

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

PHILLIPS 66 COMPANY,)	
)	
Petitioner,)	
)	
vs.)	PCB No.
)	
ILLINOIS ENVIRONMENTAL)	(Variance – Air)
PROTECTION AGENCY,)	
)	
Respondent.)	

NOTICE OF FILING

TO: Mr. Don A. Brown,
Clerk of the Board
Illinois Pollution Control Board
60 E Van Buren Street, Suite 630
Chicago, Illinois 60605

VIA ELECTRONIC MAIL)

(SEE PERSONS ON ATTACHED SERVICE LIST)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board, **ENTRY OF APPEARANCE OF MELISSA S. BROWN and PHILLIPS 66 COMPANY’S PETITION FOR VARIANCE**, copies of which are hereby served upon you.

Respectfully submitted,

Phillips 66 Company

By: /s/ Melissa S. Brown
One of Its Attorneys

Dated: May 7, 2026

Melissa S. Brown
HEPLERBROOM, LLC
4340 Acer Grove Drive
Springfield, Illinois 62711
Phone: 217-528-3674
Melissa.Brown@heplerbroom.com

CERTIFICATE OF SERVICE

I, the undersigned, on oath state the following: That I have caused to be served the attached **ENTRY OF APPEARANCE OF MELISSA S. BROWN and PHILLIPS 66 PETITION FOR VARIANCE** via electronic mail upon the following:

Don Brown
Clerk of the Board
Illinois Pollution Board
60 E Van Buren Street, Suite 630
Chicago, Illinois 60605
don.brown@illinois.gov

Illinois Environmental Protection Agency
Division of Legal Counsel
2520 West Iles Avenue, PO Box 19276
Springfield, Illinois 62794-9276
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also sent by Certified Mail

That my email address is Melissa.Brown@heplerbroom.com

That the number of pages in the email transmission is 350.

That the email transmission took place before 4:30 p.m. on May 7, 2026

Date: May 7, 2026

/s/ Melissa S. Brown
Melissa S. Brown

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vs.)	PCB No.
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ILLINOIS ENVIRONMENTAL)	(Variance – Air)
PROTECTION AGENCY,)	
)	
Respondent.)	

ENTRY OF APPEARANCE OF MELISSA S. BROWN

NOW COMES Melissa S. Brown, of the law firm HEPLERBROOM, LLC, hereby enters her appearance in this matter on behalf of Phillips 66 Company.

Respectfully submitted,

By: /s/ Melissa S. Brown

Dated: May 7, 2026

Melissa S. Brown
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INDEX

Notice of Filing..... P-1 to P-1
Certificate of Service..... P-2 to P-2
Entry of Appearance..... P-3 to P-3
Index..... P-4 to P-4
Petition for Variance..... P-5 to P-32
Exhibit 1 - Affidavit of Megan Lipscomb..... P-33 to P-42
Exhibit 2 - EJ Start Environmental Justice Map..... P-43 to P-43
Exhibit 3 - 89 Fed. Reg. 101901 (Dec. 17, 2024).....P-44 to P-53
Exhibit 4 - Illinois EPA’s 2023 Annual Air Quality Report.....P-54 to P-127
Exhibit 5- CAAPP Permit No. 95120306.....P-128 to P-350

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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Petitioner,)	
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vs.)	PCB No. ____ - ____
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ILLINOIS ENVIRONMENTAL)	(Variance – Air)
PROTECTION AGENCY,)	
)	
Respondent.)	

PETITION FOR VARIANCE

NOW COMES Petitioner, PHILLIPS 66 COMPANY (“Phillips”), by and through its undersigned counsel, pursuant to Section 35(a) of the Illinois Environmental Protection Act (“Act”), 415 ILCS 5/35(a) and 35 Ill. Adm. Code Part 104, Subpart B, and hereby petitions the Illinois Pollution Control Board (“Board”) to grant a variance from two compliance dates in 35 Ill. Adm. Code 217.152(e) and Appendix I of Part 217 concerning two process heaters at the Wood River Refinery. Phillips requests the variance pursuant to the terms and conditions outlined in this Petition.

I. INTRODUCTION

Phillips requests a variance from two compliance dates in 35 Ill. Adm. Code 217.152(e) and Appendix I of Part 217 concerning the SMR Heater and RAU Heater at the Wood River Refinery. The extended compliance dates in Appendix I of Part 217 were originally requested so that Phillips could complete the work needed to achieve compliance with the newly applicable monitoring and testing requirements of Part 217 during the next scheduled maintenance turnarounds involving the process heaters. However, after the extended compliance dates were adopted by the Board in PCB R 25-17, the maintenance turnarounds involving the SMR Heater and RAU Heater were rescheduled. Therefore, Phillips is requesting a variance to extend the

compliance date for the SMR Heater by four months and the compliance date for the RAU Heater by three months (or alternatively four months). Compliance with the current compliance dates under 35 Ill. Adm. Code Part 217 would impose an arbitrary and unreasonable hardship if the required work needs to be performed outside of the scheduled maintenance turnarounds involving these heaters.

II. REGULATION FROM WHICH VARIANCE IS SOUGHT (§ 104.204(a))

A. Language of Regulation and Effective Date

Phillips requests a variance from two compliance dates in 35 Ill. Adm. Code 217.152(e) and Appendix I of Part 217 concerning the HTR-SMR Steam Methane Reformer (“SMR Heater” herein) and the Rectified Absorber Unit (“RAU Heater” herein). These rules were adopted in *In the Matter of: Amendments to 35 Ill. Adm. Code 217*, PCB R 25-17 and the effective date of the amendments was April 23, 2025. 49 Ill. Reg. 5,999 at 6,355 (May 9, 2025). The regulations from which the variance is sought state as follows:

Section 217.152 Compliance Date and 30-Day Rolling Average Basis

- e) Notwithstanding subsection (a) of this Section, the owner or operator of emission units subject to Subpart F and located at a petroleum refinery listed in Appendix I that first become subject to the emission limitations under Subpart F on July 1, 2025, must comply with the applicable limitations in Subpart F, including the option of demonstrating compliance with the applicable Subpart through an emissions averaging plan under Section 217.158, for such emission units beginning on and after the dates set forth in Appendix I.

Section 217.Appendix I: Compliance Dates for Certain Emissions Units at Petroleum Refineries and Petrochemical Facilities

Phillips 66 Company (Facility ID 119090AAA)

Point	Emission Unit Description	Compliance Date
0036	CAU Heater	December 31, 2025
0010	HTR-SMR Steam Methane Reformer	December 31, 2026
0033	RAU Heater	December 31, 2027
0085	HDU-1 Heater	December 31, 2027
0088	HDU-2 Heater	December 31, 2027

35 Ill. Adm. Code 217.152(e) and 35 Ill. Adm. Code Part 217, Appendix I (emphasis added).

B. Regulatory History

In PCB R 25-17, the Illinois Environmental Protection Agency (“Illinois EPA”) proposed amendments to the existing rules concerning the control of nitrogen oxides (“NOx”) in Part 217 of the Board’s regulations, particularly the provisions concerning Reasonably Available Control Technology (“RACT”) requirements for various source categories in the Chicago, IL-IN-WI nonattainment area and St. Louis, MO-IL nonattainment area for the 2015 8-hour ozone National Ambient Air Quality Standard (“NAAQS”). Statement of Reasons, *In the Matter of: Amendments to 35 Ill. Adm. Code 217, Nitrogen Oxides Emissions*, PCB R 25-17 (Ill.Poll.Control.Bd. July 8, 2024). The NOx RACT regulations apply to the following types of emission units: industrial boilers, process heaters, glass melting furnaces, cement kilns, lime kilns, iron and steel reheat, annealing, or galvanizing furnaces, aluminum reverberatory or crucible furnaces, fossil fuel-fired stationary boilers, stationary reciprocating internal combustion engines and turbines. 35 Ill. Adm. Code 217.150 and 217.386. Per Illinois EPA, the amendments proposed by Illinois EPA in PCB R 25-17 were “intended to address the deficiencies identified by USEPA and meet certain obligations of the State of Illinois under the CAA, 42 U.S.C. 7401 et seq; specifically, to satisfy Illinois’ obligation to submit a SIP to

address the RACT requirements under Sections 172 and 182 of the CAA for major stationary sources of NO_x in areas designated as nonattainment with respect to a NAAQS.” Statement of Reasons, PCB R 25-17. Additionally, the proposed amendments were intended to address the anticipated reclassification of the Chicago and Metro-East ozone nonattainment areas from moderate nonattainment to serious nonattainment. *Id.*

To address the anticipated reclassification, the amendments adopted in PCB R 25-17 included lowering of the major source applicability threshold from 100 tons per year of NO_x to 50 tons per year of NO_x. *Id.*; Final Opinion and Order, PCB R 25-17 at 14 (April 17, 2025). Per the adopted amendments, the NO_x RACT requirements in Part 217 are applicable to owners and operators of the above-listed emission units that meet both of the following criteria: (1) the emission unit is at a source located in the Chicago or Metro East areas listed in Section 217.150(a)(1)(A) and the source emits or has the potential to emit equal to or greater than 50 tons per year of NO_x and (2) the emission unit emits 15 tons or more of NO_x per year. 35 Ill. Adm. Code 217.150(a)(2). Four small process heaters (RAU-Heater, CAU Heater, HDU-1 Heater, and HDU-2 Heater) at the Wood River Refinery became newly subject to the NO_x RACT requirements per the amendments in PCB R 25-17. The SMR, on the other hand, “was previously thought to not be a process heater, as the term is defined in Section 211.5195.” Illinois EPA’s Second Post-Hearing Comments, PCB R 25-17 (Ill.Pol.Control.Bd. Oct. 31, 2024) (citing to Post-Hearing Comments of Illinois EPA, PCB R 08-19 at 22 (Ill.Pol.Control.Bd. March 23, 2009)). As explained by Phillips in its post-hearing comments in PCB R 25-17, Illinois EPA revisited its prior determination as to the SMR Heater “and the Agency and Philips 66 are now in agreement that the SMR is a process heater that will be newly subject to Part 217,

Subpart F (Process Heaters).” Phillips 66 Post-Hearing Comments, PCB R 25-17, P.C. #5 at 5 (Ill.Pol.Control.Bd. Dec. 16, 2024).

Under Part 217, process heaters that meet the applicability requirements are subject to the emission limitations and requirements in Part 217, Subpart F (Process Heaters) and the general requirements in Part 217, Subpart D (NO_x General Requirements). The process heaters at the Wood River Refinery subject to Part 217, Subpart F demonstrate compliance, or will demonstrate compliance, through an emissions averaging plan pursuant to Section 217.158. Process heaters with a rated heat input capacity greater than 100 mmBtu/hr must install and operate a continuous emission monitoring system (“CEMS”) to measure NO_x emissions. 35 Ill. Adm. Code 217.157(a)(3). The SMR Heater has a rated heat input capacity of 460 mmBtu/hr¹ and, therefore, would have been required under the amendments to install a CEMS by the compliance date of July 1, 2025.² If demonstrating compliance through an emissions averaging plan and not demonstrating compliance with a CEMS, process heaters subject to Part 217, Subpart F with a rated heat input capacity less than or equal to 100 mmBtu/hr must have an initial performance test conducted by the compliance date. 35 Ill. Adm. Code 217.157(a)(5). The RAU Heater has a rated heat input capacity of 69 mmBtu/hr³ and, therefore, would have been required under the amendments to have an initial performance conducted by the compliance date of July 1, 2025.

¹ See Exhibit 1, Affidavit of Megan Lipscomb, ¶4.

² Initially, Illinois EPA proposed a compliance date of May 1, 2025 for the amendments. Illinois EPA’s Regulatory Submittal, PCB R 25-17 (July 8, 2024). Illinois then proposed revised compliance of July 1, 2025, which became the final compliance date for the amendments. “Comments Regarding Illinois Pollution Control Board Rulemaking R2025-017, *In the Matter of Amendments of 35 Ill. Adm. Code 217, Nitrogen Oxides Emissions*, P.C. #11 PCB R 25-17 (Ill.Pol.Control.Bd. Mar. 31, 2025); 35 Ill. Adm. Code 217.152(a).

³ See Exhibit 1, Affidavit of Megan Lipscomb, ¶6.

Because the SMR Heater is not currently equipped with a CEMS,⁴ installation of a CEMS is required. Additionally, the RAU Heater, along with the other three smaller heaters subject to Section 217.157(a)(5) (CAU Heater, HDU-1 Heater, and HDU-2 Heater), were not equipped with test or analyzer ports to allow for performance testing under Part 217 at the time of the PCB R 25-17 rulemaking. See Exhibit 1, Affidavit of Megan Lipscomb, ¶¶5, 7. As such, installation of test ports on these heaters is required prior to conducting performance testing. To safely perform these projects, the installation of the stack test ports and installation of the CEMS need to be performed when the emission units are not operating. *Id.* at ¶¶8-9. In PCB R 25-17, as to installation of the stack test ports, Phillips explained as follows:

The stack test ports should be installed during heater downtime in order to reduce certain safety risks. Installing test or analyzer ports when a heater is off-line and the stack is cool reduces the risk of burns from hot surfaces, fire, or explosions from welding on operating equipment, mistakes due to discomfort, and reduced dexterity from additional protective gear. Additionally, disturbing stack refractory while in operation increases the risk of refractory falling onto and damaging heater tubes and other internal components.

Phillips' Post-Hearing Comments, PCB R 25-17, P.C. #5 at 4. The same safety risks explained above apply to installation of the CEMS when the SMR Heater is in operation. See Exhibit 1, Affidavit of Megan Lipscomb at ¶¶8-9.

In PCB R 25-17, Phillips requested extended compliance dates under Part 217 so that Phillips could install the CEMS and the stack test ports during the next scheduled maintenance turnarounds involving the process heaters. At the time of the PCB R 25-17 rulemaking, the next scheduled maintenance turnaround for the SMR Heater was Fall of 2026. *Id.* at ¶10. Phillips therefore requested, and Illinois EPA proposed, an extended compliance date of December 31, 2026 to install the CEMS, which was adopted by the Board. 35 Ill. Adm. Code Part 217,

⁴ *Id.* at ¶5.

Appendix I. At the time of the PCB R 25-17 rulemaking, the next scheduled maintenance turnaround for the RAU Heater was in Fall of 2027. *See* Exhibit 1, Affidavit of Megan Lipscomb at ¶10. Phillips therefore requested, and Illinois EPA proposed, an extended compliance date of December 31, 2027 for the RAU Heater, which was adopted by the Board. 35 Ill. Adm. Code Part 217, Appendix I.

As for rescheduling of the turnarounds, the timing of refining industry turnarounds are governed by set intervals as a base case which are routinely adjusted based on mechanical integrity inspections and process performance data to optimize the need for shutdown. Exhibit 1, Affidavit of Megan Lipscomb at ¶11. The turnarounds involving the SMR Heater and RAU Heater are separately scheduled because the SMR Heater and RAU Heater serve different process units. *Id.* Different process units are grouped together for turnarounds and scheduled separately from other process unit turnarounds so that the entire refinery does not shut down at one time. *Id.* The turnarounds involving the SMR Heater and RAU Heater were reevaluated in Fall 2025. *Id.* at ¶12. Based on these reevaluations, the turnaround dates were adjusted due to favorable performance which indicated longer intervals between shutdowns were more appropriate. *See id.*

III. NATURE OF PETITIONER'S ACTIVITY (§ 104.204(b))

WRB Refining LP owns and Phillips 66 Company operates the petroleum refinery located at 900 South Central Avenue, Roxana, Illinois (hereinafter the "Wood River Refinery"). *Id.* at ¶2.

The Wood River Refinery is a petroleum refinery which processes approximately 346,000 barrels of crude oil per day into gasoline, aviation fuels, diesel oils, lubricating oils, heavy fuel oils, asphalt, and propane. *Id.* at ¶3. The refinery facilities include crude distilling,

naphtha reforming, fluid catalytic cracking, alkylation, hydrocracking, hydrodesulfurization, and delayed coking units. *Id.* Refined petroleum products are distributed by pipeline, railcar, barge, and truck. *Id.* A description of the SMR Heater and RAU Heater processes is provided below.

A. Location of and Areas Affected (§ 104.204(b)(1))

The Wood River Refinery is located at 900 South Central Avenue, Roxana, Madison County, Illinois 62084. *Id.* at ¶2. The refinery is located about 15 miles northwest of St. Louis, Missouri and encompasses approximately 2,200 acres. Per Illinois EPA's EJ Start mapping tool, the refinery is not located in an environmental justice area. Attached hereto as Exhibit 2 is a snapshot of Illinois EPA's EJ Start environmental justice mapping tool showing that the Wood River Refinery is not located in an environmental justice area.

The Wood River Refinery is located in the St. Louis, MO-IL nonattainment area for the 2015 8-hour ozone NAAQS. As of January 16, 2025, the Metro-East nonattainment area is classified as serious nonattainment for the 2015 ozone NAAQS. "Findings of Failure to Attain and Reclassification of Areas in Illinois, Indiana, Michigan, Ohio, and Wisconsin as Serious for the 2015 Ozone National Ambient Air Quality Standards," 89 Fed. Reg. 101901 (Dec. 17, 2024), attached hereto as Exhibit 3.

B. Location of Emission Units and Nearest Air Monitoring Station (§ 104.204(b)(2))

The air emissions units that are the subject of this Petition are the SMR Heater and RAU Heater, both of which are located at the Phillips 66 Refinery described above. The nearest air monitoring station maintained by Illinois EPA is located at the Wood River Water Treatment Plant at 54 N. Walcott, Wood River, Madison County, Illinois (AQS ID 17-119-3007). The locations of air monitoring stations operated by the Illinois EPA are provided in Illinois EPA's 2023 Annual Air Quality Report, which is attached hereto as Exhibit 4.

Section 104.204(b)(2) of the Board's regulations states that petitions for variance should also include a description of the location of points of discharge and, as applicable, the identification of the receiving waterway or land. This information is not relevant and not included in the Petition because Petitioner's variance requests concern air emissions and there are no cross-media impacts to the variance request. Exhibit 1, Affidavit of Megan Lipscomb at ¶35.

C. Prior Variances (§ 104.204(b)(3))

Neither WRB Refining LP nor Phillips 66 Company have been previously granted a variance by the Board for similar relief.⁵ To the best of Petitioner's knowledge and based on a search of the Board's website, the prior owners and operators of the Wood River Refinery (including ConocoPhillips Company, ToscoPetro Corporation, Wood River Refining Co., Equilon Enterprises LLC, Shell Wood River Refining Company, Shell Oil Company) were not granted variances by the Board for similar relief.⁶

D. Environmental Permits (§ 104.204(b)(4))

The Wood River Refinery is a major source pursuant to Title V of the Clean Air Act and operates under Clean Air Act Permit Program ("CAAPP") Permit No. 95120306. A copy of Petitioner's CAAPP Permit is attached as Exhibit 5.

⁵ Phillips 66 Company requested and was granted two provisional variances. *Phillips 66 v. IEPA*, PCB 95-79 (Ill.Pol.Control.Bd. March 9, 1995); *Phillips 66 Company v. IEPA*, PCB 93-252 (Ill.Pol.Control.Bd. Dec. 16, 1993). However, these variances did not concern the Wood River Refinery. Instead, the variances related to gasoline dispensing operations located in Cook, Lake, Will, DuPage, Kane, Kendall, and McHenry Counties and concerned the Stage II vapor recovery requirements in 35 Ill. Adm. Code 218.586. *Id.*

⁶ In 1996 and 1989, Shell Wood Refining and Shell Oil Company, respectively, were granted provisional variances by the Board; however, the variances concerned the sulfur dioxide emissions requirements in 35 Ill. Adm. Code 218.382(b) during periods of repairs and maintenance to the Shell Claus Off-Gas Treater unit of the sulfur recovery system at the Wood River Refinery. *See Shell Wood River Refining Company v. IEPA*, PCB 96-248 (June 6, 1996); *see Shell Oil Company v. IEPA*, PCB 89-52 (March 15, 1989); *see Shell Oil Company v. IEPA*, PCB 89-43 (March 2, 1989). Additionally, in 1978, the Board granted a variance to Shell Oil Company; however, the variance concerned the sulfur emission requirements in 35 Ill. Adm. Code 217.141(a) (formerly Rule 204(f)(1)) applicable to the sulfur recovery unit at the Wood River Refinery. *See Shell Oil Company v. IEPA*, PCB 78-190 (Dec. 14, 1978).

E. Persons Employed and Age of Facility (§ 104.204(b)(5))

The Wood River Refinery employs approximately 800 employees. Exhibit 1, Affidavit of Megan Lipscomb at ¶2. The refinery was built in 1917. *Id.*

F. Nature and Amount of Materials Used and Description of Activity (§ 104.204(b)(6))

The main purpose of the HTR-SMR Steam Methane Reformer (emission point no. 0010) (“SMR Heater” herein) is to manufacture hydrogen. *Id.* at ¶4. The SMR Heater acts as a fired reactor where hydrogen is formed in the catalyst-filled tubes of the heater. *Id.* Treated feed gas from the Saturates Gas Plant, Hydrocracker, and Ultra Low Sulfur Diesel Hydrotreater, and steam are the feeds to the SMR Heater tubes. *Id.* The SMR Heater is a terraced side wall reformer heater rated for 460 mmBtu/hr that uses refinery fuel gas in its burners. *Id.*

The Rectified Absorber Unit (“RAU Heater” herein) (emission point no. 0033) gets its feed from the Catalytic Cracking Units (CCU1 and CCU2) and consists of an Absorber Deethanizer, Debutanizer Column, and Depropanizer Column. *Id.* at ¶6. The RAU Heater serves as a reboiler for the RAU Debutanizer Column to provide heat into the column as part of the column feed separation process into propane/propylene/butane/butylene (column tops product) and gasoline (column bottoms product). *Id.* The RAU Heater is a cabin-style fired heater rated for 69 MMBTU/hr that uses refinery fuel gas in its burners. *Id.*

G. Pollution Control Equipment (§ 104.204(b)(7))

Neither the SMR Heater nor the RAU Heater have pollution control equipment and, therefore, Section 104.204(b)(7) is inapplicable. The SMR Heater will achieve compliance with the applicable emissions limitations under Part 217 via use of an emissions averaging plan pursuant to Section 217.158. As discussed in more detail below, Phillips plans to decommission the RAU Heater during the rescheduled maintenance turnaround. However, in the event that the

decommissioning does not occur, stack test ports will be installed, and performance testing of the RAU Heater will be conducted. In the event that the RAU Heater is not decommissioned, the RAU Heater will achieve compliance with the applicable emissions limitations under Part 217 via use of an emissions averaging plan pursuant to Section 217.158.

H. Nature and Amount of NOx Emissions Currently Generated (§ 104.204(b)(8))

i. SMR Heater

The below table shows the NOx emissions for the SMR Heater for 2025:

Table 1

Year	Emission Factor [lb NO _x /MMBTU]	Fired Duty [MMBTU]			Actual NO _x Emissions [ton]			Allowable NO _x Emissions [ton]			Average Impact on 30-Day Rolling Average [ton]
		Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	
2025	0.275*	2,978,603	1,224,615	730,567	408.8	168.1	100.3	119.1	49.0	29.2	22.5

Id. at ¶26.

The SMR Heater has been in compliance with the NOx emission limitations in the CAAPP Permit. *Id.* at ¶34 . Because the SMR Heater was previously determined to not constitute a process heater, the SMR Heater was not previously subject to the 0.08 lb/mmBtu NOx limit under 35 Ill. Adm. Code 217.184. However, as explained below, all process heaters subject to Part 217, Subpart F, including the SMR Heater, will comply with the 0.08 lb/mmBtu NOx limit via an emissions averaging plan.

Calculations of NOx emissions from the SMR Heater are based on the AP-42 emission factor of 280 lb/MMscf, which equates to about 0.275 lb/MMBtu. *Id.* at ¶27. Use of this emission factor is conservative. A Testo meter was used in some prior heater tuning exercises to sample at an available location on the SMR Heater stack and has shown to be consistently lower

than the AP-42 factor. *Id.* See Table 2 below for Testo meter results from 2019 – 2025 which demonstrate consistently lower NOx emissions factors than AP-42.

Table 2

Date	NO _x [ppm]	O ₂ [%]	Tester	F _d Factor [dscf/MMBTU]	NO _x Emission Factor [lb/MMBTU]
4/24/2019	70.9	11.45	CETCON	8,492	0.159
5/13/2020	62	9.8	CETCON	8,446	0.118
4/7/2021	54	12.1	CETCON	8,441	0.129
6/3/2022	47.5	14.3	CETCON	8,509	0.153
5/4/2023	74	10.2	CETCON	8,417	0.145
5/1/2024	67.4	10.5	CETCON	8,436	0.136
4/30/2025	67	9.9	CETCON	8,450	0.128
8/7/2025	87	7.21	Phillips 66	8,554	0.136
Average from Testo Grab Samples					0.138
AP-42					0.275

Id.

ii. RAU Heater

The below table shows actual NOx emissions from the RAU Heater for 2025:

Table 3

Year	Emission Factor [lb NO _x /MMBTU]	Fired Duty [MMBTU]			Actual NO _x Emissions [ton]			Allowable NO _x Emissions [ton]			Average Impact on 30-Day Rolling Average [ton]
		Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	
2025	0.098*	464,052	188,746	113,404	22.7	9.3	5.6	18.6	7.5	4.5	0.3

Id. at ¶28.

The RAU Heater has been in compliance with the NOx emission limitations in the CAAPP Permit. *Id.* at ¶34. Because the RAU Heater is newly subject to the NOx RACT provisions of Part 217 per the amendments in PCB R 25-17, the RAU Heater was not previously subject to the 0.08 lb/mmBtu NOx limit under 35 Ill. Adm. Code 217.184. However, as explained below, all process heaters subject to Part 217, Subpart F, including the RAU Heater (if not decommissioned), will comply with the 0.08 lb/mmBtu NOx limit via an emissions averaging plan.

IV. ANTICIPATED FAILURE TO MEET THE REGULATION FROM WHICH THE VARIANCE IS SOUGHT AND FACTS THAT SUPPORT PETITIONER'S ARGUMENT THAT COMPLIANCE WITH THE REGULATION CANNOT BE ACHIEVED BY ANY REQUIRED COMPLIANCE DATE (§ 104.204(c)); EFFORTS NECESSARY TO ACHIEVE IMMEDIATE COMPLIANCE WITH THE REGULATION AT ISSUE (§ 104.204(d)); AND IMMEDIATE COMPLIANCE WOULD IMPOSE AN ARBITRARY AND UNREASONABLE HARDSHIP (§ 104.204(e))

As described above, a later compliance date was granted in PCB R 25-17 to allow the required CEMS to be installed on the SMR Heater during the next scheduled maintenance turnaround involving the SMR Heater. At the time of the rulemaking, the next maintenance turnaround involving the SMR Heater was scheduled for Fall 2026. *Id.* at ¶10. Per Section 217.152(e) and Appendix I, the current compliance date for the SMR Heater is December 31, 2026. The maintenance turnaround involving the SMR Heater has been rescheduled from Fall 2026 to Spring 2027 (scheduled to begin on March 1, 2027 and expected to last approximately forty-five days). *Id.* at ¶13. The turnaround was rescheduled due to not having any mechanical integrity drivers to take the unit out of service at an earlier date. *Id.* Phillips anticipates compliance with the current compliance deadline of December 31, 2026 cannot be achieved as it would be economically unreasonable given the rescheduled turnaround.

Compliance with the current compliance deadline would entail a separate shutdown of the SMR Heater outside of the maintenance turnaround. *Id.* at ¶16. Shutdown of the SMR Heater would cause a reduction of operation to minimal rates of the following units to which the hydrogen from the SMR Heater feeds into: the Slurry Hydrotreater Unit, Diesel Hydrotreater Unit, and Hydrocracker Units. *Id.* To install the CEMS on SMR heater during a separate shutdown prior to the scheduled maintenance turnaround, Phillips estimates an additional \$424,000 of capital spend. *Id.* at ¶17. The top of the SMR heater will be replaced during the turnaround. *Id.* If the CEMS had to be installed prior to the turnaround, the \$424,000 additional capital spend accounts for the need to have extra infrastructure to install the ports as opposed to building the ports into the new heater top during the turnaround, as well as the cost to re-install the CEMS after the top of the heater is replaced during the turnaround. *Id.* Additionally, Phillips estimates that the SMR Heater would have to be down for approximately 6-7 days to install the CEMS prior to the scheduled maintenance turnaround. *Id.* With this downtime, Phillips estimates that it would lose approximately \$450,000 per day for a total of \$2,700,000 to \$3,150,000 in lost profit opportunity due to the inability of the SMR Heater to manufacture hydrogen. *Id.*

As to the RAU Heater, as described above, a later compliance date was granted in PCB R 25-17 to allow the required stack test ports to be installed on the RAU Heater during the next scheduled maintenance turnaround involving the RAU Heater. At the time of the rulemaking, the next maintenance turnaround involving the RAU Heater was scheduled for Fall 2027. *Id.* at ¶10. Per Section 217.152(e) and Appendix I, the current compliance date for the RAU Heater is December 31, 2027. The maintenance turnaround involving the RAU Heater has been rescheduled from Fall 2027 to Spring 2028 (anticipated to start on March 1, 2028 and expected

to last approximately thirty days). *Id.* at ¶18. The turnaround was rescheduled due to not having any mechanical integrity drivers to take the unit out of service at an earlier date. *Id.*

Since the PCB R 25-17 rulemaking, Phillips has conducted an evaluation of the RAU Heater and intends to decommission the RAU Heater and install a reboiler to feed the RAU Debutanizer Column. *Id.* at ¶20. Phillips plans to decommission the RAU Heater because the heater tubes are reaching their end of life. *Id.* Instead of re-tubing the RAU Heater, Phillips has decided to install a reboiler due to better firing efficiency and benefits related to ease of future maintenance. *Id.* While Phillips plans to decommission the RAU Heater and install a reboiler during the Spring 2028 turnaround, changing tariff policies and resulting changes in costs of material and equipment could impact that decision. *Id.* at ¶21. In the event that the RAU Heater is not decommissioned, Phillips will proceed with re-tubing the RAU Heater and installing stack test ports during the rescheduled maintenance turnaround in Spring 2028. *Id.* Once the turnaround is complete, Phillips would proceed with performance testing of the RAU Heater. *Id.*

Phillips anticipates compliance with the current compliance deadline of December 31, 2027 cannot be achieved as it would be economically unreasonable given the rescheduled turnaround. Compliance with the current compliance deadline for the RAU Heater would require installing a stack test port on the RAU Heater prior to December 31, 2027, which would require installing a stack test port on an emission unit that will likely be decommissioned three months later. Phillips estimates that it would incur approximately \$250,000 of additional capital spend to install the stack test ports. *See id.* at ¶21. Such capital would not need to be spent if the RAU Heater could be decommissioned during the scheduled turnaround in Spring 2028. The RAU Heater cannot be decommissioned by the current compliance date because installation of the reboiler is needed to feed the RAU Debutanizer Column. *Id.* at ¶23. While the reboiler

equipment will be installed in 2027, the final tie-ins to the existing structure cannot be performed while the RAU Heater is online. *Id.* As discussed above, a separate shutdown of the RAU Heater outside of the maintenance turnaround would result in significant additional expense.

Furthermore, compliance with the current compliance deadline would entail a separate shutdown of the RAU Heater outside of the maintenance turnaround. *See id.* at ¶24. Because the RAU Heater provides heat to the RAU Debutanizer Column, the RAU Debutanizer Column would also need to be shut down. *Id.* Phillips estimates that the RAU Heater and RAU Debutanizer Column would have to be down for approximately four days to install to complete the work on the stack test ports. *Id.* With this added downtime, Phillips estimates that it would lose approximately \$200,000 per day for a total of \$800,000 in lost profit opportunity. *Id.* The downtime of this process would lead to lost profits due to the inability to manufacture propane, propylene, butane, butylene, and gasoline. *Id.* Because compliance with the current compliance deadlines cannot be achieved as it would be economically unreasonable given the rescheduled turnarounds, immediate compliance would impose an arbitrary and unreasonable hardship.

V. COMPLIANCE PLAN (§ 104.204(f))

A. SMR Heater

A CEMS will be installed on the SMR Heater during the turnaround to be able to determine the actual emissions and be in compliance with the rule requirements for heater NO_x emissions monitoring. The CEMS will continuously monitor NO_x emission from the SMR Heater. *Id.* at ¶¶14-15. The CEMS model/type will be ABB for NO_x and Rosemont X-Steam for O₂ and CO₂. *Id.* at ¶15. The CEMS is onsite and will be installed during the Spring 2027 turnaround, which is scheduled to begin on March 1, 2027 and is expected to last approximately forty-five days. *Id.* Phillips anticipates the installation of the CEMS to take approximately three

days. *Id.* Phillips estimates that achieving compliance by the proposed extended compliance date will cost approximately \$875,000. *Id.* This includes approximately \$235,000 for major equipment, piping, and instruments as well as approximately \$430,000 for electrical and civil and concrete work. *Id.* The remainder of the cost addresses freight/transport, scaffolding, and engineering costs. *Id.*

B. RAU Heater

Phillips requests an extended compliance date for the RAU Heater due to the rescheduling of the maintenance turnaround to Spring 2028. During the rescheduled turnaround, Phillips intends to decommission the RAU Heater and replace it with a reboiler. The Spring 2028 turnaround is scheduled to begin on March 1, 2028 and is expected to be completed by approximately March 31, 2028. *Id.* at ¶18. During the turnaround, the RAU Heater is planned to be decommissioned by approximately March 15, 2028. *Id.* As for cost of achieving compliance, there will be minimal cost associated with decommissioning the RAU Heater given that the decommissioning will entail shutting down, disconnecting, and decontaminating the heater. *Id.* at ¶19.

In the event that the RAU Heater is not decommissioned, Phillips will re-tube the RAU Heater and install stack test ports during the Spring 2028 turnaround. *Id.* at ¶21. Phillips will conduct a performance test once the unit is restarted shortly after the turnaround is complete. *Id.* The estimated cost of installing the stack test ports is \$250,000 in addition to approximately \$5,000 to perform the stack test. *Id.*

VI. ENVIRONMENTAL IMPACT (§ 104.204(g))

A. Nature and Amount of Emissions of Constituent in Question

i. SMR Heater

A CEMS will be installed on the SMR Heater during the turnaround to be able to determine the actual emissions and be in compliance with the rule requirements for heater NOx emissions monitoring. As a result, Phillips expects to move from reporting with the AP-42 emission factor of 0.275 lb/MMBtu to reporting with the actual NOx emission factor. *Id.* at ¶29. For this exercise, the NOx emission factor is demonstrated as 0.165 lb/MMBtu post-turnaround (this is 60% of the AP-42 emission factor and is thought to be conservative based on Testo readings described in the above table). *Id.* The below table shows the approximate NOx emissions for the SMR Heater for 2025 and estimated NOx emissions for 2026-2030:

Table 4

Year	Emission Factor [lb NO _x /MMBTU]	Fired Duty [MMBTU]			Actual NO _x Emissions [ton]			Allowable NO _x Emissions [ton]			Average Impact on 30-Day Rolling Average [ton]
		Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	
2025	0.275*	2,978,603	1,224,615	730,567	408.8	168.1	100.3	119.1	49.0	29.2	22.5
2026	0.275*	2,954,000	1,169,784	768,040	405.5	160.6	105.4	118.2	46.8	30.7	23.6
2027	0.275*/0.165**	2,649,277	1,154,662	781,016	295.6	95.1	64.3	106.0	46.2	31.2	15.6
2028	0.165**	3,074,400	1,217,462	799,344	253.2	100.3	65.8	123.0	48.7	32.0	10.7
2029	0.165**	3,066,000	1,214,136	797,160	252.5	100.0	65.6	122.6	48.6	31.9	10.7
2030	0.165**	2,887,500	1,143,450	750,750	237.8	94.2	61.8	115.5	45.7	30.0	10.1

*Based on AP-42 Emission Factor

**Estimated Emission Factor when CEMS is installed

See id.

ii. RAU Heater

The RAU Heater uses an AP-42 emission factor and RAU Heater fired duty, the table below shows NOx emissions for 2025 and estimated NOx emissions for 2026-2030. *Id.* at ¶30. Once the steam reboiler is installed during the turnaround in the spring of 2028, the RAU Heater will cease to operate and will emit zero NOx emissions. *Id.*

Table 5

Year	Emission Factor [lb NO _x /MMBTU]	Fired Duty [MMBTU]			Actual NO _x Emissions [ton]			Allowable NO _x Emissions [ton]			Average Impact on 30-Day Rolling Average [ton]
		Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	
2025	0.098*	464,052	188,746	113,404	22.7	9.3	5.6	18.6	7.5	4.5	0.3
2026	0.098*	443,944	190,896	110,986	21.8	9.4	5.4	17.8	7.6	4.4	0.3
2027	0.098*	453,412	194,967	113,353	22.2	9.6	5.6	18.1	7.8	4.5	0.3
2028	0.098*	152,750	0	0	7.5	0	0	6.1	0	0	0.1
2029	N/A	0	0	0	0	0	0	0	0	0	0
2030	N/A	0	0	0	0	0	0	0	0	0	0

*Based on AP-42 Emission Factor

See *id.*

As explained above, in the event that the RAU Heater is not decommissioned, Phillips will proceed with installing the stack test ports, stack testing, and including the RAU Heater in the emissions averaging plan. *Id.* at ¶32. In that scenario, estimated NO_x emissions for the RAU Heater for 2026 through 2030 is provided in Table 6 below:

Table 6

Year	Emission Factor [lb NO _x /MMBTU]	Fired Duty [MMBTU]			Actual NO _x Emissions [ton]			Allowable NO _x Emissions [ton]			Average Impact on 30-Day Rolling Average [ton]
		Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	
2025	0.098*	464,052	188,746	113,404	22.7	9.3	5.6	18.6	7.5	4.5	0.3
2026	0.098*	443,944	190,896	110,986	21.8	9.4	5.4	17.8	7.6	4.4	0.3
2027	0.098*	453,412	194,967	113,353	22.2	9.6	5.6	18.1	7.8	4.5	0.3
2028	0.098* / 0.114**	424,166	212,083	135,733	20.8	12.1	7.7	17.0	8.5	5.4	0.3
2029	0.114**	460,776	198,134	115,194	22.6	11.3	6.6	18.4	7.9	4.6	0.3
2030	0.114**	458,935	197,342	114,734	22.5	11.2	6.5	18.4	7.9	4.6	0.3

*Based on AP-42 Emission Factor

**Estimated Emission Factor when CEMS is installed (based on 2025 CAU Heater emission factor)

See *id.* at ¶32.

B. Impact on Human Health and Environment and Measures to Minimize Impact of Emissions

There will be no difference in qualitative or quantitative impact of the operation of the SMR Heater and RAU Heater on human health and environment if the request for variance is granted as compared to the operation of the heaters if immediate compliance is required. The current compliance deadlines were requested in PCB R 25-17 in order to install a CEMS on the SMR Heater in order to monitor NO_x emissions and install a stack test port on the RAU Heater in order to perform a performance test to determine NO_x emissions. Because the extended compliance dates concerned time needed to install monitoring and testing equipment, there was no difference in NO_x emissions between Phillips complying with the general compliance date of July 1, 2025 for the Part 217 amendments and the extended compliance dates in Appendix I. As such, there will be no difference in emissions between Phillips complying with the extended compliance dates adopted in PCB R 25-17 as compared to the extended compliance dates requested in this Petition. Moreover, the RAU Heater will likely be decommissioned prior to the requested extended compliance date.

As for general impact on human health and environment from the NO_x RACT amendments adopted in PCB R 25-17, “[w]hen the Part 217 amendments are fully implemented, the Agency anticipates a reduction of annual emissions from the Phillips 66 refinery of greater than 200 tons of NO_x per year, as a result of the environmental benefit factor for averaging plans and the additional units subject to the regulations.” Illinois EPA’s Post-Hearing Comments, PCB R 25-17, P.C. #3 (Nov. 20, 2024). In PCB R 25-17, Illinois EPA proposed and the Board granted an extended applicability date of January 1, 2028 for when the environmental benefit factor would apply to Phillips 66. *See* 35 Ill. Adm. Code 217.158(m). Phillips is not requesting an extension of this date as part of this Petition.

The requested extensions of the compliance date do not extend Phillips' compliance date into another ozone season (May 1 through September 30). The requested variance is for four and three-month periods which extend over the winter and early spring season, both ending before the start of the next ozone season. The extension of the compliance date for the SMR Heater would extend from December 31, 2026 through April 30, 2027. The extension of the compliance date for the RAU Heater would extend from December 31, 2027 through March 31, 2028 if the RAU Heater is decommissioned or, alternatively, through April 30, 2028 if the RAU Heater is not decommissioned.

The requested extensions of the compliance dates for the SMR Heater and RAU Heater will not result in any exceedances of the applicable emissions limitations under Part 217, Subpart F as discussed above. Exhibit 1, Affidavit of Megan Lipscomb at ¶33. There are no cross-media impacts applicable to the variance requested. *Id.* at ¶35. As for measures to minimize impact of emissions, Phillips will continue to utilize good combustion practices. *Id.* at ¶36. Good combustion practices include performing the required annual combustion tuning for covered process heaters under the boiler and process heater National Emissions Standards for Hazardous Air Pollutants ("NESHAP"), 40 C.F.R. Part 63, Subpart DDDDD and Part 217 regulations, operating the heater with no visible opacity, maintaining balanced heat distribution and proper flame patterns at the burners, and maintaining proper air-to-fuel ratios. *Id.*

VII. SUPPORTING DOCUMENTS OR LEGAL AUTHORITIES (§ 104.204(h))

Citations to supporting documents or legal authorities used as a basis for Petitioner's variance requests are included throughout this Petition. Supporting documents and legal authorities, other than Board decisions, reported state and federal court decisions, or state and federal regulations and statutes, are attached as exhibits to this Petition.

VIII. COPY OF MATERIAL PORTION OF PERMIT (§ 104.204(i))

The Board's regulations require that, if the requested variance involves an existing permit or pending permit application, a copy of the material portion of the permit or permit application must be appended to the petition. 35 Ill. Adm. Code 104.204(i). A copy of Petitioner's CAAPP Permit is attached hereto as Exhibit 5.

IX. CONDITIONS FOR VARIANCE (§ 104.204(j))

Phillips requests that the Board grant a variance from the compliance dates in 35 Ill. Adm. Code 217.152(e) and Part 217, Appendix I for the SMR Heater and RAU Heater at the Wood River Refinery. Phillips proposes that the variance be stated as follows:

1. Phillips shall install a NO_x CEMS on the SMR Heater at the Wood River Refinery by April 30, 2027.
2. Beginning on May 1, 2027, the SMR Heater shall be subject to the requirements of 35 Ill. Adm. Code Part 217.
3. As to the RAU Heater, Phillips shall either:
 - a. Decommission the RAU Heater at the Wood River Refinery by March 31, 2028; or
 - b. Install stack test ports on the RAU Heater by March 31, 2028 and conduct a performance test of the RAU Heater required by 35 Ill. Adm. Code 217.157(a)(5) by April 30, 2028.
4. If the RAU Heater is not decommissioned, beginning on May 1, 2028, the RAU Heater shall be subject to the requirements of 35 Ill. Adm. Code Part 217.

X. TERM OF VARIANCE (§ 104.204(k))

For the SMR Heater, petitioner requests a four-month variance with a start date of December 31, 2026 and an end date of April 30, 2027. The current compliance date for the SMR under Section 217.152(e) and Appendix I of Part 217 is December 31, 2026. As discussed above, the maintenance turnaround involving the SMR Heater has been rescheduled to begin on March 1, 2027 and is expected to last approximately forty-five days. Phillips requests a variance end date of April 30, 2027 to allow sufficient time for the CEMS to be installed and turnaround to be completed. On May 1, 2027, the SMR Heater will be subject to the NO_x RACT requirements of Part 217. On May 1, 2027, Phillips will begin to include the SMR Heater into the refinery's emissions averaging plan to demonstrate compliance with the 0.08 lb/mmBtu NO_x emissions limit under Section 217.184.

For the RAU Heater, if the RAU Heater is decommissioned, Phillips requests a three-month variance with a start date of December 31, 2027 and an end date of March 31, 2028. The current compliance date for the RAU Heater under Section 217.152(e) and Appendix I of Part 217 is December 31, 2027. As discussed above, the maintenance turnaround involving the RAU Heater has been rescheduled to begin on March 1, 2028. Phillips requests a variance end date of March 31, 2028, which should be sufficient time to fully decommission and retire the RAU Heater.

If the RAU Heater is not decommissioned, Phillips requests a four-month variance with a start date of December 31, 2027 and an end date of April 30, 2028. In that scenario, Phillips would proceed with installing the stack test ports on the RAU Heater by March 31, 2028 (during the Spring 2028 turnaround when the unit is shutdown) and conduct a performance test on the

RAU Heater by April 30, 2028 (i.e., within 30 days after the turnaround is complete and the unit is started up).

XI. CONSISTENCY WITH FEDERAL LAW (§104.204(I) and § 104.208)

The Board may grant the requested variance consistent with federal law, the Clean Air Act (42 U.S.C. 7401, et seq.), and the federal regulations adopted under the Clean Air Act (40 CFR 50 through 99). The NO_x RACT amendments adopted in PCB R 25-17 were a federally required rule. Illinois EPA's Certification of Required Rule, PCB R 25-17 (Ill.Pol.Control.Bd. July 8, 2024). The adopted amendments, including the extended compliance deadlines for the SMR Heater and RAU Heater in Appendix I, were adopted consistent with federal law. The NO_x RACT amendments were proposed to satisfy the State's obligation to submit a SIP that addresses RACT requirements for major stationary sources of NO_x in the ozone nonattainment areas. *Id.* Section 110 of the Clean Air Act states:

Each State shall, after reasonable notice and public hearings, adopt and submit to the Administrator, within 3 years (or such shorter period as the Administrator may prescribe) after the promulgation of a national primary ambient air quality standard (or any revision thereof) under section 7409 of this title for any air pollutant, a plan which provides for implementation, maintenance, and enforcement of such primary standard in each air quality control region (or portion thereof) within such State. In addition, such State shall adopt and submit to the Administrator (either as a part of a plan submitted under the preceding sentence or separately) within 3 years (or such shorter period as the Administrator may prescribe) after the promulgation of a national ambient air quality secondary standard (or revision thereof), a plan which provides for implementation, maintenance, and enforcement of such secondary standard in each air quality control region (or portion thereof) within such State. Unless a separate public hearing is provided, each State shall consider its plan implementing such secondary standard at the hearing required by the first sentence of this paragraph.

42 U.S.C. 7410(a)(1). Under Section 110, states must submit SIPs for USEPA approval that provide for attainment and maintenance of standards that were established by USEPA.

Additionally, the Clean Air Act requires states to address emissions on an area-specific basis

through RACT and reasonably available control measures (“RACM”). *See* Illinois EPA’s Certification of Required Rule, PCB R 25-17 (citing 42 U.S.C. 7502 and 7511a). As explained by Illinois EPA, the Clean Air Act “requires the State to demonstrate that it has adopted ‘all reasonably available control measures as expeditiously as possible (including such reductions in emissions from existing sources in the area as may be obtained through the adopted, at a minimum, of reasonably available control technology) and shall provide for attainment of the national primary ambient air quality standards.’” *Id.* (citing 42 U.S.C. 7502(c)(1)). NO_x RACT is also required for major stationary sources located in moderate, serious, and severe ozone nonattainment areas. *Id.* (citing 42 U.S.C. 7511a(b)(2) and (f)). At the initiation of PCB R 25-17, the Chicago and Metro East nonattainment areas for the 2015 ozone NAAQS were designated as moderate nonattainment. As of January 2025, the Chicago and Metro-East nonattainment areas were reclassified to serious nonattainment for the 2015 ozone NAAQS. 89 Fed. Reg. 101901 (Dec. 17, 2024), attached hereto as Exhibit 3.

In PCB R 25-17, Illinois EPA proposed the extended compliance dates in Part 217, Appendix I applicable to Phillips 66 with the understanding, per discussions with USEPA, that the amendments would be approvable as revisions to Illinois’ SIP. *See* Illinois EPA’s Second Post-Hearing Comments, PCB R 25-17, P.C. #2 (Ill.Pol.Control.Bd. Oct. 31, 2024) (“The Agency has had discussions with [USEPA] and continues to discuss the proposed revisions, below, with USEPA. While the Agency anticipates that the proposed revisions are approvable, it will keep the Board apprised of any anticipated issues regarding USEPA approval at hearing or in further post-hearing comments.”). Illinois EPA submitted the amendments adopted in PCB R 25-17 to USEPA for approval as revisions to Illinois’ SIP on May 12, 2025. USEPA has not yet acted on the SIP submission as of the date of filing of this Petition.

Furthermore, in PCB R 25-17, Illinois EPA explained that the extended compliance dates proposed by Illinois EPA for certain units in Appendix I were consistent with the timing considerations in the federal Good Neighbor Plan for the 2015 ozone NAAQS. *See* Illinois EPA's Second Post-Hearing Comments, PCB R 25-17 (citing "Federal 'Good Neighbor Plan' for the 2015 Ozone National Ambient Air Quality Standards," 88 Fed. Reg. 36654 (June 5, 2023)). Based on a study evaluating requirements of the Good Neighbor Plan, USEPA found that three years was enough time for non-electric generating units to install the required controls. *Id.* Illinois EPA explained that "[s]uch time frames appear similarly analogous in the context of this proposed rulemaking." *Id.* The NO_x RACT requirements adopted in PCB R 25-17 became effective on April 23, 2025. 49 Ill. Reg. 5,999, 6,356 (May 9, 2025). The timeframe for the variance requested for both the SMR Heater and RAU Heater are still within a three-year period from the effective date of the adopted NO_x RACT amendments (variance end date of April 30, 2027 for the SMR Heater and variance end date of March 31, 2028 for the RAU Heater).

As required by the Clean Air Act, if the variances are granted by the Board, Illinois EPA must submit the Board's order granting the variances to USEPA and request that the variances be reflected in Illinois' SIP. Similar to the amendments adopted in PCB R 25-17, Phillips anticipates that the variances requested herein will be approvable by USEPA as revisions into Illinois' SIP. Phillips has had several discussions with Illinois EPA regarding the variance relief requested in this Petition. Illinois EPA indicated that it had discussions with USEPA on the relief requested and Illinois EPA does not anticipate any issues with approvability of the requested variances. Granting the variances would have no other impact on Section 110 of the Clean Air Act. Additionally, granting the variances would not impact Phillips' compliance with any applicable federal regulations. Exhibit 1, Affidavit of Megan Lipscomb at ¶37. It is

Petitioner's understanding that granting of the variance would require revising the SIP and the requirements of Section 110(a) of the Clean Air Act (42 U.S.C. 7410(a)) and 40 CFR 51 will be satisfied.

XII. AFFIDAVIT (§ 104.204(m))

An affidavit verifying the facts included in this Petition for Variance is attached hereto as Exhibit 1. *See Exhibit 1*, Affidavit of Megan Lipscomb.

XIII. HEARING REQUEST (§ 104.204(n))

Petitioner does not request that a hearing be held on this Petition for Variance. Phillips believes sufficient information is included in this Petition that adequately demonstrates the burden of proof required to grant Phillips' proposed variance.

XIV. CONCLUSION

It is an arbitrary and unreasonable hardship to require Petitioner to comply with the current compliance deadlines for the SMR Heater and RAU Heater under 35 Ill. Adm. Code Part 217. Compliance by the current compliance dates is economically unreasonable as described herein. A variance extending the compliance dates by four months and three months (or alternatively four months) for the SMR Heater and RAU Heater, respectively, will allow Petitioner to complete the actions described herein during the next scheduled maintenance turnarounds, avoiding additional capital expenditure to perform the work during separate shutdowns.

WHEREFORE, Petitioner PHILLIPS 66 COMPANY respectfully requests that the Illinois Pollution Control Board enter an order granting the variance requested as discussed herein and grant Phillips such other and further relief as the Board deems appropriate.

Respectfully submitted.

PHILLIPS 66 COMPANY,
Petitioner,

DATE: May 7, 2026

By: /s/ Melissa S. Brown
One of Its Attorneys

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

PHILLIPS 66 COMPANY,)	
)	
Petitioner,)	
)	
vs.)	PCB No. ____ - ____
)	
ILLINOIS ENVIRONMENTAL)	(Variance – Air)
PROTECTION AGENCY,)	
)	
Respondent.)	

AFFIDAVIT OF MEGAN LIPSCOMB

I, Megan Lipscomb, being first duly sworn on oath, state as follows:

1. I am Senior Manager – Environmental with the Phillips 66 Company Wood River Refinery. I have been Senior Manager – Environmental since May 1, 2024.
2. WRB Refining LP owns and Phillips 66 Company operates the petroleum refinery known as the Wood River Refinery located at 900 South Central Avenue, Roxana, Illinois. The refinery was built in 1917 and currently the refinery employs approximately 800 employees.
3. The petroleum refinery processes approximately 346,000 barrels of crude oil per day into gasoline, aviation fuels, diesel oils, lubricating oils, heavy fuel oils, asphalt, and propane. The refinery includes crude distilling, naphtha reforming, fluid catalytic cracking, alkylation, hydrocracking, hydrodesulfurization, and delayed coking units. Refined petroleum products are distributed via pipeline, railcar, barge, and truck.
4. The HTR-SMR Steam Methane Reformer (emission point no. 0010) manufactures hydrogen. The heater acts as a fired reactor where hydrogen is formed in the catalyst-filled tubes of the heater. The feeds to the SMR Heater tubes include the treated feed gas from the Saturates Gas Plant, Hydrocracker, and Ultra Low Sulfur Diesel Hydrotreater, and steam. The heater is a

terraced side wall reformer heater rated for 460 mmBtu/hr that uses refinery fuel gas in its burners.

5. The SMR Heater is not equipped with a continuous emissions monitoring system (“CEMS”).

6. The Rectified Absorber Unit (emission point no. 0033) gets its feed from the Catalytic Cracking Units (CCU1 and CCU2) and includes an Absorber Deethanizer, Debutanizer Column, and Depropanizer Column. The heater serves as a reboiler for the RAU Debutanizer Column to provide heat as part of the column feed separation process into propane, propylene, butane, or butylene (column tops product) and gasoline (column bottoms product). The heater is a cabin-style fired heater rated for 69 MMBTU/hr that uses refinery fuel gas in its burners.

7. The RAU Heater is not equipped with test or analyzer ports to allow for performance testing.

8. The installation of the stack test ports and installation of the CEMS need to be performed when the emission units are not operating for safety considerations.

9. Installation of ports when a heater is off-line, and the stack is cool, reduces safety risks, such as burns from hot surfaces, fire, or explosions from performing welding and other activities on operating equipment, mistakes due to heat discomfort, and reduced dexterity from additional protective gear that would be required. Disturbing stack refractory while a unit is operating also increases the risk of refractory falling and damaging heater tubes and other internal components.

10. At the time of the PCB R 25-17 rulemaking, the next scheduled maintenance turnarounds involving the SMR Heater and RAU Heater were scheduled for Fall of 2026 and Fall of 2027, respectively.

11. The timing of refining turnarounds are governed by set intervals which are routinely adjusted based on mechanical integrity inspections, and process performance data to optimize the need for shutdown. The turnarounds involving the SMR Heater and RAU Heater are separately scheduled because the heaters serve different process units. Different process units are grouped together for turnarounds, and scheduled separately from other process unit turnarounds, so that the whole refinery does not shut down at one time.

12. In Fall 2025, the timing of the turnarounds involving the SMR Heater and RAU Heater were reevaluated. The dates for the turnarounds were adjusted due to favorable performance which indicated longer intervals between shutdowns were more appropriate.

13. The maintenance turnaround involving the SMR Heater has been rescheduled from Fall 2026 to Spring 2027 – scheduled to begin on March 1, 2027 and expected to last approximately forty-five days. The turnaround was rescheduled because there were no mechanical integrity drivers to take the unit out of service at an earlier date.

14. A CEMS will be installed on the SMR Heater during the turnaround. The CEMS will allow Phillips to determine the actual emissions. Installation of a CEMS on the SMR Heater is required for compliance with the Part 217 requirements for heater NO_x emissions monitoring.

15. The CEMS (ABB for NO_x and Rosemont X-Steam for O₂ and CO₂) will continuously monitor NO_x emissions from the heater. The CEMS is currently onsite. Phillips anticipates the installation of the CEMS to take approximately three days during the turnaround. Phillips estimates that installation of the CEMS by the proposed compliance date will cost approximately \$875,000, which includes approximately \$235,000 for major equipment, piping, and instruments as well as approximately \$430,000 for electrical and civil and concrete work (remainder of the cost addresses freight/transport, scaffolding, engineering costs, etc.).

16. If Phillips were to install the CEMS by the current compliance date of December 31, 2026, a separate shutdown of the SMR Heater outside of the maintenance turnaround would be required. Shutdown of the SMR Heater would cause a reduction of operation to minimal rates of the following units to which the hydrogen from the SMR Heater feeds into: the Slurry Hydrotreater Unit, Diesel Hydrotreater Unit, and Hydrocracker Units.

17. To install the CEMS during a separate shutdown prior to the scheduled maintenance turnaround, Phillips estimates an additional \$424,000 of capital spend. This accounts for the need to have extra infrastructure to install the ports as opposed to building the ports into the new heater top during the turnaround, as well as the cost to re-install the CEMS after the top of the heater is replaced during the turnaround. To install the CEMS prior to the scheduled maintenance turnaround, Phillips estimates that the SMR Heater would have to be shut down for approximately 6-7 days. Phillips estimates that it would lose approximately \$450,000 per day for a total of \$2,700,000 to \$3,150,000 in lost profit opportunity due to the inability of the SMR Heater to manufacture hydrogen if this downtime was required.

18. The maintenance turnaround involving the RAU Heater has been rescheduled from Fall 2027 to Spring 2028 – scheduled to begin on March 1, 2028 and expected to last approximately thirty days. The RAU Heater is planned to be decommissioned by approximately March 15, 2028. The turnaround was rescheduled because there were not any mechanical integrity drivers to take the unit out of service at an earlier date.

19. There will be minimal cost associated with decommissioning the RAU Heater given that the decommissioning will entail shutting down, disconnecting, and decontaminating the heater.

20. Phillips conducted an evaluation of the RAU Heater in the Fall of 2025 and decided to decommission the RAU Heater and install a reboiler to feed the RAU Debutanizer Column. Phillips plans to decommission the RAU Heater due to the heater tubes reaching their end of life. Instead of re-tubing the RAU Heater, Phillips intends to replace the RAU Heater with a reboiler due to better firing efficiency and ease of future maintenance.

21. Changing tariff policies and resulting changes in costs of material and equipment could impact the decision to decommission the RAU Heater. If the RAU Heater is not decommissioned, Phillips will proceed with re-tubing the RAU Heater. In this scenario, the RAU Heater will be re-tubed during the Spring 2028 turnaround and stack test ports will be installed on the heater. A performance test to demonstrate compliance with 35 Ill. Adm. Code Part 217 would be performed once the unit is restarted shortly after the turnaround is complete. Phillips estimates that installation of the stack test ports would cost approximately \$250,000 and performance of the stack test would cost approximately \$5,000.

22. If Phillips were to install a stack test port and perform a stack test on the RAU Heater by the current compliance date of December 31, 2027, Phillips estimates that it would incur approximately \$255,000 of additional capital spend.

23. Because installation of the reboiler is needed to feed the RAU Debutanizer Column, the RAU Heater could not be decommissioned by the current compliance date of December 31, 2027. The reboiler equipment is planned to be installed in 2027, but the final tie-ins to the existing structure cannot be performed while the RAU Heater is online.

24. A separate shutdown of the RAU Heater outside of the maintenance turnaround would be required if Phillips was required to install the stack test ports and perform a stack test on the RAU Heater by the current compliance date of December 31, 2027. The RAU

Debutanizer Column would also need to be shut down because the RAU Heater provides heat to the column. Phillips estimates that the RAU Heater and RAU Debutanizer Column would have to be down for approximately four days to install to complete the work on the stack test ports, in which Phillips estimates that it would lose approximately \$200,000 per day for a total of \$800,000 in lost profit opportunity due to the inability to manufacture propane, propylene, butane, butylene, and gasoline.

25. There would be no impact on or difference in emissions between Phillips complying with the current compliance dates for the SMR Heater and RAU Heater as compared to the proposed compliance dates aligned with the rescheduled maintenance turnarounds.

26. Table 1 below shows the NO_x emissions for the SMR Heater for 2025 based upon the Annual Emissions Report submitted for 2025 :

Table 1

Year	Emission Factor [lb NO _x /MMBTU]	Fired Duty [MMBTU]			Actual NO _x Emissions [ton]			Allowable NO _x Emissions [ton]			Average Impact on 30-Day Rolling Average [ton]
		Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	
2025	0.275*	2,978,603	1,224,615	730,567	408.8	168.1	100.3	119.1	49.0	29.2	22.5

27. SMR Heater NO_x emissions calculations are based on the AP-42 emission factor of 280 lb/MMscf, which equates to about 0.275 lb/MMBtu and use of this emission factor is conservative. A Testo meter was used in some prior heater tuning exercises to sample at an available location on the SMR Heater stack, which has demonstrated to be consistently lower than the AP-42 factor. Table 2 below shows Testo meter results from 2019 – 2025:

Table 2

Date	NO _x [ppm]	O ₂ [%]	Tester	F _d Factor [dscf/MMBTU]	NO _x Emission Factor [lb/MMBTU]
4/24/2019	70.9	11.45	CETCON	8,492	0.159
5/13/2020	62	9.8	CETCON	8,446	0.118
4/7/2021	54	12.1	CETCON	8,441	0.129
6/3/2022	47.5	14.3	CETCON	8,509	0.153
5/4/2023	74	10.2	CETCON	8,417	0.145
5/1/2024	67.4	10.5	CETCON	8,436	0.136
4/30/2025	67	9.9	CETCON	8,450	0.128
8/7/2025	87	7.21	Phillips 66	8,554	0.136
Average from Testo Grab Samples					0.138
AP-42					0.275

28. Table 3 below shows actual NO_x emissions for 2025 for the RAU Heater:

Table 3

Year	Emission Factor [lb NO _x /MMBTU]	Fired Duty [MMBTU]			Actual NO _x Emissions [ton]			Allowable NO _x Emissions [ton]			Average Impact on 30-Day Rolling Average [ton]
		Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	
2025	0.098*	464,052	188,746	113,404	22.7	9.3	5.6	18.6	7.5	4.5	0.3

29. As a result of installation of the CEMS on the SMR Heater during the maintenance turnaround, Phillips expects to move from reporting with the AP-42 emission factor of 0.275 lb/MMBTu to reporting with the actual NO_x emission factor. The NO_x emission factor is demonstrated as 0.165 lb/MMBTu post-turnaround (this is 60% of the AP-42 emission factor and is thought to be conservative based on Testo readings described in the above table). Table 4

below shows the NOx emissions for the SMR Heater for 2025 and estimated NOx emissions for 2026-2030:

Table 4

Year	Emission Factor [lb NO _x /MMBTU]	Fired Duty [MMBTU]			Actual NO _x Emissions [ton]			Allowable NO _x Emissions [ton]			Average Impact on 30-Day Rolling Average [ton]
		Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	
2025	0.275*	2,978,603	1,224,615	730,567	408.8	168.1	100.3	119.1	49.0	29.2	22.5
2026	0.275*	2,954,000	1,169,784	768,040	405.5	160.6	105.4	118.2	46.8	30.7	23.6
2027	0.275*/0.165**	2,649,277	1,154,662	781,016	295.6	95.1	64.3	106.0	46.2	31.2	15.6
2028	0.165**	3,074,400	1,217,462	799,344	253.2	100.3	65.8	123.0	48.7	32.0	10.7
2029	0.165**	3,066,000	1,214,136	797,160	252.5	100.0	65.6	122.6	48.6	31.9	10.7
2030	0.165**	2,887,500	1,143,450	750,750	237.8	94.2	61.8	115.5	45.7	30.0	10.1

*Based on AP-42 Emission Factor

**Estimated Emission Factor when CEMS is installed

30. The RAU Heater uses an AP-42 emission factor and RAU Heater fired duty and

Table 5 below shows NOx emissions for 2025 and estimated NOx emissions for 2026-2030.

Table 5

Year	Emission Factor [lb NO _x /MMBTU]	Fired Duty [MMBTU]			Actual NO _x Emissions [ton]			Allowable NO _x Emissions [ton]			Average Impact on 30-Day Rolling Average [ton]
		Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	
2025	0.098*	464,052	188,746	113,404	22.7	9.3	5.6	18.6	7.5	4.5	0.3
2026	0.098*	443,944	190,896	110,986	21.8	9.4	5.4	17.8	7.6	4.4	0.3
2027	0.098*	453,412	194,967	113,353	22.2	9.6	5.6	18.1	7.8	4.5	0.3
2028	0.098*	152,750	0	0	7.5	0	0	6.1	0	0	0.1
2029	N/A	0	0	0	0	0	0	0	0	0	0
2030	N/A	0	0	0	0	0	0	0	0	0	0

*Based on AP-42 Emission Factor

31. The RAU Heater will cease to operate in Spring of 2028 once the reboiler is installed and, therefore, the RAU Heater will emit zero NOx emissions after that point.

32. If the RAU Heater is not decommissioned, Phillips would proceed with installing the stack test ports, stack testing, and including the RAU Heater in the emissions averaging plan. If the RAU Heater were not decommissioned, estimated NOx emissions for the RAU Heater for 2026 through 2030 is provided in Table 6 below:

Table 6

Year	Emission Factor [lb NO _x /MMBTU]	Fired Duty [MMBTU]			Actual NO _x Emissions [ton]			Allowable NO _x Emissions [ton]			Average Impact on 30-Day Rolling Average [ton]
		Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	Annual	Ozone	Peak Ozone	
2025	0.098*	464,052	188,746	113,404	22.7	9.3	5.6	18.6	7.5	4.5	0.3
2026	0.098*	443,944	190,896	110,986	21.8	9.4	5.4	17.8	7.6	4.4	0.3
2027	0.098*	453,412	194,967	113,353	22.2	9.6	5.6	18.1	7.8	4.5	0.3
2028	0.098* / 0.114**	424,166	212,083	135,733	20.8	12.1	7.7	17.0	8.5	5.4	0.3
2029	0.114**	460,776	198,134	115,194	22.6	11.3	6.6	18.4	7.9	4.6	0.3
2030	0.114**	458,935	197,342	114,734	22.5	11.2	6.5	18.4	7.9	4.6	0.3

*Based on AP-42 Emission Factor

**Estimated Emission Factor when CEMS is installed (based on 2025 CAU Heater emission factor)

33. The proposed compliance dates requested in the Petition would not result in any exceedances of the applicable emissions limitations under 35 Ill. Adm. Code Part 217, Subpart F. All process heaters subject to 35 Ill. Adm. Code Part 217, Subpart F, including the SMR Heater and the RAU Heater (if not decommissioned), will comply with the 0.08 lb/mmBtu NOx limit via an emissions averaging plan.

34. The SMR Heater and RAU Heater have been in compliance with the NOx emission limitations in the facility's Clean Air Act Permit Program permit.

35. There are no cross-media impacts applicable to the relief requested in the Petition.

36. Phillips will continue to utilize good combustion practices, which include performing the required annual combustion tuning for covered process heaters under the boiler and process heater National Emissions Standards for Hazardous Air Pollutants (“NESHAP”), 40 C.F.R. Part 63, Subpart DDDDD, and 35 Ill. Adm. Code Part 217 regulations, operating the heater with no visible opacity, maintaining balanced heat distribution and proper flame patterns at the burners, and maintaining proper air-to-fuel ratios.

37. The proposed compliance dates for the SMR Heater and RAU Heater would not impact Phillips’ compliance with any applicable federal regulations.

38. I have been personally involved in matters relating to Wood River Refinery’s compliance with the nitrogen oxides (“NOx”) regulations at 35 Ill. Adm. Code Part 217, including involvement in the *In the Matter of: Amendments to 35 Ill. Adm. Code 217*, PCB R 25-17 rulemaking. I have been personally involved in the planning of the projects relating to the SMR Heater and RAU Heater referenced in Phillips’ Petition for Variance.

39. I have read the Petition for Variance, dated May 7, 2026, and based upon my personal knowledge and belief, the facts stated relating to Phillips 66 Company and the Wood River Refinery are true and correct.

40. If called upon to testify in this matter, I could competently testify to the facts stated herein.

FURTHER AFFIANT SAYETH NOT.

Subscribed and Sworn to before me

On May 7th, 2026

Merideth A. Wilson

Notary Public

My Commission Expires: 8-22-26

Megan Lipscomb
Megan Lipscomb



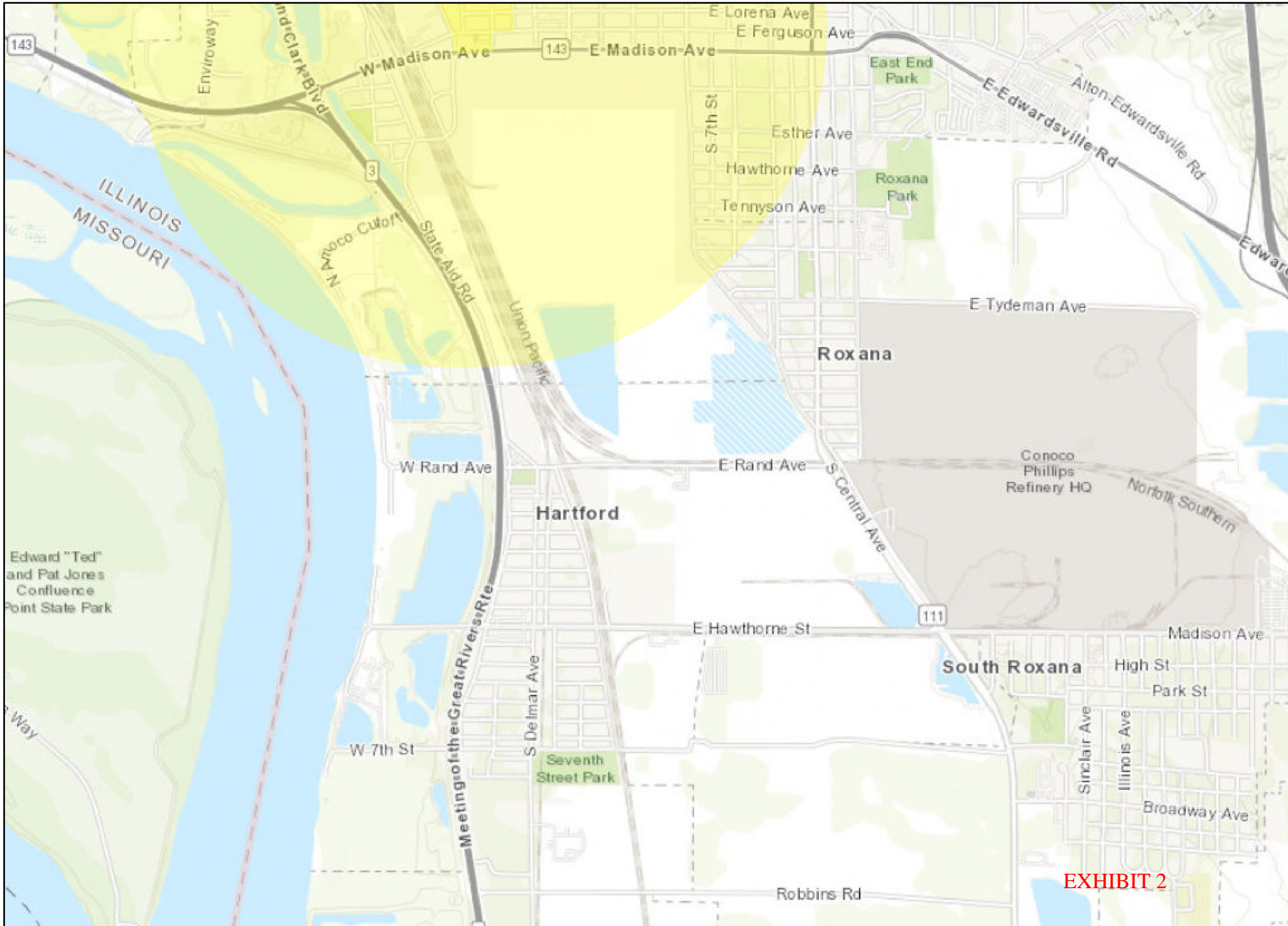


EXHIBIT 2

WASHINGTON—2010 SULFUR DIOXIDE NAAQS

[Primary]

Designated area ¹	Designation	
	Date ²	Type
Whatcom County (part) That portion of Whatcom County encompassed by the rectangle with the vertices using Universal Traverse Mercator (UTM) coordinates in UTM zone 10 with datum NAD83 as follows: (1) Vertices—UTM Easting (m) 519671, UTM Northing (m) 5412272; (2) Vertices—UTM Easting (m) 524091, UTM Northing (m) 5412261; (3) Vertices—UTM Easting (m) 519671, UTM Northing (m) 5409010; (1) Vertices—UTM Easting (m) 524111, UTM Northing (m) 5409044.	January 16, 2025	Attainment.

¹ Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

² This date is April 9, 2018, unless otherwise noted.

* * * * *
[FR Doc. 2024-29575 Filed 12-16-24; 8:45 am]
BILLING CODE 6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 81

[EPA-R05-OAR-2024-0546; FRL-12410-01-R5]

Findings of Failure To Attain and Reclassification of Areas in Illinois, Indiana, Michigan, Ohio, and Wisconsin as Serious for the 2015 Ozone National Ambient Air Quality Standards

AGENCY: Environmental Protection Agency (EPA).
ACTION: Final determination.

SUMMARY: The Environmental Protection Agency (EPA) is determining that the Allegan County, MI; Berrien County, MI; Chicago, IL-IN-WI; Cleveland, OH; Milwaukee, WI; Muskegon County, MI; Sheboygan County, WI; and Illinois portion of the St. Louis, MO-IL areas failed to attain the 2015 ozone National Ambient Air Quality Standards (NAAQS) by the applicable attainment date. The effect of failing to attain by the applicable attainment date is that the areas will be reclassified by operation of law to “Serious” nonattainment for the 2015 ozone NAAQS on January 16, 2025, the effective date of this final rule. This action fulfills EPA’s obligation under the Clean Air Act (CAA) to determine whether ozone nonattainment areas attained the NAAQS by the attainment date and to publish a document in the **Federal Register** identifying each area that is determined as having failed to attain and identifying the reclassification.

DATES: This final rule is effective on January 16, 2025.

ADDRESSES: EPA has established a docket for this action under Docket ID No. EPA-R05-OAR-2024-0546. All documents in the docket are listed on the <https://www.regulations.gov> website. Although listed in the index, some information is not publicly available, *i.e.*, Confidential Business Information (CBI), Proprietary Business Information (PBI), or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. Publicly available docket materials are available either through <https://www.regulations.gov> or at the Environmental Protection Agency, Region 5, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, Illinois 60604. This facility is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding Federal holidays. We recommend that you telephone Eric Svingen, Environmental Engineer, at (312) 353-4489 before visiting the Region 5 office.

FOR FURTHER INFORMATION CONTACT: Eric Svingen, Air and Radiation Division (AR-18J), Environmental Protection Agency, Region 5, 77 West Jackson Boulevard, Chicago, Illinois 60604, (312) 353-4489, svingen.eric@epa.gov.

SUPPLEMENTARY INFORMATION:

I. Overview of Action

EPA is required to determine whether areas designated nonattainment for an ozone NAAQS attained the standard by the applicable attainment date, and to take certain steps for areas that failed to attain (see CAA section 181(b)(2)). EPA’s determination of attainment for the 2015 ozone NAAQS is based on a

nonattainment area’s design value (DV) as of the attainment date.¹

The 2015 ozone NAAQS is met at an EPA regulatory monitoring site when the DV does not exceed 0.070 parts per million (ppm). For the Moderate nonattainment areas for the 2015 ozone NAAQS addressed in this action, the attainment date was August 3, 2024. Because the DV is based on the three most recent, complete calendar years of data, attainment must occur no later than December 31 of the year prior to the attainment date (*i.e.*, December 31, 2023, in the case of Moderate nonattainment areas for the 2015 ozone NAAQS). As such, EPA’s determinations for each area are based upon the complete, quality-assured, and certified ozone monitoring data from calendar years 2021, 2022, and 2023.

This action addresses eight areas in Illinois, Indiana, Michigan, Missouri, Ohio, and Wisconsin that were classified as Moderate for the 2015 ozone NAAQS as of the Moderate area attainment date of August 3, 2024. EPA is addressing the remaining areas, including the Missouri portion of the St. Louis area, in separate actions. Table 1 provides a summary of the DVs and the EPA’s air quality-based determinations

¹ A DV is a statistic used to compare data collected at an ambient air quality monitoring site to the applicable NAAQS to determine compliance with the standard. The data handling conventions for calculating DVs for the 2015 ozone NAAQS are specified in appendix U to 40 CFR part 50. The DV for the 2015 ozone NAAQS is the 3-year average of the annual fourth highest daily maximum 8-hour average ozone concentration. The DV is calculated for each air quality monitor in an area, and the DV for an area is the highest DV among the individual monitoring sites located in the area.

for the eight Moderate areas addressed in this action.

TABLE 1—SUMMARY OF NONATTAINMENT AREAS IN ILLINOIS, INDIANA, MICHIGAN, MISSOURI, OHIO, AND WISCONSIN CLASSIFIED AS MODERATE FOR THE 2015 OZONE NAAQS

Nonattainment area	2021–2023 design value (DV) (ppm)	Attainment by the attainment date
Allegan County, MI	0.075	Failed to attain.
Berrien County, MI	0.073	Failed to attain.
Chicago, IL-IN-WI	0.077	Failed to attain.
Cleveland, OH	0.073	Failed to attain.
Milwaukee, WI	0.074	Failed to attain.
Muskegon County, MI	0.077	Failed to attain.
Sheboygan County, WI	0.077	Failed to attain.
St. Louis, MO-IL	0.074	Failed to attain.

EPA is finding that the eight Moderate areas in Table 1 did not attain by their attainment dates, because their 2021–2023 DVs are greater than 0.070 ppm. If EPA determines that a nonattainment area classified as Moderate failed to attain by the attainment date, CAA section 181(b)(2)(B) requires EPA to publish a determination in the **Federal Register**, no later than 6 months following the attainment date, identifying each such area and identifying the applicable reclassification.

Under CAA section 181(b)(2)(A), the effect of this determination is that these eight areas will be reclassified by operation of law as Serious on the effective date of this final rule. The reclassified areas will then be subject to the Serious area requirement to attain the 2015 ozone NAAQS as expeditiously as practicable, but not later than August 3, 2027.

Once reclassified as Serious, the relevant States must submit to EPA the SIP revisions for these areas that satisfy the statutory and regulatory requirements applicable to Serious areas established in CAA section 182(c) and in the 2015 Ozone NAAQS SIP Requirements Rule (see 83 FR 62998, December 6, 2018). EPA is establishing deadlines for submitting SIP revisions for these reclassified areas in a separate action.

II. What is the background for this action?

On October 26, 2015, EPA issued its final action to revise the NAAQS for ozone to establish a new 8-hour standard (see 80 FR 65452, October 26, 2015). In that action, EPA promulgated identical tighter primary and secondary ozone standards designed to protect public health and welfare that specified an 8-hour ozone level of 0.070 ppm. Specifically, the standards require that

the 3-year average of the annual fourth highest daily maximum 8-hour average ozone concentration may not exceed 0.070 ppm.

Effective on August 3, 2018, EPA designated 52 areas throughout the country as nonattainment for the 2015 ozone NAAQS (see 83 FR 25776, June 4, 2018). In a separate action, EPA assigned classification thresholds and attainment dates based on the severity of an area’s ozone problem, determined by the area’s DV (see 83 FR 10376, May 8, 2018). EPA established the attainment date for Marginal, Moderate, and Serious nonattainment areas as 3 years, 6 years, and 9 years, respectively, from the effective date of the final designations. Thus, the attainment date for Marginal nonattainment areas for the 2015 ozone NAAQS was August 3, 2021, the attainment date for Moderate areas was August 3, 2024, and the attainment date for Serious areas is August 3, 2027. On October 7, 2022 (87 FR 60897), EPA determined that 22 areas, including the eight areas addressed in this action, did not attain the standards by the Marginal attainment date, and these areas were reclassified as Moderate by operation of law.

III. What is the statutory authority for this action?

The statutory authority for these determinations is provided by the CAA, as amended (42 U.S.C. 7401 *et seq.*). Relevant portions of the CAA include, but are not necessarily limited to, sections 181 and 182.

CAA section 107(d) provides that when the EPA establishes or revises a NAAQS, the agency must designate areas of the country as nonattainment, attainment, or unclassifiable based on whether an area is not meeting (or is contributing to air quality in a nearby area that is not meeting) the NAAQS,

meeting the NAAQS, or cannot be classified as meeting or not meeting the NAAQS, respectively. Subpart 2 of part D of title I of the CAA governs the classification, State planning, and emissions control requirements for any areas designated as nonattainment for a revised primary ozone NAAQS. In particular, CAA section 181(a)(1) requires each area designated as nonattainment for a revised ozone NAAQS to be classified at the same time as the area is designated based on the extent of the ozone problem in the area (as determined based on the area’s DV). Classifications for ozone nonattainment areas are “Marginal,” “Moderate,” “Serious,” “Severe,” and “Extreme,” in order of stringency. CAA section 182 provides the specific attainment planning and additional requirements that apply to each ozone nonattainment area based on its classification.

Section 181(b)(2)(A) of the CAA requires that within 6 months following the applicable attainment date, EPA shall determine whether an ozone nonattainment area attained the ozone standard based on the area’s DV as of that date. Under CAA section 181(a)(5) as interpreted by EPA in 40 CFR 51.1307, upon application by any State, EPA may grant a 1-year extension to the attainment date when certain criteria are met. One criterion for a first attainment date extension is that an area’s fourth highest daily maximum 8-hour value for the attainment year must not exceed the level of the standard.

In the event an area fails to attain the ozone NAAQS by the applicable attainment date and is not granted a 1-year attainment date extension, CAA section 181(b)(2)(A) requires the EPA to make the determination that an ozone nonattainment area failed to attain the ozone standard by the applicable attainment date, and requires the area to be reclassified by operation of law to the

higher of: (1) The next higher classification for the area, or (2) the classification applicable to the area's DV as of the determination of failure to attain.² Section 181(b)(2)(B) of the CAA requires EPA to publish the determination of failure to attain and accompanying reclassification in the **Federal Register** no later than 6 months after the attainment date, which in the case of the Moderate nonattainment areas considered in this determination is February 3, 2025.

Once an area is reclassified, each State that contains a reclassified area is required to submit certain SIP revisions in accordance with its more stringent classification. The SIP revisions are intended to, among other things, demonstrate how the area will attain the NAAQS as expeditiously as practicable, but no later than August 3, 2027, the Serious area attainment date for the 2015 ozone NAAQS. Per CAA section 182(i), a State with a reclassified ozone nonattainment area must submit the applicable attainment plan requirements "according to the schedules prescribed in connection with such requirements" in CAA section 182(c) for Serious areas, but EPA "may adjust applicable deadlines (other than attainment dates) to the extent such adjustment is necessary or appropriate to assure consistency among the required submissions." EPA is addressing the SIP revision and implementation deadlines for newly reclassified Serious areas, as well as the continued applicability of Moderate area requirements that these areas may not yet have met, in a separate rulemaking.

IV. How does EPA determine whether an area has attained the standard?

The level of the 2015 ozone NAAQS is 0.070 ppm.³ Under EPA regulations at 40 CFR part 50, appendix U, the 2015 ozone NAAQS is attained at a site when the 3-year average of the annual fourth highest daily maximum 8-hour average

² All nonattainment areas named in this action that failed to attain by the attainment date would be classified to the next higher classification, Serious. None of the affected areas has a DV that would otherwise place an area in a higher classification.

³ See 40 CFR 50.19.

ambient ozone concentration (*i.e.*, DV) does not exceed 0.070 ppm. When the DV does not exceed 0.070 ppm at each ambient air quality monitoring site within the area, the area is deemed to be attaining the ozone NAAQS. Each area's DV is determined by the highest DV among monitors with valid DVs.⁴ The data handling convention in appendix P dictates that concentrations shall be reported in "ppm" to the third decimal place, with additional digits to the right being truncated. Thus, a computed 3-year average ozone concentration of 0.071 ppm is greater than 0.070 ppm and would exceed the standard, but a computed 3-year average ozone concentration of 0.0709 ppm is truncated to 0.070 ppm and attains the 2015 ozone NAAQS.

EPA's determination of attainment is based upon hourly ozone concentration data for calendar years 2021, 2022 and 2023 that have been collected and quality-assured in accordance with 40 CFR part 58 and reported to EPA's Air Quality System (AQS) database.⁵

State and local monitoring network plans are subject to approval by EPA on an annual basis and any interim modifications to those plans must also

⁴ According to appendix U to 40 CFR part 50, ambient monitoring sites with a DV of 0.070 ppm or less must meet minimum data completeness requirements in order to be considered valid. These requirements are met for a 3-year period at a site if daily maximum 8-hour average ozone concentrations are available for at least 90% of the days within the ozone monitoring season, on average, for the 3-year period, with a minimum of at least 75% of the days within the ozone monitoring season in any one year. Ozone monitoring seasons are defined for each State in appendix D to 40 CFR part 58. DVs greater than 0.070 ppm are considered to be valid regardless of the data completeness.

⁵ EPA maintains the AQS, a database that contains ambient air pollution data collected by EPA, State, local, and tribal air pollution control agencies. The AQS also contains meteorological data, descriptive information about each monitoring station (including its geographic location and its operator) and data quality assurance/quality control information. The AQS data is used to (1) assess air quality, (2) assist in attainment/non-attainment designations, (3) evaluate SIPs for non-attainment areas, (4) perform modeling for permit review analysis, and (5) prepare reports for Congress as mandated by the CAA. Access is through the website at <https://www.epa.gov/aqs>.

be approved by EPA.⁶ The annual monitoring network plan process is provided in 40 CFR 58.10 and the requirements governing system modifications and monitor discontinuations are laid out in 40 CFR 58.14. Where State or local agencies seek to modify the ambient air quality monitoring networks by discontinuing a monitor station, EPA may approve such modifications subject to the criteria established in 40 CFR 58.14(c). EPA may not approve such discontinuation if doing so would compromise data collection needed for implementation of a NAAQS. If a monitor has been discontinued subject to 40 CFR 58.14 such that the discontinuation results in insufficient data to calculate a valid DV according to appendix U to 40 CFR part 50, EPA will determine the applicable area's attainment status based on the remaining monitors in the area.

V. What is EPA's determination for the areas?

EPA is determining that the eight Moderate nonattainment areas addressed in this action failed to attain the 2015 ozone NAAQS by the attainment date of August 3, 2024. The eight areas are: Allegan County, MI; Berrien County, MI; Chicago, IL-IN-WI; Cleveland, OH; Milwaukee, WI; Muskegon County, MI; Sheboygan County, WI; and the Illinois portion of the St. Louis, MO-IL area. As shown in Table 1, at least one monitor in each of these areas had a 2021–2023 DV greater than 0.070 ppm. EPA has further determined that these areas did not meet the requirement under section 181(a)(5)(B) and 40 CFR 51.1307 necessary to grant a 1-year extension of the attainment date, because at least one monitor in each area had a 2023 fourth highest daily maximum 8-hour average that was greater than 0.070 ppm. Table 2 through Table 9 show the annual fourth highest daily maximum 8-hour average ozone concentration and 2021–2023 DV for each monitor in the eight areas.

⁶ Annual monitoring network plans for each State are available at <https://www.epa.gov/amtic/state-monitoring-agency-annual-air-monitoring-plans-and-network-assessments>.

TABLE 2—2021–2023 FOURTH HIGHEST DAILY MAXIMUM 8-HOUR AVERAGE OZONE CONCENTRATIONS AND DESIGN VALUES AT ALL MONITORS IN THE ALLEGAN COUNTY, MI AREA

AQS Site ID	County	State	Fourth highest daily maximum 8-hour average ozone concentration (ppm)			2021–2023 design value (DV) (ppm)
			2021	2022	2023	
26-005-0003	Allegan	Michigan	0.078	0.073	0.075	0.075

TABLE 3—2021–2023 FOURTH HIGHEST DAILY MAXIMUM 8-HOUR AVERAGE OZONE CONCENTRATIONS AND DESIGN VALUES AT ALL MONITORS IN THE BERRIEN COUNTY, MI AREA

AQS Site ID	County	State	Fourth highest daily maximum 8-hour average ozone concentration (ppm)			2021–2023 design value (DV) (ppm)
			2021	2022	2023	
26-021-0014	Berrien	Michigan	0.069	0.074	0.078	0.073

TABLE 4—2021–2023 FOURTH HIGHEST DAILY MAXIMUM 8-HOUR AVERAGE OZONE CONCENTRATIONS AND DESIGN VALUES AT ALL MONITORS IN THE CHICAGO, IL-IN-WI AREA

AQS Site ID	County	State	Fourth highest daily maximum 8-hour average ozone concentration (ppm)			2021–2023 design value (DV) (ppm)
			2021	2022	2023	
17-031-0001	Cook	Illinois	0.068	0.073	0.082	0.074
17-031-0032	Cook	Illinois	0.077	0.072	0.083	0.077
17-031-0076	Cook	Illinois	0.070	0.074	0.080	0.074
17-031-1003	Cook	Illinois	0.068	0.070	0.073	0.070
17-031-1601	Cook	Illinois	0.072	0.071	0.081	0.074
17-031-3103	Cook	Illinois	0.060	0.062	0.081	0.067
17-031-4002	Cook	Illinois	0.067	0.068	0.080	0.071
17-031-4007	Cook	Illinois	0.069	0.070	0.083	0.074
17-031-4201	Cook	Illinois	0.075	0.070	0.086	0.077
17-031-7002	Cook	Illinois	0.078	0.071	0.081	0.076
17-043-6001	DuPage	Illinois	0.069	0.068	0.082	0.073
17-089-0005	Kane	Illinois	0.068	0.070	0.084	0.074
17-097-1007	Lake	Illinois	0.077	0.070	0.081	0.076
17-111-0001	McHenry	Illinois	0.069	0.070	0.084	0.074
17-197-1011	Will	Illinois	0.065	0.064	0.080	0.069
18-089-0022	Lake	Indiana	0.070	0.071	0.076	0.072
18-089-2008	Lake	Indiana	0.068	0.069	0.075	0.070
18-127-0024	Porter	Indiana	0.072	0.073	0.077	0.074
18-127-0026	Porter	Indiana	0.066	0.067	0.072	0.068
55-059-0019	Kenosha	Wisconsin	0.079	0.070	0.084	0.077
55-059-0025	Kenosha	Wisconsin	0.072	0.071	0.080	0.074

TABLE 5—2021–2023 FOURTH HIGHEST DAILY MAXIMUM 8-HOUR AVERAGE OZONE CONCENTRATIONS AND DESIGN VALUES AT ALL MONITORS IN THE CLEVELAND, OH AREA

AQS Site ID	County	State	Fourth highest daily maximum 8-hour average ozone concentration (ppm)			2021–2023 design value (DV) (ppm)
			2021	2022	2023	
39-035-0034	Cuyahoga	Ohio	0.070	0.073	0.071	0.071
39-035-0060	Cuyahoga	Ohio	0.059	0.061	0.065	0.061
39-035-0064	Cuyahoga	Ohio	0.069	0.065	0.075	0.069
39-035-5002	Cuyahoga	Ohio	0.068	0.065	0.073	0.068
39-055-0004	Geauga	Ohio	0.067	0.064	0.066	0.065
39-085-0003	Lake	Ohio	0.072	0.076	0.072	0.073
39-085-0007	Lake	Ohio	0.063	0.062	0.073	0.066
39-093-0018	Lorain	Ohio	0.059	0.063	0.064	0.062
39-103-0004	Medina	Ohio	0.065	0.067	0.072	0.068
39-133-1001	Portage	Ohio	0.067	0.071	0.070	0.069
39-153-0026	Summit	Ohio	0.066	0.069	0.071	0.068

TABLE 6—2021–2023 FOURTH HIGHEST DAILY MAXIMUM 8-HOUR AVERAGE OZONE CONCENTRATIONS AND DESIGN VALUES AT ALL MONITORS IN THE MILWAUKEE, WI AREA

AQS Site ID	County	State	Fourth highest daily maximum 8-hour average ozone concentration (ppm)			2021–2023 design value (DV) (ppm)
			2021	2022	2023	
55-0790010	Milwaukee	Wisconsin	0.066	0.065	0.068	0.066
55-079-0068	Milwaukee	Wisconsin	0.071	0.070	0.076	0.072
55-079-0085	Milwaukee	Wisconsin	0.072	0.074	0.076	0.074
55-089-0008	Ozaukee	Wisconsin	0.072	0.072	0.077	0.073
55-089-0009	Ozaukee	Wisconsin	0.073	0.071	0.077	0.073

TABLE 7—2021–2023 FOURTH HIGHEST DAILY MAXIMUM 8-HOUR AVERAGE OZONE CONCENTRATIONS AND DESIGN VALUES AT ALL MONITORS IN THE MUSKEGON COUNTY, MI AREA

AQS Site ID	County	State	Fourth highest daily maximum 8-hour average ozone concentration (ppm)			2021–2023 design value (DV) (ppm)
			2021	2022	2023	
26-121-0039	Muskegon	Michigan	0.075	0.082	0.075	0.077

TABLE 8—2021–2023 FOURTH HIGHEST DAILY MAXIMUM 8-HOUR AVERAGE OZONE CONCENTRATIONS AND DESIGN VALUES AT ALL MONITORS IN THE SHEBOYGAN COUNTY, WI AREA

AQS Site ID	County	State	Fourth highest daily maximum 8-hour average ozone concentration (ppm)			2021–2023 design value (DV) (ppm)
			2021	2022	2023	
55-117-0006	Sheboygan	Wisconsin	0.073	0.077	0.082	0.077
55-117-0009	Sheboygan	Wisconsin	0.066	0.071	0.074	0.070

TABLE 9—2021–2023 FOURTH HIGHEST DAILY MAXIMUM 8-HOUR AVERAGE OZONE CONCENTRATIONS AND DESIGN VALUES AT ALL MONITORS IN THE ST. LOUIS, MO-IL AREA

AQS Site ID	County	State	Fourth highest daily maximum 8-hour average ozone concentration (ppm)			2021–2023 design value (DV) (ppm)
			2021	2022	2023	
17-119-0120	Madison	Illinois	0.070	0.076	0.078	0.074
17-119-0122	Madison	Illinois	0.070	0.067	0.078	0.071
17-1193007	Madison	Illinois	0.070	0.072	0.077	0.073
17-163-0010	St. Clair	Illinois	0.070	0.066	0.067	0.077
29-099-0019	Jefferson	Missouri	0.073	0.067	0.078	0.072
29-183-1002	St. Charles	Missouri	0.067	0.071	0.080	0.072
29-183-1004	St. Charles	Missouri	0.065	0.067	0.073	0.068
29-510-0085	St. Louis City	Missouri	0.068	0.068	0.077	0.071

VI. What action is EPA taking?

Pursuant to CAA section 181(b)(2), EPA is determining that the Allegan County, MI; Berrien County, MI; Chicago, IL-IN-WI; Cleveland, OH; Milwaukee, WI; Muskegon County, MI; Sheboygan County, WI; and Illinois portion of the St. Louis, MO-IL areas failed to attain the 2015 ozone NAAQS by the applicable attainment date of August 3, 2024. Therefore, upon the effective date of this final action, these areas will be reclassified, by operation of law, to Serious for the 2015 ozone

NAAQS. Once reclassified as Serious, these areas will be required to attain the standard “as expeditiously as practicable” but no later than 9 years after the initial designation as nonattainment, which in this case would be no later than August 3, 2027.

Section 553 of the APA, 5 U.S.C. 553(b)(B), provides that, when an agency for good cause finds that notice and public procedures are impracticable, unnecessary or contrary to the public interest, the agency may issue a rule without providing notice

and an opportunity for public comment. EPA has determined that there is good cause for making this final agency action without prior proposal and opportunity for comment because our action to determine whether these areas have attained the NAAQS by the attainment date is governed, per CAA section 181(b)(2)(A), solely by area design values as of that date. The area design values relied upon in this determination are calculations based on the certified air quality monitoring data governed by EPA’s regulations and

involve no judgment or discretion. Thus, notice and public procedures are unnecessary to take this action. EPA finds that this constitutes good cause under 5 U.S.C. 553(b)(B).

VII. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review, and Executive Order 14094: Modernizing Regulatory Review

This action is not a “significant regulatory action” under the terms of Executive Order 12866 (58 FR 51735, October 4, 1993) and is therefore not subject to review under Executive Order 14094 (88 FR 21879, April 11, 2023).

B. Paperwork Reduction Act (PRA)

This rule does not impose an information collection burden under the provisions of the PRA of 1995 (44 U.S.C. 3501 *et seq.*). This action does not contain any information collection activities and serves only to make final determinations that the Allegan County, MI; Berrien County, MI; Chicago, IL–IN–WI; Cleveland, OH; Milwaukee, WI; Muskegon County, MI; Sheboygan County, WI; and Illinois portion of the St. Louis, MO–IL nonattainment areas failed to attain the 2015 ozone standards by the August 3, 2024, attainment date where such areas will be reclassified as Serious nonattainment for the 2015 ozone standards by operation of law upon the effective date of the final reclassification action.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA (5 U.S.C. 601 *et seq.*). This action will not impose any requirements on small entities. The determination of failure to attain the 2015 ozone standards (and resulting reclassifications), do not in and of themselves create any new requirements beyond what is mandated by the CAA. This final action would require the State to adopt and submit SIP revisions to satisfy CAA requirements and would not itself directly regulate any small entities.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538 and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any State, local or Tribal governments or the private sector.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. The division of responsibility between the Federal government and the States for purposes of implementing the NAAQS is established under the CAA.

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This action has Tribal implications. However, it will neither impose substantial direct compliance costs on federally recognized Tribal governments, nor preempt Tribal law.

EPA has identified one Tribal area within the nonattainment areas covered by this rulemaking, that would be potentially affected by this final action. Specifically, the boundaries of the Berrien County, MI area contains the Pokagon Band of Potawatomi Indians.

EPA has concluded that the final rule may have Tribal implications for this Tribe for the purposes of Executive Order 13175 but would not impose substantial direct costs upon the Tribe, nor would it preempt Tribal law. A Tribe that is part of an area that is reclassified from Moderate to Serious nonattainment is not required to submit a Tribal implementation plan revision to address new Moderate area requirements.

However, certain permitting requirements will change for stationary sources seeking preconstruction permits in any nonattainment areas newly reclassified as Serious, including on Tribal lands within these nonattainment areas.

EPA has communicated or intends to communicate with the potentially affected Tribe located within the boundaries of the nonattainment areas addressed in this final action, including offering government-to-government consultation, as appropriate.

G. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks

EPA interprets Executive Order 13045 (62 FR 19885, April 23, 1997) as applying to those regulatory actions that concern environmental health or safety risks that EPA has reason to believe may disproportionately affect children, per the definition of “covered regulatory action” in section 2–202 of the Executive Order. This action is not

subject to Executive Order 13045 because it does not establish an environmental standard intended to mitigate health or safety risks.

H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use

This action is not subject to Executive Order 13211 (66 FR 28355, May 22, 2001) because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act (NTTAA)

This rulemaking does not involve technical standards. Therefore, EPA is not considering the use of any voluntary consensus standards.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations, 59 FR 7629, February 16, 1994) directs Federal agencies to identify and address “disproportionately high and adverse human health or environmental effects” of their actions on communities with environmental justice (EJ) concerns to the greatest extent practicable and permitted by law. Executive Order 14096 (Revitalizing Our Nation’s Commitment to Environmental Justice for All, 88 FR 25251, April 26, 2023) builds on and supplements E.O. 12898 and defines EJ as, among other things, the just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability in agency decision-making and other Federal activities that affect human health and the environment.

EPA did not perform an EJ analysis and did not consider EJ in this action. Due to the nature of the action being taken here, this action is expected to have a neutral to positive impact on the air quality of the affected area. Consideration of EJ is not required as part of this action, and there is no information in the record inconsistent with the stated goal of E.O. 12898/14096 of achieving EJ for communities with EJ concerns.

K. Congressional Review Act

This rule is exempt from the CRA because it is a rule of particular applicability. The rule makes factual determinations for identified entities (the Allegan County, MI; Berrien County, MI; Chicago, IL–IN–WI;

Cleveland, OH; Milwaukee, WI; Muskegon County, MI; Sheboygan County, WI; and Illinois portion of the St. Louis, MO–IL areas), based on facts and circumstances specific to those entities. The determinations of attainment and failure to attain the 2015 ozone NAAQS do not in themselves create any new requirements beyond what is mandated by the CAA.

L. Judicial Review

Under section 307(b)(1) of the CAA, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by February 18, 2025. Filing a petition for reconsideration by the Administrator of this action does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition

for judicial review may be filed, and shall not postpone the effectiveness of this action. This action may not be challenged later in proceedings to enforce its requirements. (See section 307(b)(2).)

List of Subjects in 40 CFR Part 81

Environmental protection, Administrative practice and procedure, Air pollution control, Intergovernmental relations, Nitrogen dioxide, Ozone, Reporting and recordkeeping requirements, Volatile organic compounds.

Dated: December 6, 2024.

Debra Shore,
Regional Administrator, Region 5.

For the reasons stated in the preamble the Environmental Protection Agency amends title 40 CFR part 81 as follows:

ILLINOIS—2015 8-HOUR OZONE NAAQS
 [Primary and Secondary]

PART 81—DESIGNATION OF AREAS FOR AIR QUALITY PLANNING PURPOSES

■ 1. The authority citation for part 81 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

■ 2. Section 81.314 is amended in the table for “Illinois—2015 8-Hour Ozone NAAQS [Primary and Secondary]” by revising the entry for “Chicago, IL-IN-WI” to read as follows:

§ 81.314 Illinois.

* * * * *

Designated area ¹	Designation		Classification	
	Date ²	Type	Date ²	Type
Chicago, IL-IN-WI: Cook County. DuPage County. Grundy County (part): Aux Sable Township and Goose Lake Township. Kane County. Kendall County (part): Oswego Township. Lake County. McHenry County. Will County.	3/7/14/2021	Nonattainment	1/16/2025	Serious.
* * * * *				

¹ Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the State has regulatory authority under the Clean Air Act for such Indian country.

² This date is August 3, 2018, unless otherwise noted.

³ EPA revised the nonattainment boundary in response to a court decision, which did not vacate any designations for the 2015 ozone NAAQS, but which remanded the designation for the identified county. Because this additional area is part of a previously designated nonattainment area, the implementation dates for the overall nonattainment area (e.g., the August 3, 2021 attainment date) remain unchanged regardless of this later designation date.

■ 3. Section 81.315 is amended in the table for “Indiana—2015 8-Hour Ozone

NAAQS [Primary and Secondary]” by revising the entry for “Chicago, IL-IN-WI” to read as follows:

§ 81.315 Indiana.

* * * * *

INDIANA—2015 8-HOUR OZONE NAAQS
 [Primary and Secondary]

Designated area ¹	Designation		Classification	
	Date ²	Type	Date ²	Type
Chicago, IL-IN-WI: Lake County (part): Calumet Township, Hobart Township, North Township, Ross Township, and St. John Township. Porter County (part):	3/7/14/2021	Nonattainment	1/16/2025	Serious.

INDIANA—2015 8-HOUR OZONE NAAQS—Continued
 [Primary and Secondary]

Designated area ¹	Designation		Classification	
	Date ²	Type	Date ²	Type
Center Township, Jackson Township, Liberty Township, Pine Township, Portage Township, Union Township, Washington Township, and Westchester Township.				
* * * * *				

¹ Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

² This date is August 3, 2018, unless otherwise noted.

³ EPA revised the nonattainment boundary in response to a court decision, which did not vacate any designations for the 2015 ozone NAAQS, but which remanded the designation for the identified county. Because this additional area is part of a previously designated nonattainment area, the implementation dates for the overall nonattainment area (e.g., the August 3, 2021 attainment date) remain unchanged regardless of this later designation date.

* * * * *

■ 4. Section 81.323 is amended in the table for “Michigan—2015 8-Hour Ozone NAAQS [Primary and

Secondary]” by revising the entries for **§ 81.323 Michigan.** “Allegan County, MI”, “Berrien County, MI”, and “Muskegon County, MI” to read as follows:

MICHIGAN—2015 8-HOUR OZONE NAAQS
 [Primary and Secondary]

Designated area ¹	Designation		Classification	
	Date ²	Type	Date ²	Type
Allegan County, MI Allegan County (part): Casco Township, Cheshire Township, City of Douglas, City of Holland, City of Saugatuck, Clyde Township, Fillmore Township, Ganges Township, Heath Township, Laketown Township, Lee Township, Manilus Township, Overisel Township, Saugatuck Township, and Valley Township.	Nonattainment	1/16/2025	Serious.
Berrien County, MI: Berrien County.	Nonattainment	1/16/2025	Serious.
* * * * *				
Muskegon County, MI Muskegon County (part): Blue Lake Township, City of Montague, City of Muskegon, City of Muskegon Heights, City of North Muskegon, City of Roosevelt Park, City of Whitehall, Dalton Township, (incl. Village of Lakewood Club), Fruitland Township, Fruitport Township, (incl. Village of Fruitport), Laketon Township, Montague Township, Muskegon Township, Norton Shores Township, White River Township, and Whitehall Township.	Nonattainment	1/16/2025	Serious.
* * * * *				

¹ Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the State has regulatory authority under the Clean Air Act for such Indian country.

² This date is August 3, 2018, unless otherwise noted.

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■ 5. Section 81.336 is amended in the table for “Ohio—2015 8-Hour Ozone

NAAQS [Primary and Secondary]” by revising the entry for “Cleveland, OH” to read as follows: **§ 81.336 Ohio.**

* * * * *

OHIO—2015 8-HOUR OZONE NAAQS
 [Primary and Secondary]

Designated area ¹	Designation		Classification	
	Date ²	Type	Date ²	Type
* * * * *	* * * * *	* * * * *	* * * * *	* * * * *
Cleveland, OH Cuyahoga County. Geauga County. Lake County. Lorain County. Medina County. Portage County. Summit County.	Nonattainment	1/16/2025	Serious.
* * * * *	* * * * *	* * * * *	* * * * *	* * * * *

¹ Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the State has regulatory authority under the Clean Air Act for such Indian country.
² This date is August 3, 2018, unless otherwise noted.

* * * * *
 ■ 6. Section 81.350 is amended in the table for “Wisconsin—2015 8-Hour Ozone NAAQS [Primary and

Secondary]” by revising the entries for **§ 81.350 Wisconsin.** “Chicago IL-IN-WI”, “Milwaukee, WI”, and “Sheboygan County, WI” to read as follows:
 * * * * *

WISCONSIN—2015 8-HOUR OZONE NAAQS
 [Primary and Secondary]

Designated area ¹	Designation		Classification	
	Date ²	Type	Date ²	Type
Chicago, IL-IN-WI	⁵ 7/14/2021	Nonattainment	1/16/2025	Serious.
Kenosha County (part): The portion of Kenosha County bounded by the Lake Michigan shoreline on the East, the Kenosha County boundary on the North, the Kenosha County boundary on the South, and the I-94 corridor (including the entire corridor) on the West.				
* * * * *	* * * * *	* * * * *	* * * * *	* * * * *
Milwaukee, WI	⁵ 7/14/2021	Nonattainment	1/16/2025	Serious.
Milwaukee County. Ozaukee County. Racine County (part): Inclusive and east of the following roadways going from the northern county boundary to the southern county boundary: Highway 45 to Washington Ave. to South Beaumont Ave. Washington County (part): Inclusive and east of the following roadways going from the northern county boundary to the southern county boundary: County H to N Main St/Old US Hwy 45 to WI-60 Trunk E to WI-164 S. Waukesha County (part): Going from the western county boundary to the southern county boundary: Inclusive and north of I-94 and inclusive and east of Highway 67.				
Sheboygan County, WI	⁵ 7/14/2021	Nonattainment	1/16/2025	Serious.
Sheboygan County (part):				

WISCONSIN—2015 8-HOUR OZONE NAAQS—Continued
 [Primary and Secondary]

Designated area ¹	Designation		Classification	
	Date ²	Type	Date ²	Type
Inclusive and east of the following roadways with the boundary starting from north to south: Union Road which turns into County Road Y which turns into Highland Drive, to Lower Road which turns into Monroe Street, to Broadway/Main Street to Highway 32 which turns into Giddings Avenue to County Road W to County Road KW.				

¹ Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the State has regulatory authority under the Clean Air Act for such Indian country.

² This date is August 3, 2018, unless otherwise noted.

⁵ EPA revised the nonattainment boundary in response to a court decision, which did not vacate any designations for the 2015 ozone NAAQS, but which remanded the designation for the identified county. Because this additional area is part of a previously designated nonattainment area, the associated implementation dates for the overall nonattainment area (e.g., the August 3, 2021 attainment date) remain unchanged regardless of this later designation date.

* * * * *

[FR Doc. 2024–29137 Filed 12–16–24; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 81

[EPA–R03–OAR–2023–0419; FRL–11736–02–R3]

Redesignation of Portions of Westmoreland and Cambria Counties, Pennsylvania for the 2010 Sulfur Dioxide (SO₂) National Ambient Air Quality Standards (NAAQS)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (the EPA or the Agency) is finalizing the redesignation of portions of Cambria County and Westmoreland County, Pennsylvania, to “nonattainment” for the 2010 1-hour primary sulfur dioxide (SO₂) national ambient air quality standard (NAAQS or standard). Westmoreland County was previously designated “attainment/unclassifiable,” and Cambria County was designated “unclassifiable.” The EPA notified the Commonwealth of Pennsylvania of its intended redesignation of portions of Cambria and Westmoreland counties on February 17, 2023, and published a Notice of Availability (NOA) for this action on February 12, 2024. The EPA’s redesignation of portions of these counties is based on modeled violations of the 2010 1-hour primary SO₂ NAAQS.

DATES: This final rule is effective on January 16, 2025.

ADDRESSES: The EPA has established a docket for this redesignation under Docket ID Number EPA–R03–OAR–2023–0419. All documents in the docket are listed on the www.regulations.gov website. Although listed in the index, some information is not publicly available, e.g., confidential business information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. Publicly available docket materials are available through www.regulations.gov, or please contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section for additional availability information.

The EPA has established a website for the designations for the 2010 SO₂ NAAQS at www.epa.gov/sulfur-dioxide-designations/sulfurdioxide-designations-regulatory-actions. This final redesignation action, associated technical support documents, and other related information will be added to this website.

FOR FURTHER INFORMATION CONTACT: Ellen Schmitt, Planning & Implementation Branch (3AD30), Air & Radiation Division, U.S. Environmental Protection Agency, Region III, 1600 John F. Kennedy Boulevard, Philadelphia, Pennsylvania 19103. The telephone number is (215) 814–5787. Ms. Schmitt can also be reached via electronic mail at schmitt.ellen@epa.gov.

SUPPLEMENTARY INFORMATION:

I. Background and Purpose of the EPA’s Final Action

The EPA is required by Clean Air Act (CAA) section 107(d) to designate all areas throughout the nation as attaining or not attaining the NAAQS within two years of the promulgation of any new or revised NAAQS. Pursuant to CAA section 107(d), the EPA must designate as “nonattainment” those areas that violate the NAAQS and those nearby areas that contribute to violations. Once an area has been designated, the EPA Administrator, under CAA section 107(d)(3), may at any time notify a state that a designation should be revised.

Under section 109 of the CAA, the EPA has established primary and secondary NAAQS for certain pervasive air pollutants and conducts periodic reviews of the NAAQS to determine whether they should be revised or whether new NAAQS should be established. The primary NAAQS represent ambient air quality standards, the attainment and maintenance of which the EPA has determined, including a margin of safety, are requisite to protect the public health. The secondary NAAQS represent ambient air quality standards, the attainment and maintenance of which the EPA has determined are requisite to protect the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air.

On June 22, 2010 (75 FR 35520), the EPA finalized the revision of the 1-hour primary SO₂ NAAQS, codified at 40 Code of Federal Regulations (CFR) 50.17, which became effective on August 23, 2010 (hereafter referred to as the 2010 SO₂ NAAQS). The 2010 SO₂ NAAQS is met at an ambient air quality



Illinois Air Quality Report



2023



January 2025

EXHIBIT 4

**ILLINOIS ANNUAL
AIR QUALITY REPORT
2023**

**Illinois Environmental Protection Agency
Bureau of Air**

Executive Summary

This report presents a summary of air quality data collected throughout the State of Illinois during calendar year 2023. Data is presented for the six criteria pollutants (those for which air quality standards have been developed – particulate matter (PM₁₀ and PM_{2.5}), ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide, and lead – along with some heavy metals, volatile organic compounds and toxic compounds. Monitoring was conducted at 61 different site locations collecting data from 130 instruments.

In terms of the Air Quality Index (AQI), air quality during 2023 was either good or moderate 87% of the time throughout Illinois. There were two days when at least one monitoring site registered Very Unhealthy AQI (category purple). This compares with zero Very Unhealthy days in 2022. The 2023 Very Unhealthy days were due to elevated particulate concentrations from wildfire smoke. There were 10 days (six for ozone, one for PM_{2.5}, and three for both ozone and PM_{2.5}) when at least one monitoring site registered Unhealthy AQI (category red). This compares with two Unhealthy days in 2022. In 2023, there were 32 days (28 for ozone, one for PM_{2.5}, and three for both ozone and particulates) when AQI in at least one part of Illinois was considered Unhealthy for Sensitive Groups (category orange).

Section 1: Statewide Summary of Air Quality

OZONE

Monitoring was conducted at 36 locations during the March-October "ozone season" and at least 75 percent data capture was obtained at all 36 sites.

Elgin recorded the highest 1-hour concentration of 0.119 ppm for Illinois Chicago area monitors. This compares with the highest concentration of 0.103 ppm in 2022 at Zion. The highest 1-hour for Metro-East in 2023 was 0.099 ppm recorded at East St. Louis, compared with a 2022 high of 0.096 ppm at Alton.

Data are also presented to compare with the current 8-hour standard as of 2016 of 0.070 ppm. The appropriate statistic for comparison with the 8-hour standard is the fourth highest value, which is averaged over a three-year period. There were 36 sites in Illinois that had a fourth-high value above 0.070 ppm in 2023 compared with eight sites in 2022. The highest Illinois Chicago area fourth-high value was 0.086 ppm at Northbrook. The highest level in the Metro-East area was 0.082 ppm at Jerseyville. For the three-year period 2021-2023, 18 sites had a fourth-high average above 0.070 ppm (Table B4).

Figure 1 shows for each year the statewide average of each site's highest hourly ozone value for the ten-year period 2014-2023. The graph shows some year-to-year fluctuation with high years occurring during summers with more favorable meteorology for ozone formation and low years in summers less conducive for ozone formation. The statewide average for 2023 was 0.095 ppm compared with 0.085 ppm in 2022 and 0.082 ppm in 2021.

Statewide, the total number of 1-hour excursion days in 2023 was zero compared with zero in 2022 and zero in 2021.

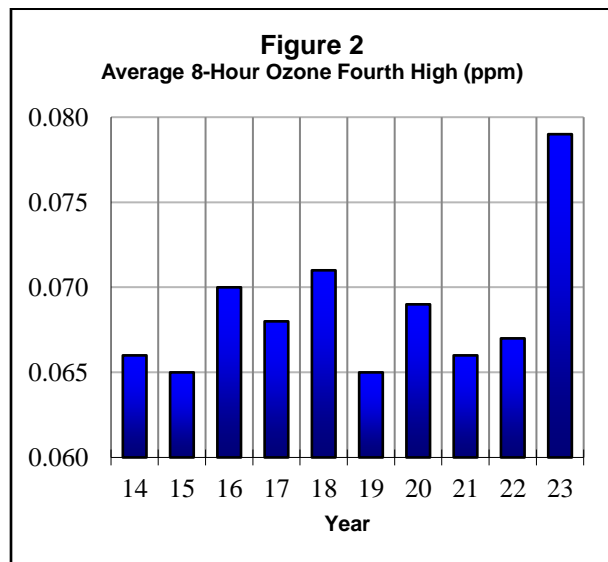
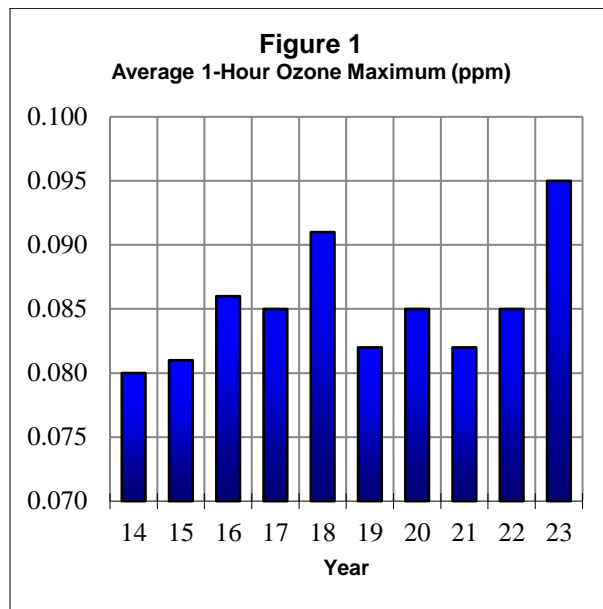


Figure 2 shows for each year the statewide annual average of the fourth highest 8-hour ozone value 2014-2023. The statewide average for 2023 was 0.079 ppm compared with 0.067 ppm in 2022 and 0.066 in 2021.

Section 1: Statewide Summary of Air Quality

PARTICULATE MATTER

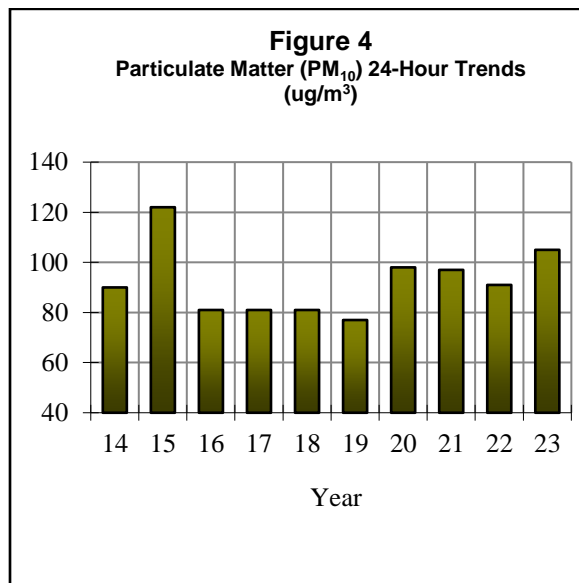
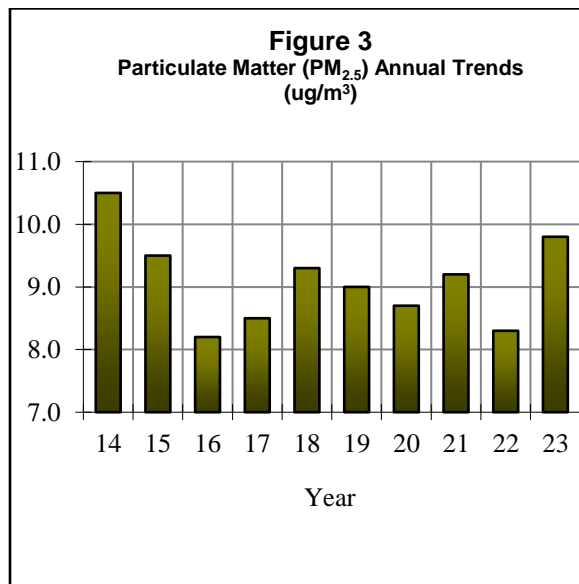
Monitoring was conducted at 34 sites for PM_{2.5}. In 2023, no sites recorded an average above 12.0 ug/m³, the level of the annual standard. The statewide average of the annual averages was 9.8 ug/m³ in 2023 compared to 8.3 ug/m³ in 2022. Note, in 2024 the annual standard was revised to 9.0 ug/m³. In 2023, 18 non-exempt sites recorded an annual design value above 9.0 ug/m³.

Figure 3 shows the trend of the statewide annual averages for PM_{2.5} for the period 2014-2023. There were 84 exceedances of the 24-hour standard of 35 ug/m³ in 2023 compared with one exceedance in 2022 and 10 exceedances in 2021. The statewide peak of 213.1 ug/m³, due to wildfire smoke, was recorded in Normal. In 2023, the statewide 98-percentile 24-hour average was 25.1 ug/m³. This compares with 21.1 ug/m³ in 2022 and 21.8 ug/m³ in 2021.

In 2023 there were four sites monitoring PM₁₀. The statewide annual average was 25 ug/m³ compared with 28 ug/m³ in 2022 and 29 ug/m³ in 2021. The highest annual average was 32 ug/m³ in Lyons Township. The lowest annual was 16 ug/m³ at Northbrook.

For PM₁₀, the statewide average of the maximum 24-hour averages in 2023 was 105 ug/m³ compared with 91 ug/m³ in 2022 and 97 ug/m³ in 2021. **Figure 4** depicts this information for the period 2014-2023.

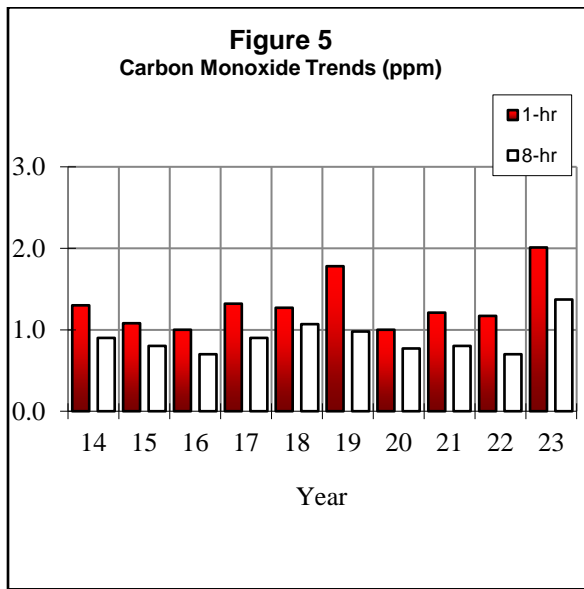
There was one exceedance of the 24-hour primary standard of 150 ug/m³ in 2023. The highest 24-hour average was recorded in Lyons Township with a value of 155 ug/m³ compared with a high 24-hour value of 139 ug/m³ in Lyons Township in 2022.



CARBON MONOXIDE

There were no exceedances of either the 1-hour primary standard of 35 ppm or the 8-hour primary standard of 9 ppm in 2023. The highest 1-hour average was 3.2 ppm recorded at the Lansing-Kingery near-road location. The highest 8-hour average was 1.6 ppm also recorded at the Lansing-Kingery near-road location.

Figure 5 shows the trend for the period 2014-2023 for the statewide average of the 1-hour and 8-hour high CO values. The statewide average of the 1-hour high was 2.01 ppm in 2023 compared with 1.17 ppm in 2022. The statewide average for the 8-hour high was 1.37 ppm in 2023 compared with 0.70 ppm in 2022.



SULFUR DIOXIDE

There were four exceedances of the 1-hour primary standard of 75 ppb in 2023 compared with five exceedances in 2022. The highest 1-hour average was 147 ppb recorded at the Decatur-Primient location compared with 293 ppb at the Decatur-Primient location in 2022. The statewide average of the 1-hour high in 2023 was 7 ppb. This compares with 50 ppb in 2022. There were no sites over the primary 1-hour standard of 75 ppb for the 2021-2023 period (Table B17).

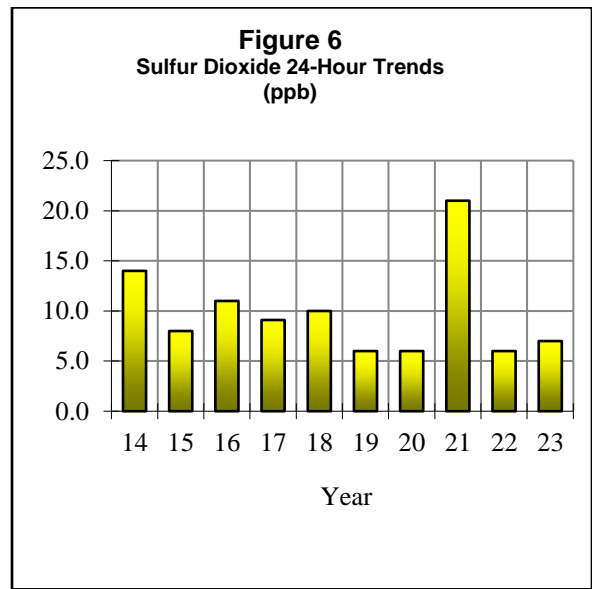


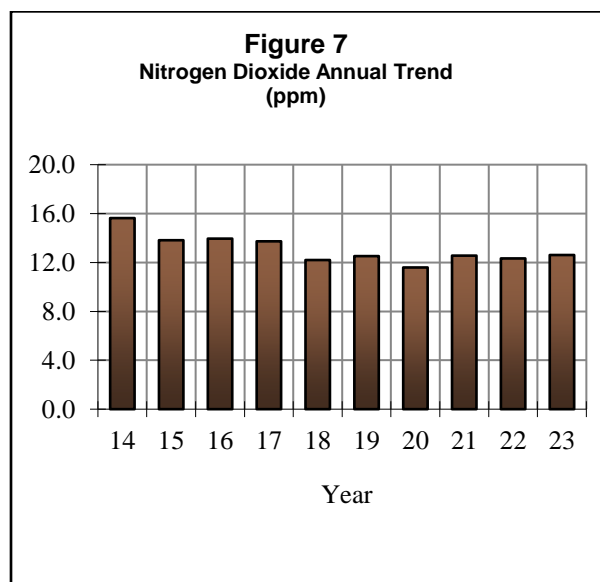
Figure 6 shows the statewide trend for the maximum 24-hour averages for the period 2014-2023. The statewide average for 2023 was 7 ppb. This compares with an average of 6 ppb in 2022.

Section 1: Statewide Summary of Air Quality

NITROGEN DIOXIDE

There were no violations of the annual primary standard of 53 ppb recorded in Illinois during 2023. The highest annual average of 17.0 ppb was recorded at Schiller Park. The statewide annual average for 2023 was 12.6 ppb compared with 12.3 ppb in 2022 and 12.6 ppb in 2021. There were no violations of the 1-hour primary standard, and there were also no violations in 2022. There were no sites over the 1-hour primary standard of 100 ppb for the 2021-2023 period compared to zero sites for the 2020-2022 period (Table B20).

Figure 7 depicts the trend of statewide annual averages from 2014-2023. There have been no violations of the annual standard since 1980.



LEAD

There were no violations of the rolling three-month maximum mean standard for the 2021 to 2023 period (Table B23).

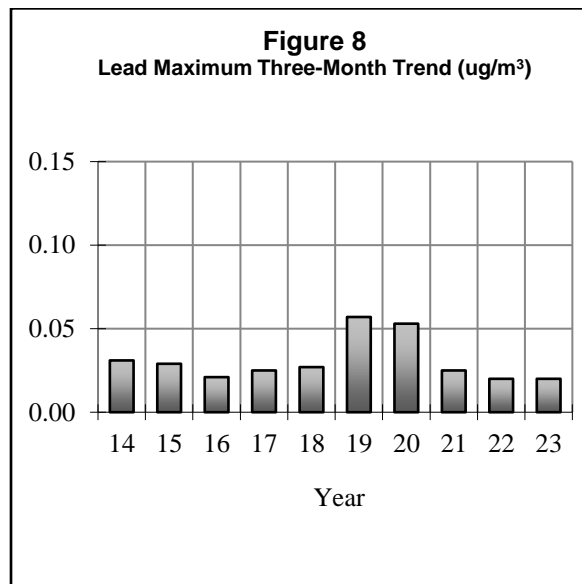


Figure 8 shows the trend of the statewide maximum rolling three-month averages from 2014-2023. All monitoring locations in the State have three-year maximum averages under the national standard for lead (Table B23). The statewide average for all sites was 0.020 ug/m³ in 2023 compared to 0.020 ug/m³ in 2022 and 0.025 ug/m³ in 2021.

Section 1: Statewide Summary of Air Quality

FILTER ANALYSIS RESULTS

The total suspended particulate samples were analyzed, in addition to lead, for specific metals (Table B24). Several of the metals analyzed (cadmium, chromium, manganese, and nickel) have known toxic properties. There are currently no state or federal ambient air quality standards for these parameters.

The areas with the highest metals concentrations in Illinois are generally the heavily industrialized areas of the Metro-East (Granite City), south Chicago, and near source-oriented monitors. The highest 24-hour average for nickel was 0.057 ug/m³ measured in Granite City. The monitor at Chicago Washington High School recorded the highest cadmium concentration with a 24-hour average of 0.005 ug/m³. The highest 24-hour chromium average was 0.091 ug/m³ recorded at Chicago Washington High School. The highest 24-hour manganese average was 0.956 ug/m³ also recorded at Chicago Washington High School.

TOXIC COMPOUNDS

Sampling for toxic compounds other than metals (see Filter Analysis Section, **Table B24**) was conducted at Northbrook and Schiller Park. Most compounds were below the method detection limits. **Table B25** has a listing of various toxic compound maximums and annual averages.

Section 2: Air Quality Index

The Air Quality Index (AQI) is the national standard method for reporting air pollution levels to the public. An index such as the AQI is necessary because there are several air pollutants, each with different typical ambient concentrations and each with different levels of harm, and to report actual concentrations for all of them would be confusing. The AQI uses a single number and a short descriptor to define the air quality in an easy-to-remember and easy-to-understand way, taking all the pollutants into account.

The AQI is based on the short-term federal National Ambient Air Quality Standards (NAAQS), for six of the criteria pollutants, namely:

- Ozone (O₃)
- Sulfur dioxide (SO₂)
- Carbon monoxide (CO)
- Particulate matter (PM₁₀)
- Particulate matter (PM_{2.5})
- Nitrogen dioxide (NO₂)

In each case, the short-term primary NAAQS corresponds to 100 on the AQI scale – the top end of the Moderate category. The next concentration above the NAAQS would begin the Unhealthy for Sensitive Groups category at 101 on the AQI scale. **Table 3** lists all the AQI ranges and their descriptor categories. Each category corresponds to a different level of health concern. **Table 4** lists each AQI category and its corresponding meaning.

Unhealthy for Sensitive Groups occurs on occasion for 8-hour ozone, PM_{2.5}, and downwind of certain SO₂ sources. Unhealthy air quality is uncommon in Illinois, and Very Unhealthful air quality is rare. There has never been an occurrence of Hazardous AQI in Illinois.

The AQI is computed as follows: data from pollution monitors in an area are collected, and the AQI sub index for each pollutant is

computed using formulas derived from the index and concentration relations. Nomograms and tables are also available for this purpose. The data used are:

- O₃ estimate of the highest 8-hour average for that calendar day
- SO₂ the highest 1-hour average with a max AQI of 200. AQI over 200 uses 24-hour averages for that calendar day.
- CO the highest 8-hour average so far that calendar day
- PM₁₀ the most recent 24-hour average
- PM_{2.5} estimate of the 24-hour average for that calendar day
- NO₂ the highest 1-hour average

Continuous monitors are utilized for all the pollutants, including PM₁₀ and PM_{2.5}.

Once all the sub-indices for the various pollutants have been computed, the highest is chosen. That is the AQI for the area and the pollutant giving rise to it is the "critical pollutant." Thus if, for Anytown, Illinois, the following sub-indices were obtained:

O ₃	=	45
SO ₂	=	23
CO	=	19
PM ₁₀	=	41
PM _{2.5}	=	61

Anytown's AQI for that day would be 61, which is in the Moderate category, and the critical pollutant would be particulates (PM_{2.5}). If data for one of the pollutants used in computing AQI is missing, the AQI is computed using the data available, ignoring the missing data. It occasionally happens that two pollutants have the same sub index; in such cases there are two critical pollutants.

The Illinois EPA issues an AQI forecast for 14 areas, or sectors, in Illinois (**Table 5**). These correspond to metropolitan areas with populations greater than 100,000.

Section 2: Air Quality Index

Table 3: Air Quality Index Categories		
AQI Values	AQI Descriptor	Colors
<i>When the AQI is in this range:</i>	<i>...air quality conditions are:</i>	<i>...as symbolized by this color:</i>
0-50	Good	Green
51-100	Moderate	Yellow
101-150	Unhealthy for Sensitive Groups	Orange
151 to 200	Unhealthy	Red
201 to 300	Very Unhealthy	Purple
301 to 500	Hazardous	Maroon

Table 4: Air Quality Index Health Concerns		
Air Quality Index Levels of Health Concern	Numerical Value	Meaning
Good	0 to 50	Air quality is considered satisfactory, and air pollution poses little or no risk.
Moderate	51 to 100	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	151 to 200	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	201 to 300	Health warnings of emergency conditions. The entire population is more likely to be affected.
Hazardous	301 to 500	Health alert: everyone may experience more serious health effects.

Section 2: Air Quality Index

Table 5: Air Quality Index Sectors in Illinois	
Sector/Sub-Sector	Coverage Area
Lake County	Sub-Sector of Chicago Metropolitan Area including Lake County sites and Cary PM2.5
Chicago	Sub-Sector of Chicago Metropolitan Area including all areas within the city limits of Chicago and including monitoring sites at Springfield Pump Station, Kennedy Near Road, South Water Filtration Plant, Taft High School, and ComEd/Lawndale
North and West Suburbs	Sub-Sector of Chicago Metropolitan Area including parts of Cook, Du Page, and McHenry Counties north of I-290 (Eisenhower Expressway) and outside of the Chicago city limits
South and West Suburbs	Sub-Sector of Chicago Metropolitan Area including parts of Cook and Du Page Counties south of I-290 and outside of the Chicago city limits
Will County/Joliet	Sub-Sector of Chicago Metropolitan Area including Will County only
Aurora-Elgin	Sub-Sector of Chicago Metropolitan Area including the eastern part of Kane County
Rockford	Rockford Metropolitan Area
Rock Island	The Illinois portion of the Quad Cities area
Peoria	Peoria Metropolitan Area
Champaign	Champaign-Urbana Metropolitan Area
Normal	Bloomington-Normal Metropolitan Area
Decatur	Decatur Metropolitan Area
Springfield	Springfield Metropolitan Area
Metro-East St. Louis	The Illinois portion of the St. Louis Metropolitan Area

Section 2: Air Quality Index

Illinois EPA AQI forecasts and AQI information can be obtained on EPA's AirNow website at <http://www.airnow.gov>. The AirNow website shows estimated real-time AQI levels for all sectors in Illinois as well as other areas around the country. AQI information can further be obtained via e-mail and/or cell phones through the EnviroFlash program located at <http://illinois.enviroflash.info/signup.cfm>. The AirNow website and residents subscribed to EnviroFlash program can also receive alerts when high pollution levels are occurring or expected to occur. Additionally, Illinois AQI forecasts and current AQI levels are picked up and reported by various media outlets, weather websites, and electronic application programs.

2022 for the Chicago MSA and zero statewide Action Days.

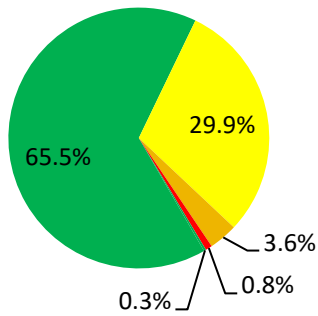
2023 Illinois AQI Sector Summary

In order to present a more representative AQI, 24-hour calendar day FRM PM_{2.5} and PM₁₀ values from the total network were used to determine the percentages in the AQI pie charts even though these values were not available for issuing the daily AQI. The pie charts show the percent of days each sector was in a particular category.

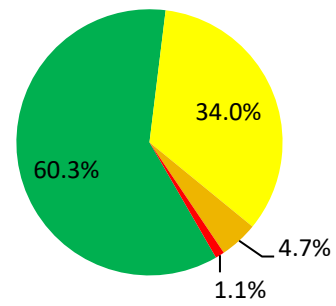
Air quality was in the "Good" and "Moderate" categories most often in 2023. Most sectors had a higher frequency of "Good" than "Moderate" as well as a higher frequency of "Moderate" than "Unhealthy for Sensitive Groups."

In 2023, there were no ozone advisories issued in Illinois. An advisory is declared when ozone levels have reached the level of the former 1-hour standard (0.125 ppm) on a particular day. There were 17 Air Pollution Action Days issued for the Chicago MSA in 2023. Of those, five were statewide Action Days. This compares with one Action Day in

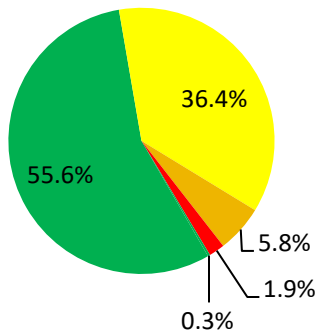
Chicago Sector - Lake County



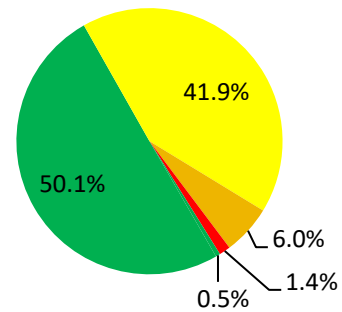
Chicago Sector - Chicago



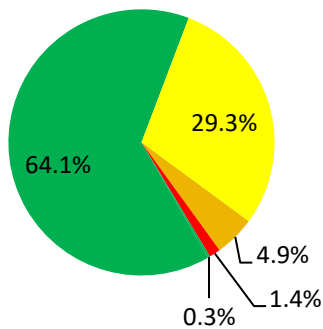
Chicago Sector - North & West Suburbs



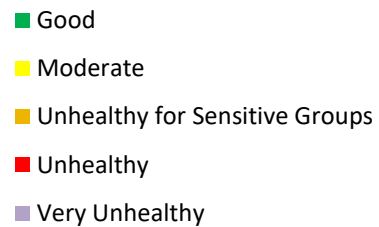
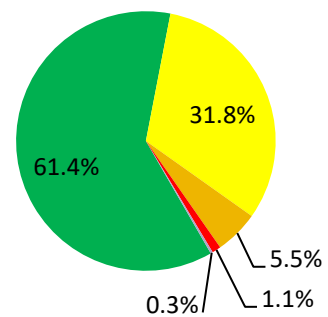
Chicago Sector - South & West Suburbs



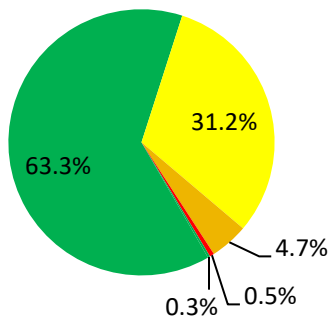
Aurora - Elgin



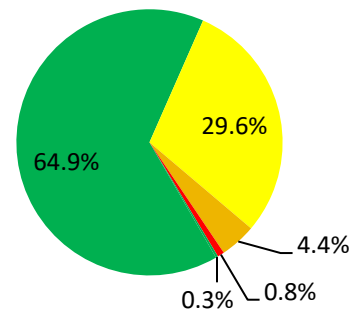
Joliet/Will County



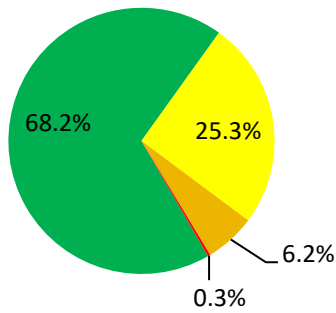
Rockford



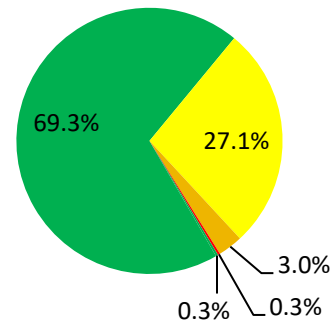
Rock Island



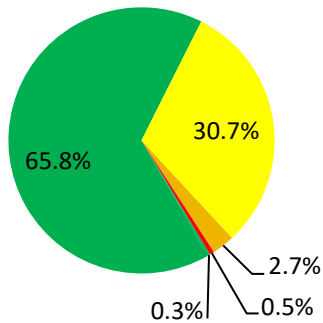
Peoria



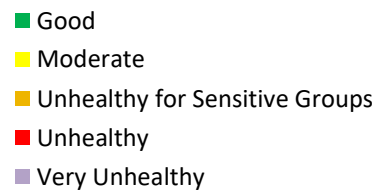
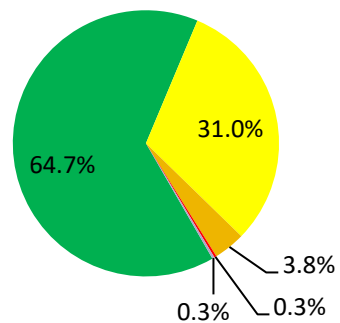
Champaign



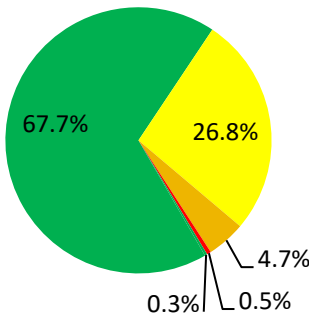
Normal



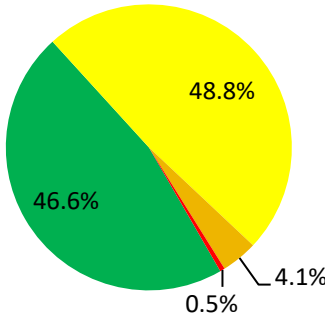
Decatur



Springfield



Metro-East (St. Louis)



- Good
- Moderate
- Unhealthy for Sensitive Groups
- Unhealthy
- Very Unhealthy

Electronic Filing: Received, Clerk's Office 05/07/2026 **PCB 2026-058**
Section 2: Air Quality Index

Pollutant	Primary/ Secondary	Averaging Time	Level	Form	
Carbon Monoxide	primary	8-hour	9 ppm	Not to be exceeded more than once per year	
		1-hour	35 ppm		
Lead	primary and secondary	Rolling 3-month average	0.15 µg/m ³	Not to be exceeded	
Nitrogen Dioxide	primary	1-hour	100 ppb	98th percentile, averaged over 3 years	
	primary and secondary	Annual	53 ppb	Annual Mean	
Ozone	primary and secondary	8-hour	0.070 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years	
Particle Pollution	PM _{2.5}	primary	Annual	9.0 µg/m ³	
		secondary	Annual	15.0 µg/m ³	
	PM ₁₀	primary and secondary	24-hour	35 µg/m ³	98th percentile, averaged over 3 years
		primary and secondary	24-hour	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide	primary	1-hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years	
	secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year	

PM_{2.5} standards are referenced to local conditions of temperature and pressure rather than standard conditions (760 mmHg and 25 degrees Celsius).

Pollutant	Advisory	Yellow Alert	Red Alert	Emergency
Particulate Matter (µg/m ³)	2-hour 420	24-hour 350	24-hour 420	24-hour 500
Sulfur Dioxide (ppm)	2-hour 0.30	4-hour 0.30	4-hour 0.35	4-hour 0.40
Carbon Monoxide (ppm)	2-hour 30	8-hour 15	8-hour 30	8-hour 40
Nitrogen Dioxide (ppm)	2-hour 0.40	1-hour 0.60 or 24-hour 0.15	1-hour 1.20 or 24-hour 0.30	1-hour 1.60 or 24-hour 0.40
Ozone (ppm)	1-hour 0.12	1-hour 0.20	1-hour 0.30	1-hour 0.50

Appendix A: Air Sampling Network

Description of the Air Sampling Network

The Illinois air monitoring network is composed of instrumentation owned and operated by both the Illinois EPA and by cooperating local agencies. This network has been designed to measure ambient air quality levels throughout the State of Illinois following federal guidelines.

The network contains both continuous and non-continuous instruments. The continuous instruments operate throughout the year, while non-continuous instruments operate intermittently based on USEPA's sampling calendar (3-day, 6-day, or 12-day schedule). This is the official non-continuous sampling schedule used by the Illinois EPA and can be found at <https://www.epa.gov/amtic/sampling-schedule-calendar>.

In accordance with USEPA air quality monitoring requirements as set forth in Title 40 of the Code of Federal Regulations, Part 58 (40 CFR 58), five types of monitoring stations are used to collect ambient air data. These include State and Local Air Monitoring Stations

(SLAMS), National Air Monitoring Stations (NAMS), Photochemical Assessment Monitoring Stations (PAMS), Special Purpose Monitoring Stations (SPMS), and National Core Monitoring Stations (NCore). The types of stations are distinguished from one another on the basis of the general monitoring objectives they are designed to meet.

The SLAMS, NAMS, PAMS, SPMS, and NCore designations for the sites operated within the State of Illinois are provided in the Illinois Annual Network Plan. An updated air monitoring plan is submitted to USEPA each year for review. This plan can be found at <http://epa.illinois.gov/topics/air-quality/outdoor-air/air-monitoring.html>.

Table A1 is a summary of the distribution of pollutants through the years along with the total number of instruments and the total number of sites. The site directory is listed in **Table A2** and the monitoring directory is listed in **Table A3**.

Appendix A: Air Sampling Network

1. **State/Local Air Monitoring Station (SLAMS) Network** - The SLAMS network is designed to meet a minimum of four basis monitoring objectives:
 - a. To determine the highest concentrations expected to occur in the area covered by the network.
 - b. To determine representative concentrations in areas of high population density.
 - c. To determine the air quality impact of significant sources or source categories.
 - d. To determine general background concentration levels.

2. **National Air Monitoring Station (NAMS) Network** - The NAMS network is a subset of stations selected from the SLAMS network with emphasis given to urban and multisource areas. The primary objectives of the NAMS network are:
 - a. To measure expected maximum concentrations.
 - b. To measure concentrations in areas where poor air quality is combined with high population exposure.
 - c. To provide data useable for the determination of national trends.
 - d. To provide data necessary to allow the development of nationwide control strategies.

3. **Photochemical Assessment Monitoring Station (PAMS) Network** - The PAMS network is required in serious, severe, and extreme ozone nonattainment areas to obtain detailed data for ozone, precursors (NO_x and VOC), and meteorology. NO_x and VOC sampling is required for the period June - August each year. Ozone sampling occurs during the ozone season, March - October. Network design is based on four monitoring types. In Illinois, PAMS are required in the Chicago metropolitan area only.
 - a. Type 1 sites are located upwind of the nonattainment area and are located to measure background levels of ozone and precursors coming into the area
 - b. Type 2 sites are located slightly downwind of the major source areas of ozone precursors.
 - c. Type 3 sites are located at the area of maximum ozone concentrations.
 - d. Type 4 sites are located at the domain edge of the nonattainment area and measure ozone and precursors leaving the area.

4. **Special Purpose Monitoring Station (SPMS) Network** - Any monitoring site that is not a designated SLAMS or NAMS is considered a special purpose monitoring station. Some of the SPMS network objectives are as follows:
 - a. To provide data as a supplement to stations used in developing local control strategies, including enforcement actions.

Appendix A: Air Sampling Network

- b. To verify the maintenance of ambient standards in areas not covered by the SLAMS/NAMS network.
 - c. To provide data on non-criteria pollutants.
5. **National Core Station (NCore) Network** - NCore is a multi-pollutant network that integrates several advanced measurement systems. In Illinois, Northbrook and Bondville are considered NCore sites. A few of the NCore network objectives are as follows:
- a. Support for development of emission strategies and accountability of emission strategy progress through tracking long-term trends of pollutants and their precursors.
 - b. Support of long-term health assessments that contribute to review of national standards.
 - c. Support to scientific studies ranging across technological, health, and atmospheric process disciplines.
 - d. Support to ecosystem assessments recognizing that national air quality networks benefit ecosystems assessments.

Appendix A: Air Sampling Network

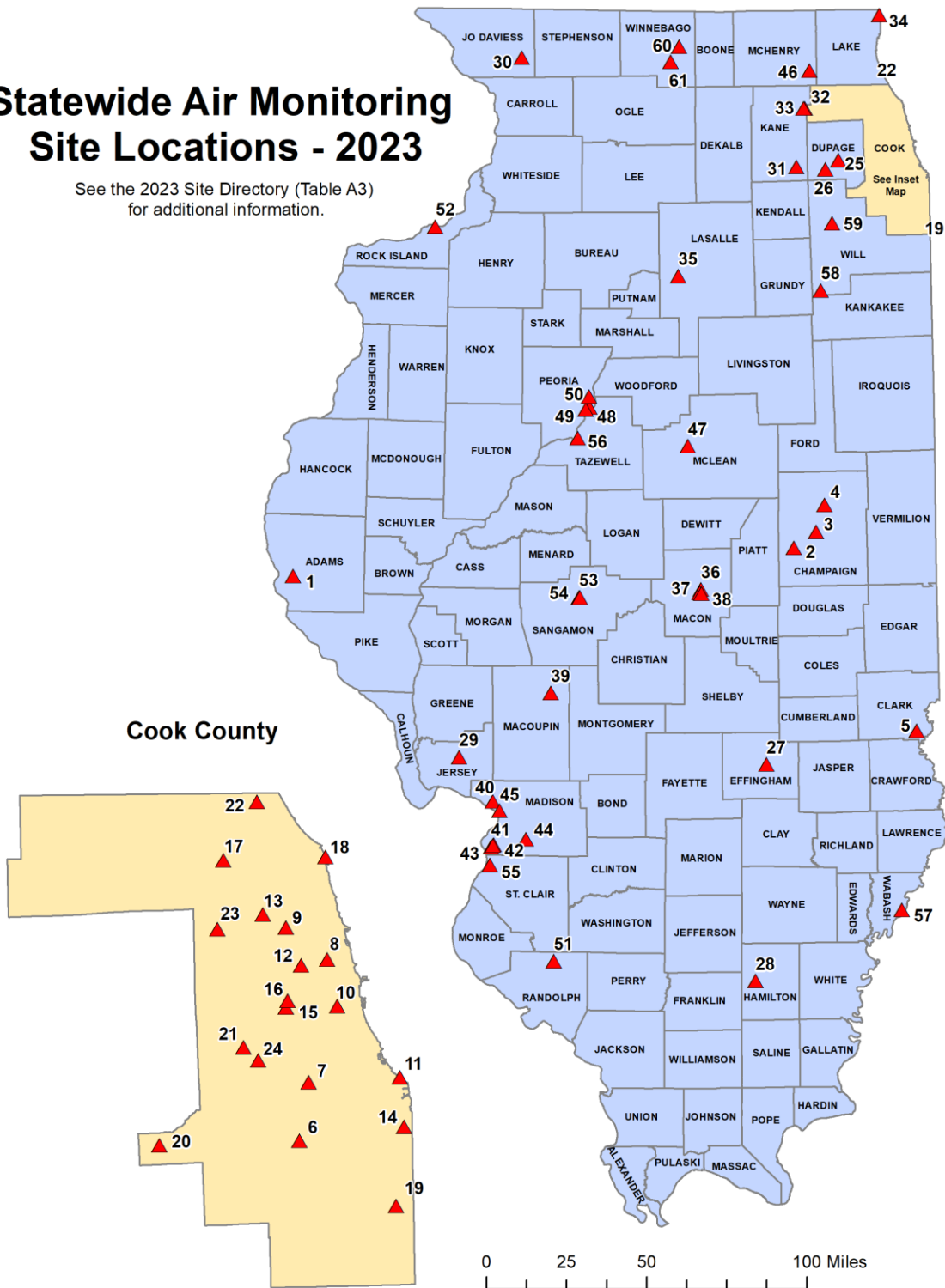
Table A1
Distribution of Air Monitoring Equipment

Parameter	2023	2022	2021	2020	2019
Particulate Matter Federal Reference Method (PM _{2.5} FRM)	21	22	23	25	25
PM _{2.5} Federal Equivalent Method (PM _{2.5} FEM)	21	20	19	17	17
PM _{10-2.5} (PM Coarse)	1	1	1	1	1
PM _{2.5} Air Quality Index (non-FEM)	5	5	7	7	7
PM _{2.5} Speciation	4	4	4	4	4
Particulate Matter (PM ₁₀)	5	5	5	5	5
Lead (Pb)	5	7	7	5	5
Sulfur Dioxide (SO ₂)	13	13	13	14	14
Nitrogen Dioxide (NO ₂)	8	8	8	7	7
Total Reactive Nitrogen (NO _y)	2	2	2	2	2
Ozone (O ₃)	36	37	37	37	37
Carbon Monoxide (CO)	3	3	3	3	4
Volatile Organic Compounds	2	2	2	2	2
Semi Volatile Organic Compounds	1	1	1	1	1
Semi Non-Methane Organic Compounds	1	1	1	1	1
Carbonyls	2	2	2	2	2
Total Instruments	130	133	135	133	134
Total Sites	61	64	64	64	64

Note, the above table includes collocated monitors but does not include meteorological instrumentation.

Statewide Air Monitoring Site Locations - 2023

See the 2023 Site Directory (Table A3) for additional information.



Site Directory

Site Map ID	AQS ID	County	City	Address	Latitude Longitude	Owner / Operator
1	17-001-0007	Adams	Quincy	John Wood Comm. College 1301 South 48th St.	+39.91540937 -91.33586832	IL EPA
2	17-019-1001	Champaign	Bondville	State Water Survey Township Rd. 500 E.	+40.052780 -88.372510	IL EPA/US EPA
3	17-019-0006	Champaign	Champaign	Ameren Substation 904 N. Walnut	+40.1237962 -88.229531	IL EPA
4	17-019-0007	Champaign	Thomasboro	North Thomas St.	+40.244913 -88.188519	IL EPA
5	17-023-0001	Clark	West Union	416 S. State Highway 1 & West Union	+39.210883 -87.668416	Indiana DEP
6	17-031-0001	Cook	Alsip	Village Garage 4500 W. 123rd St.	+41.6709919 -87.7324569	CCDES
7	17-031-0076	Cook	Chicago	Com Ed Maintenance Bldg. 7801 Lawndale	+41.75139998 -87.71348815	CCDES
8	17-031-0219	Cook	Chicago	Kennedy Near-road #2 Kennedy Expy. & W. Webster Ave.	+41.920681 -87.674425	IL EPA
9	17-031-0052	Cook	Chicago	Mayfair Pump Station 4850 Wilson Ave.	+41.96548483 -87.74992806	CCDES
10	17-031-0110	Cook	Chicago	Perez Elementary School 1241 19th St.	+41.855771 -87.657932	CCDES
11	17-031-0032	Cook	Chicago	South Water Filtration Plant 3300 E. Cheltenham Pl.	+41.75583241 -87.54534967	CCDES
12	17-031-0057	Cook	Chicago	Springfield Pump Station 1745 N. Springfield Ave.	+41.912739 -87.722673	CCDES
13	17-031-1003	Cook	Chicago	Taft High School 6545 W. Hurlbut St	+41.98433233 -87.7920017	CCDES
14	17-031-0022	Cook	Chicago	Washington High School 3535 E. 114th St.	+41.68716544 -87.53931548	CCDES
15	17-031-4002	Cook	Cicero	Cook County Trailer 1820 S. 51st Ave	+41.85524313 -87.7524697	CCDES
16	17-031-6005	Cook	Cicero	Liberty School 13th St. & 50th Ave.	+41.86442642 -87.74890238	CCDES
17	17-031-4007	Cook	Des Plaines	Regional Office Building 9511 W. Harrison St	+42.06028469 -87.86322543	IL EPA
18	17-031-7002	Cook	Evanston	Water Pumping Station 531 E. Lincoln	+42.062053 -87.675254	IL EPA
19	17-031-0119	Cook	Lansing	Kingery Near-road #1 Kingery Expy. & Torrence Ave.	+41.578603 -87.557392	IL EPA
20	17-031-1601	Cook	Lemont	Cook County Trailer 729 Houston	+41.66812034 -87.99056969	CCDES
21	17-031-1016	Cook	Lyons Township	Village Hall 50th St & Glencoe	+41.801180 -87.832349	IL EPA
22	17-031-4201	Cook	Northbrook	Northbrook Water Plant 750 Dundee Rd.	+42.13999619 -87.79922692	IL EPA
23	17-031-3103	Cook	Schiller Park	IEPA Trailer 4743 Mannheim Rd.	+41.96519348 -87.87626473	IL EPA
24	17-031-3301	Cook	Summit	Graves Elementary School 60th St. & 74th Ave.	+41.78276601 -87.80537679	CCDES

Site Directory

Site Map ID	AQS ID	County	City	Address	Latitude Longitude	Owner / Operator
25	17-043-6001	DuPage	Lisle	Morton Arboretum Route 53	+41.81304939 -88.0728269	IL EPA
26	17-043-4002	DuPage	Naperville	City Hall 400 S. Eagle St.	+41.77107094 -88.15253365	IL EPA
27	17-049-1001	Effingham	Effingham	Central Grade School 10421 N. US Hwy. 45	+39.06715932 -88.54893401	IL EPA
28	17-065-0002	Hamilton	Knight Prairie	Ten Mile Creek DNR Office State Route 14	+38.08215516 -88.6249434	IL EPA
29	17-083-0117	Jerseyville	Jerseyville	1320 Maple Summit Rd.	+39.101439 -90.344494	IL EPA
30	17-085-9991	Jo Daviess	Stockton	10952 E. Parker Rd.	+42.2869 -89.9997	US EPA
31	17-089-0007	Kane	Aurora	Health Department 1240 N. Highland	+41.78471651 -88.32937361	IL EPA
32	17-089-0005	Kane	Elgin	Larsen Junior High School 665 Dundee Rd.	+42.04914776 -88.27302929	IL EPA
33	17-089-0003	Kane	Elgin	McKinley School 258 Lovell St.	+42.050403 -88.28001471	IL EPA
34	17-097-1007	Lake	Zion	Camp Logan Illinois Beach State Park	+42.4675733 -87.81004705	IL EPA
35	17-099-0007	La Salle	Oglesby	308 Portland Ave.	+41.29301454 -89.04942498	IL EPA
36	17-115-0013	Macon	Decatur	IEPA Trailer 2200 N. 22nd	+39.866933 -88.925452	IL EPA
37	17-115-0217	Macon	Decatur	Tate & Lyle North 899 N. Folk St.	+39.850712 -88.933635	ERM Inc.
38	17-115-0317	Macon	Decatur	Tate & Lyle South 2200 E. El Dorado St.	+39.846856 -88.923323	ERM Inc.
39	17-117-0002	Macoupin	Nilwood	IEPA Trailer Heaton & Dubois	+39.39607533 -89.80973892	IL EPA
40	17-119-0120	Madison	Alton	Horace Mann School 2708 Edwards St.	+38.901316 -90.146211	IL EPA
41	17-119-0010	Madison	Granite City	Air Products 15th & Madison	+38.69443831 -90.15395426	IL EPA
42	17-119-1007	Madison	Granite City	Fire Station #1 23rd & Madison	+38.70453426 -90.13967484	IL EPA
43	17-119-0024	Madison	Granite City	Gateway Medical Center 2100 Madison Ave.	+38.7006315 -90.14476267	IL EPA
44	17-119-0122	Madison	Maryville	8B Schiber Ct.	+38.730263 -89.950053	IL EPA
45	17-119-3007	Madison	Wood River	Water Treatment Plant 54 N. Walcott	+38.86066947 -90.10585111	IL EPA
46	17-111-0001	McHenry	Cary	Cary Grove High School 1st St. & Three Oaks Rd.	+42.22144166 -88.24220734	IL EPA
47	17-113-2003	McLean	Normal	ISU Physical Plant Main & Gregory	+40.51873537 -88.99689571	IL EPA
48	17-143-0037	Peoria	Peoria	City Office Building 613 N.E. Jefferson	+40.697326 -89.584084	IL EPA
49	17-143-0024	Peoria	Peoria	Fire Station #8 MacArthur & Hurlburt	+40.68742038 -89.60694277	IL EPA

Site Directory

Site Map ID	AQS ID	County	City	Address	Latitude Longitude	Owner / Operator
50	17-143-1001	Peoria	Peoria Heights	Peoria Heights High School 508 E. Glen Ave.	+40.74550393 -89.58586902	IL EPA
51	17-157-0001	Randolph	Houston	IEPA Trailer Hickory Grove & Fallview	+38.17627761 -89.78845862	IL EPA
52	17-161-3002	Rock Island	Rock Island	Rock Island Arsenal 32 Rodman Ave.	+41.51472697 -90.51735026	IL EPA
53	17-167-0012	Sangamon	Springfield	Agricultural Building State Fair Grounds	+39.83192087 -89.64416359	IL EPA
54	17-167-0014	Sangamon	Springfield	Illinois Building State Fair Grounds	+39.831522 -89.640926	IL EPA
55	17-163-0010	St. Clair	East St. Louis	RAPS Trailer 13th & Tudor	+38.61203448 -90.16047663	IL EPA
56	17-179-0004	Tazewell	Pekin	Fire Station #3 272 Derby	+40.55643203 -89.65402083	IL EPA
57	17-185-0001	Wabash	Mount Carmel	Division St.	+38.397276 -87.773631	Indiana DEP
58	17-197-1011	Will	Braidwood	Com Ed Training Center 36400 S. Essex Rd.	+41.22153707 -88.19096718	IL EPA
59	17-197-1002	Will	Joliet	Pershing Elementary School Midland & Campbell Sts.	+41.52688509 -88.11647381	IL EPA
60	17-201-2001	Winnebago	Loves Park	Maple Elementary School 1405 Maple Ave.	+42.33498222 -89.0377748	IL EPA
61	17-201-0118	Winnebago	Rockford	Fire Department 204 S. 1 st St.	+42.2670002 -89.089170	IL EPA

Monitoring Directory

AQS ID	City	CO	NOy	NO2	Ozone	PM10	PM Coarse	PM2.5 FRM	PM2.5 FEM	PM2.5 AQI	PM2.5 Speciation	SO2	VOC	Toxics	TSP Pb, Metals	Meteorological	
17-001-0007	Quincy																
17-019-0006	Champaign N. Walnut																
17-019-0007	Thomasboro																
17-019-1001	Bondville	T										T					
17-023-0001	West Union																
17-031-0001	Alsip																
17-031-0022	Chicago Washington High School					C		2									
17-031-0032	Chicago South Water Filtration																
17-031-0052	Chicago Mayfair Pump Station																
17-031-0057	Chicago Springfield Pump Station																
17-031-0076	Chicago Com Ed Maintenance																
17-031-0110	Chicago Perez Elementary														2		
17-031-0119	Lansing Kingery near-road #1																
17-031-0219	Chicago Kennedy near-road #2																
17-031-1003	Chicago Taft High School																
17-031-1016	Lyons Township					C		2									
17-031-1601	Lemont																
17-031-3103	Schiller Park																
17-031-3301	Summit							2									
17-031-4002	Cicero Cook County Trailer																
Active Monitor	Site/Monitor Installed	Site/Monitor Removed			C = Continuous PM ₁₀ , T = Trace level 2 = 2 nd Collocated monitor												

Monitoring Directory

AQS ID	City	CO	NOy	NO2	Ozone	PM10	PM Coarse	PM2.5 FRM	PM2.5 FEM	PM2.5 AQI	PM2.5 Speciation	SO2	VOC	Toxics	TSP Pb, Metals	Meteorological
17-031-4007	Des Plaines															
17-031-4201	Northbrook	T		P								T				
17-031-6005	Cicero Liberty School															
17-031-7002	Evanston															
17-043-4002	Naperville															
17-043-6001	Lisle															
17-049-1001	Effingham															
17-065-0002	Knight Prairie															
17-083-0117	Jerseyville															
17-085-9991	Stockton															
17-089-0003	Elgin McKinley School															
17-089-0005	Elgin Larsen Jr. High School															
17-089-0007	Aurora															
17-097-1007	Zion															
17-099-0007	Oglesby															
17-111-0001	Cary															
17-113-2003	Normal								2							
17-115-0013	Decatur IEPA Trailer															
17-115-0217	Decatur Tate & Lyle North															
17-115-0317	Decatur Tate & Lyle South															
Active Monitor	Site/Monitor Installed	Site/Monitor Removed		T = Trace level P = PAMS season only. 2 = 2 nd Collocated monitor												

Monitoring Directory

AQS ID	City	CO	NOy	NO2	Ozone	PM10	PM Coarse	PM2.5 FRM	PM2.5 FEM	PM2.5 AQI	PM2.5 Speciation	SO2	VOC	Toxics	TSP Pb, Metals	Meteorological	
17-117-0002	Nilwood																
17-119-0120	Alton Horace Mann School																
17-119-0010	Granite City Air Products														2		
17-119-0024	Granite City Gateway Medical Center																
17-119-1007	Granite City Fire Station #1							2									
17-119-0122	Maryville Maintenance Bldg																
17-119-3007	Wood River																
17-119-9991	Highland																
17-143-0024	Peoria Fire Station #8																
17-143-0037	Peoria City Office Building																
17-143-1001	Peoria Heights																
17-157-0001	Houston																
17-161-3002	Rock Island																
17-163-0010	East St. Louis																
17-167-0012	Springfield Agricultural Building																
17-167-0014	Springfield Illinois Building																
17-179-0004	Pekin																
17-185-0001	Mount Carmel																
17-197-1002	Joliet Pershing Elementary																
17-197-1011	Braidwood																
Active Monitor	Site/Monitor Installed	Site/Monitor Removed			C = Continuous PM ₁₀ 2 = 2 nd Collocated monitor												

Monitoring Directory

AQS ID	City	CO	NOy	NO2	Ozone	PM10	PM Coarse	PM2.5 FRM	PM2.5 FEM	PM2.5 AQI	PM2.5 Speciation	SO2	VOC	Toxics	TSP Pb, Metals	Meteorological	
17-201-0118	Rockford Fire Department																
17-201-2001	Loves Park																
Active Monitor	Site/Monitor Installed	Site/Monitor Removed															

Air Quality Data Interpretation

In order to provide a uniform procedure for determining whether a sufficient amount of air quality data has been collected by a sensor in a given time period (year, quarter, month, day, etc.) to accurately represent air quality during that time period, a minimum statistical selection criteria was developed.

In order to calculate an annual average for non-continuous parameters, a minimum of 75% of the data that was scheduled to be collected must be available, i.e., 45 samples per year for an every-six-day schedule (total possible of 60 or 61 samples). Additionally, in order to have proper quarterly balance, each site on an every sixth day schedule should have at least 10 samples per calendar quarter. This provides for a 20% balance in each quarter if the minimum required annual sampling is achieved.

PM₁₀ and PM_{2.5} samplers operate on one of three sampling frequencies:

- Every-day sampling (68 samples required each quarter for 75% data capture)
- Every-third-day sampling (23 samples required each quarter for 75% data capture)
- Every-six-day sampling (12 samples required each quarter for 75% data capture).

To calculate an annual PM₁₀ or PM_{2.5} mean, arithmetic means are calculated for each quarter in which valid data is recorded in at least 75% of the possible sampling periods. The annual mean is then the arithmetic average of the four quarterly means.

To determine an annual average for continuous data 75% of the total possible yearly observations are necessary, i.e., a minimum of 6570 hours (75% of the hours available) are needed. In order to provide a balance between the respective quarters, each quarter should have at least 1300 hours which is 20% of the 75% minimum annual requirement. To calculate

quarterly averages at sites which do not meet the annual criteria, 75% of the total possible observations in a quarter are needed, i.e., a minimum of 1647 hours of 2200 hours available. Monthly averages also require 75% of the total possible observations in a month, i.e., 540 hours as a minimum. Additionally, for short-term running averages (24-hour, 8-hour, and 3-hour) 75% of the data during the particular time period is needed, i.e., 18 hours for a 24-hour average, six hours for an 8-hour average and three hours for a 3-hour average.

For ozone, a valid 8-hour average has at least six valid 1-hour averages within the 8-hour period. The daily maximum 8-hour ozone concentration is based on 17 consecutive moving 8-hour periods in each day, beginning with the 8-hour period from 7:00 a.m. to 3:00 p.m. and ending with the 8-hour period from 11:00 p.m. to 7:00 a.m. The daily maximum value is considered valid if 8-hour averages are available for at least 13 of the 17 consecutive moving 8-hour periods, or if the daily maximum value is greater than the level of the NAAQS. Complete sampling over a three-year period requires an average of 90% valid days with each year having at least 75% valid days.

Data listed as not meeting the minimum statistical selection criteria in this report were so noted after evaluation using the criteria above. Although short term averages (3, 8, 24 hours) have been computed for certain sites not meeting the annual criteria, these averages may not be representative of an entire year's air quality. In certain circumstances where even the 75% criteria is met, the number and/or magnitude of short-term averages may not be directly comparable from one year to the next because of seasonal distributional differences.

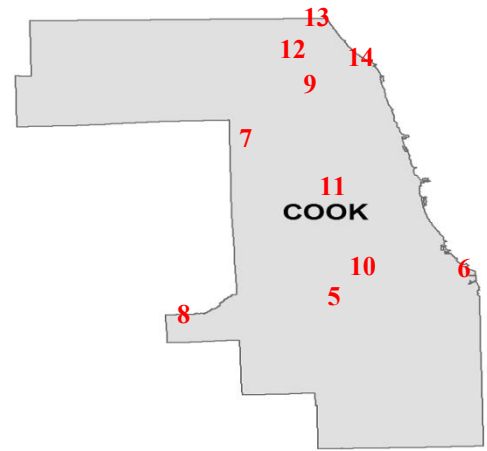
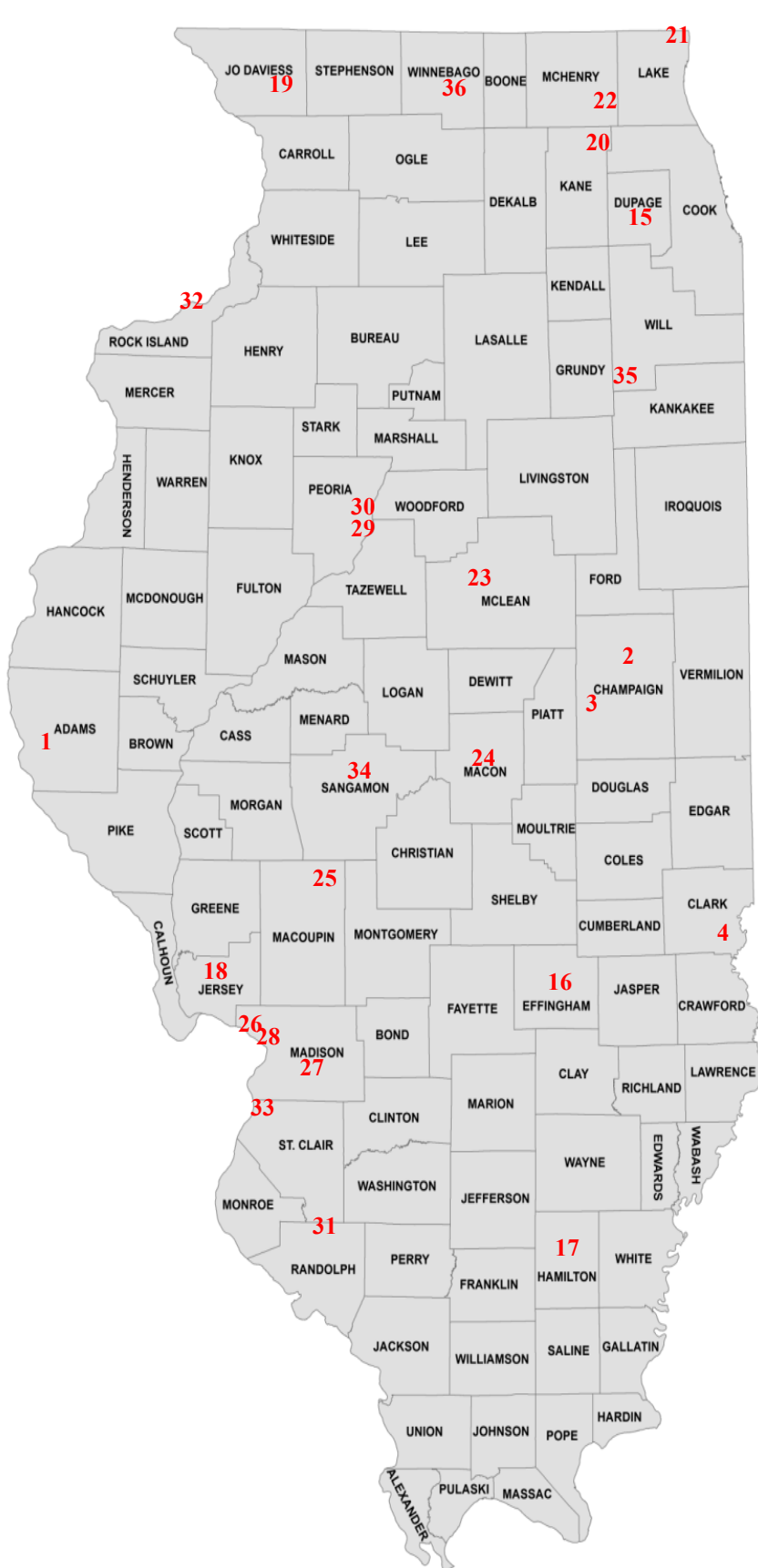
For summary purposes, the data is expressed in the number of figures to which the raw data is validated. Extra figures may be carried in the averaging technique, but the result is rounded to the appropriate number of figures. For example, the values 9, 9, and 10 are

averaged to give 9; whereas the values 9.0, 9.0, and 10.0 are averaged to 9.3. The raw data itself should not be expressed to more significant figures than the sensitivity of the monitoring methodology allows.

In comparing data to the various air quality standards, the data are implicitly rounded to the number of significant figures specified by that standard. For example, to exceed the 0.15 ug/m³ three-month lead standard, a three-month average value must be 0.155 ug/m³ or higher; to exceed the 9 ppm CO 8-hour standard, an 8-hour average must be 9.5 ppm or higher. Peak averages, though, will be expressed to the number of significant figures appropriate to that monitoring methodology.

The NAAQS for CO has a short-term standard for ambient air concentrations not to be exceeded more than once per year. SO₂ has a 1-hour standard which is the three-year average of each year's 99th percentile values. NO₂ has a 1-hour standard which is the three-year average of each year's 98th percentile values. PM₁₀ has a 24-hour standard which cannot average more than one exceedance over a three-year period (in three years). PM_{2.5} has a 24-hour standard which is a three-year average of each year's 98th percentile values. In the case of ozone, the 8-hour standard is concentration-based and as such is the average of the fourth highest value each year over a three-year period. The standards are promulgated in this manner in order to protect the public from excessive levels of pollution both in terms of acute and chronic health effects.

The following data tables detail and summarize air quality in Illinois. The tables of short-term exceedances list those sites which exceeded any of the short-term primary standards (24 hours or less). The detailed data tables list averages and peak concentrations for all monitoring sites in Illinois.



Site ID	Site Name
1.	170010007 Quincy
2.	170190007 Thomasboro
3.	170191001 Bondville
4.	170230001 West Union
5.	170310001 Alsip
6.	170310032 Chicago – South Water Filtration
7.	170313103 Schiller Park
8.	170311601 Lemont
9.	170311003 Chicago – Taft High School
10.	170310076 Chicago – Com Ed Maint. Bldg.
11.	170314002 Cicero
12.	170314007 Des Plaines
13.	170314201 Northbrook
14.	170317002 Evanston
15.	170436001 Lisle
16.	170491001 Effingham
17.	170650002 Knight Prairie
18.	170830117 Jerseyville
19.	170859991 Stockton
20.	170890005 Elgin
21.	170971007 Zion
22.	171110001 Cary
23.	171132003 Normal
24.	171150013 Decatur
25.	171170002 Nilwood
26.	171190120 Alton
27.	171190122 Maryville
28.	171193007 Wood River
29.	171430024 Peoria
30.	171431001 Peoria Heights
31.	171570001 Houston
32.	171613002 Rock Island
33.	171630010 East St. Louis
34.	171670014 Springfield
35.	171971011 Braidwood
36.	172012001 Loves Park

8-Hour Ozone Exceedances

EXCEEDANCES OF THE 8-HOUR PRIMARY STANDARD OF 0.070 PPM						
Date	City	Concentration		Date	City	Concentration
04/14/23	Chicago - SWFP	0.083		05/24/23	Decatur	0.079
04/14/23	Cicero	0.074		05/24/23	Knight Prairie	0.074
04/14/23	Des Plaines	0.076		05/24/23	Nilwood	0.079
04/14/23	Evanston	0.083		05/24/23	Normal	0.081
04/14/23	Northbrook	0.082		05/24/23	Peoria	0.086
04/14/23	Zion	0.081		05/24/23	Peoria Heights	0.086
05/11/23	Cary	0.071		05/24/23	Quincy	0.071
05/11/23	Chicago - SWFP	0.075		05/24/23	Rock Island	0.075
05/11/23	Des Plaines	0.075		05/24/23	Springfield - Illinois Bldg	0.080
05/11/23	Elgin	0.072		05/24/23	Thomasboro	0.078
05/11/23	Evanston	0.074		05/24/23	West Union	0.078
05/11/23	Northbrook	0.075		05/28/23	Springfield - Illinois Bldg	0.071
05/11/23	Zion	0.075		05/29/23	Alsip	0.074
05/22/23	Braidwood	0.071		05/29/23	Braidwood	0.075
05/22/23	Cary	0.071		05/29/23	Cary	0.074
05/22/23	Elgin	0.075		05/29/23	Des Plaines	0.073
05/22/23	Lemont	0.071		05/29/23	Elgin	0.078
05/22/23	Peoria Heights	0.072		05/29/23	Lemont	0.073
05/22/23	Stockton	0.072		05/29/23	Lisle	0.071
05/23/23	Alsip	0.080		05/29/23	Schiller Park	0.073
05/23/23	Braidwood	0.079		05/29/23	Alton	0.075
05/23/23	Cary	0.079		05/29/23	East St. Louis	0.076
05/23/23	Chicago - Com Ed	0.076		05/29/23	Houston	0.076
05/23/23	Chicago - SWFP	0.071		05/29/23	Jerseyville	0.076
05/23/23	Chicago - Taft	0.072		05/29/23	Maryville	0.075
05/23/23	Des Plaines	0.077		05/29/23	Wood River	0.074
05/23/23	Elgin	0.082		05/29/23	Bondville	0.072
05/23/23	Evanston	0.071		05/29/23	Nilwood	0.073
05/23/23	Lemont	0.079		05/29/23	Peoria	0.076
05/23/23	Lisle	0.076		05/29/23	Peoria Heights	0.075
05/23/23	Northbrook	0.071		05/29/23	Quincy	0.074
05/23/23	Bondville	0.072		05/29/23	Rock Island	0.079
05/23/23	Decatur	0.072		05/29/23	Rockford - Loves Park	0.071
05/23/23	Normal	0.073		05/29/23	Springfield - Illinois Bldg	0.073
05/23/23	Peoria	0.073		05/29/23	Stockton	0.071
05/23/23	Peoria Heights	0.075		05/30/23	Alsip	0.078
05/23/23	Rock Island	0.075		05/30/23	Braidwood	0.072
05/23/23	Rockford - Loves Park	0.074		05/30/23	Cary	0.074
05/23/23	Springfield - Illinois Bldg	0.071		05/30/23	Chicago - Com Ed	0.071
05/24/23	Braidwood	0.073		05/30/23	Chicago - SWFP	0.072
05/24/23	Alton	0.080		05/30/23	Des Plaines	0.072
05/24/23	East St. Louis	0.077		05/30/23	Elgin	0.079
05/24/23	Houston	0.077		05/30/23	Evanston	0.074
05/24/23	Jerseyville	0.082		05/30/23	Lemont	0.080
05/24/23	Maryville	0.081		05/30/23	Lisle	0.072
05/24/23	Wood River	0.077		05/30/23	Zion	0.075
05/24/23	Bondville	0.081		05/30/23	Alton	0.076

8-Hour Ozone Exceedances

EXCEEDANCES OF THE 8-HOUR PRIMARY STANDARD OF 0.070 PPM					
Date	City	Concentration	Date	City	Concentration
05/30/23	East St. Louis	0.076	06/02/23	Zion	0.078
05/30/23	Houston	0.073	06/02/23	Alton	0.073
05/30/23	Jerseyville	0.078	06/02/23	Houston	0.072
05/30/23	Maryville	0.076	06/02/23	Jerseyville	0.075
05/30/23	Wood River	0.074	06/02/23	Maryville	0.075
05/30/23	Decatur	0.075	06/02/23	Wood River	0.073
05/30/23	Effingham	0.078	06/02/23	Bondville	0.077
05/30/23	Knight Prairie	0.073	06/02/23	Decatur	0.079
05/30/23	Normal	0.071	06/02/23	Effingham	0.076
05/30/23	Peoria	0.076	06/02/23	Knight Prairie	0.072
05/30/23	Peoria Heights	0.077	06/02/23	Nilwood	0.075
05/30/23	Quincy	0.076	06/02/23	Normal	0.080
05/30/23	Rock Island	0.077	06/02/23	Peoria	0.080
05/30/23	Rockford - Loves Park	0.080	06/02/23	Peoria Heights	0.080
05/30/23	Springfield - Illinois Bldg	0.075	06/02/23	Rockford - Loves Park	0.080
05/30/23	Stockton	0.074	06/02/23	Springfield - Illinois Bldg	0.077
05/31/23	Alton	0.074	06/02/23	Thomasboro	0.075
05/31/23	Jerseyville	0.084	06/02/23	West Union	0.081
05/31/23	Wood River	0.072	06/03/23	Alsip	0.078
05/31/23	Decatur	0.074	06/03/23	Braidwood	0.080
05/31/23	Nilwood	0.071	06/03/23	Cary	0.073
05/31/23	Peoria	0.075	06/03/23	Chicago - Com Ed	0.075
05/31/23	Peoria Heights	0.075	06/03/23	Chicago - Taft	0.071
05/31/23	Springfield - Illinois Bldg	0.073	06/03/23	Cicero	0.074
05/31/23	Stockton	0.076	06/03/23	Des Plaines	0.074
06/01/23	Cary	0.079	06/03/23	Elgin	0.076
06/01/23	Chicago - Com Ed	0.072	06/03/23	Lemont	0.081
06/01/23	Chicago - Taft	0.073	06/03/23	Lisle	0.072
06/01/23	Cicero	0.073	06/03/23	Schiller Park	0.073
06/01/23	Des Plaines	0.078	06/03/23	Alton	0.082
06/01/23	Elgin	0.071	06/03/23	East St. Louis	0.084
06/01/23	Evanston	0.072	06/03/23	Houston	0.087
06/01/23	Zion	0.073	06/03/23	Jerseyville	0.084
06/01/23	Rockford - Loves Park	0.071	06/03/23	Maryville	0.083
06/02/23	Alsip	0.085	06/03/23	Wood River	0.081
06/02/23	Braidwood	0.086	06/03/23	Bondville	0.079
06/02/23	Cary	0.083	06/03/23	Decatur	0.082
06/02/23	Chicago - Com Ed	0.083	06/03/23	Effingham	0.076
06/02/23	Chicago - SWFP	0.073	06/03/23	Knight Prairie	0.077
06/02/23	Chicago - Taft	0.077	06/03/23	Nilwood	0.079
06/02/23	Cicero	0.079	06/03/23	Normal	0.078
06/02/23	Des Plaines	0.082	06/03/23	Peoria	0.083
06/02/23	Elgin	0.087	06/03/23	Peoria Heights	0.082
06/02/23	Evanston	0.076	06/03/23	Quincy	0.081
06/02/23	Lemont	0.085	06/03/23	Rock Island	0.083
06/02/23	Lisle	0.082	06/03/23	Rockford - Loves Park	0.076
06/02/23	Schiller Park	0.074	06/03/23	Springfield - Illinois Bldg	0.081

8-Hour Ozone Exceedances

EXCEEDANCES OF THE 8-HOUR PRIMARY STANDARD OF 0.070 PPM						
Date	City	Concentration		Date	City	Concentration
06/03/23	Stockton	0.077		06/10/23	Houston	0.082
06/03/23	Thomasboro	0.076		06/10/23	Jerseyville	0.083
06/03/23	West Union	0.075		06/10/23	Maryville	0.078
06/04/23	Decatur	0.072		06/10/23	Wood River	0.078
06/04/23	Peoria	0.074		06/10/23	Bondville	0.077
06/04/23	Peoria Heights	0.073		06/10/23	Decatur	0.079
06/04/23	Rock Island	0.077		06/10/23	Effingham	0.079
06/04/23	Springfield - Illinois Bldg	0.072		06/10/23	Knight Prairie	0.075
06/05/23	Effingham	0.071		06/10/23	Nilwood	0.074
06/05/23	Rock Island	0.074		06/10/23	Normal	0.077
06/06/23	Alton	0.079		06/10/23	Peoria	0.077
06/06/23	East St. Louis	0.093		06/10/23	Peoria Heights	0.079
06/06/23	Houston	0.088		06/10/23	Rock Island	0.076
06/06/23	Jerseyville	0.076		06/10/23	Rockford - Loves Park	0.072
06/06/23	Maryville	0.086		06/10/23	Springfield - Illinois Bldg	0.079
06/06/23	Wood River	0.081		06/10/23	Thomasboro	0.072
06/06/23	Bondville	0.075		06/14/23	East St. Louis	0.077
06/06/23	Decatur	0.079		06/14/23	Houston	0.079
06/06/23	Effingham	0.082		06/14/23	Jerseyville	0.072
06/06/23	Knight Prairie	0.081		06/14/23	Maryville	0.074
06/06/23	Nilwood	0.076		06/14/23	Wood River	0.074
06/06/23	Normal	0.073		06/14/23	Knight Prairie	0.071
06/06/23	Peoria	0.079		06/14/23	Quincy	0.072
06/06/23	Peoria Heights	0.079		06/15/23	Alton	0.073
06/06/23	Quincy	0.080		06/15/23	East St. Louis	0.076
06/06/23	Rock Island	0.075		06/15/23	Houston	0.080
06/06/23	Springfield - Illinois Bldg	0.075		06/15/23	Jerseyville	0.072
06/06/23	West Union	0.076		06/15/23	Maryville	0.078
06/09/23	East St. Louis	0.074		06/15/23	Wood River	0.074
06/09/23	Houston	0.075		06/15/23	Bondville	0.072
06/09/23	Jerseyville	0.071		06/15/23	Decatur	0.071
06/09/23	Maryville	0.073		06/15/23	Effingham	0.073
06/09/23	Wood River	0.071		06/15/23	Knight Prairie	0.074
06/10/23	Alsip	0.072		06/15/23	Peoria	0.074
06/10/23	Braidwood	0.074		06/15/23	Peoria Heights	0.075
06/10/23	Cary	0.071		06/15/23	Quincy	0.073
06/10/23	Chicago - Com Ed	0.071		06/15/23	Springfield - Illinois Bldg	0.073
06/10/23	Chicago - SWFP	0.084		06/17/23	Elgin	0.076
06/10/23	Cicero	0.073		06/17/23	Lemont	0.073
06/10/23	Des Plaines	0.077		06/17/23	Lisle	0.072
06/10/23	Elgin	0.073		06/17/23	Alton	0.074
06/10/23	Evanston	0.086		06/17/23	East St. Louis	0.072
06/10/23	Lemont	0.071		06/17/23	Houston	0.074
06/10/23	Northbrook	0.086		06/17/23	Jerseyville	0.073
06/10/23	Zion	0.084		06/17/23	Maryville	0.075
06/10/23	Alton	0.078		06/17/23	Wood River	0.073
06/10/23	East St. Louis	0.077		06/17/23	Effingham	0.071

8-Hour Ozone Exceedances

EXCEEDANCES OF THE 8-HOUR PRIMARY STANDARD OF 0.070 PPM						
Date	City	Concentration		Date	City	Concentration
06/18/23	Alsip	0.081		06/20/23	Nilwood	0.073
06/18/23	Cary	0.079		06/20/23	Normal	0.074
06/18/23	Chicago - Com Ed	0.079		06/20/23	Peoria	0.080
06/18/23	Chicago - SWFP	0.078		06/20/23	Peoria Heights	0.079
06/18/23	Chicago - Taft	0.072		06/20/23	Quincy	0.077
06/18/23	Cicero	0.080		06/20/23	Rock Island	0.083
06/18/23	Des Plaines	0.083		06/20/23	Rockford - Loves Park	0.073
06/18/23	Elgin	0.078		06/20/23	Springfield - Illinois Bldg	0.074
06/18/23	Evanston	0.075		06/20/23	Stockton	0.076
06/18/23	Lemont	0.074		06/21/23	Alsip	0.080
06/18/23	Lisle	0.072		06/21/23	Braidwood	0.074
06/18/23	Northbrook	0.081		06/21/23	Cary	0.072
06/18/23	Schiller Park	0.081		06/21/23	Chicago - SWFP	0.076
06/18/23	Zion	0.077		06/21/23	Cicero	0.075
06/18/23	Peoria	0.073		06/21/23	Des Plaines	0.073
06/18/23	Peoria Heights	0.074		06/21/23	Elgin	0.076
06/18/23	Rockford - Loves Park	0.073		06/21/23	Evanston	0.073
06/19/23	Alsip	0.081		06/21/23	Lemont	0.079
06/19/23	Braidwood	0.078		06/21/23	Lisle	0.078
06/19/23	Cary	0.079		06/21/23	Northbrook	0.076
06/19/23	Chicago - Com Ed	0.077		06/21/23	Schiller Park	0.071
06/19/23	Chicago - SWFP	0.074		06/21/23	Zion	0.076
06/19/23	Chicago - Taft	0.072		06/21/23	Chicago - Com Ed	0.074
06/19/23	Cicero	0.078		06/21/23	Peoria	0.071
06/19/23	Des Plaines	0.078		06/21/23	Peoria Heights	0.071
06/19/23	Elgin	0.081		06/22/23	Alsip	0.071
06/19/23	Evanston	0.075		06/22/23	Lemont	0.071
06/19/23	Lemont	0.080		06/22/23	Northbrook	0.072
06/19/23	Northbrook	0.080		06/22/23	Peoria	0.080
06/19/23	Schiller Park	0.076		06/22/23	Peoria Heights	0.080
06/19/23	Zion	0.077		06/22/23	Quincy	0.071
06/19/23	Peoria	0.075		06/22/23	Rock Island	0.073
06/19/23	Peoria Heights	0.074		06/22/23	Springfield - Illinois Bldg	0.071
06/19/23	Quincy	0.075		06/23/23	Braidwood	0.082
06/19/23	Rock Island	0.084		06/23/23	Chicago - SWFP	0.074
06/19/23	Rockford - Loves Park	0.080		06/23/23	Elgin	0.073
06/19/23	Stockton	0.079		06/23/23	Evanston	0.071
06/20/23	Braidwood	0.075		06/23/23	Lisle	0.071
06/20/23	Elgin	0.072		06/23/23	Northbrook	0.072
06/20/23	Lemont	0.073		06/23/23	Alton	0.071
06/20/23	Alton	0.074		06/23/23	East St. Louis	0.073
06/20/23	East St. Louis	0.072		06/23/23	Jerseyville	0.073
06/20/23	Houston	0.073		06/23/23	Maryville	0.074
06/20/23	Jerseyville	0.076		06/23/23	Wood River	0.072
06/20/23	Maryville	0.075		06/23/23	Decatur	0.071
06/20/23	Wood River	0.074		06/23/23	Nilwood	0.074
06/20/23	Decatur	0.071		06/23/23	Peoria	0.072

8-Hour Ozone Exceedances

EXCEEDANCES OF THE 8-HOUR PRIMARY STANDARD OF 0.070 PPM						
Date	City	Concentration		Date	City	Concentration
06/23/23	Peoria Heights	0.072		06/28/23	Des Plaines	0.082
06/23/23	Quincy	0.076		06/28/23	Elgin	0.084
06/23/23	Rock Island	0.079		06/28/23	Evanston	0.078
06/23/23	Springfield - Illinois Bldg	0.075		06/28/23	Lemont	0.080
06/24/23	Alsip	0.082		06/28/23	Lisle	0.082
06/24/23	Braidwood	0.071		06/28/23	Northbrook	0.089
06/24/23	Cary	0.086		06/28/23	Zion	0.077
06/24/23	Chicago - Com Ed	0.078		06/28/23	Alton	0.071
06/24/23	Chicago - Taft	0.073		06/28/23	Jerseyville	0.072
06/24/23	Cicero	0.078		06/28/23	Maryville	0.073
06/24/23	Des Plaines	0.083		06/28/23	Wood River	0.071
06/24/23	Elgin	0.082		06/28/23	Decatur	0.081
06/24/23	Lemont	0.083		06/28/23	Effingham	0.081
06/24/23	Lisle	0.086		06/28/23	Nilwood	0.075
06/24/23	Northbrook	0.076		06/28/23	Normal	0.076
06/24/23	Schiller Park	0.081		06/28/23	Peoria	0.078
06/24/23	Zion	0.073		06/28/23	Peoria Heights	0.081
06/24/23	Alton	0.071		06/28/23	Quincy	0.072
06/24/23	Jerseyville	0.072		06/28/23	Rock Island	0.078
06/24/23	Wood River	0.072		06/28/23	Rockford - Loves Park	0.086
06/24/23	Bondville	0.078		06/28/23	Springfield - Illinois Bldg	0.077
06/24/23	Decatur	0.077		06/28/23	Stockton	0.087
06/24/23	Effingham	0.077		06/28/23	Thomasboro	0.075
06/24/23	Normal	0.075		06/29/23	Cary	0.076
06/24/23	Peoria	0.078		06/29/23	Elgin	0.072
06/24/23	Peoria Heights	0.080		06/29/23	Northbrook	0.072
06/24/23	Rock Island	0.071		06/29/23	Zion	0.075
06/24/23	Rockford - Loves Park	0.075		06/29/23	Rockford - Loves Park	0.079
06/24/23	Springfield - Illinois Bldg	0.074		06/30/23	Cicero	0.071
06/24/23	Stockton	0.073		06/30/23	East St. Louis	0.075
06/24/23	Thomasboro	0.074		06/30/23	Knight Prairie	0.072
06/24/23	West Union	0.071		07/01/23	Cicero	0.071
06/27/23	Braidwood	0.080		07/04/23	Chicago - SWFP	0.079
06/27/23	Lemont	0.076		07/04/23	Evanston	0.075
06/27/23	Lisle	0.073		07/04/23	Northbrook	0.071
06/27/23	Normal	0.071		07/23/23	Chicago - SWFP	0.075
06/27/23	Peoria	0.074		07/24/23	Lemont	0.072
06/27/23	Peoria Heights	0.071		07/25/23	Alsip	0.084
06/27/23	Rock Island	0.077		07/25/23	Cary	0.084
06/27/23	Rockford - Loves Park	0.076		07/25/23	Chicago - Com Ed	0.083
06/28/23	Alsip	0.080		07/25/23	Chicago - SWFP	0.089
06/28/23	Braidwood	0.076		07/25/23	Chicago - Taft	0.087
06/28/23	Cary	0.090		07/25/23	Cicero	0.085
06/28/23	Chicago - Com Ed	0.080		07/25/23	Des Plaines	0.093
06/28/23	Chicago - SWFP	0.079		07/25/23	Elgin	0.086
06/28/23	Chicago - Taft	0.071		07/25/23	Evanston	0.092
06/28/23	Cicero	0.081		07/25/23	Lemont	0.078

Ozone Highs

AQS ID	City	Number Of Days 8-Hour Greater Than 0.070 ppm			Fourth Highest Samples 1-Hour (ppm)				Fourth Highest Samples 8-Hour (ppm)			
		2023	2022	2021								
17-001-0007	Quincy	12	0	0	0.084	0.083	0.082	0.080	0.081	0.080	0.077	0.076
17-019-0007	Thomasboro	6	1	0	0.085	0.084	0.080	0.080	0.078	0.076	0.075	0.075
17-019-1001	Bondville	9	1	0	0.087	0.083	0.082	0.082	0.081	0.079	0.078	0.077
17-023-0001	West Union	5	1	0	0.092	0.081	0.080	0.079	0.081	0.078	0.076	0.075
17-031-0001	Alsip	14	4	2	0.093	0.092	0.091	0.089	0.085	0.084	0.083	0.082
17-031-0032	Chicago South Water Filtration	15	4	10	0.100	0.089	0.088	0.087	0.089	0.084	0.083	0.083
17-031-0076	Chicago Com Ed Maintenance	13	4	3	0.103	0.095	0.090	0.090	0.090	0.083	0.083	0.080
17-031-1003	Chicago Taft High School	11	3	2	0.103	0.093	0.086	0.086	0.090	0.087	0.077	0.073
17-031-1601	Lemont	21	4	4	0.109	0.093	0.092	0.091	0.085	0.083	0.083	0.081
17-031-3103	Schiller Park	10	1	0	0.100	0.100	0.095	0.089	0.084	0.082	0.081	0.081
17-031-4002	Cicero Cook County Trailer	14	3	2	0.100	0.099	0.092	0.091	0.085	0.085	0.081	0.080
17-031-4007	Des Plaines	16	3	2	0.109	0.108	0.100	0.097	0.093	0.086	0.083	0.083
17-031-4201	Northbrook	17	3	8	0.107	0.105	0.102	0.093	0.099	0.092	0.089	0.086
17-031-7002	Evanston	15	4	11	0.103	0.095	0.089	0.087	0.092	0.086	0.083	0.081
17-043-6001	Lisle	15	1	2	0.105	0.097	0.091	0.090	0.088	0.088	0.086	0.082
17-049-1001	Effingham	10	0	0	0.087	0.085	0.083	0.082	0.082	0.081	0.079	0.078
17-065-0002	Knight Prairie	9	0	1	0.083	0.080	0.079	0.078	0.081	0.077	0.075	0.074
17-083-0117	Jerseyville	16	5	2	0.094	0.088	0.087	0.087	0.084	0.084	0.083	0.082
17-085-9991	Stockton	9	0	0	0.092	0.083	0.080	0.080	0.087	0.079	0.077	0.076
17-089-0005	Elgin Larsen Jr. High School	21	3	0	0.119	0.093	0.092	0.090	0.095	0.087	0.086	0.084
17-097-1007	Zion	14	3	9	0.113	0.095	0.092	0.091	0.097	0.085	0.084	0.081
17-111-0001	Cary	18	3	2	0.112	0.103	0.102	0.097	0.090	0.086	0.086	0.084
17-113-2003	Normal	11	2	0	0.085	0.084	0.083	0.083	0.081	0.080	0.078	0.077
17-115-0013	Decatur IEPA Trailer	14	2	0	0.087	0.085	0.085	0.084	0.082	0.081	0.079	0.079
17-117-0002	Nilwood	10	2	0	0.085	0.083	0.081	0.080	0.079	0.079	0.076	0.075

Ozone Highs

AQS ID	City	Number Of Days 8-Hour Greater Than 0.070 ppm			Fourth Highest Samples 1-Hour (ppm)				Fourth Highest Samples 8-Hour (ppm)			
		2023	2022	2021								
17-119-0120	Alton	14	6	3	0.086	0.086	0.084	0.083	0.082	0.080	0.079	0.078
17-119-0122	Maryville	14	1	3	0.090	0.089	0.084	0.083	0.086	0.083	0.081	0.078
17-119-3007	Wood River	16	6	2	0.086	0.085	0.085	0.084	0.081	0.081	0.078	0.077
17-119-9991	Highland	-	3	0	-	-	-	-	-	-	-	-
17-143-0024	Peoria Fire Station #8	20	0	1	0.093	0.090	0.088	0.086	0.086	0.083	0.080	0.080
17-143-1001	Peoria Heights	21	0	0	0.094	0.088	0.088	0.086	0.086	0.082	0.081	0.080
17-157-0001	Houston	12	2	1	0.094	0.092	0.087	0.086	0.088	0.087	0.082	0.080
17-161-3002	Rock Island	16	0	2	0.093	0.089	0.087	0.087	0.084	0.083	0.083	0.079
17-163-0010	East St. Louis	13	1	2	0.099	0.092	0.090	0.082	0.093	0.084	0.077	0.077
17-167-0014	Springfield	17	3	0	0.085	0.085	0.083	0.083	0.081	0.080	0.079	0.077
17-197-1011	Braidwood	15	2	2	0.099	0.093	0.092	0.088	0.086	0.082	0.080	0.080
17-201-2001	Loves Park	15	0	0	0.092	0.091	0.088	0.087	0.086	0.080	0.080	0.080
Statewide Average					0.095	0.090	0.087	0.086	0.086	0.082	0.080	0.079
Total Over 0.070 ppm		498	81	76								
Total Days Over 0.070 ppm		42	16	23								

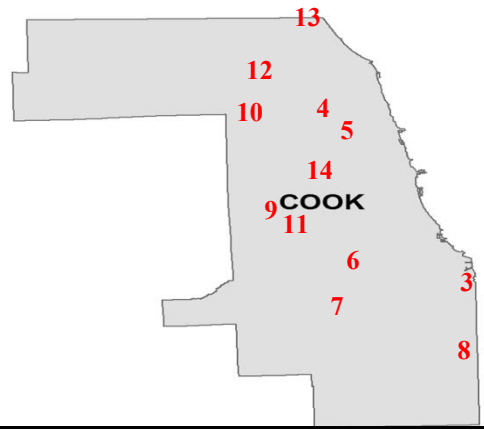
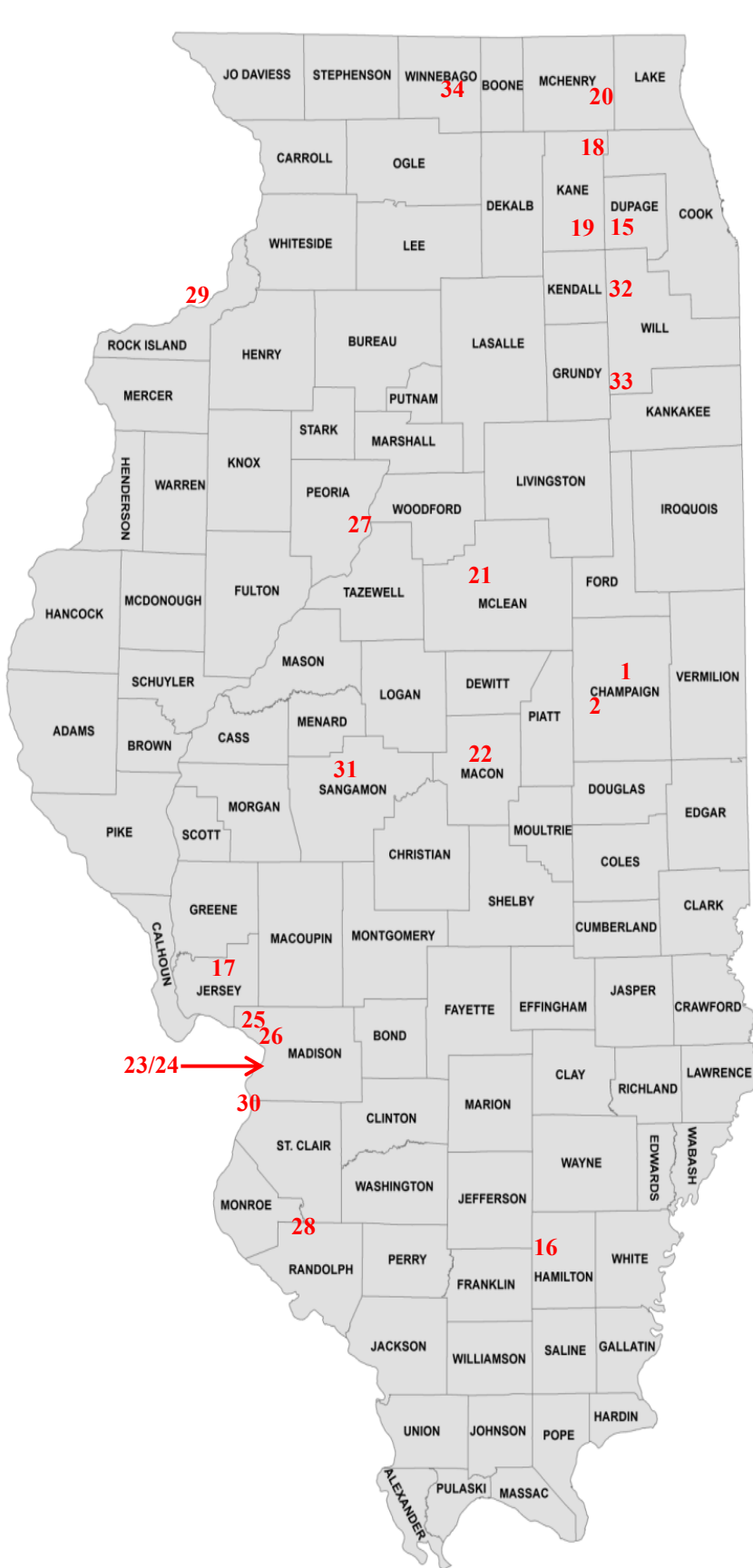
Ozone Design Values

AQS ID	City	Fourth High 8-Hour Concentrations (ppm)					Design Values* (ppm)		
		2023	2022	2021	2020	2019	2021-2023	2020-2022	2019-2021
17-001-0007	Quincy	0.076	0.056	0.064	0.064	0.062	0.065	0.061	0.063
17-019-0007	Thomasboro	0.075	0.064	0.064	0.069	0.062	0.067	0.065	0.065
17-019-1001	Bondville	0.077	0.068	0.060	0.062	0.058	0.068	0.063	0.060
17-023-0001	West Union	0.075	0.062	0.062	0.060	0.060	0.066	0.061	0.060
17-031-0001	Alsip	0.082	0.073	0.068	0.076	0.070	0.074	0.072	0.071
17-031-0032	Chicago South Water Filtration	0.083	0.072	0.077	0.077	0.071	0.077	0.075	0.075
17-031-0076	Chicago Com Ed Maintenance	0.080	0.074	0.070	0.068	0.065	0.074	0.070	0.067
17-031-1003	Chicago Taft High School	0.073	0.070	0.068	0.077	0.069	0.070	0.071	0.071
17-031-1601	Lemont	0.081	0.071	0.072	0.078	0.068	0.074	0.073	0.072
17-031-3103	Schiller Park	0.081	0.062	0.060	0.068	0.064	0.067	0.063	0.064
17-031-4002	Cicero Cook County Trailer	0.080	0.068	0.067	0.079	0.064	0.071	0.071	0.070
17-031-4007	Des Plaines	0.083	0.070	0.069	0.072	0.066	0.074	0.070	0.069
17-031-4201	Northbrook	0.086	0.070	0.075	0.079	0.069	0.077	0.074	0.074
17-031-7002	Evanston	0.081	0.071	0.078	0.074	0.069	0.076	0.074	0.073
17-043-6001	Lisle	0.082	0.068	0.069	0.073	0.070	0.073	0.070	0.070
17-049-1001	Effingham	0.078	0.067	0.060	0.062	0.063	0.068	0.063	0.061
17-065-0002	Knight Prairie	0.074	0.064	0.066	0.067	0.064	0.068	0.065	0.065
17-083-0117	Jerseyville	0.082	0.072	0.065	0.062	0.069	0.073	0.066	0.065
17-085-9991	Stockton	0.076	0.059	0.064	0.063	0.059	0.066	0.062	0.062
17-089-0005	Elgin Larsen Jr. High School	0.084	0.070	0.068	0.073	0.071	0.074	0.070	0.070
17-097-1007	Zion	0.081	0.070	0.077	0.076	0.066	0.076	0.074	0.073
17-111-0001	Cary	0.084	0.070	0.069	0.076	0.070	0.074	0.071	0.071
17-113-2003	Normal	0.077	0.069	0.062	0.070	0.063	0.069	0.067	0.065
17-115-0013	Decatur Illinois EPA Trailer	0.079	0.065	0.064	0.065	0.063	0.069	0.064	0.064
17-117-0002	Nilwood	0.075	0.062	0.062	0.063	0.063	0.066	0.062	0.062

Ozone Design Values

AQS ID	City	Fourth High 8-Hour Concentrations (ppm)					Design Values* (ppm)		
		2023	2022	2021	2020	2019	2021-2023	2020-2022	2019-2021
17-119-0120	Alton	0.078	0.076	0.070	0.069	0.067	0.074	0.071	0.068
17-119-0122	Maryville	0.078	0.067	0.070	0.067	0.064	0.071	0.068	0.067
17-119-3007	Wood River	0.077	0.072	0.070	0.069	0.070	0.073	0.070	0.069
17-119-9991	Highland	-	0.070	0.067	0.066	0.062	-	0.067	0.064
17-143-0024	Peoria Fire Station #8	0.080	0.059	0.064	0.064	0.062	0.067	0.062	0.063
17-143-1001	Peoria Heights	0.080	0.065	0.062	0.070	0.064	0.069	0.065	0.065
17-157-0001	Houston	0.080	0.068	0.065	0.061	0.060	0.071	0.064	0.062
17-161-3002	Rock Island	0.079	0.061	0.066	0.063	0.066	0.068	0.063	0.065
17-163-0010	East St. Louis	0.077	0.067	0.066	0.065	0.064	0.070	0.066	0.065
17-167-0014	Springfield State Fairgrounds	0.077	0.064	0.057	0.067	0.062	0.066	0.062	0.062
17-197-1011	Braidwood	0.080	0.064	0.065	0.067	0.060	0.069	0.065	0.064
17-201-2001	Loves Park	0.080	0.066	0.067	0.067	0.066	0.071	0.066	0.066
Statewide Average		0.079	0.067	0.067	0.069	0.065	0.071	0.067	0.067

*The design value is the three-year average of the fourth high concentration. Design value greater than 0.070 ppm is a violation of the National Ambient Air Quality Standard.



Site ID	Site Name
1.	170190006 Champaign
2.	170191001 Bondville
3.	170310022 Chicago – Washington High School
4.	170310052 Chicago – Mayfair Pump Station
5.	170310057 Chicago – Springfield Pump Station
6.	170310076 Chicago – Com Ed Maint. Bldg.
7.	170310001 Alsip
8.	170310119 Lansing – Kingery near-road
9.	170311016 Lyons Township
10.	170313103 Schiller Park
11.	170313301 Summit
12.	170314007 Des Plaines
13.	170314201 Northbrook
14.	170316005 Cicero
15.	170434002 Naperville
16.	170650002 Knight Prairie
17.	170831001 Jerseyville
18.	170890003 Elgin
19.	170890007 Aurora
20.	171110001 Cary
21.	171132003 Normal
22.	171150013 Decatur
23.	171190024 Granite City – Gateway Medical
24.	171191007 Granite City – 23 rd and Madison
25.	171190120 Alton
26.	171193007 Wood River
27.	171430037 Peoria
28.	171570001 Houston
29.	171613002 Rock Island
30.	171630010 East St. Louis
31.	171670012 Springfield
32.	171971002 Joliet
33.	171971011 Braidwood
34.	172010118 Rockford

PM_{2.5} 24-Hour Exceedances

EXCEEDANCES OF THE 24-HOUR PRIMARY STANDARD OF 35 ug/m3		
Date	Location	Concentration (ug/m3)
06/06/23	Knight Prairie	47.1
06/15/23	Rock Island	48.4
06/23/23	Normal	39.3
	Rockford	39.0
06/26/23	Naperville	35.8
06/27/23	Braidwood	118.4
	Cary	152.9
	Des Plaines	146.2
	Joliet	144.8
	Kingery Near-Road	135.4
	Naperville	157.2
	Northbrook	130.8
	Schiller Park	118.2
	Jerseyville	51.8
	Bondville	94.3
	Decatur	91.7
	Normal	115.4
	Rock Island	120.1
	Rockford	138.0
	Springfield - Ag Bldg	67.5
06/28/23	Braidwood	158.6
	Cary	118.2
	Des Plaines	136.3
	Elgin	59.4
	Joliet	169.3
	Kingery Near-Road	117.6
	Naperville	151.0
	Northbrook	136.5
	Schiller Park	102.4
	East St. Louis	66.5
	Houston	38.9
	Jerseyville	76.4
	Bondville	200.4
	Decatur	210.5
	Knight Prairie	63.5
	Normal	213.1
	Rock Island	155.4
	Rockford	166.1
	Springfield - Ag Bldg	171.1
06/29/23	Alsip	46.5
	Aurora	54.5
	Braidwood	47.7
	Cary	78.3
	Chicago - Com Ed	47.8
	Chicago - Springfield Pump	54.3
	Chicago - Summit	48.3

PM_{2.5} 24-Hour Exceedances

EXCEEDANCES OF THE 24-HOUR PRIMARY STANDARD OF 35 ug/m3		
Date	Location	Concentration (ug/m3)
	Chicago - Washington	45.7
	Cicero - Liberty	53.2
	Des Plaines	64.2
	Elgin	65.9
	Joliet	59.1
	Kingery Near-Road	50.9
	McCook	50.7
	Naperville	65.4
	Northbrook	68.1
	Schiller Park	53.0
	Rock Island	77.2
	Rockford	112.2
07/16/23	Braidwood	57.9
	Cary	39.1
	Des Plaines	44.4
	Joliet	56.8
	Kingery Near-Road	54.7
	Northbrook	41.3
	Schiller Park	47.2
	Jerseyville	36.0
	Bondville	53.4
	Decatur	52.7
	Knight Prairie	35.7
	Normal	74.5
	Rock Island	59.9
	Rockford	42.2
	Springfield - Ag Bldg	47.4
07/24/23	Cary	38.7
	Joliet	36.3
	Schiller Park	40.5
	Rockford	37.2
07/25/23	Cary	44.3
	Des Plaines	50.1
	Joliet	46.5
	Kingery Near-Road	53.1
	Northbrook	48.3
	Schiller Park	54.7
	Rockford	43.3
Total Over 35 ug/m3	84	
Total Days Over 35 ug/m3	10	

PM_{2.5} Highs

AQS ID	City	Total Samples	Samples Greater Than 35 ug/m3			Highest Samples 2023							
			2023	2022	2021	1st	2nd	3rd	4th	5th	6th	7th	8th
17-019-0006	Champaign	120	0	0	0	28.6	25.8	22.1	18.3	18.2	18.1	17.3	15.5
17-019-1001	Bondville	363	3	0	0	200.4	94.3	53.4	28.5	27.2	24.8	23.9	22.4
17-031-0001	Alsip	59	1	0	0	46.5	26.0	22.7	22.5	19.3	18.8	18.4	18.2
17-031-0022	Chicago Washington High School	121	1	0	0	45.7	30.5	22.8	22.6	20.0	19.3	19.2	18.6
17-031-0052	Chicago Mayfair Pump Station	115	0	0	0	29.0	23.8	22.0	20.5	20.0	19.0	18.9	18.8
17-031-0057	Chicago Springfield Pump Station	60	1	0	0	54.3	24.9	22.9	19.4	18.5	17.4	16.1	16.0
17-031-0076	Chicago Com Ed Maintenance	60	1	0	0	47.8	24.8	23.7	19.5	19.0	18.5	18.0	16.1
17-031-0119	Lansing Kingery near-road #1	365	5	0	0	135.4	117.6	54.7	53.1	50.9	34.8	32.2	30.3
17-031-1016	Lyons Township	118	1	0	0	50.7	28.9	24.6	24.2	22.9	20.2	19.6	19.3
17-031-3103	Schiller Park	360	6	0	1	118.2	102.4	54.7	53.0	47.2	40.5	28.1	26.1
17-031-3301	Summit	119	1	0	0	48.3	24.8	23.5	22.8	21.1	20.5	19.4	19.0
17-031-4007	Des Plaines	357	5	0	1	146.2	136.3	64.2	50.1	44.4	33.6	33.3	30.7
17-031-4201	Northbrook	365	5	0	1	136.5	130.8	68.1	48.3	41.3	34.6	30.8	29.0
17-031-6005	Cicero Liberty School	54	1	0	0	53.2	24.0	23.0	22.2	21.9	19.0	16.7	16.4
17-043-4002	Naperville	351	4	0	0	157.2	151.0	65.4	35.8	33.0	29.6	27.5	26.9
17-065-0002	Knight Prairie	365	3	0	1	63.5	47.1	35.7	27.6	26.9	23.6	23.4	23.1
17-083-0117	Jerseyville	365	3	0	0	76.4	51.8	36.0	24.7	23.5	23.5	22.6	21.6
17-089-0003	Elgin McKinley School	118	2	0	1	65.9	59.4	26.0	23.0	21.7	19.5	19.1	18.9
17-089-0007	Aurora	120	1	0	0	54.5	28.5	25.9	24.1	23.3	19.0	17.9	17.7
17-111-0001	Cary	365	6	0	0	152.9	118.2	78.3	44.3	39.1	38.7	33.1	29.4
17-113-2003	Normal	365	4	0	1	213.1	115.4	74.5	39.3	33.9	33.6	29.5	27.3
17-115-0013	Decatur Illinois EPA Trailer	365	3	0	3	210.5	91.7	52.7	30.7	30.5	28.2	25.1	24.9
17-119-0024	Granite City Gateway Medical Center	103	0	0	0	31.1	24.7	22.0	21.9	20.6	18.5	18.5	17.2
17-119-1007	Granite City Fire Station #1	60	0	0	0	23.0	22.2	17.4	17.1	17.0	15.9	15.4	15.4
17-119-0120	Alton Horace Mann	107	0	0	0	22.1	20.8	20.3	18.5	17.8	17.1	17.1	17.0
17-119-3007	Wood River	179	0	0	0	23.8	19.9	19.6	19.3	18.2	17.2	16.8	16.5
17-143-0037	Peoria	224	0	0	0	29.6	21.9	20.8	20.6	19.8	19.5	18.6	18.4

PM_{2.5} Highs

AQS ID	City	Total Samples	Samples Greater Than 35 ug/m3			Highest Samples 2023							
			2023	2022	2021	1st	2nd	3rd	4th	5th	6th	7th	8th
17-157-0001	Houston	357	1	0	0	38.9	28.3	26.5	23.7	22.6	21.9	21.8	21.5
17-161-3002	Rock Island	365	5	0	1	155.4	120.1	77.2	59.9	48.4	35.1	29.4	27.7
17-163-0010	East St. Louis	360	1	0	0	66.5	34.6	33.2	31.9	29.8	25.6	24.9	24.8
17-167-0012	Springfield Agricultural Building	364	3	1	0	171.1	67.5	47.4	26.5	23.7	23.0	22.7	22.1
17-197-1002	Joliet Pershing Elementary	361	6	0	0	169.3	144.8	59.1	56.8	46.5	36.3	33.4	31.2
17-197-1011	Braidwood	365	4	0	0	158.6	118.4	57.9	47.7	30.5	28.3	28.1	27.8
17-201-0118	Rockford Fire Dept.	365	7	0	0	166.1	138.0	112.2	43.3	42.2	39.0	37.2	34.2
Total Over 35 ug/m3			84	1	10								
Total Days Over 35 ug/m3			10	1	6								

PM_{2.5} 24-Hour Design Values

AQS ID	City	98th Percentile Concentrations (ug/m3)					Design Values* (ug/m3)		
		2023	2022	2021	2020	2019	2021-2023	2020-2022	2019-2021
17-019-0006	Champaign	22.1	15.9	21.0	17.3	19.8	20	18	19
17-019-1001	Bondville	22.4	16.1	19.7	16.1	18.7	19	17	18
17-031-0001	Alsip	26.0	23.7	19.1	14.9	16.0	23	19	17
17-031-0022	Chicago Washington High School	22.8	23.1	21.5	22.3	24.8	22	22	23
17-031-0052	Chicago Mayfair Pump Station	22.0	23.2	22.0	24.0	24.7	22	23	24
17-031-0057	Chicago Springfield Pump Station	24.9	28.3	20.0	22.4	18.6	24	24	20
17-031-0076	Chicago Com Ed Maintenance	24.8	22.3	19.3	14.5	24.9	22	19	20
17-031-0119	Lansing Kingery near-road #1	30.3	20.8	22.5	23.1	21.6	25	22	22
17-031-1016	Lyons Township	24.6	29.5	24.4	19.4	25.8	26	24	23
17-031-3103	Schiller Park	26.1	22.5	22.8	20.0	26.3	24	22	23
17-031-3301	Summit	23.5	23.3	20.7	21.4	19.3	23	22	20
17-031-4007	Des Plaines	30.7	18.5	25.9	18.0	29.0	25	21	24
17-031-4201	Northbrook	29.0	17.8	20.7	15.0	20.7	23	18	19
17-031-6005	Cicero Liberty School	24.0	29.2	17.8	21.9	19.3	24	23	20
17-043-4002	Naperville	27.5	18.8	20.7	20.9	22.8	22	20	21
17-065-0002	Knight Prairie	23.1	18.3	20.1	16.9	17.3	21	18	18
17-083-0117	Jerseyville	21.6	18.3	20.4	16.9	16.9	20	19	18
17-089-0003	Elgin McKinley School	26.0	26.0	27.1	25.7	24.9	26	26	26
17-089-0007	Aurora	25.9	18.0	19.4	20.5	24.5	21	19	21
17-111-0001	Cary	29.4	19.0	26.5	17.1	18.6	25	21	21
17-113-2003	Normal	27.3	19.6	21.7	18.9	20.6	23	20	20
17-115-0013	Decatur Illinois EPA Trailer	24.9	17.6	23.6	17.6	20.4	22	20	21
17-119-0120	Alton Horace Mann	20.3	22.4	20.8	22.4	19.2	21	22	21
17-119-0024	Granite City Gateway Medical Center	22.0	21.1	23.0	23.7	25.0	22	23	24
17-119-1007	Granite City Fire Station #1	22.2	23.8	19.3	22.3	23.8	22	22	22

PM_{2.5} 24-Hour Design Values

AQS ID	City	98th Percentile Concentrations (ug/m3)					Design Values* (ug/m3)		
		2023	2022	2021	2020	2019	2021-2023	2020-2022	2019-2021
17-119-3007	Wood River	19.3	22.4	21.8	26.1	22.7	21	23	24
17-143-0037	Peoria City Office Building	19.8	23.2	22.2	19.6	19.3	22	22	20
17-157-0001	Houston	21.5	17.3	19.1	18.6	16.9	19	18	18
17-161-3002	Rock Island	27.7	21.1	23.7	17.5	20.1	24	21	20
17-163-0010	East St. Louis	24.8	21.2	23.1	22.1	22.9	23	22	23
17-167-0012	Springfield Agricultural Building	22.1	18.2	22.4	17.6	17.9	21	19	19
17-197-1002	Joliet Pershing Elementary	31.2	18.0	23.4	21.0	21.4	24	21	22
17-197-1011	Braidwood	27.8	18.3	21.3	19.1	20.6	22	20	20
17-201-0118	Rockford Fire Department	34.2	21.1	24.1	21.3	23.4	26	22	23
Statewide Average		25.1	21.1	21.8	19.9	21.4	22.6	20.9	21.0

*The design value is the three-year average of the 98th percentile concentration. Design value greater than or equal to 35.5 ug/m³ is a violation of the National Ambient Air Quality Standard.

PM_{2.5} Annual Design Values

AQS ID	City	Annual Arithmetic Mean Concentrations (ug/m3)					Design Values* (ug/m3)		
		2023	2022	2021	2020	2019	2021-2023	2020-2022	2019-2021
17-019-0006	Champaign	8.6	7.4	8.5	7.3	7.5	8.2	7.8	7.8
17-019-1001	Bondville	8.7	7.4	8.2	7.3	7.8	8.1	7.6	7.8
17-031-0001	Alsip	10.6	8.6	9.1	8.6	7.9	9.4	8.7	8.5
17-031-0022	Chicago Washington High School	10.3	9.0	9.4	8.8	10.3	9.6	9.1	9.5
17-031-0052	Chicago Mayfair Pump Station	10.0	8.6	9.5	10.3	9.2	9.4	9.5	9.7
17-031-0057	Chicago Springfield Pump Station	10.5	8.7	9.1	8.3	8.8	9.4	8.7	8.7
17-031-0076	Chicago Com Ed Maintenance	10.4	8.8	8.7	8.3	8.3	9.3	8.6	8.5
17-031-0119	Lansing Kingery near-road #1	11.2	8.6	10.1	10.8	10.8	10.0	9.8	10.6
17-031-3103	Schiller Park	10.4	9.6	10.5	9.9	10.8	10.2	10.0	10.4
17-031-3301	Summit	10.4	9.2	9.8	8.7	9.3	9.8	9.3	9.3
17-031-4007	Des Plaines	10.2	7.5	9.7	8.4	10.3	9.1	8.5	9.5
17-031-4201	Northbrook	9.8	7.0	8.1	7.3	8.5	8.3	7.5	7.9
17-031-6005	Cicero Liberty School	11.1	9.1	8.7	9.3	9.0	9.6	9.1	9.0
17-043-4002	Naperville	10.7	8.0	9.5	9.1	10.3	9.4	8.9	9.7
17-065-0002	Knight Prairie	8.6	7.3	9.3	8.8	8.3	8.4	8.5	8.8
17-083-0117	Jerseyville	8.3	6.9	7.9	7.5	8.0	7.7	7.4	7.8
17-089-0003	Elgin McKinley School	10.2	9.7	9.0	8.8	8.5	9.7	9.2	8.8
17-089-0007	Aurora	9.4	9.1	9.6	8.4	8.7	9.4	9.1	8.9
17-111-0001	Cary	9.5	7.8	8.6	8.2	7.8	8.6	8.2	8.2
17-113-2003	Normal	10.2	7.9	8.9	8.5	9.0	9.0	8.4	8.8
17-115-0013	Decatur IEPA Trailer	9.7	7.3	9.6	8.6	9.5	8.8	8.5	9.2
17-119-0120	Alton Horace Mann	9.2	8.9	9.3	9.0	9.1	9.1	9.1	9.1
17-119-1007	Granite City Fire Station #1	10.2	9.9	10.0	10.1	10.5	10.0	10.0	10.2
17-119-3007	Wood River	9.0	9.6	9.7	9.2	9.1	9.4	9.5	9.3
17-143-0037	Peoria City Office Building	8.6	8.3	9.6	8.3	8.0	8.9	8.7	8.6

PM_{2.5} Annual Design Values

AQS ID	City	Annual Arithmetic Mean Concentrations (ug/m3)					Design Values* (ug/m3)		
		2023	2022	2021	2020	2019	2021-2023	2020-2022	2019-2021
17-157-0001	Houston	8.0	6.9	8.1	8.3	7.7	7.7	7.8	8.0
17-161-3002	Rock Island	10.1	7.6	8.8	8.1	8.6	8.9	8.2	8.5
17-163-0010	East St. Louis	10.6	9.0	10.0	9.5	9.1	9.9	9.5	9.5
17-167-0012	Springfield Agricultural Building	9.6	8.4	8.7	7.6	8.2	8.9	8.2	8.2
17-197-1002	Joliet Pershing Elementary	10.8	7.9	9.7	9.8	9.7	9.5	9.1	9.8
17-197-1011	Braidwood	9.7	7.5	8.6	8.2	8.8	8.6	8.1	8.5
17-201-0118	Rockford Fire Department	10.5	7.1	9.4	9.1	10.3	9.0	8.5	9.6
Statewide Average		9.8	8.3	9.2	8.7	9.0	9.1	8.7	9.0

*The design value is the three-year average of the annual arithmetic mean concentrations. Design value greater than 9.0 ug/m³ is a violation of the National Ambient Air Quality Standard.

Shaded cells indicate completeness criteria were not met.



Site ID	Site Name
1. 170310022	Chicago – Washington High School
2. 170311016	Lyons Township
3. 170314201	Northbrook
4. 171190010	Granite City – 23 rd and Madison

PM₁₀ 24-Hour Highs and Design Values

AQS ID	City	Total Samples	Highest 24-Hour Samples								Samples Greater Than 150 ug/m ³			Three-year Exceedance Average*
			1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	2023	2022	2021	
17-031-0022	Chicago Washington High School	337	138	120	108	70	68	68	66	65	0	0	0	0.0
17-031-1016	Lyons Township	339	155	137	111	94	91	87	86	83	1	0	0	0.3
17-031-4201	Northbrook	60	63	36	36	35	32	32	31	30	0	0	0	0.0
17-119-1007	Granite City Fire Station #1	58	65	53	49	47	47	44	41	40	0	0	0	0.0
Statewide Average			105	87	76	62	60	58	56	55				
Total Over 150 ug/m ³											1	0	0	
Total Days Over 150 ug/m ³											1	0	0	

*The 24-hour PM₁₀ standard is an exceedance-based standard set at 150 ug/m³. The level is not to be exceeded more than once per year on average over three years. Three-year averages more than one are a violation of the National Ambient Air Quality Standard.

PM₁₀ Annual Design Values

AQS ID	City	Annual Arithmetic Mean Concentration (ug/m3)					Design Values* (ug/m3)		
		2023	2022	2021	2020	2019	2021-2023	2020-2022	2019-2021
17-031-0022	Chicago Washington High School	26	29	29	32	27	28	30	29
17-031-1016	Lyons Township	32	38	42	37	30	37	39	36
17-031-4201	Northbrook	16	16	19	20	14	17	18	18
17-119-1007	Granite City Fire Station #1	27	30	25	32	35	27	29	31
Statewide Average		25	28	29	30	27	27	29	29

*The annual PM₁₀ standard was revoked in 2007. Previously the standard was a three-year average of the annual means. Concentrations above 50 ug/m³ were a violation of the former National Ambient Air Quality Standard. Currently only the 24-hour PM₁₀ standard is in place (see Table B10).

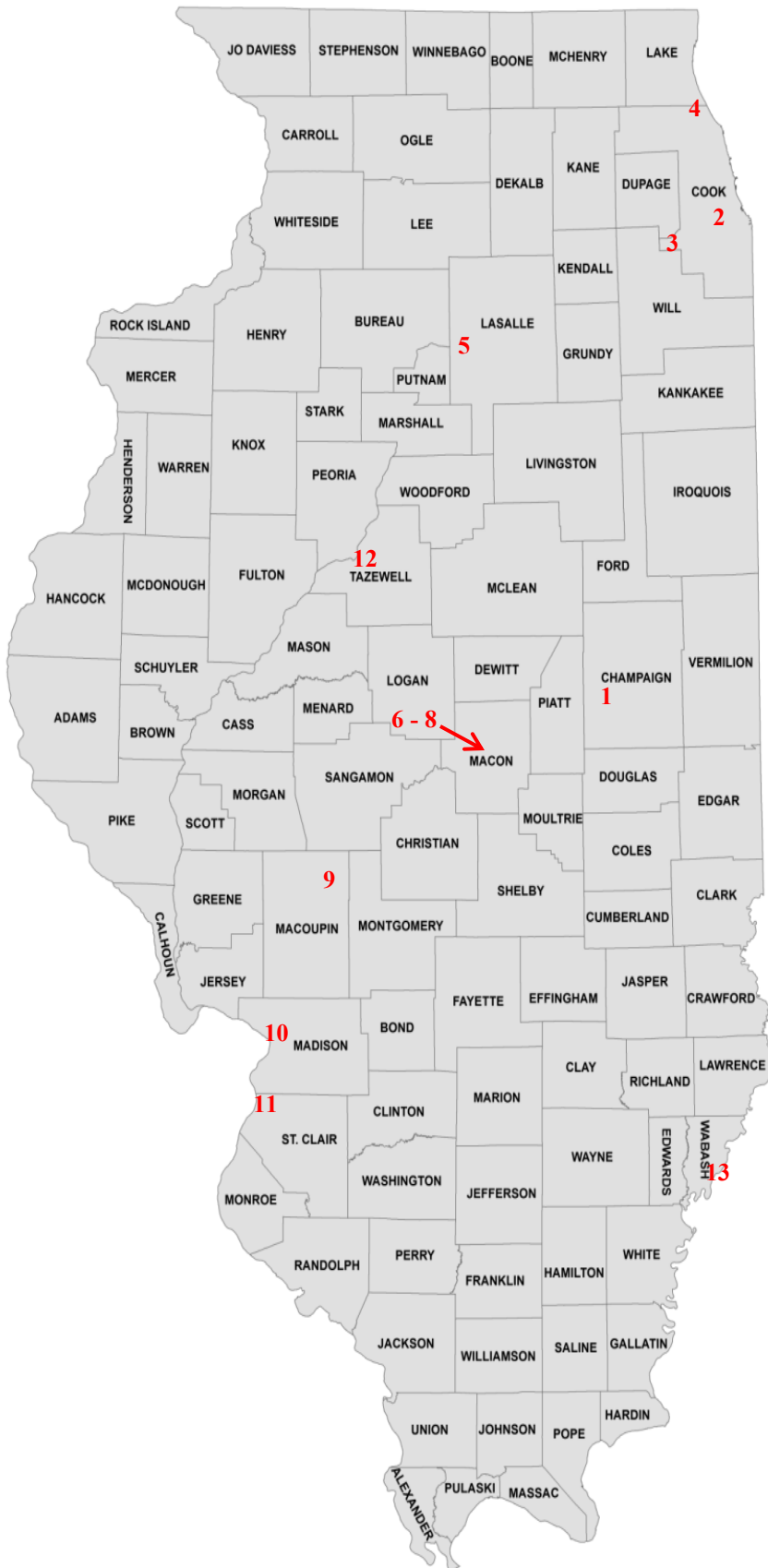
Carbon Monoxide Highs

AQS ID	City	Total Hourly Samples	Fourth Highest Daily Samples 1-Hour (ppm)				Fourth Highest Samples 8-Hour (ppm)			
17-019-1001	Bondville	5901	1.59	1.40	0.38	0.35	1.5	1.3	0.4	0.4
17-031-0119	Lansing Kingery near-road #1	8274	3.2	3.0	2.4	2.2	1.6	1.5	1.4	1.4
17-031-4201	Northbrook	8287	1.23	1.15	1.11	1.00	1.0	0.9	0.9	0.9
Statewide Average			2.01	1.85	1.30	1.18	1.37	1.23	0.90	0.90

Carbon Monoxide 1-Hour and 8-Hour Design Values

AQS ID	City	1-Hour Samples Greater than 35 (ppm)					8-Hour Samples Greater than 9 (ppm)				
		2023	2022	2021	2020	2019	2023	2022	2021	2020	2019
17-019-1001	Bondville	0	0	0	0	0	0	0	0	0	0
17-031-0119	Lansing Kingery near-road #1	0	0	0	0	0	0	0	0	0	0
17-031-4201	Northbrook	0	0	0	0	0	0	0	0	0	0

*The 1-hour and 8-hour carbon monoxide standard is an exceedance-based standard. The 1-hour standard is set at 35 ppm and is not to be exceeded more than once per year. The 8-hour standard is set at 9 ppm and is not to be exceeded more than once per year. More than one exceedance in a year is a violation of the National Ambient Air Quality Standard.



Site ID	Site Name
1. 170191001	Bondville
2. 170310076	Chicago – Com Ed Maint. Bldg.
3. 170311601	Lemont
4. 170314201	Northbrook
5. 170990007	Oglesby
6. 171150013	Decatur
7. 171150218	Decatur - Primient North
8. 171150318	Decatur - Primient South
9. 171170002	Nilwood
10. 171193007	Wood River
11. 171630010	East St. Louis
12. 171790004	Pekin
13. 171850001	Mount Carmel

Sulfur Dioxide Exceedances

EXCEEDANCES OF THE 1-HOUR PRIMARY STANDARD OF 75 ppb		
Date	City	Concentration (ppb)
8/17	Decatur – Primient South	90.2
9/26	Decatur – Primient South	86.1
9/29	Decatur – Primient North	147.3
9/30	Decatur – Primient North	94.4
Total Over 75 ppb	4	
Total Days Over 75 ppb	4	

Sulfur Dioxide Highs

AQS ID	City	Total Hourly Samples	Samples Greater Than 75 ppb			Highest Daily 1-Hour Samples (ppb)			
			2023	2022	2021	1st	2nd	3rd	4th
17-019-1001	Bondville	6876	0	0	0	6.5	3.8	3.7	3.2
17-031-0076	Chicago Com Ed Maintenance	8179	0	0	0	21.5	17.1	11.8	10.6
17-031-1601	Lemont	8357	0	0	0	11.0	6.9	6.6	6.5
17-031-4201	Northbrook	8465	0	0	0	8.5	8.0	6.9	6.4
17-099-0007	Oglesby	8702	0	0	0	21.1	19.0	16.7	15.6
17-115-0013	Decatur Illinois EPA Trailer	8474	0	0	0	21.7	21.5	19.0	17.6
17-115-0217	Decatur Primient North	8667	2	2	0	147.3	94.4	56.6	50.3
17-115-0317	Decatur Primient South	8657	2	2	1	90.2	86.1	72.9	66.1
17-117-0002	Nilwood	8639	0	0	0	9.2	4.8	3.9	3.1
17-119-3007	Wood River	8698	0	0	3	18.7	17.0	14.5	13.9
17-163-0010	East St. Louis	7943	0	0	0	19.0	18.6	13.2	11.2
17-179-0004	Pekin	8601	0	0	0	8.5	5.3	4.7	4.6
17-185-0001	Mount Carmel	8335	0	1	0	23.8	20.8	12.8	10.2
Statewide Average						31.3	24.9	18.7	16.9
Total Over 75 ppb			4	5	4				
Total Days Over 75 ppb			4	5	4				

Sulfur Dioxide 1-Hour Design Values

AQS ID	City	99th Percentile Concentrations (ppb)					Design Values* (ppb)		
		2023	2022	2021	2020	2019	2021-2023	2020-2022	2019-2021
17-019-1001	Bondville	3.7	4.5	3.2	2.6	3.8	4	3	3
17-031-0076	Chicago Com Ed Maintenance	10.6	10.5	9.7	14.4	10.5	10	12	12
17-031-1601	Lemont	6.5	7.1	6.9	4.8	6.6	7	6	6
17-031-4201	Northbrook	6.4	3.6	5.7	6.1	4.1	5	5	5
17-099-0007	Oglesby	15.6	4.5	5.3	7.6	22.4	8	6	12
17-115-0013	Decatur Illinois EPA Trailer	19.0	18.2	16.6	21.6	23.4	18	19	21
17-115-0117	Decatur ADM	-	-	-	16.3	17.0	-	-	-
17-115-0217	Decatur Primient North	50.3	55.4	42.6	38.8	41.8	49	46	41
17-115-0317	Decatur Primient South	66.1	44.5	51.8	38.5	34.2	54	45	42
17-117-0002	Nilwood	3.1	4.2	3.4	2.9	4.6	4	4	4
17-119-3007	Wood River	13.9	9.1	12.0	7.2	9.3	12	9	10
17-163-0010	East St. Louis	11.2	13.8	12.4	8.3	10.6	12	12	10
17-179-0004	Pekin	4.6	11.0	12.2	14.3	17.3	9	13	15
17-185-0001	Mount Carmel	10.2	24.9	21.0	48.9	30.5	19	32	33
Statewide Average		17.0	16.3	15.6	16.6	16.9	16	16	16

*The design value is the three-year average of the 99th percentile concentration. Design value greater than 75 ppb is a violation of the National Ambient Air Quality Standard.



Site ID	Site Name
1.	170310076 Chicago - Com Ed Maintenance
2.	170310219 Chicago - Kennedy near-road
3.	170310119 Lansing - Kingery near-road
4.	170313103 Schiller Park
5.	170314002 Cicero
6.	170314201 Northbrook (PAMS only)
7.	171170002 Nilwood
8.	171630010 East St. Louis

Nitrogen Dioxide Highs

AQS ID	City	Total Hourly Samples	Samples Greater Than 100 ppb			Highest Samples							
			2023	2022	2021	1st	2nd	3rd	4th	5th	6th	7th	8th
17-031-0076	Chicago Com Ed Maintenance	6809	0	0	0	65.8	61.4	52.2	50.5	48.1	47.1	46.7	46.7
17-031-0119	Lansing Kingery near- road #1	8743	0	0	0	69.6	57.9	56.9	56.5	55.2	54.9	53.7	53.1
17-031-0219	Chicago Kennedy near- road #2	8475	0	0	0	60.8	59.4	59.1	58.9	55.9	53.8	53.0	52.5
17-031-3103	Schiller Park	8698	0	0	0	83.1	60.6	58.6	55.8	55.5	55.0	54.4	54.1
17-031-4002	Cicero Cook County Trailer	6551	0	0	0	77.2	67.5	60.0	55.9	55.6	54.7	54.6	54.4
17-031-4201	Northbrook PAMS only June -Aug	2911	0	0	0	55.3	50.0	46.4	42.9	41.2	37.1	34.0	33.0
17-117-0002	Nilwood	8697	0	0	0	17.8	17.7	17.3	16.6	16.4	16.2	15.4	14.8
17-163-0010	East St. Louis	8490	0	0	0	41.6	40.8	39.3	39.0	38.6	38.6	38.3	38.0
Total Over 100 ppb			0	0	0								
Total Days Over 100 ppb			0	0	0								

Nitrogen Dioxide 1-Hour Design Values

AQS ID	City	98th Percentile Concentrations (ppb)					Design Values* (ppb)		
		2023	2022	2021	2020	2019	2021-2023	2020-2022	2019-2021
17-031-0076	Chicago Com Ed Maintenance	47.1	50.3	46.9	44.4	46.8	48	47	46
17-031-0119	Lansing Kingery near-road #1	53.1	51.7	49.0	47.8	51.1	51	50	49
17-031-0219	Chicago Kennedy near-road #2	52.5	52.7	52.1	49.9	44.7	52	52	49
17-031-3103	Schiller Park	54.1	51.6	54.3	50.2	54.1	53	52	53
17-031-4002	Cicero Cook County Trailer	54.7	55.3	56.6	49.4	55.7	56	54	54
17-031-4201	Northbrook PAMS only June -Aug	46.4	31.4	28.2	-	-	35	30	-
17-117-0002	Nilwood	14.8	13.5	13.0	15.5	15.0	14	14	15
17-163-0010	East St. Louis	38.0	38.6	38.8	39.1	39.1	38	39	39
Statewide Average		45.1	43.1	42.4	42.3	43.8	43	42	44

*The design value is the three-year average of the 98th percentile concentration. Design value greater than 100 ppb is a violation of the National Ambient Air Quality Standard.

Nitrogen Dioxide Annual Design Values

AQS ID	City	Annual Arithmetic Mean Concentrations* (ppb)				
		2023	2022	2021	2020	2019
17-031-0076	Chicago Com Ed Maintenance	12.48	11.51	11.86	11.33	11.89
17-031-0119	Lansing Kingery near-road #1	16.91	17.09	17.49	16.46	16.64
17-031-0219	Chicago Kennedy near-road #2	15.79	15.56	15.70	14.74	16.37
17-031-3103	Schiller Park	17.01	17.21	17.14	15.19	17.43
17-031-4002	Cicero Cook County Trailer	15.49	14.53	14.77	12.75	14.14
17-031-4201	Northbrook PAMS only June -Aug	7.99	7.39	5.02	-	-
17-117-0002	Nilwood	2.13	1.80	2.04	2.12	2.37
17-163-0010	East St. Louis	8.45	8.62	8.90	8.56	8.82
Statewide Average (year-round sites only)		12.61	12.33	12.56	11.59	12.52

*The design value is the highest annual average concentration during the most recent two years. Design value greater than 53 ppb is a violation of the National Ambient Air Quality Standard.



Site ID	Site Name
1. 170310022	Chicago – Washington High School
2. 170310110	Chicago – Perez Elementary
3. 171190010	Granite City – 15 th and Madison

Table B22

Lead Highs

AQS ID	City	Total Sample Days	Highest Monthly Means					Maximum Three-Month Mean
			1st	2nd	3rd	4th	5th	
17-031-0022	Chicago Washington High School	59	0.013	0.013	0.012	0.009	0.009	0.01
17-031-0110	Chicago Perez Elementary	57	0.031	0.024	0.018	0.015	0.015	0.02
17-119-0010	Granite City Air Products	59	0.056	0.031	0.026	0.024	0.021	0.03
Statewide Average			0.033	0.023	0.019	0.016	0.015	0.02

Lead Design Values

AQS ID	City	Maximum Three-Month Rolling Mean (ug/m3)					Design Values* (ug/m3)		
		2023	2022	2021	2020	2019	2021-2023	2020-2022	2019-2021
17-031-0022	Chicago Washington High School	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.02
17-031-0110	Chicago Perez Elementary	0.02	0.01	0.01	0.02	0.01	0.02	0.02	0.02
17-119-0010	Granite City Air Products	0.03	0.04	0.03	0.12	0.15	0.04	0.12	0.15
17-119-0121	Alton Olin Inc. Temporary Discontinued Site	-	0.02	0.05	-	-	-	0.05	0.05
Statewide Average		0.020	0.020	0.025	0.053	0.057	0.02	0.05	0.06

*The design value is the maximum three-month rolling mean over the latest three-year period. Design value greater than 0.15 ug/m3 is a violation of the National Ambient Air Quality Standard.

Metals Filter Analysis Data

AQS ID	City	Total Samples	Highs (ug/m3)		Annual Mean	Total Samples	Highs (ug/m3)		Annual Mean
			1 st	2 nd			1 st	2 nd	
		Cadmium				Chromium			
17-031-0022	Chicago Washington High School	59	0.002	0.001	0.000	59	0.047	0.025	0.006
17-031-0110	Chicago Perez Elementary	57	0.000	0.000	0.000	57	0.013	0.010	0.004
17-119-0010	Granite City Air Products	59	0.001	0.001	0.000	59	0.029	0.016	0.007
		Manganese				Nickel			
17-031-0022	Chicago Washington High School	59	0.386	0.239	0.070	59	0.011	0.010	0.003
17-031-0110	Chicago Perez Elementary	57	0.114	0.082	0.029	57	0.009	0.008	0.002
17-119-0010	Granite City Air Products	59	0.456	0.247	0.071	59	0.013	0.013	0.004

Toxic Compounds

AQS ID	City	Compounds	Highest 24-hour Samples (ppbc)				2023 Annual Average
			1 st	2 nd	3 rd	4 th	
17-031-4201	Northbrook*	1,3 Butadiene	0.042	0.039	0.029	0.026	0.011
		Dichloromethane	41.400	31.300	4.810	4.550	3.286
		Chloroform	14.900	14.700	14.200	10.300	4.876
		Carbon Tetrachloride	0.182	0.128	0.110	0.108	0.095
		Tetrachloroethylene	0.076	0.075	0.056	0.052	0.021
		Trichloroethylene	0.010	0.008	0.008	0.007	0.005
		1,2 Dichloropropane	0.055	0.034	0.032	0.032	0.005
		Vinyl Chloride	0.020	0.018	0.018	0.018	0.005
		Benzene	0.652	0.310	0.271	0.267	0.177
		Toluene	0.910	0.872	0.746	0.707	0.443
		Formaldehyde	5.070	4.500	3.990	3.330	1.978
		Acetaldehyde	2.140	1.990	1.780	1.760	1.030
		Acrolein	1.610	1.260	0.990	0.856	0.428
17-031-3103	Schiller Park**	1,3 Butadiene	0.128	0.063	0.052	0.036	0.045
		Dichloromethane	0.255	0.220	0.144	0.136	0.153
		Chloroform	0.037	0.020	0.021	0.020	0.023
		Carbon Tetrachloride	0.093	0.087	0.087	0.087	0.084
		Tetrachloroethylene	0.090	0.054	0.029	0.029	0.034
		Trichloroethylene	0.056	0.000	0.000	-	0.019
		1,2 Dichloropropane	0.000	0.000	0.000	0.000	0.000
		Vinyl Chloride	0.007	0.003	0.003	0.002	0.002
		Benzene	0.499	0.305	0.260	0.250	0.260
		Toluene	1.000	0.444	0.319	0.222	0.344
		Formaldehyde	3.520	2.100	1.930	1.820	1.767
		Acetaldehyde	2.510	1.570	1.450	1.270	1.252
		Acrolein	0.476	0.261	0.248	0.208	0.244

*Data set for period of March 14th – December 31st 2023.

**Data set for period of November 9th – December 31st 2023.

Illinois EPA's Website Information

To access the online version of the Annual Air Quality Report, various pollutant averages and exceedances, the monitoring network plan and emission trends:

- <https://www2.illinois.gov/epa/topics/air-quality/Pages/default.aspx>

Air Quality Index Information

To view current Air Quality Index numbers and forecasts across the country:

- <http://www.airnow.gov>

To sign up for air quality information such as forecasts and pollution alerts:

- <https://www.enviroflash.info/signup.cfm>

Monitoring Data Access Information

To access yearly Air Quality Index summaries, air quality statistics and monitoring concentrations:

- <https://www.epa.gov/outdoor-air-quality-data>

To access status and trends of key air pollutants:

- <https://www.epa.gov/air-trends>

To access historical Design Values (statistic to compare to the National Ambient Air Quality Standards):

- <https://www.epa.gov/air-trends/air-quality-design-values>

Nonattainment Areas and Designations (regions in violation of the various National Ambient Air Quality Standards):

- <http://www.epa.gov/green-book>

Other

- Ambient Monitoring Technology Information Center: <https://www.epa.gov/amtic>
- Toxic Release Inventory Search: <http://www.epa.gov/enviro/tri-search>
- Toxic Release Inventory Data and Tools: <https://www.epa.gov/toxics-release-inventory-tri-program/tri-data-and-tools>

Bureau of Air Permit Section
File Organization Cover Sheet

Source Name:	Conoco Phillips Co
ID No.:	119090AAA
Application No.:	95120306
Category:	03K
Item Date:	11-7-2003
Keyword:	
Comment:	
Part:	of

*
*
*

* If applicable



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

P.O. Box 19506, SPRINGFIELD, ILLINOIS 62794-9506

RENEE CIPRIANO, DIRECTOR

217/782-2113

TITLE V - CLEAN AIR ACT PERMIT PROGRAM (CAAPP) PERMIT
and
TITLE I PERMIT¹

PERMITTEE

ConocoPhillips Wood River Refinery
Attn: Neal Sahni
Post Office Box 76
Roxanna, Illinois 62084

Application No.: 95120306

I.D. No.: 119090AAA

Applicant's Designation: WRR

Date Received: December 27, 1995

Operation of: Petroleum Refinery

Date Issued: November 7, 2003

Expiration Date²: November 7, 2008

Source Location: 900 South Central Avenue, Roxanna, Madison County

Responsible Official: Herman L. Seedorf III, Refinery Manager

This permit is hereby granted to the above-designated Permittee to OPERATE a petroleum refinery, pursuant to the above referenced permit application. This permit is subject to the conditions contained herein.

If you have any questions concerning this permit, please contact Dan Punzak at 217/782-2113.

DES

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

COPY
Original Signed by
Donald E. Sutton, P.E.

DES:DGP:jar

RNB 11/7/2003

cc: *JAS* Illinois EPA, FOS, Region 3

¹ This permit may contain terms and conditions which address the applicability, and compliance if determined applicable, of Title I of the CAA and regulations promulgated thereunder, including 40 CFR 52.21 - federal PSD and 35 IAC Part 203 - Major Stationary Sources Construction and Modification. Any such terms and conditions are identified within this permit.

² Except as provided in Condition 8.7 of this permit.

EPA DIVISION OF RECORDS MANAGEMENT
RELEASABLE

JUN 08 2018

REVIEWER: JKS

ROD R. BLAGOJEVICH, GOVERNOR

PRINTED ON RECYCLED PAPER

TABLE OF CONTENTS

	<u>PAGE</u>
1.0 SOURCE IDENTIFICATION	5
1.1 Source	
1.2 Owner/Parent Company	
1.3 Operator	
1.4 General Source Description	
2.0 LIST OF ABBREVIATIONS/ACRONYMS USED IN THIS PERMIT	6
3.0 INSIGNIFICANT ACTIVITIES	8
3.1 Identification of Insignificant Activities	
3.2 Compliance with Applicable Requirements	
3.3 Addition of Insignificant Activities	
4.0 SIGNIFICANT EMISSION UNITS AT THIS SOURCE	11
5.0 OVERALL SOURCE CONDITIONS	19
5.1 Source Description	
5.2 Applicable Regulations	
5.3 Non-Applicability of Regulations of Concern	
5.4 Source-Wide Operational and Production Limits and Work Practices	
5.5 Source-Wide Emission Limitations	
5.6 General Recordkeeping Requirements	
5.7 General Reporting Requirements	
5.8 General Operational Flexibility/Anticipated Operating Scenarios	
5.9 General Compliance Procedures	
5.10 Special Permit Shield	
6.0 EMISSIONS CONTROL PROGRAMS	32
6.1 NO _x Trading Program	
7.0 UNIT SPECIFIC CONDITIONS	40
7.1 Unit: Process Heaters and Boilers	
Control: None	
7.2 Unit: Storage Tanks	
Control: None	
7.3 Unit: Catalytic Cracking Operations	
Control: CO Boiler and Electrostatic Precipitators (ESPs)	
7.4 Unit: Catalytic Reforming Units	
Control: None	
7.5 Unit: Other Petroleum Processing Units	
Control: Flare on Some Units	
7.6 Unit: Benzene Extraction Unit (BEU)	
Control: Flare	

PAGE

7.7	Unit:	Refinery Flare System Consisting of Gas Recovery System, Fuel Gas Treaters, Fuel Gas System and Flares	
	Control:	None	
7.8	Unit:	Sulfur Recovery Unit	
	Control:	Offgas Treatment and Thermal Oxidizers	
7.9	Unit:	Logistics (Loading and Shipping)	
	Control:	See Section 7.9.2	
7.10	Unit:	Fugitive Emissions	
	Control:	LDAR Program	
7.11	Unit:	Cooling Water Towers	
	Control:	None	
7.12	Unit:	Wastewater Treatment System	
	Control:	Flare	
7.13	Unit:	Gasoline Dispensing Tanks	
	Control:	Submerged Loading Pipe and Vapor Balance System	
8.0	GENERAL PERMIT CONDITIONS		186
8.1	Permit Shield		
8.2	Applicability of Title IV Requirements		
8.3	Emissions Trading Programs		
8.4	Operational Flexibility/Anticipated Operating Scenarios		
8.5	Testing Procedures		
8.6	Reporting Requirements		
8.7	Obligation to Comply with Title I Requirements		
9.0	STANDARD PERMIT CONDITIONS		191
9.1	Effect of Permit		
9.2	General Obligations of Permittee		
9.3	Obligation to Allow Illinois EPA Surveillance		
9.4	Obligation to Comply with Other Requirements		
9.5	Liability		
9.6	Recordkeeping		
9.7	Annual Emissions Report		
9.8	Requirements for Compliance Certification		
9.9	Certification		
9.10	Defense to Enforcement Actions		
9.11	Permanent Shutdown		
9.12	Reopening and Reissuing Permit for Cause		
9.13	Severability Clause		
9.14	Permit Expiration and Renewal		
10.0	ATTACHMENTS		
10.1	Attachment 1 - List and Details of Storage Tanks		1-1
10.2	Attachment 2 - LDAR Program		2-1
10.3	Attachment 3 - Example Certification by a Responsible Official		3-1
10.4	Attachment 4 - Guidance on Revising This Permit		4-1

	<u>PAGE</u>
10.5 Attachment 5 - Form 199-CAAPP, Application For Construction Permit (For CAAPP Sources Only)	5-1
10.6 Attachment 6 - Guidance on Renewing This Permit	6-1

1.0 SOURCE IDENTIFICATION

1.1 Source

ConocoPhillips Wood River Refinery
900 South Central Avenue
Roxanna, Illinois 62084
618/255-2478

I.D. No.: 119090AAA
Standard Industrial Classification: 2911

1.2 Owner/Parent Company

ConocoPhillips Company
600 North Dairy Ashford
Houston, Texas 77079

1.3 Operator

ConocoPhillips Wood River Refinery
900 South Central Avenue
Roxanna, Illinois 62084

Gina Nicholson
618/255-2512

1.4 General Source Description

The Wood River Refinery is located at 900 South Central Avenue in Roxanna (Wood River Township). The source produces a wide range of petroleum products from liquid propane, gasoline, aviation fuel, diesel fuel for transportation, distillate and residual oils for heating purposes, and asphalt. In addition petroleum refinery requires large amounts of heat. This can be supplied from steam produced in boilers or in process heaters which heat the fluid directly. The boilers and process heaters burn along or a combination of refinery fuel gas and purchased natural gas. In addition, the source has many storage tanks for storage of crude oil, intermediates and finished products and a logistics department where trucks are loaded for shipment of the products. The source also has many water cooling towers, a sulfur recovery plant and a wastewater treatment plant.

2.0 LIST OF ABBREVIATIONS/ACRONYMS USED IN THIS PERMIT

Act	Environmental Protection Act [415 ILCS 5/1 et seq.]
AP-42	Compilation of Air Pollutant Emission Factors, Volume 1, Stationary Point and Other Sources (and Supplements A through F), USEPA, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711
AVO	Audio, Visual or Olfactory
BACT	Best Available Control Technology
BAT	Best Available Technology
bbl	Barrels
Btu	British thermal unit
°C	Degrees Celsius
CAA	Clean Air Act [42 U.S.C. Section 7401 et seq.]
CAAPP	Clean Air Act Permit Program
CFR	Code of Federal Regulations
cm	Centimeter
cm ²	square centimeter
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
COM	Continuous Opacity Monitor
CSR	Claus Sulfur Recovery Plant
CT	Cooling Towers
CWT	Cooling Water Towers
dscf	dry standard cubic foot
ESPs	Electrostatic Precipitator(s)
°F	degrees Fahrenheit
FCC(U)	Fluid Catalytic Cracking (Unit)
ft	feet
gal	gallon
gr	grains
HAP	Hazardous Air Pollutant
HF	Hydrofluoric Acid
HON	Hazardous Organic NESHAP
hr	hour
H ₂ S	Hydrogen Sulfide
IAC	Illinois Administrative Code
I.D. No.	Identification Number of Source, assigned by Illinois EPA
Illinois EPA	Illinois Environmental Protection Agency
°K	degrees Kelvin
kg	kilogram
kPa	Kilopascals
kW	kilowatts
LAER	Lowest Achievable Emission Rate
lb	pound
LEL	Lower Explosive Limit
LDAR	Leak Detection and Repair
LPG	Liquefied propane gas
m	meter
MACT	Maximum Available Control Technology
mg	milligram
mmBtu	Million British thermal units

mmscf	million standard cubic feet
mo	month
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO _x	Nitrogen Oxides
NSPS	New Source Performance Standards
OM	Organic Material
OWS	Oil/Water Separator
PM	Particulate Matter
PM ₁₀	Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 microns as measured by applicable test or monitoring methods
ppm	parts per million
PSD	Prevention of Significant Deterioration
psi	pounds per square inch
psia	pounds per square inch absolute
RMP	Risk Management Plan
RVP	Reid Vapor Pressure
scf	standard cubic feet
SCOT	Shell Claus Offgas Treatment
sec	second
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
SRU	Sulfur Recovery Unit
T	Ton
TC	Total Carbon
TOC	Total Organic Carbon
T1	Title I B identifies Title I conditions that have been carried over from an existing construction permit
T1N	Title I New B identifies Title I conditions that are being established in this permit
T1R	Title I Revised B identifies Title I conditions that have been carried over from an existing construction permit and subsequently revised in this permit
USEPA	United States Environmental Protection Agency
VOL	Volatile Organic Liquid
VOM	Volatile Organic Material
VPL	Volatile Petroleum Liquid
wt. %	weight percent
WWTP	Wastewater Treatment Plant
yr	year

3.0 INSIGNIFICANT ACTIVITIES

3.1 Identification of Insignificant Activities

The following activities at the source constitute insignificant activities as specified in 35 IAC 201.210:

- 3.1.1 Activities determined by the Illinois EPA to be insignificant activities, pursuant to 35 IAC 201.210(a) (1) and 201.211, as follows:

Petroleum Product Storage Tanks, numbered as follows:
000005, 000007, 000014, 890554, 901130, 920835,
930416, 940023, TK-B109, TK-CH110, TK-CH193,
TK-CH249, TK-CH261, TK-931035, TK-931036, TK-940279,
TK-B111, TK-B113, TK-B114, TK-CH160, TK-CH248,
TK-CH250, TK-CH251, TK-CH252, TK-CH254, TK-CH266,
TK-880147, TK-900621, TK-920012, TK-920464, TK-CH038,
TK-CH191, TK-CH192, TK-CH196, TK-940888, TK-CH277,
TK-CH208, TK-ADD003 TO 012, TK-E033, TK-D009-1

- 3.1.2 Activities that are insignificant activities based upon maximum emissions, pursuant to 35 IAC 201.210(a) (2) or (a) (3), as follows:

TK-B083, TK-B138, TK-CH237 to 240, TK-CH262,
TK-CH271, TK-CH272, TK-CH287, TK-C057, TK-C058,
TK-L008, TK-L009, TK-M001, TK-M008, TK-M064, TK-M065,
TK-P077

- 3.1.3 Activities that are insignificant activities based upon their type or character, pursuant to 35 IAC 201.210(a) (4) through (18), as follows:

Direct combustion units designed and used for comfort heating purposes and fuel combustion emission units as follows: (A) Units with a rated heat input capacity of less than 2.5 mmBtu/hr that fire only natural gas, propane, or liquefied petroleum gas; (B) Units with a rated heat input capacity of less than 1.0 mmBtu/hr that fire only oil or oil in combination with only natural gas, propane, or liquefied petroleum gas; and (C) Units with a rated heat input capacity of less than 200,000 Btu/hr which never burn refuse, or treated or chemically contaminated wood [35 IAC 201.210(a) (4)].

Equipment used for filling drums, pails, or other packaging containers, excluding aerosol cans, with soaps, detergents, surfactants, lubricating oils, waxes, vegetable oils, greases, animal fats, glycerin, sweeteners, corn syrup, aqueous salt solutions, or aqueous caustic solutions [35 IAC 201.210(a) (8)].

Storage tanks of organic liquids with a capacity of less than 10,000 gallons and an annual throughput of less than 100,000 gallons per year, provided the storage tank is not used for the storage of gasoline or any material listed as a HAP pursuant to Section 112(b) of the CAA [35 IAC 201.210(a)(10)].

Storage tanks of any size containing virgin or re-refined distillate oil, hydrocarbon condensate from natural gas pipeline or storage systems, lubricating oil, or residual fuel oils [35 IAC 201.210(a)(11)].

Printing operations with aggregate organic solvent usage that never exceeds 750 gallons per year from all printing lines at the source, including organic solvent from inks, dilutents, fountain solutions, and cleaning materials [35 IAC 201.210(a)(14)].

Gas turbines and stationary reciprocating internal combustion engines of less than 112 kW (150 horsepower) power output [35 IAC 201.210(a)(15)].

Gas turbines and stationary reciprocating internal combustion engines of between 112 kW and 1,118 kW (150 and 1,500 horsepower) power output that are emergency or standby units [35 IAC 201.210(a)(16)].

Storage tanks of any size containing exclusively soaps, detergents, surfactants, glycerin, waxes, vegetable oils, greases, animal fats, sweeteners, corn syrup, aqueous salt solutions, or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials [35 IAC 201.210(a)(17)].

Loading and unloading systems for railcars, tank trucks, or watercraft that handle only the following liquid materials, provided an organic solvent has not been mixed with such materials: soaps, detergents, surfactants, lubricating oils, waxes, glycerin, vegetable oils, greases, animal fats, sweetener, corn syrup, aqueous salt solutions, or aqueous caustic solutions [35 IAC 201.210(a)(18)].

3.1.4 Activities that are considered insignificant activities pursuant to 35 IAC 201.210(b).

3.2 Compliance with Applicable Requirements

Insignificant activities are subject to applicable requirements notwithstanding status as insignificant activities. In particular, in addition to regulations of general applicability, such as 35 IAC 212.301 and 212.123 (Condition 5.2.2), the

Permittee shall comply with the following requirements, as applicable:

- 3.2.1 For each cold cleaning degreaser, the Permittee shall comply with the applicable equipment and operating requirements of 35 IAC 215.182, 218.182, or 219.182.
- 3.2.2 For each particulate matter process emission unit, the Permittee shall comply with the applicable particulate matter emission limit of 35 IAC 212.321 or 212.322. For example, the particulate matter emissions from a process emission unit shall not exceed 0.55 pounds per hour if the emission unit's process weight rate is 100 pounds per hour or less, pursuant to 35 IAC 266.110.
- 3.2.3 For each organic material emission unit that uses organic material, e.g., a mixer or printing line, the Permittee shall comply with the applicable VOM emission limit of 35 IAC 215.301, 218.301, or 219.301, which requires that organic material emissions not exceed 8.0 pounds per hour or do not qualify as photochemically reactive material as defined in 35 IAC 211.4690.
- 3.2.4 For each storage tank over 250 gallons capacity that stores an organic material with a vapor pressure exceeding 2.5 psia, the tank shall be equipped with a permanent submerged loading pipe. [35 IAC 219.122(b) and (c)]

3.3 Addition of Insignificant Activities

- 3.3.1 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type that is identified in Condition 3.1, until the renewal application for this permit is submitted, pursuant to 35 IAC 201.212(a).
- 3.3.2 The Permittee must notify the Illinois EPA of any proposed addition of a new insignificant activity of a type addressed by 35 IAC 201.210(a) and 201.211 other than those identified in Condition 3.1, pursuant to Section 39.5(12)(b) of the Act.
- 3.3.3 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type identified in 35 IAC 201.210(b).

4.0 SIGNIFICANT EMISSION UNITS AT THIS SOURCE

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Construction Date	Firing ^a Rate (mmBtu/hr)	Emission Control Equipment
Units Subject to NSPS Subpart J					
01	WRR-31	Acetone Unit HTR-ACETONE-H1	1978	29	None
02	WRR-31	Acetone Unit HTR-ACETONE-H2	1978	29	None
03	WRR-6	Vacuum Flasher No. 1 North Heater HTR-VF-1-NORTH	1983	100	None
04	WRR-6	Vacuum Flasher No. 1 South Heater HTR-VF-1-SOUTH	1983	100	None
05	WRR-69	Heavy Catalytic Naphtha Hydrotreater F-1 Charge Heater HTR-HCNHT	1986	25	None
06	WRR-27	Utility Boilers Boiler 18 BLR-18	1979	249	None
Unit Subject to NSPS Subpart D					
07	WRR-27	Utility Boilers Boiler 17 BLR-17	1973	700	None
Units Subject to NSPS Subpart Dc					
08	WRR-61	Rental Package Boiler Rental Boiler No. 1 BLR-RENT-1	1997	99	None
09	WRR-61	Rental Package Boiler Rental Boiler No. 2 BLR-RENT-2	1997	99	None
Units Not Subject to NSPS					
10	WRR-6	Visbreaker Unit East Heater HTR-VBU-EAST	Pre-1972	55	None
11	WRR-6	Visbreaker Unit West Heater HTR-VBU-WEST	Pre-1972	55	None
12	WRR-16	Alkylation Unit HTR-ALKY-HM1	Pre-1972	37.5	None
13	WRR-16	Alkylation Unit HTR-ALKY-HM2	Pre-1972	110	None
14	WRR-17	Precursor Unit HTR-Precursor	Pre-1972	67.4	None
15	WRR-19	Benzene Extraction Unit HTR-BEU-HM1	Pre-1972	110	None
16	WRR-19	Benzene Extraction Unit HTR-BEU-HM2	Pre-1972	110	None
17	Control 0007	CO Heater HTR-CCU1-CO	Pre-1972	155	None

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Construction Date	Firing ^a Rate (mmBtu/hr)	Emission Control Equipment
18	Control 0011	CO Heater HTR-CCU2-CO	Pre-1972	155	N/A
18a	WRR-7	CCU-1 Startup Heater B-1 (Used only during startup)	Pre-1972	80	None
18b	WRR-8	CCU-2 Startup Heater B-1 (Used only during startup)	Pre-1972	80	None
19	WRR-8	Catalytic Feed Hydrotreater Unit HTR-CFH	Pre-1972	32	None
20	WRR-5	Cracked Absorption Unit HTR-CAU-ROSTILL	Pre-1972	95	None
21	WRR-1	Distilling Unit HTR-DU1-F301	Pre-1973	120	None
22	WRR-1	Distilling Unit HTR-DU1-F302	Pre-1972	200	None
23	WRR-2	Distilling Unit 2, Lube Crude Heater HTR-DU2-F200	Pre-1972	151	None
24	WRR-2	Distilling Unit, West Crude Heater HTR-DU2-F202	Pre-1972	231	None
25	WRR-2	Distilling Unit 2, East Crude Heater HTR-DU2-F203	Pre-1972	231	None
26	WRR-68	Rectified Absorption Unit Reboiler Heater HTR-RAU-DEBUT	Pre-1972	68.5	None
27	WRR-6	Vacuum Flasher No. 2 West Heater HTR-VF-2-F204	Pre-1972	61	None
28	WRR-21	Vacuum Flasher No. 2 East Heater HTR-VF2-F205	Pre-1972	61	None
29	WRR-6	Vacuum Flasher No. 3 Visbreaker Heater HTR-VF-3	Pre-1972	50	None
30	WRR-21	Cat Reformer No. 1 Feed Preheater HTR-CR1-H1	Pre-1972	165	None
31	WRR-21	Cat Reformer No. 1 First Interreactor Heater HTR-CR1-H2	Pre-1972	162	None
32	WRR-21	Cat Reformer No. 1 Second Interreactor Heater HTR-CR1-H3	Pre-1972	78	None
33	WRR-21	Cat Reformer No. 1 Stabilizer Reboiler HTR-CR1-H4	Pre-1972	40	None
34	WRR-21	Cat Reformer No.1 Regeneration Gas Heater HTR-CR1-H5	Pre-1972	37.8	None

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Construction Date	Firing ^a Rate (mmBtu/hr)	Emission Control Equipment
35	WRR-21	Cat Reformer No. 1 Third Interreactor Heater HTR-CR1-H7	Pre-1972	100	None
36	WRR-26	Cat Reformer No. 2 Charge Reheater HTR-CR2-N	Pre-1972	275	None
37	WRR-25	Cat Reformer No. 3 Stabilizer Reboiler HTR-CR3-H2	Pre-1972	31.5	None
38	WRR-25	Cat Reformer No.3 Regeneration Gas Heater HTR-CR3-H3	Pre-1972	25.4	None
39	WRR-25	Cat Reformer No. 3 Charge Heater HTR-CR3-H4	Pre-1972	144.7	None
40	WRR-25	Cat Reformer No. 3 First Interreactor Heater HTR-CR3-H5	Pre-1972	141	None
41	WRR-25	Cat Reformer No. 3 Second Interreactor Heater HTR-CR3-H6	Pre-1972	74	None
42	WRR-23	Distillate Hydrotreater F-1 Charge Heater HTR-DHT	Pre-1972	108	None
43	WRR-20	Hydrocracking Unit First Stage Charge Heater HTR-HCU-H1	Pre-1972	70	None
44	WRR-20	Hydrocracking Unit Second Stage Charge Heater HTR-HCU-H2	Pre-1972	70	None
45	WRR-20	Hydrocracking Unit Fractionator Reboiler HTR-HCU-H3	Pre-1972	235	None
46	WRR-26	Hydrodesulfurization Unit 1 Charge Heater HTR-HDU1	Pre-1972	67.3	None
47	WRR-25	Hydrodesulfurization Unit 2 Charge Heater HTR-HDU2	Pre-1972	81	None
48	WRR-24	Kerosene Hydrotreater KHT Heater HTR-KHT	Pre-1972	109	None
49	WRR-24	Kerosene Hydrotreater Mineral Spirits Heater HTR-KH2	1972	94.2	None
50	WRR-22	Saturates Gas Plant RO Stabilizer Reboiler HTR-SGP	Pre-1972	59.5	None

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Construction Date	Firing ^a Rate (mmBtu/hr)	Emission Control Equipment
51	WRR-20	Steam Methane Reformer SMR Heater HTR-SMR	Pre-1972	460	None
52	WRR-11	Lube Extract Unit LEU Extract Heater HTR-LEU-EXT	Pre-1972	63.5	None
53	WRR-11	Lube Extract Unit LEU Raffinate Heater HTR-LEU-RAFF	Pre-1972	20.8	None
54	WRR-11	Lube Extract Unit F-1 Charge Heater HTR-LMT	Pre-1972	20	None
55	WRR-6	Vacuum Fractionator Column Charge Heater HTR-VFC	Pre-1972	89.1	None
56	WRR-13	Asphalt Processing Asphalt Thermo Heater HTR-ASPHAT-THE	Pre-1972	8	None
57	WRR-13	Asphalt Blending Converter Preheater HTR-ASHALT-PRE	Pre-1972	3.9	None
58	WRR-27	Utility Boilers Boiler 15 BLR-15	Pre-1972	360	None
59	WRR-27	Utility Boilers Boiler 16 BLR-16	Pre-1972	360	None
60	Catalytic Cracking Unit #1 (CCU-1)	Heavy Molecular weight hydrocarbons are cracked into lower molecular weight products. The catalyst regeneration part of the unit vents to through the control equipment.	Pre-1972		CO Heater (0007) ^a , ESP (0006)
61	Catalyst Loading	Catalyst is loaded onto trucks from CCU-1	Pre-1972		None
62	Supplemental Air Compressor Engine	Diesel-fired compressor engines provide supplemental air for catalyst regeneration for CCU-1	Pre-1972		None
63	Catalytic Cracking Unit #2 (CCU-2)	Heavy molecular weight hydrocarbons are cracked into lower molecular weight products. The catalyst regeneration part of the unit vents to through the control equipment.	Pre-1972		CO Heater (0011) ^a , ESP (0010)
64	Catalyst Loading	Catalyst is loaded onto trucks from CCU-2	Pre-1972		None

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Construction Date	Firing ^a Rate (mmBtu/hr)	Emission Control Equipment
65	Supplemental Air Compressor Engine		Pre-1972		
66	WRR-21	Catalytic Reformer #1	Pre-1972		None during material processing; to flare when depressurizing or hydrogen introduction; to scrubber during catalyst reactivation with chloriding agent
67	WRR-26	Catalytic Reformer #2	Pre-1972		None during material processing; to flare when depressurizing or hydrogen introduction; to scrubber during catalyst reactivation with chloriding agent
68	WRR-25	Catalytic Reformer #3	Pre-1972		None during material processing; to flare when depressurizing or hydrogen introduction; to scrubber during catalyst reactivation with chloriding agent
69	WRR-16	Alkylation Unit	Pre-1972		Flare System
69a	WRR-16	Sulfuric Acid Handling System	1989		Caustic Scrubber
70	WRR-8	Catalytic Feed Hydrotreater	Pre-1972		Flare System
71	BT	Butane Treaters/Caustic Regenerators	Pre-1972		Flare System
72	CAU WRR-5	Cracked Absorption Unit/Stabilizers	Pre-1972		Flare System
73	DIH No. 2	Diesohexanizer No. 2	Pre-1972		Flare System

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Construction Date	Firing ^a Rate (mmBtu/hr)	Emission Control Equipment
74	DU-1 WRR-1	Distilling Unit No.1	Pre-1972		Flare System
75	DU-2 WRR-2	Distilling Unit No. 2	Pre-1972		Flare System
76	WRR-5	Light Oil Treaters, Closed Vents	Pre-1972		Flare System
77	C3 Treaters	Propane/Propylene Treaters, to RFG	Pre-1972		Flare System
78	RAU WRR-4	Rectified Absorption System, to RFG	Pre-1972		Flare System
79	SW5	Gas Plant Sour Water Stripper, to RFG	Pre-1972		Flare System
80	VF-1, VF-2, VF-3 WRR-6	Vacuum Flasher Units 1, 2, and 3, to RFG	Pre-1972		Flare System
81	VBU WRR-6	Visbreaker Unit	Pre-1972		Flare System
82	DHT WRR-23	Distillate Hydroreater, to RFG	Pre-1972		Flare System
83	HCU WRR-20	Hydrocracker Unit, to RFG Also	Pre-1972		Flare System
84	HDU-1 and 2 WRR-25	Hydrosulfurization Unit 1 and 2	Pre-1972		Flare System
85	KHT WRR-24	Kerosene Hydrotreater, Vent to H ₂ System	Pre-1972		Flare System
86	SGP WRR-22	Saturates Gas Plant, to RFG	Pre-1972		Flare System
87	SMR WRR-20	Steam Methane Reformer, to H ₂ System	Pre-1972		Flare System
88	LEU WRR-11	Lubricants Extraction Unit	Pre-1972		Flare System
89	LHT WRR-12	Lubricants Hydrotreater, to H ₂ System	Pre-1972		Flare System
90	VFC WRR-6	Vacuum Fractionator Column, Vent Directly to Heater of this Unit	Pre-1972		Flare System
91	CNS WRR-69	Catalytic Naphtha Splitter	1997		Flare System
92	HCNHT WRR-69	Heavy Catalytic Naphtha Hydrotreater	1997		Flare System
93	GHT WRR-60	Gasoline Hydrotreater	1997		Flare System
94	WRR-19	Benzene Extraction Unit (BEU). Benzene is extracted from aromatic feedstocks	Pre-1972		Flare
95	Alkylation Unit Flare	Hydrocarbons are preferably recovered by compressor system or unrecoverable amount is sent to flare.	Pre-1972		None

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Construction Date	Firing ^a Rate (mmBtu/hr)	Emission Control Equipment
96	Distilling Flare	Hydrocarbons are preferably recovered by compressor system or unrecoverable amount is sent to flare.	Pre-1972		None
97	North Property Ground Flare	Hydrocarbons are preferably recovered by compressor system or unrecoverable amount is sent to flare.	Pre-1972		None
98	Aromatics Low Pressure Flare	Hydrocarbons are preferably recovered by compressor system or unrecoverable amount is sent to flare.	Pre-1972		None
99	Aromatics High Pressure Flare	Hydrocarbons are preferably recovered by compressor system or unrecoverable amount is sent to flare.	Pre-1972		None
100	Sulfur Recovery Unit No. 1 (SRU-1)	Production of Sulfur from Various Hydrogen Sulfide rich Refinery Streams	Pre-1972		SCOT Unit, Thermal Oxidizers
101	Sulfur Recovery Unit No. 2 (SRU-2)	Production of Sulfur from Various Hydrogen Sulfide rich Refinery Streams	Pre-1972		SCOT Unit, Thermal Oxidizers
102a	LDG-TT-NEWRACK	Light Oil Truck Rack, Gasoline Mode	Pre-1972		Vapor Recovery System (Absorber)
102b	LDG-TT-NEWRACK	Light Oil Truck Rack, Petroleum Products Other Than Gasoline	Pre-1972		None
103	LDG-TC-OLD-RACK	Light Oil Tank Car Rack	Pre-1972		None
104a	LDG-TT-ASPHALT	Asphalt, Truck Rack	Pre-1972		None
104b	LDG-TC-ASPHALT	Asphalt Tank Car Rack	Pre-1972		None
105a	LDG-Barge-01 and 02	Barge Loading, Gasoline Mode	Pre-1972		None
105b	LDG-Barge-01 and 02	Barge Loading (Non-Gasoline and Non-Benzene)	Pre-1972		None
106	LDG-Barge-03	Barge Loading Benzene	Pre-1972		Flare
107	APU	Asphalt Processing Unit	Pre-1972		Thermal Oxidizer ^a
108	LDG-TC-PROP/BUT	East Tank Car Rack	Pre-1972		North Property Ground Flare
109	LDG-TT-PROP/BUT	East Truck Rack	Pre-1972		North Property Ground Flare
110	CWT-11A	Non-Contact Process Water Cooling Tower	Pre-1972		None

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Construction Date	Firing ^a Rate (mmBtu/hr)	Emission Control Equipment
111	CWT-12B	Non-Contact Process Water Cooling Tower	Pre-1972		None
112	CWT-13	Non-Contact Process Water Cooling Tower	Pre-1972		None
113	CWT-14	Non-Contact Process Water Cooling Tower	Pre-1972		None
114	CWT-15	Non-Contact Process Water Cooling Tower	Pre-1972		None
115	CWT-16	Non-Contact Process Water Cooling Tower	Pre-1972		None
116	CWT-17	Non-Contact Process Water Cooling Tower	Pre-1972		None
117	CWT-19	Non-Contact Process Water Cooling Tower	Pre-1972		None
118	CWT-2	Non-Contact Process Water Cooling Tower	Pre-1972		None
119	CWT-20	Non-Contact Process Water Cooling Tower	Pre-1972		None
120	CWT-2A	Non-Contact Process Water Cooling Tower	Pre-1972		None
121	CWT-7	Non-Contact Process Water Cooling Tower	Pre-1972		None
122	CWT-9C	Non-Contact Process Water Cooling Tower	Pre-1972		None
123	WWTS	Units to Flare ^a : Primary Treatment/Lift Station/Collection/Bar Screen/Neutralization/CPI Oil Separators/Air Disengageent/DNF-1 and 3/DNF Sump/Two Centrifuge Holding Tanks (C-63 and C-64) and Ancillary Equipment as Part of Solids Dewatering/Tanks A-140, B-121, CH-278, C-46 and 47, D-52 through 54, F-10	1993		Primary Flare and Installed Flare
124	WWTS	Biotreaters/Clarifiers/Ponds and Lagoons	Pre-1972		None
125	Point 0096	Two Fixed Roof Tanks TK-H032 and TK-H033, 5700 gallons each	Pre-1972		Submerged Loading Pipe and Vapor Balance

5.0 OVERALL SOURCE CONDITIONS

5.1 Source Description

5.1.1 This permit is issued based on the source requiring a CAAPP permit as a major source (as defined in the CAA) of NO_x, SO₂, CO, PM, VOM, and HAP emissions.

5.1.2 For purposes of the CAAPP, the ConocoPhillips Wood River Refinery is considered a single source with the following other ConocoPhillips sources located in the vicinity of the refinery:

<u>I. D. No.</u>	<u>Location</u>
119050AAK	Hartford Lubricant Plant 2300 South Delmar, Hartford
119115ABB	Conoco, Inc. Route 111, Wood River
119801AAL	Conoco, Inc.
119050AAN	Wood River Products Terminal 2150 South Delmar

This determination is based on information provided by the refinery that these other sources do not serve as main distribution facilities for the Wood River Refinery and only handle materials refined at the refinery on an infrequent basis. If this status changes, the Illinois EPA must be notified.

5.2 Applicable Regulations

5.2.1 Specific emission units at this source are subject to particular regulations as set forth in Section 7 (Unit-Specific Conditions) of this permit.

5.2.2 In addition, emission units at this source are subject to the following regulations of general applicability:

- a. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 IAC 212.301 and 212.314.

Unless otherwise stated in Section 7, compliance with this requirements is considered to be assured by the inherent nature of operations at this source, as demonstrated by historical operation.

- b.
 - i. Emission units identified in 35 IAC 212.304 through 212.308 shall be operated under the provisions of an operating program prepared by the Permittee and submitted to the Illinois EPA for its review. Such operating program shall be designed to significantly reduce fugitive particulate matter emissions [35 IAC 212.309(a)].
 - ii. The operating program shall be amended from time to time by the Permittee so that the operating program is current. Such amendments shall be consistent with the requirements set forth by this condition and shall be submitted to the Illinois EPA [35 IAC 212.312].
 - iii. All normal traffic pattern roads and parking facilities located at this source shall be paved or treated with water, oils, or chemical dust suppressants. All paved areas shall be cleaned on a regular basis. All areas treated with water, oils, or chemical dust suppressants shall have the treatment applied on a regular basis, as needed, in accordance with the operating program [35 IAC 212.306].
- c. No person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, pursuant to 35 IAC 212.123(a), except as allowed by 35 IAC 212.123(b) and 212.124. The 35 IAC 212.122 exception only applies to fuel combustion emission units with a firing rate in excess of 250 mmBtu/hr and constructed after April 14, 1972. The Permittee does not have any units that meet this exception.
- d. Except as provided by 35 IAC 214, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2,000 ppm [35 IAC 214.301]. This provision shall not apply to existing processes designed to remove sulfur compounds from the flue gases of petroleum and petrochemical processes. [35 IAC 214.382(a)]
- e. PM Emission Limits for Process Sources
 - i. Except as further provided by 35 IAC Part 212, no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any process emission unit for which construction or modification

commenced prior to April 14, 1972, which, either alone or in combination with the emission of particulate matter from all other similar process emission units at a source or premises exceeds the allowable emission rates using the following equations. (35 IAC 212.322):

$$E = 4.10 (P)^{0.67}$$

for P less than or equal to 30 ton/hr

$$E = (55.0 (P)^{0.11}) - 40.0$$

for P greater than 30 ton/hr

Where:

E = Allowable emission rate in lbs/hr; and

P = Process weight rate in ton/hr

- ii. For process emission units for which construction or modification commenced after April 14, 1972 (35 IAC 212.321):

$$E = 2.54 (P)^{0.534}$$

for P less than or equal to 450 ton/hr

$$E = 24.8 (p)^{0.16}$$

for P greater than 450 ton/hr

- iii. For P less than 0.05 (100 lb/hr), the allowable is 0.55 lb/hr (35 IAC 266.110).

- iv. Note that the above limits do not apply to the catalytic cracking operations. See Condition 7.3.3(d) for the PM rule that applies to those operations.

- 5.2.3 a. Except as provided in section (iv) or (v) of this Condition, no person shall cause or allow the discharge of organic materials in excess of 100 ppm equivalent methane (molecular weight 16.0) into the atmosphere from:

- i. Any catalyst regenerator of a petroleum cracking system; or
- ii. Any petroleum fluid coker; or
- iii. Any other waste gas stream from any petroleum or petrochemical manufacturing process.

- iv. Exception. Existing sources subject to Condition 5.2.3(a)(iii) may, alternatively, at their election, comply with the organic material emission limitations imposed by 35 IAC 219.301 or 219.302; provided, however, that there shall be no increase in emissions from such sources above the level of emissions in existence on May 3, 1979.
- v. New Sources. Sources subject to Condition 5.2.3(a)(iii), construction of which commenced on or after January 1, 1977, may at their election, comply with the following emission limitations:
 - A. A maximum of eight pounds per hour of organic material; or
 - B. Emissions of organic material in excess of the limitation of Condition 5.2.3(a)(v)(A) of this Section is allowable if such emissions are controlled by air pollution control methods or equipment approved by the Illinois EPA capable of reducing by 85 percent or more the uncontrolled organic material that would otherwise be emitted to the atmosphere. Such methods or equipment must be approved by the Illinois EPA and approved by the USEPA as a SIP revision. (35 IAC 219.441)
- b. No owner or operator of a petroleum refinery shall cause or allow the operation of any vacuum producing system unless the condensers, hot wells and accumulators of any such system are equipped with vapor loss control equipment including, but not limited to, piping, valves, flame arresters and hot well covers, to vent any VOM with a vapor pressure of 1.5 psia or greater at 70°F to a heater, fire box, flare, refinery fuel gas system, or other equipment or system of equal emission control as approved by the Illinois EPA and approved by the USEPA as a SIP revision. This Section shall not apply to vacuum producing systems on lube units. (35 IAC 219.442)
- c. Pursuant to 35 IAC 219.443, the owner or operator of a petroleum refinery shall not process organic material with a vapor pressure of 10.34 kPa (1.5 psia) or greater at 294.3 K (70°F) in any wastewater (oil/water) separator at a petroleum refinery unless the separator is equipped with air pollution control equipment capable of reducing uncontrolled organic material emissions into the atmosphere by 85%.

Compliance with this requirement is considered to be assured by the inherent nature of operations at this source, as demonstrated by historical operation.

- d. Pursuant to 35 IAC 219.444, the Permittee shall not cause or allow a refinery process unit turnaround except in compliance with an operating procedure approved by the Illinois EPA. Except for procedures that were on file with the Illinois EPA no later than November 1, 1979, the procedure shall be designed to reduce emissions of VOM during refinery process unit turnarounds from organic material with a vapor pressure of 10.34 kPa (1.5 psia) or greater at 294.3°K (70°F) and shall at a minimum include depressurization of the refinery process unit or vessel to a flare, refinery fuel gas system, or other equipment or system of equal emission control, as approved by the Illinois EPA, until the internal pressure from the vessel or unit is less than 5.0 psig before allowing the vessel to be vented to the atmosphere.
- e. Pursuant to 35 IAC 219.143, no person shall cause or allow the emission of organic material into the atmosphere from any vapor blowdown system or any safety relief valve, except such safety relief valves not capable of causing an excessive release, unless such emission is controlled:
 - i. To 10 ppm equivalent methane (molecular weight 16.0) or less; or
 - ii. By combustion in a smokeless flare; or
 - iii. By other air pollution control equipment approved by the Illinois EPA according to the provisions of 35 IAC 201, and further processed consistent with 35 IAC 219.108.

Currently the Illinois EPA has not approved other air pollution control equipment for use in controlling vapor blowdown emissions at this source.
- f. Pursuant to 35 IAC 219.144, Condition 5.2.3(e) shall not apply to any set of unregulated safety relief valves capable of causing excessive releases, provided the owner or operator thereof, by October 1, 1972, supplied the Illinois EPA with the following:
 - i. A historical record of each such set (or, if such records were unavailable, of similar sets which, by virtue of operation under similar

circumstances, may reasonably have been presumed to have the same or greater frequency of excessive releases) for a three-year period immediately preceding October 1, 1972, indicating:

- A. Dates on which excessive releases occurred from each such set; and
 - B. Duration in minutes of each such excessive release; and
 - C. Quantities (in pounds) of mercaptans and/or hydrogen sulfide emitted into the atmosphere during each such excessive release.
- ii. Proof, using such three-year historical records, that no excessive release is likely to occur from any such set, either alone or in combination with such excessive releases from other sets owned or operated by the same person and located within a ten-mile radius from the center point of any such set, more frequently than 3 times in any 12 month period; and
 - iii. Accurate maintenance records for such safety relief valves.
- g. No person shall cause or allow the emission of a carbon monoxide waste gas stream into the atmosphere from a petroleum or petrochemical process unless such waste gas stream is burned in a direct flame afterburner or carbon monoxide boiler so that the resulting concentration of carbon monoxide in such waste gas stream is less than or equal to 200 ppm corrected to 50 percent excess air, or such waste gas stream is controlled by other equivalent air pollution control equipment approved by the Illinois EPA according to the provisions of 35 IAC.201 [35 IAC 216.361(a)].

5.2.4 Certain petroleum refining process units at the refinery are subject to 40 CFR 63 Subpart CC, NESHAP for Petroleum Refineries. However, Subpart CC exempts certain units from applicability of the rule. For instance, units that are subject to the HON rule are exempt from applicability of Subpart CC. Within the overall standard are specific standards for various classifications as follows:

- a. Miscellaneous process vents.
- b. Storage vessels.

- c. Wastewater streams and wastewater treatment operations.
- d. Equipment leaks.
- e. Gasoline loading racks.
- f. Marine vessel loading operations.

Within some of the above classifications there are two groupings. Group 1 units generally require control equipment or emission minimization methods. Group 2 units do not require control equipment or emission minimization methods. In Section 7 of this permit, specific emission units are identified as being Group 1 or Group 2 units.

5.2.5 Future Regulations

a. Adopted Rule with Future Compliance Date

This source is subject to 40 CFR 63 Subpart UUU, [63.1560 et. seq.] a NESHAP for Catalytic Cracking Units (CCUs), Catalytic Reforming Units (CRUs) and Sulfur Recovery Units (SRUs) at Petroleum Refineries. This Subpart has been promulgated as a final rule but the source does not have to achieve compliance with the emission limitations until April 11, 2005. An extension beyond that date is allowed for CCUs until the date that Tier 2 gasoline sulfur control standard is met provided that certain interim requirements are met as described in 40 CFR 63.1563.

b. New Regulations

- i. Should this stationary source become subject to a regulation under 40 CFR Part 63 or 35 IAC after the date this permit is issued, then the owner or operator shall, in accordance with the applicable regulation(s), comply with the applicable requirements by the date(s) specified and shall certify compliance with the applicable requirements of such regulation(s) as part of the annual compliance certification, as required by 40 CFR Part 70 or 71.
- ii. No later than upon the submittal for renewal of this permit, the owner or operator shall submit, as part of an application, the necessary information to address either the non-applicability of, or demonstrate compliance with all applicable requirements of any potentially applicable regulation which

was promulgated after the date this permit is issued.

5.2.6 Episode Action Plan

- a. If the source is required to have an episode action plan pursuant to 35 IAC 244.142, the Permittee shall maintain at the source and have on file with the Illinois EPA a written episode action plan (plan) for reducing the levels of air contaminants during yellow alerts, red alerts, and emergencies, consistent with safe operating procedures. The plan shall contain the information specified in 35 IAC 244.144.
- b. The Permittee shall immediately implement the appropriate steps described in this plan related to the declared episode stage and contaminant (35 IAC 244.169(b)) should an air pollution alert or emergency be declared.
- c. If an operational change occurs at the source which invalidates the plan, a copy of the revised plan shall be submitted to the Illinois EPA for review within 30 days of the change. Such plans shall be further revised if disapproved by the Illinois EPA. [35 IAC 244.143(d) and 244.145(b)]
- d. For sources required to have a plan pursuant to 35 IAC 244.142, a copy of the original plan and any subsequent revisions shall be sent to:
 - i. Illinois EPA, Compliance Section; and
 - ii. For sources located in Cook County and outside of the city of Chicago: Cook County Department of Environmental Control.

5.2.7 Benzene Waste Operations

- a. The requirements of 40 CFR 61 Subpart FF, Benzene Waste Operations, are applicable because the source is a petroleum refinery with a total annual benzene quantity in its waste streams in excess of 10 megagrams per year. The Permittee has currently chosen to comply with 40 CFR 61.342(e)(2) which states that the benzene quantity for the wastes described below shall not exceed 6 megagrams per year:

The owner or operator shall manage and treat facility waste (including remediation and process unit turn-around waste) with a flow-weighted annual average water content of 10 percent or greater, on a volume basis as

total water, and each waste stream that is mixed with water or wastes at any time such that the resulting mixture has an annual water content greater than 10 percent.

However, all other options for compliance under 40 CFR 61.342 remain available.

- b. The determination of benzene quantity for each waste stream shall be made in accordance with 40 CFR 61.355(k).
- c. Recordkeeping shall be in accordance with 40 CFR 61.356.
- d. Reporting shall be in accordance with 40 CFR 61.357.
- e. Any benzene stored in the fuels blending CCU oil storage tanks (TK-B141 and B142), fuels blending blend tank (TK-B146) and the fuels blending storage tank (TK-B145) shall be counted toward the 6 Mg/yr uncontrolled benzene limit of 40 CFR 61.342(e).

5.2.8 Risk Management Plan

- a. This stationary source, as defined in 40 CFR Section 68.3, is subject to 40 CFR Part 68, the Accidental Release Prevention regulations [40 CFR 68.215(a)(1)].
- b. The owner or operator of a stationary source shall revise and update the RMP submitted, as specified in 40 CFR 68.190.

5.3 Non-Applicability of Regulations of Concern

The safety relief valves at the refinery are not subject to 35 IAC 219.301 (8 lb/hr rule) because they are covered by more specific regulations, 35 IAC 219.143 (vapor blowdown requirements) and 219.144 (safety relief valve requirements).

5.4 Source-Wide Operational and Production Limits and Work Practices

In addition to the source-wide requirements in the Standard Permit Conditions in Section 9, the Permittee shall fulfill the following source-wide operational and production limitations and/or work practice requirements:

- a. The following is not truly a source-wide limit, but it is a limit that covers a combination of many areas of the refinery that resulted in an emission reduction of 5,589 lb/day.

- i. The Permittee has converted the following oil/water separators to junction boxes and will continue to operate them as junction boxes. Gas Plant OWS (included as a portion of the Vapor Blowdown System, aromatics east and west OWSs, separator boxes 2, 5, 6, 8 and 11, and alkylation plant OWS.
 - A. The Permittee shall maintain fixed covers on all junction boxes identified in Condition 5.4(a)(i).
 - B. Junction box cover(s) shall have a tight seal(s) around the edge and the cover(s) shall be kept in place at all times, except during inspection and/or maintenance.
 - C. If a cover has access doors or hatches, such access doors or hatches shall be kept closed at all times except during inspection and/or maintenance.
 - D. The Permittee shall keep a written record of any inspection and/or maintenance, excluding routing sampling and gauging activities, which requires removal of any junction box cover or opening of any access door or hatch on a junction box cover.
 - ii. The reduction value listed above was necessary to meet the reduction required by 35 IAC 219.762(c)(2). At the same time a limit was placed on throughput of gasoline and crude oil at the marine terminal. That limit is listed in Condition 7.9.5.
- b. The above limit is from a Federally Enforceable State Operating Permit, No. 87120058, for the Hartford Dock.

5.5 Source-Wide Emission Limitations

5.5.1 Permitted Emissions for Fees

No emission limitations are being imposed on this source for the purpose of permit fees. The Permittee will be required to pay the maximum fee of \$250,000.00/year in accordance with Section 39.5(18)(a)(ii)(A) of the Act.

5.5.2 Emissions of Hazardous Air Pollutants

Source-wide emission limitations for HAPs as listed in Section 112(b) of the CAA are not set. This source is considered to be a major source of HAPs.

5.5.3 Other Source-Wide Emission Limitations

Source-wide emission limitations are not set for this source pursuant to either the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21, Illinois EPA rules for Major Stationary Sources Construction and Modification, 35 IAC Part 203, or Section 502(b)(10) of the CAA. However, there may be unit specific emission limitations set forth in Section 7 of this permit pursuant to these rules.

5.6 General Recordkeeping Requirements

5.6.1 General Records for Process Unit Turnarounds

The Permittee shall maintain records of the following items for the source to demonstrate compliance with Condition 5.2.3(d):

- a. Each date that a refinery unit or vessel is shutdown for turnaround;
- b. The total estimated quantity of VOM emitted to the atmosphere resulting from the turnaround and the duration of the emissions in hours, with supporting information (Emissions associated with process unit turnaround shall not be included when determining compliance with any hourly or annual emission limitation); and
- c. Any occurrence of depressurization of a refinery unit or vessel with a pressure of 5.0 psig or greater containing a material with a vapor pressure of 10.34 kPa (1.5 psia) or greater at 294.3°K (70°F) by venting directly to the atmosphere, and the reason for such venting.

5.6.2 Records for Safety Relief Valves

The Permittee shall maintain records of all safety relief valves which are excluded from the control requirements of Condition 5.2.3(e) pursuant to Condition 5.2.3(f) because they are capable of causing excessive releases, but no excess release is likely to occur based on historical information as previously submitted to the Illinois EPA. These records shall include, as a minimum, the following:

- a. Identification of such safety relief valves or sets of safety relief valves; and
- b. Historical information that demonstrates that no excessive releases are likely to occur from any such set of valves, either alone or in combination with such excessive releases from other sets owned or operated by the Permittee and located within a ten-

mile radius from the center point of any such set, more frequently than 3 times in any 12 month period.

5.6.3 Retention and Availability of Records

- a. All records and logs required by this permit shall be retained for a least five years from the date of entry (unless a longer retention period is specified by the particular recordkeeping provision herein), shall be kept at a location at the source that is readily accessible to the Illinois EPA or USEPA, and shall be made available for inspection and copying at all reasonable times by the Illinois EPA or USEPA upon request.
- b. The Permittee shall retrieve and print, on paper, during normal source office hours, any required records retained in an electronic format (e.g., computer) in response to an Illinois EPA or USEPA request for required records during the course of a source inspection.
- c. Records for Units Exempt from Subpart TT Control Requirements

The Permittee shall maintain a list of all units that are subject to 35 IAC 219 Subpart TT which are not required to comply with the control requirements of 35 IAC 219.986(a) by meeting the exemption in 35 IAC 219.980(c), that is, individual emission units with VOM emissions of less than 2.5 tons per calendar year if the total emissions from all such units not complying with 35 IAC 219.986 do not exceed 5.0 tons per calendar year. Within 30 days of the end of each calendar year the emissions from each unit exempt from the control requirement shall be updated to include the most recent calendar year.

- d. The Permittee shall kept records of emissions of all pollutants in order to be able to submit the Annual Emission Report required by Condition 5.7.2. This includes records of specific HAPs.

5.7 General Reporting Requirements

5.7.1 General Source-Wide Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations with the permit requirements in accordance with Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.

With regard to specific limits in Section 5, the Permittee shall report any failure to operate any of the oil/water separators listed in Condition 5.4(a) as junction boxes.

5.7.2 Annual Emissions Report

The annual emissions report required pursuant to Condition 9.7 shall contain emissions information for the previous calendar year.

5.8 General Operational Flexibility/Anticipated Operating Scenarios

Changes in feed stock and quality, including but not limited to changes in gravity and sulfur content are not considered operational changes and do not require notification to the Illinois EPA (Section 39.5(12) of the Act).

5.9 General Compliance Procedures

5.9.1 Process Unit Turnaround

- a. Compliance with the source-wide operational requirements specified in Condition 5.2.3(d) shall be based on the recordkeeping requirements of Conditions 5.6.1.
- b. Compliance with the source-wide operational requirements specified in Condition 5.2.3(e) shall be based on the recordkeeping requirements of Condition 5.6.3.
- c. For the purpose of estimating HAP emissions from equipment at the source, the vapor weight percent (based on a 1992 USEPA survey) of each HAP for each organic liquid times the VOM emissions contributed by that organic liquid is acceptable.

5.10 Special Permit Shield

The Permittee is hereby shielded from any obligation to measure the volume of leaking liquid from a pump or compressor for purposes of determining compliance with 35 IAC 219.142 as Condition 7.8.5 establishes appropriate compliance procedures for this rule that do not rely on such measurements.

6.0 EMISSIONS CONTROL PROGRAMS

6.1 NO_x Trading Program

6.1.1 Description of NO_x Trading Program

The NO_x Trading Program is a regional "cap and trade" market system for large sources of NO_x emissions in the eastern United States, including Illinois. It is designed to reduce and maintain NO_x emissions from the emission units covered by the program within a budget to help contribute to attainment and maintenance of the ozone ambient air quality standard in the multi-state region covered by the program, as required by Section 126 of the CAA. The NO_x Trading Program applies in addition to other applicable requirements for NO_x emissions and in no way relaxes these other requirements.

Emission units that are subject to the NO_x Trading Program are referred to as "budget units." Sources that have one or more budget unit subject to the NO_x Trading Program are referred to as budget sources.

The NO_x Trading Program controls NO_x emissions from budget units during a seasonal control period from May 1 through September 30 of each year, when weather conditions are conducive to formation of ozone in the ambient air. (In 2004, the first year that the NO_x Trading Program is in effect, the control period will be May 31 through September 30.) By November 30 of each year, the allowance transfer deadline, each budget source must hold "NO_x allowances" for the actual NO_x emissions of its budget units during the preceding control period. The USEPA will then retire NO_x allowances in the source's accounts in amounts equivalent to its seasonal emissions. If a source does not have sufficient allowances in its accounts, USEPA would subtract allowances from the source's future allocation for the next control period and impose other penalties as appropriate. Stringent monitoring procedures developed by USEPA apply to budget units to assure that actual emissions of NO_x emissions are accurately determined.

The number of NO_x allowances available for budget sources is set by the overall budget for NO_x emissions established by USEPA. This budget requires a substantial reduction in NO_x emissions from historical levels as necessary to meet air quality goals. In Illinois, separate rules have been established for the budget units that are electrical generating units (EGU) and for large units at manufacturing plants and institutions (non EGU), like the boilers at this source. Under these rules, the allocation or share of the NO_x allowances for non-EGU is set in an amount established by rule [35 IAC Part 217, Appendix E].

New budget unit, for which limited operating data may be available, may obtain NO_x allowances from the new source set-aside (NSSA), a portion of the overall budget reserved for new budget units.

In addition to directly receiving or purchasing NO_x allowances as described above, budget sources may transfer NO_x allowances from one of their units to another. They may also purchase allowances in the marketplace from other sources that are willing to sell some of the allowances that they have received. Each budget source must designate an account representative to handle all its allowance transactions. The USEPA, in a central national system, will maintain allowance accounts and record transfer of allowances among accounts.

The ability of sources to transfer allowances will serve to minimize the costs of reducing NO_x emissions from budget units to comply with the overall NO_x budget. In particular, the NO_x emissions of budget units that may be most economically controlled will be targeted by sources for further control of emissions. This will result in a surplus of NO_x allowances from those units that can be transferred to other units at which it is more difficult to control NO_x emissions. Experience with reduction of sulfur dioxide emissions under the federal Acid Rain program has shown that this type of trading program not only achieves regional emission reductions in a more cost-effective manner but also results in greater overall reductions than application of traditional emission standards to individual emission units.

The USEPA developed the plan for the NO_x Trading Program with assistance from affected states. Illinois' rules for the NO_x Trading Program are located at 35 IAC Part 217, Subpart U and W, for non-EGUs and EGUs, respectively. These rules have been approved by the USEPA. These rules provide for interstate trading of NO_x allowances, as mandated by Section 9.9 of the Act. Accordingly, these rules refer to and rely upon federal rules at 40 CFR Part 96, which have been developed by USEPA for certain aspects of the NO_x Trading Program, and which an individual state must follow to allow for interstate trading of allowances.

Note: This narrative description of the NO_x Trading Program is for informational purposes only and is not enforceable.

6.1.2 Applicability

- a. The following emission units are budget units for purposes of Illinois' NO_x Trading Program. Accordingly, this source is a budget source and the Permittee is the owner or operator of a budget source

and budget units. In this section of this permit, these emission units are addressed as budget units.

Boilers BLR-15, 16 and 17 (Emission Units 07, 58 and 59)

- b. This Permit does not provide "low-emitter status" for the above emission units pursuant to 35 IAC 217.472.

6.1.3 General Provisions of the NO_x Trading Program

- a. This source and the budget units at this source shall comply with all applicable requirements of Illinois' NO_x Trading Program, i.e., 35 IAC Part 217, Subpart U, and 40 CFR Part 96 (excluding 40 CFR 96.4(b) and 96.55(c), and excluding 40 CFR 96, Subparts C, E and I), pursuant to 35 IAC 217.456(a) and 217.456(f)(2).
- b. Any provision of the NO_x Trading Program that applies to a budget source (including any provision applicable to the account representative of a budget source) shall also apply to the owner and operator of such budget sources and to the owner and operator of each budget unit at the source, pursuant to 35 IAC 217.456(f)(3).
- c. Any provision of the NO_x Trading Program that applies to a budget EGU (including any provision applicable to the account representative of a budget unit) shall also apply to the owner and operator of such budget unit. Except with regard to requirements applicable to budget units with a common stack under 40 CFR 96, Subpart H, the owner and operator and the account representative of one budget unit shall not be liable for any violation by any other budget unit of which they are not an owner or operator or the account representative, pursuant to 35 IAC 217.456(f)(4).

6.1.4 Requirements for NO_x Allowances

- a. Beginning in 2004, by November 30 of each year, the allowance transfer deadline, the account representative of each budget unit at this source must hold allowances available for compliance deductions under 40 CFR 96.54 in the budget unit's compliance account or the source's overdraft account in an amount that shall not be less than the budget unit's total NO_x emissions for the preceding control period (rounded to the nearest whole ton), as determined in accordance with applicable monitoring requirements, plus any number of allowances necessary to account for actual utilization (e.g., for testing, start-up, malfunction, and shut down) under 40 CFR 96.42(e) for the control period, pursuant to 35 IAC 217.456(d)(1). For purposes of this requirement, an allowance may not be utilized for a control period in

a year prior to the year for which the allowance is allocated, pursuant to 35 IAC 217.456(d)(4).

- b. The account representative of a budget unit that has excess emissions in any control period, i.e., NO_x emissions in excess of the number of NO_x allowances held as provided above, shall surrender allowances as required for deduction under 40 CFR 96.54(d)(1), pursuant to 35 IAC 217.456(f)(5). In addition, the owner or operator of a budget unit that has excess emissions shall pay any fine, penalty, or assessment, or comply with any other remedy imposed under 40 CFR 96.54(d)(3) and the Act, pursuant to 35 IAC 217.456(f)(6). Each ton of NO_x emitted in excess of the number of NO_x allowances held as provided above for each budget unit for each control period shall constitute a separate violation of 35 IAC Part 217 and the Act, pursuant to 35 IAC 217.456(d)(3).
- c. An allowance allocated by the Illinois EPA or USEPA under the NO_x Trading Program is a limited authorization to emit one ton of NO_x in accordance with the NO_x Trading Program. As explained by 35 IAC 217.456(d)(5), no provisions of the NO_x Trading Program, the budget permit application, the budget permit, or a retired unit exemption under 40 CFR 96.5 and no provision of law shall be construed to limit the authority of the United States or the State of Illinois to terminate or limit this authorization. As further explained by 35 IAC 217.456(d)(6), an allowance allocated by the Illinois EPA or USEPA under the NO_x Trading Program does not constitute a property right. As provided by 35 IAC 217.456(d)(2), allowances shall be held in, deducted from, or transferred among allowances accounts in accordance with 35 IAC Part 217, Subpart U, and 40 CFR 96, Subparts F and G.

6.1.5 Monitoring Requirements for Budget Units

- a. The Permittee shall comply with the monitoring requirements of 40 CFR Part 96, Subpart H, for the budget unit and the compliance of the budget unit with the emission limitation under 6.1.4(a) shall be determined by the emission measurements recorded and reported in accordance with 40 CFR 96, Subpart H, pursuant to 35 IAC 217.456(c)(1) and (c)(2).
- b. The account representative for the source and the budget unit at the source shall comply with those sections of the monitoring requirements of 40 CFR 96, Subpart H, applicable to an account representative, pursuant to 35 IAC 217.456(c)(1).

Note: Pursuant to 40 CFR 96.70(b), existing budget units are to begin complying with applicable monitoring requirements of 40 CFR Part 96 at least one year in advance of the start of the first control period governed by the NO_x Trading Program.

6.1.6 Recordkeeping Requirements for Budget Units

Unless otherwise provided below, the Permittee shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This 5-year period may be extended for cause at any time prior to the end of the 5 years, in writing by the Illinois EPA or the USEPA.

- a. The account certificate of representation of the account representative for the source and each budget unit at the source and all documents that demonstrate the truth of the statements in the account certificate of representation, in accordance with 40 CFR 96.13, as provided by 35 IAC 217.456(e)(1)(A). These certificates and documents must be retained on site at the source for at least 5-years after they are superseded because of the submission of a new account certificate of representation changing the account representative.
- b. All emissions monitoring information, in accordance with 40 CFR 96, Subpart H, (provided that to the extent that 40 CFR 96, Subpart H, provides for a 3-year period for retaining records, the 3-year period shall apply), pursuant to 35 IAC 217.456(e)(1)(B).
- c. Copies of all reports, compliance certifications, and other submissions and all records made or required under the NO_x Trading Program or documents necessary to demonstrate compliance with requirements of the NO_x Trading Program, pursuant to 35 IAC 217.456(e)(1)(C).
- d. Copies of all documents used to complete a budget permit application and any other submission under the NO_x Trading Program, pursuant to 35 IAC 217.456(e)(1)(D).

6.1.7 Reporting Requirements for Budget Units

- a. The account representative for this source and each budget unit at this source shall submit to the Illinois EPA and USEPA the reports and compliance certifications required under the NO_x Trading Program, including those under 40 CFR 96, Subparts D and H, and 35 IAC 217.474, pursuant to 35 IAC 217.456(e)(2).

- b. Notwithstanding the provisions for CAAPP permits, these submittals need only be signed by the designated representative, who may serve in place of the responsible official for this purpose, as provided by Section 39.5(1) of the Act, and submittals to the Illinois EPA need only be made to the Illinois EPA, Air Compliance Section.

6.1.8 Allocation of NO_x Allowances to Budget Units

- a. As the budget units identified in Condition 6.1.2(a) are "existing" units listed in 35 IAC Part 217, Appendix E, these units are entitled to NO_x allowances as specified by Appendix E, subject to transfers of allowances from the source made in accordance with 35 IAC 217.462(b). (The portion of Appendix E that applies to the Permittee is provided in Condition 6.1.12.) The number of NO_x allowances actually allocated for these budget units shall be the number of NO_x allowances allocated by the Illinois EPA in accordance with 35 IAC 217.466(a) and issued by USEPA, which may reflect adjustments to the overall allocations to budget units as provided for by 35 IAC 217.460 and 217.462(c).
- b. To the extent that NO_x allowances remain in the NSSA after any allocation for new budget units, the Permittee is also entitled to a pro-rata share of such remaining allowances as provided by 35 IAC 217.466(d).

6.1.9 Eligibility to Obtain NO_x Allowances from the New Source Set-Aside (NSSA)

The Permittee is not eligible to obtain NO_x allowances from the NSSA for the budget units identified in Condition 6.1.2(a), as provided by 35 IAC 217.468, because the units are "existing" budget units.

6.1.10 Eligibility for Early Reduction Credits (ERC)

The Permittee is not eligible to request NO_x allowances for the budget units identified in Condition 6.1.2(a) for any early reductions in NO_x emissions prior to the 2004 control period, as provided by 35 IAC 217.470, because these units are not equipped with continuous emission monitoring systems for NO_x.

6.1.11 Budget Permit Required by the NO_x Trading Program

- a. For this source, this segment of the CAAPP Permit, i.e., Section 6.1, is the Budget Permit required by the NO_x Trading Program and is intended to contain

federally enforceable conditions addressing all applicable NO_x Trading Program requirements. This Budget Permit shall be treated as a complete and segregable portion of the source's permit, as provided by 35 IAC 217.458(a)(2).

- b. The Permittee and any other owner or operator of this source and each budget unit at the source shall operate the budget units in compliance with this Budget Permit, pursuant to 35 IAC 217.456(b)(2).
- c. No provision of this Budget Permit or the associated application shall be construed as exempting or excluding the Permittee, or other owner or operator and, to the extent applicable, the account representative of a budget source or budget unit from compliance with any other regulation or requirement promulgated under the CAA, the Act, the approved State Implementation Plan, or other federally enforceable permit, pursuant to 35 IAC 217.456(g).
- d. Upon recordation by USEPA under 40 CFR 96, Subpart F or G, every allocation, transfer, or deduction of an allowance to or from the budget units' compliance accounts or to or from the source's general or overdraft account is deemed to amend automatically and become part of this budget permit, pursuant to 35 IAC 217.456(d)(7). This automatic amendment of this budget permit shall be deemed an operation of law and will not require any further review.
- e. No revision of this Budget Permit shall excuse any violation of the requirements of the NO_x Trading Program that occurs prior to the date that the revision to this permit takes effect, pursuant to 35 IAC 217.456(f)(1).
- f. The Permittee, or other owner or operator of the source, shall reapply for a Budget Permit for the source as required by 35 IAC Part 217, Subpart U and Section 39.5 of the Act. For purposes of the NO_x Trading Program, the application shall contain the information specified by 35 IAC 217.458(b)(2).

6.1.12 References

35 IAC Part 217 Appendix E - Provisions Applicable to the Permittee, originally identified as "TOSCO", now ConocoPhillips.

Company I.D. No./ Name	Unit Designation	Unit Description	Budget Allocation	Budget Allocation Less 3% N SSA
119090AAA	72110633080	Boiler No. 15	40	38
119090AAA	72110633081	Boiler No. 16	40	39
119090AAA	72110633082	Boiler No. 17	80	78
Company Total Allocation:			160	155

7.0 UNIT SPECIFIC CONDITIONS

7.1 Unit: Process Heaters and Boilers
Control: None

7.1.1 Description

Process heaters are used to heat the petroleum material being processed. The heaters use as a fuel either alone or in combination fuel gas generated on site or purchased natural gas. The following list of emission units is divided into those subject to NSPS and those not subject to an NSPS. The primary NSPS requirement is on H₂S content of the fuel gas. There are several fuel gas systems at the site. Any system that does not feed an NSPS heater is not required to meet the same H₂S requirement. There are also some boilers that produce steam for process heat. The boilers burn the same gaseous fuels as the process heaters.

7.1.2 List of Process Heaters, Boilers, and Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Firing ^a Rate (mmBtu/hr)	Emission Control Equipment
Units Subject to NSPS Subpart J				
01	WRR-31	Acetone Unit HTR-ACETONE-H1	29	None
02	WRR-31	Acetone Unit HTR-ACETONE-H2	29	None
03	WRR-6	Vacuum Flasher No. 1 North Heater HTR-VF-1-NORTH	100	None
04	WRR-6	Vacuum Flasher No. 1 South Heater HTR-VF-1-SOUTH	100	None
05	WRR-69	Heavy Catalytic Naphtha Hydrotreater F-1 Charge Heater HTR-HCNHT	25	None
06	WRR-27	Utility Boilers Boiler 18 BLR-18	249	None
Units Subject to NSPS Subpart D				
07	WRR-27	Utility Boilers Boiler 17 BLR-17	700	None
Units Subject to NSPS Subpart Dc				
08	WRR-61	Rental Package Boiler Rental Boiler No. 1 BLR-RENT-1	99	None

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Firing ^a Rate (mmBtu/hr)	Emission Control Equipment
09	WRR-61	Rental Package Boiler Rental Boiler No. 2 BLR-RENT-2	99	None
Units Not Subject to NSPS				
10	WRR-6	Visbreaker Unit East Heater HTR-VBU-EAST	55	None
11	WRR-6	Visbreaker Unit West Heater HTR-VBU-WEST	55	None
12	WRR-16	Alkylation Unit HTR-ALKY-HM1	37.5	None
13	WRR-16	Alkylation Unit HTR-ALKY-HM2	110	None
14	WRR-17	Precursor Unit HTR-Precursor	67.4	None
15	WRR-19	Benzene Extraction Unit HTR-BEU-HM1	110	None
16	WRR-19	Benzene Extraction Unit HTR-BEU-HM2	110	None
17	WRR-7	CO Heater ^b HTR-CCU1-CO	175	None
18	WRR-8	CO Heater ^b HTR-CCU2-CO	175	N/A
18a	WRR-7	CCU-1 Startup Heater B-1 (Used only during startup)	80	None
18b	WRR-8	CCU-2 Startup Heater B-1 (Used only during startup)	80	None
19	WRR-8	Catalytic Feed Hydrotreater Unit HTR-CFH	32	None
20	WRR-5	Cracked Absorption Unit HTR-CAU-ROSTILL	95	None
21	WRR-1	Distilling Unit HTR-DU1-F301	120	None
22	WRR-1	Distilling Unit HTR-DU1-F302	200	None
23	WRR-2	Distilling Unit 2, Lube Crude Heater HTR-DU2-F200	151	None
24	WRR-2	Distilling Unit, West Crude Heater HTR-DU2-F202	231	None

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Firing ^a Rate (mmBtu/hr)	Emission Control Equipment
25	WRR-68	Distilling Unit 2, East Crude Heater HTR-DU2-F203	231	None
26	WRR-68	Rectified Absorption Unit Reboiler Heater HTR-RAU-DEBUT	68.5	None
27	WRR-6	Vacuum Flasher No. 2 West Heater HTR-VF-2-F204	61	None
28	WRR-6	Vacuum Flasher No. 2 East Heater HTR-VF2-F205	61	None
29	WRR-6	Vacuum Flasher No. 3 Visbreaker Heater HTR-VF-3	50	None
30	WRR-21	Cat Reformer No. 1 Feed Preheater HTR-CR1-H1	165	None
31	WRR-21	Cat Reformer No. 1 First Interreactor Heater HTR-CR1-H2	162	None
32	WRR-21	Cat Reformer No. 1 Second Interreactor Heater HTR-CR1-H3	78	None
33	WRR-21	Cat Reformer No. 1 Stabilizer Reboiler HTR-CR1-H4	40	None
34	WRR-21	Cat Reformer No.1 Regeneration Gas Heater HTR-CR1-H5	37.8	None
35	WRR-21	Cat Reformer No. 1 Third Interreactor Heater HTR-CR1-H7	100	None
36	WRR-26	Cat Reformer No. 2 Charge Reheater HTR-CR2-N	275	None
37	WRR-25	Cat Reformer No. 3 Stabilizer Reboiler HTR-CR3-H2	31.5	None
38	WRR-25	Cat Reformer No.3 Regeneration Gas Heater HTR-CR3-H3	25.4	None
39	WRR-25	Cat Reformer No. 3 Charge Heater HTR-CR3-H4	144.7	None

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Firing ^a Rate (mmBtu/hr)	Emission Control Equipment
40	WRR-25	Cat Reformer No. 3 First Interreactor Heater HTR-CR3-H5	141	None
41	WRR-25	Cat Reformer No. 3 Second Interreactor Heater HTR-CR3-H6	74	None
42	WRR-23	Distillate Hydrotreater F-1 Charge Heater HTR-DHT	108	None
43	WRR-20	Hydrocracking Unit First Stage Charge Heater HTR-HCU-H1	70	None
44	WRR-20	Hydrocracking Unit Second Stage Charge Heater HTR-HCU-H2	70	None
45	WRR-20	Hydrocracking Unit Fractionator Reboiler HTR-HCU-H3	235	None
46	WRR-26	Hydrodesulfurization Unit 1 Charge Heater HTR-HDU1	67.3	None
47	WRR-25	Hydrodesulfurization Unit 2 Charge Heater HTR-HDU2	81	None
48	WRR-24	Kerosene Hydrotreater KHT Heater HTR-KHT	109	None
49	WRR-24	Kerosene Hydrotreater Mineral Spirits Heater HTR-KH2	94.2	None
50	WRR-22	Saturates Gas Plant RO Stabilizer Reboiler HTR-SGP	59.5	None
51	WRR-20	Steam Methane Reformer SMR Heater HTR-SMR	460	None
52	WRR-11	Lube Extract Unit LEU Extract Heater HTR-LEU-EXT	63.5	None
53	WRR-11	Lube Extract Unit LEU Raffinate Heater HTR-LEU-RAFF	20.8	None
54	WRR-11	Lube Extract Unit F-1 Charge Heater HTR-LHT	20	None

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Firing ^a Rate (mmBtu/hr)	Emission Control Equipment
55	WRR-6	Vacuum Fractionator Column Charge Heater HTR-VFC	89.1	None
56	WRR-13	Asphalt Processing Asphalt Thermo Heater HTR-ASPHAT-THE	8	None
57	SRR-13	Asphalt Blending Converter Preheater HTR-ASHALT-PRE	3.9	None
58	WRR-27	Utility Boilers Boiler 15 BLR-15	360	None
59	WRR-27	Utility Boilers Boiler 16 BLR-16	360	None

^a Firing rates listed are for descriptive purposes and are not permit limits unless stated as such in Condition 7.1.5.

^b While acting as a process heater, this unit is also a control device, using process generated CO as its fuel.

7.1.3 Applicability Provisions and Applicable Regulations

- a. An "affected process heater or boiler" for the purpose of these unit-specific conditions, is a process heater, boiler, preheater, or reboiler that burns gaseous fuel, classified as a fuel combustion emission unit and is identified in Condition 7.1.2.
- b.
 - i. Pursuant to the Petroleum Refinery NSPS, 40 CFR 60 Subpart J, emissions units 01-06 listed in Condition 7.1.2 shall not burn any fuel gas that contains H₂S in excess of 0.10 gr/dscf on an average 3-hour rolling basis. (40 CFR 60.104(a)(1) and 60.105(e)(3)(ii))
 - ii. The remaining fuel combustion units, that is those not specified in Condition 7.1.3(b)(i), are subject to 35 IAC 214.382(c)(2) and (d). These rules require that the fuel gas not contain H₂S in excess of 0.39 gr/dscf demonstrated on a three-hour block average basis.
- c. No person shall cause or allow the emission of carbon monoxide (CO) into the atmosphere from any fuel combustion emission source with actual heat input

greater than 10 mmBtu/hr to exceed 200 ppm, corrected to 50 percent excess air (35 IAC 216.121).

- d. No person shall cause or allow the emission of nitrogen oxides into the atmosphere in any one hour period from any existing fuel combustion emission source with an actual heat input equal to or greater than 250 mmBtu/hr, located in the St. Louis major metropolitan area when firing gaseous fuel to exceed 0.3 lbs/mmBtu of actual heat input. Due to their firing rates, this provision only applies to permit Emission Unit Nos. 07 (Boiler 17), 51 (SMR), 58 (Boiler 15) and 59 (Boiler 16). (35 IAC 217.141)
- e. Emission Unit Nos. 07, 58, and 59 (Boilers 15, 16 and 17) are subject to the NO_x Control and Trading Program, 35 IAC 217, Subpart U (217.450 et. seq.). The requirements for that program are in Section 6.0 of this permit.
- f. Malfunction and Breakdown Provisions

In the event of a malfunction or breakdown of fuel gas treaters or sulfur recovery system, the Permittee is authorized to continue operation of the process heaters or boilers in violation of the applicable requirements of 35 IAC 214.382(c)(2) and (d), as necessary to prevent risk of injury to personnel or severe damage to equipment. This authorization is subject to the following requirements:

- i. Whenever the sulfur recovery system has not recovered at least 75% of the total sulfur available for a four hour period, the Permittee shall institute SO₂ emission reduction procedures. The procedures shall reduce uncontrolled SO₂ emissions to no more than 16.0 tons/hr. These procedures shall include:
 - A. All necessary changes in refinery operations; and
 - B. Any other reasonable action to reduce SO₂ emissions.
- ii. The Permittee shall fulfill the applicable recordkeeping and reporting requirements of Conditions 7.1.9(b) and 7.1.10(a).
- iii. The Permittee shall monitor the system daily and perform preventative maintenance to minimize the frequency of malfunctions of the sulfur recovery system.

- g. Emission Units Nos. 08 and 09 (Rental Boilers Nos. 1 and 2) are subject to 40 CFR 60, Subparts A and Dc. However, since only gaseous fuels are burned there are no applicable emission standards. See Section 7.1.9 for recordkeeping requirements.
- h. Emission Unit No. 07 (Boiler 17) is subject to 40 CFT 60, Subparts A and D. This rule requires that emissions of NO_x not exceed 0.20 lb/mmBtu of heat input from combustion of gaseous fossil fuel. [40 CFR 60.44(a)(1)] Emissions of PM shall not exceed 0.10 lb/mmBtu. [40 CFR 60.42(a)(i)]

7.1.4 Non-Applicability of Regulations of Concern

- a. The refinery NESHAP (40 CFR 63 Subpart CC) only applies to certain "petroleum refining process units." The emission units listed in 7.1.2 are fuel combustion devices and do not qualify as petroleum refining process units.
- b. 35 IAC 217.121 limits NO_x emissions from new fuel combustion emission units with a firing rate equal to or greater than 250 mmBtu/hr. None of the new units listed in Condition 7.1.2 have a firing rate greater than 250 mmBtu/hr. For the purposes of this rule, new is defined as constructed after April 14, 1972.
- c. The rule for SO₂ limits from a combination of fuels (35 IAC 214.162) does not apply since all of these units burn gaseous fuels only and not liquid or solid fuels. [35 IAC 214.382(c)]
- d. This permit is issued based on the affected process heaters not being subject to 35 IAC 214.301 because the process heaters and boilers are not process emission sources, but rather fuel combustion emission units.
- e. Pursuant to Civil Action No. 98-652-GPM, the Permittee has discontinued use of refinery fuel pitch as a fuel in all fuel combustion units listed in Condition 7.1.2. Therefore, 35 IAC 214.382(c)(1) is no longer applicable.
- f. NSPS Subpart J is not applicable to the rental package boilers (Emission Unit Nos. 08 and 09) because the boiler are only fired with natural gas.
- g. i. Unit No. 07 (Boiler 17) is not subject to an SO₂ standard with NSPS Subpart D (Steam Generators) because the boiler fires only gaseous fuels and there are only standards for

liquid and solid fuels (or solid in combination with wood residue). [40 CFR 60.43]

- ii. In addition, steam generators that fire only gaseous fuels are not required to have continuous monitoring system for opacity or SO₂. [40 CFR 60.45(b)(1)]

7.1.5 Operational Limits

- a. Although the RAU steam reboiler is not an emission unit listed in Condition 7.1.2 since it uses steam rather than generates it, the following limits are included here since most of the steam it uses is from Boiler 17.
 - i. Boiler 17 shall supply no more than 25,000 lb/hr on a daily average to the RAU steam reboiler.
 - ii. Refinery fuel usage (or alternatively natural gas) to generate the amount of steam in (a) above shall not exceed 39 mmBtu/hr, on a daily average, or 340 mmscf/year.
 - iii. Maximum steam input to the RAU steam reboiler shall not exceed 40,000 lb/hr. The difference between the total and Boiler 17 is provided by piping steam from the sulfur condensers (A, C and D trains). This steam was previously vented to the atmosphere.
 - iv. These limitations are from state permit 01060090 [T1].
- b. The two rental package boilers shall only be fired with natural gas as required by State Permit 97020044.

7.1.6 Emission Limitations

In addition to Condition 5.2.2, the affected process heaters are subject to the following:

- a. Emissions from the affected heaters as indicated shall not exceed the following limits [T1]:

Pollutant	E M I S S I O N S (Tons/Year)		
	03	04	05
NO _x	122.1	122.1	10.74

<u>Pollutant</u>	<u>E M I S S I O N S</u> (Tons/Year)		
	<u>Heater No.</u>		
	<u>03</u>	<u>04</u>	<u>05</u>
SO ₂	8.8	8.8	0.06
CO	36.6	36.6	9.02
PM	3.3	3.3	0.59
VOM	2.4	2.4	0.82
 Firing Rate (mmBtu/hr)	 100	 100	 25
 Construction Permit	 83070045	 83070045	 01120044

- b. The limits in Condition 7.1.6(a) are based on the maximum firing rate, continuous operation, and AP-42 emission factors for pollutants not set by the permit (e.g., NO_x or NSPS).

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

The limitations for emission Units 03 and 04 contain revisions to previously issued Construction Permit 83070045. The source has requested that the Illinois EPA establish conditions in this permit that allow various refinements from the conditions of this construction permit, consistent with the information provided in the CAAPP application. The source has requested these revisions to the units' hours of operation and firing rate and has addressed the applicability and compliance of Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits contained in Condition 7.1.6(a) continue to ensure that the construction and/or modification addressed in the above construction permit does not constitute a new major source or major modification pursuant to these rules. These limits are the primary enforcement mechanism for the equipment and activities permitted in this construction permit and the information in the CAAPP application contains the most current and accurate information for the source. Specifically, the original limits included use of refinery fuel pitch as a fuel. This fuel is no longer permitted and therefore the SO₂ emission rate was lowered to the use of refinery fuel gas as the fuel. The emission rate was also adjusted to the most recent AP-42 emission factors. The NO_x emission

rate is over 40 ton/yr but was not required to use BACT because these were replacement units and there was no net increase. The firing rates were not changed [T1R].

- c. Emissions attributable to burning the additional amount of fuel specified in Condition 7.1.5(a)(ii) shall not exceed the following:

<u>Pollutant</u>	<u>Emission Factor (Lb/mmscf)</u>	<u>Emissions (Tons/Yr)</u>
SO ₂	5.08	0.87
NO _x	146.0	24.82
CO	84.0	14.28
PM	7.6	1.30
VOM	5.5	0.94

The above limitations were established in Permit 01060090, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21 [T1].

- d. Emissions from the two rental package boilers (Units 08 and 09) shall not exceed the following limits:

Combined Fuel Usage 266 mmcf/yr

Firing Rate Per Boiler 99 mmBtu/hr

<u>Pollutant</u>	<u>Emissions (Tons/Yr)</u>
SO ₂	0.08
NO _x	11.0
CO	4.7
PM	1.9
VOM	0.8

The above limitations were established in Permit 97020044, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21 [T1].

- e. Emissions attributable to the additional steam load placed on Boiler 17 and heat input required to preheat the feed entering the GHT Unit for the Tier 2 gasoline sulfur requirements project shall not exceed the following:

<u>Pollutant</u>	<u>Boiler 17 Emissions (Tons/Yr)</u>	<u>HTR-ALKY-HM1^a Emissions (Tons/Yr)</u>
SO ₂	83.03	3.42
NO _x	2.89	0.17
CO	47.77	2.87
PM/PM ₁₀	4.32	0.26
VOM	3.13	0.19

* The HTR-ALKY-HM1 heater will be used to preheat the feed entering the GHT.

The above limitations were established in Permit 01120044, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21 [T1].

7.1.7 Testing Requirements

Within 90 days of a written request from the Illinois EPA, the Permittee shall conduct an emissions test to demonstrate compliance with the emission rate in Condition 7.1.3 or 7.1.6.

7.1.8 Monitoring Requirements

- a. Fuel Gas Analysis for Gas Systems that Serve NSPS Heaters

Pursuant to the requirements of the NSPS specified in Condition 7.1.3(b) and Civil Action No. 98-652-GPM, the Permittee has chosen to monitor and record the fuel gas H₂S concentration rather than SO₂ concentration. The Permittee has also chosen to continuously monitor at one or more locations that accurately represents the concentration of H₂S in the fuel gas being burned, even the units not subject to NSPS. Any performance evaluation required pursuant to 40 CFR 60.13(c) for the H₂S monitor shall use Performance Specification 7. Method 11 shall be used for conducting the relative accuracy evaluations (40 CFR 60.105(a)(4)).

- b. Fuel Gas Analysis for Gas Systems that Do Not Serve NSPS Heaters

Any fuel gas system that does not provide fuel to heaters subject to the NSPS may determine compliance on a block three hour average basis.

- c. Pursuant to 40 CFR 60.45(a), Emission Unit 07 (Boiler 17) shall be equipped with a continuous monitoring system for measurement of NO_x emissions and either O₂ or CO₂. Note that the NO_x monitor required by the NO_x Trading Program (Condition 6.1.5) may be sufficient to meet this requirements.

7.1.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected process heater and boilers to demonstrate compliance with Conditions 7.1.3, 7.1.6, and 7.1.8, pursuant to Section 39.5(7)(b) of the Act:

- a. A continuous record of the H₂S concentration in the fuel gas systems used for the process heaters. From this continuous "recording", the Permittee shall calculate a rolling 3-hour average for units subject to NSPS. Only the rolling 3-hour averages are required to be kept for five years. Note that there are 24 three-hour averages. If a fuel gas system does not serve an NSPS heater, a block three-hour average basis may be used. There are 8 three-hour block averages.
- b. Total gas burned in all units combined (scf/mo) for each type of fuel (refinery gas and natural gas).
- c. Records showing the design firing rate of each unit with backup calculations.
- d. NO_x, CO, SO₂, PM, and VOM emissions (ton) for individual units or groups of units combined as necessary to determine compliance with Condition 7.1.6, using the compliance procedures in Condition 7.1.12.
- e. Records for Malfunctions and Breakdowns of Sulfur Recovery System

The Permittee shall maintain records, pursuant to 35 IAC 201.263, of continued operation of a process heater or boiler subject to 35 IAC 214.382(c)(2) or (d) during malfunctions and breakdown of the fuel gas treaters or sulfur recovery system, which as a minimum, shall include:

- i. Date and duration of malfunction or breakdown;
 - ii. A detailed explanation of the malfunction or breakdown;
 - iii. An explanation why the damaged feature(s) could not be immediately repaired and whether the actions required by Condition 7.1.3(g) were implemented;
 - iv. The measure used to reduce the quantity of emissions and the duration of the event;
 - v. The steps taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity; and
 - vi. The amount of release above typical emissions during malfunction/breakdown.
- f. RAU Reboiler Project
- i. Steam demand for the RAU Reboiler (lb/hr, daily average);
 - ii. Amount of steam generated (lb/hr, daily average) from the sulfur condensers (A-Train, C-Train, and D-Train); and
 - iii. Emissions of SO₂, NO_x, CO, PM, and VOM from Boiler 17 attributable to the additional firing required by the RAU Steam Reboiler, with supporting calculations (lb/mo).
- g. Rental Package Boilers Project
- i. Refinery steam demand, as supplied by the two rental package boilers and Boilers 13, 15, 16, 17, and 18;
 - ii. Fuel usage of the two rental package boilers, mmft³/mo; and
 - iii. Each period of time that an existing boiler, e.g., Boiler #13, is out of service for maintenance and a description of the maintenance performed.
- h. Tier 2 Gasoline Sulfur Requirements Project
- i. Firing rate of the F-1 Charge Heater (mmBtu/hr on a daily average);

- ii. Steam demand for the naphtha splitter column reboilers (T-5032/T-5033) from Boiler 17 (lb/hr, daily average);
 - iii. Emissions of NO_x, CO, VOM, SO₂, PM and PM₁₀ from Boiler 17 attributable to the additional steam demand required by the naphtha splitter column reboilers (T-5032/T5033) (tons/month and tons/year);
 - iv. Emissions of NO_x, CO, VOM, SO₂, PM and PM₁₀ from HTR-ALKYHM1 heater attributable to the increased firing rate required to preheat the feed to the GHT (tons/month and tons/year); and
 - v. Emissions of NO_x, CO, VOM, SO₂, PM and PM₁₀ from HTR-HCNHT (tons/month and tons/year).
- i. Records of monitored values required by Condition 7.1.8(c), i.e., 40 CFR 60.45(a).

7.1.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of the affected process heater with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. For NSPS units as identified in Condition 7.1.2, any exceedance of the concentration of H₂S in the fuel gas above the NSPS allowable level of 0.1 gr/dscf (160 ppmv). Pursuant to 40 CFR 60.105(e)(3)(ii), exceedances are determined using rolling 3-hour periods. For non-NSPS units exceedances are determined on block three-hour averages and the allowable is 0.39 gr/dscf.
- b. Any exceedance of the firing rate or emission rate allowed by Condition 7.1.6 within 30 days of a record showing such an occurrence.
- c. Reporting of Malfunctions and Breakdowns

The Permittee shall provide the following notification and reports to the Illinois EPA, Compliance Section and Regional Field Office, pursuant to 35 IAC 201.263, concerning continued operation of the process heaters and boilers subject to Condition 7.1.3(g) during malfunction or breakdown of the control features of the fuel gas treaters or sulfur recovery system.

- i. The Permittee shall notify the Illinois EPA's regional office by telephone as soon as possible during normal working hours, but no later than three (3) days, upon the occurrence of noncompliance due to malfunction or breakdown.
- ii. Upon achievement of compliance, the Permittee shall give a written follow-up notice to the Illinois EPA, Compliance Section and Regional Field Office, providing a detailed explanation of the event, an explanation why continued operation of the process heaters or boilers was necessary, the length of time during which operation continued under such conditions, the measures taken by the Permittee to minimize and correct deficiencies with chronology, and when the repairs were completed or when the process heaters or boilers was taken out of service.
- iii. If compliance is not achieved within 5 working days of the occurrence, the Permittee shall submit interim status reports to the Illinois EPA, Compliance Section and Regional Field Office, within 5 days of the occurrence and every 14 days thereafter, until compliance is achieved. These interim reports shall provide a brief explanation of the nature of the malfunction or breakdown, corrective actions accomplished to date, actions anticipated to occur with schedule, and the expected date on which repairs will be complete or the process heaters or boilers will be taken out of service.

- d. Steam usage to the RAU reboiler exceeding 40,000 lb/hr or 25,000 lb/hr attributable to Boiler 17.

7.1.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.1.12 Compliance Procedures

- a. Compliance with applicable rules is assured by operation of the heaters and boilers according to manufacturer's recommended practices.
- b. Except for SO₂ emissions from the combustion of refinery fuel gas, emissions shall be calculated using either site-specific emission factors (e.g., stack test results or CEMS), if available or AP-42 emission factors (Tables 1.4-1 and 1.4-2, 5th Edition, March, 1998) for natural gas boilers. These factors are as follows:

	Emission Factor (lb/10 ⁶ scf)	
	Firing Rate	
	Less Than 100 mmBtu/hr	Greater Than 100 mmBtu/hr
NO _x	100	280
CO	84	84
PM	7.6	7.6
VOM	5.5	5.5

- c. SO₂ emissions from the combustion of refinery fuel gas shall be calculated using the monitored H₂S content of the gas, the Btu value of the gas, gas usage, and stoichiometric conversion of H₂S to SO₂, as follows:

Fuel Gas Combustion Emissions, Lb/Hour SO₂ =

$$\frac{\text{Fuel Gas Flow * (mmscf/day) x H}_2\text{S Content (gr/100 scf) 64 x lb SO}_2\text{/mol}}{7000 \text{ Grain/lb x } 34 \text{ lb H}_2\text{S/mol x } 24 \text{ hr/day}}$$

- d. Emissions (lb/mo) = Gas Usage (mmscf/mo) x Heating Value of Gas (Btu/scf) x Emission Factor (lb/mmBtu)

7.2 Unit: Storage Tanks
Control: See Section 7.2.2

7.2.1 Description

The Wood River Refinery is typical of refineries in that it has many storage tanks. These may contain liquids at standard conditions such as crude oil, gasoline tanks that store fuel oils and other materials that have a low vapor pressure are included in Section 3 as insignificant emission units. Also not included in this section are those in the wastewater treatment system that are more process tanks than storage and two gasoline dispensing tanks that are subject to special rules and are in Section 7.13.

Here is an explanation of the list of storage tanks in several tables in Attachment 1.

Table 1 is a list of external floating roof tanks in the Logistics Department and these tanks only contain volatile petroleum liquids with a vapor pressure up to 12.5 psia.

Table 2 is a list of external floating roof tanks in locations other than Logistics. There are three maximum vapor pressures (MVP) listed in the table. If the MVP is 12.5 psia and the actual vapor pressure is over 11.1 psia then the material may only be a VPL and not a VOL. If the MVP is 11.1 then a VOL is permitted but it may be a VPL. If the MVP is 1.5 then the tank is treated more like a fixed roof tank because it has indicated that there is no secondary seal.

Table 3 is a list of internal floating roof tanks. The same criteria with regard to VPL and VOL applies as for Table 2.

Table 4 is a list of fixed roof tanks and these may not contain a VOM with a MVP over 1.5 psia. These are also Group 2 storage vessels with regard to 40 CFR 63 Subpart CC (Refinery MACT).

All of the tanks in Tables 1, 2 and 3, except the two in Table 3 with a vapor pressure limit of 1.5 psia may store materials that classify the tank as a Group 1 storage vessel pursuant to the definition in 40 CFR 63.641.

7.2.2 List of Emission Units and Air Pollution Control Equipment
See Attachment 1

7.2.3 Applicability Provisions and Applicable Regulations

- a. An "affected storage tank" for the purpose of these unit-specific conditions, is an existing tank capable of storing a VOM and listed in Attachment 1.
- b. All of the tanks in Tables 1 to 3 in Attachment 1 are subject to the control requirements of 35 IAC 219.122(b) and 40 CFR 63 Subpart CC, which in turn reference the requirements of 40 CFR 63 Subpart G except the two tanks in Table 3 with a specified maximum vapor pressure of 1.5 psia which can only be operated as Group 2 tanks due to having only one seal.
- c. Each storage tank subject to 40 CFR 63 Subpart CC (40 CFR 63 Subpart G) is hereby shielded from compliance with 35 IAC 219.121, 123 and 124, except for the requirements of Conditions 7.2.5. This shield is issued to streamline the applicable requirements for the source based on the Illinois EPA's finding that compliance with 40 CFR 63 Subpart CC assures compliance with 35 IAC 219.121, 123 and 124.
- d. For each tank that is not a Petroleum Refinery NESHAP Group 1 tank solely due to HAP content, the Permittee must either comply with 40 CFR 63 Subpart CC, or the requirements of 35 IAC 219.121, 123 and 124 will apply.
- e. Neither 40 CFR 63 Subpart CC or 35 IAC 219 Subpart have any requirements that apply to the tanks in Table 4 of Attachment 1.
- f. Tanks A-62, A-63, and A-64 are subject to the control requirements of 40 CFR 61, Subpart Y.
- g. Tank A-156 is subject to NSPS 40 CFR 60, Subpart UU.

7.2.4 Non-Applicability of Regulations of Concern

- a. Except as provided for in the regulations, 35 IAC 219.122(b) requires the use of a permanent submerged loading pipe if the vapor pressure of the liquid in a tank is above 2.5 psia. Since all tanks at the source that hold liquid with a vapor pressure over 2.5 psia have floating roofs, the liquids must enter the tanks below the surface of the liquid.
- b. Tanks subject to 40 CFR 63 Subpart CC (40 CFR 63 Subpart G) are not subject to 40 CFR 60 Subpart Kb. Accordingly, because Tanks TK-CH290, TK-A150, and TK-A151 are subject to 40 CFR 63 Subpart CC, they are not subject to the requirements of 40 CFR 60 Subpart Kb.

7.2.5 Control Requirements

- a. i. Each affected tank subject to 40 CFR 63 Subpart G (as incorporated by 40 CFR 63 Subpart CC) equipped with an external floating roof shall comply with the requirements of 40 CFR 63.119(c), which requires the use of an external floating roof that is equipped with a primary and secondary seal.
 - A. The primary seal shall be either a metallic shoe seal or a liquid mounted seal; and
 - B. The primary seal and secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except during the inspections required by Condition 7.2.8 (40 CFR 63.120(c) (a) (iii)):
 - ii. All drains (for drainage of rainwater, also know as "stub drains") in the floating roof deck shall be provided with slotted membrane fabric covers or equivalent covers across at least 90 percent of the area of the opening [35 IAC 219.124(a) (3)];
 - iii. All openings of the floating roof deck, other than drains, shall be equipped with projections into the tank which remain below the liquid surface at all times except when supported on the roof legs and be equipped with covers, lids, or seals [35 IAC 219.123(b) (3) and 219.124(a) (4)];
 - iv. Covered external floating roof tanks may comply with the requirements for internal floating roof tanks. See Condition 7.2.5(b).
- b. Each affected internal floating roof tank shall comply with the requirements of 40 CFR 63.119(b), which requires the use of an internal floating roof or an external floating roof converted to an internal floating roof by the addition of a fixed roof (cover), either of which is equipped with one of the following:
 - i. A primary seal that is either a metallic shoe seal or a liquid mounted seal; or
 - ii. A primary seal and secondary seal that completely cover the annular space between the

floating roof and the wall of the storage vessel in a continuous fashion except during the inspections required by Condition 7.2.8. The primary seal may be vapor-mounted.

7.2.6 Emission Limitations

- a. In addition to Condition 5.2.2, some specific affected tanks are subject to the following maximum values:

<u>Tanks Combined</u>	<u>Throughput (Gal/Year)</u>	<u>Vapor Pressure (psia)</u>	<u>VOM Emissions (Tons/Year)</u>
TK-A150 and TK-A151	66,150,000	7.51	11.11
TK-F057 and TK-F059	22,000,000	5.00	6.20

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total) [T1].

The above limitations were established in Permit 73010832 and 72110615, pursuant to 35 IAC Part 203. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203 [T1].

- b. Emissions from Tank A-157 shall not exceed the following limits.

<u>VOM Emissions</u>	
<u>(Tons/Mo)</u>	<u>Tons/Yr)</u>
0.9	8.36

7.2.7 Operating Requirements

- a. Each affected tank subject to 40 CFR 63 Subpart G (as incorporated by 40 CFR 63 Subpart CC) equipped with an external floating roof shall be operated in compliance with the operating requirements of 40 CFR 63.119(c), (d), and 63.120(b) as follows:
 - i. The external floating roof shall be floating on the liquid surface at all times, except during those intervals when the storage tank is being completely emptied and subsequently refilled and the roof rests on its leg supports. When the roof is resting on its leg supports, the process of emptying or refilling

- shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 63.119(c) (3) and (4)]
- ii. For primary seals that use a metallic shoe seal, one end of the metallic shoe shall extend into the stored liquid and the other end shall extend a minimum vertical distance of 61 centimeters above the stored liquid surface and there shall be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope. [40 CFR 63.120(b) (5)]
 - iii. The secondary seal shall completely cover the space between the roof edge and the vessel wall except as provided in (v), and there shall be no holes, tears, or other openings in the seal or seal fabric. [40 CFR 63.120(b) (6)]
 - iv. The accumulated area of gaps between the vessel wall and the primary seal shall not exceed 212 square centimeters per meter of vessel diameter and the width of any portion of any gap shall not exceed 3.81 centimeters. [40 CFR 63.120(b) (3)]
 - v. The accumulated area of gaps between the vessel wall and the secondary seal shall not exceed 21.2 square centimeters per meter of vessel diameter and the width of any portion of any gap shall not exceed 1.27 centimeters. These seal gap requirements may be exceeded during the measurement of the primary seal gaps as required by Condition 7.4.8. [40 CFR 63.120(b) (4)]
 - vi. The covers, lids or seals on openings of the floating roof deck other than stub drains shall be operated such that the following requirements are met:
 - A. The cover, lid or seal is in the closed position at all times except when the cover or lid must be open for access. [40 CFR 63.646(f) (1)]
 - B. Rim space vents, if provided, are set to open when the roof is not floating or when the pressure beneath the rim seal exceeds the manufacturer=s recommended setting. [40 CFR 63.646(f) (2)]

- C. Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports [40 CFR 63.646(f)(3)];
- vii. No person shall cause or allow the emissions of air contaminants into the atmosphere from any gauging or sampling devices attached to an affected tank, except during sampling or maintenance operations [35 IAC 219.121(b)(1)].
- viii. A tank that is in-service shall be repaired or emptied upon identification in an inspection that the accumulated area of gaps between the tank wall and primary seal exceed 212 cm² per meter of tank diameter and the width of any portion of any gap exceeds 3.81 cm, the secondary seal does not completely cover the space between the tank wall, the accumulated area of gaps between the tank wall and the secondary seal exceeds 21.2 cm² per meter of tank diameter and the width of any portion of any gap exceed 1.27 cm, or there are holes or tears in the seal fabric or seal envelope of either the primary or secondary seal. These actions shall be completed within 45 days of the inspection unless an extension is granted. [40 CFR 63.120(b)(8)]
- ix. A tank that is empty shall be repaired prior to refilling the tank upon identification in an inspection that the floating roof has defects, the primary seal has holes, tears or other openings in the seal or seal fabric, or the secondary seal has holes, tears or other openings in the seal or seal fabric. [40 CFR 63.120(b)(10)(i)]
- b. Each internal floating roof affected tank shall be operated in compliance with the operating requirements of 40 CFR 63.119(b) or (d) and 63.120(a) as follows:
 - i. The internal floating roof shall be floating on the liquid surface at all times, except during those intervals when the storage tank is being completely emptied and subsequently refilled and the roof rests on its leg supports. When the roof is resting on its leg supports, the process of filling, emptying or refilling shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 63.119(b)(1)]

- ii. The covers, lids or seals on openings of the floating roof deck other than stub drains shall be operated such that the following requirements are met:
 - A. The cover, lid or seal is in the closed position at all times except when the cover or lid must be open for access. [40 CFR 63.646(f) (1)]
 - B. Rim space vents, if provided, are set to open when the roof is not floating or when the pressure beneath the rim seal exceeds the manufacturer=s recommended setting. [40 CFR 63.646(f) (2)]
 - C. Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports [40 CFR 63.646(f) (3)];
- iii. No person shall cause or allow the emissions of air contaminants into the atmosphere from any gauging or sampling devices attached to an affected tank, except during sampling or maintenance operations [35 IAC 219.121(b) (1)].
- iv. A tank that is in-service shall be repaired or emptied upon identification in an inspection that the internal floating roof is not resting on the surface of the liquid inside the affected storage tank, and is not resting on the leg supports, there is liquid on the floating roof, the seal is detached, or there are visible gaps between the seal and the wall of the affected tank. These actions shall be completed within 45 days of the inspection unless an extension is utilized. [40 CFR 63.120(a) (4)]
- v. A tank that is empty shall be repaired prior to refilling the tank upon identification in an inspection that the floating roof has defects, the primary seal has holes, tears or other openings in the seal or seal fabric, or the secondary seal (if one is present) has holes, tears or other openings in the seal or seal fabric. [40 CFR 63.120(b) (7)]

7.2.8 Inspection Requirements

- a. The Permittee shall fulfill the applicable testing and procedures requirements of 40 CFR 63.120(b) for each affected tank subject to 40 CFR 63 Subpart G (as incorporated by 40 CFR 63 Subpart CC) equipped with an external floating roof equipped with an external floating roof as follows:
 - i. Except as provided in (ii) below, the Permittee shall measure gaps between the tank wall and the secondary seal at least once per year (Annual Inspection) and the primary seals at least once every five years (Five Year Inspection). The measurement shall be conducted in accordance with the following methods and procedures: [40 CFR 63.120(b) (1), (2), (3), and (4)]
 - A. Measure seal gaps, if any, at one or more floating roof levels when the roof is not resting on the roof leg supports;
 - B. Measure seal gaps around the entire circumference of the vessel in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and the circumferential distance of each such location;
 - C. The total surface area of each gap shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance;
 - D. Add the gap surface area of each gap location for the primary and secondary seal individually and divide the sum by the nominal diameter of the tank and compare each ratio to the respective requirement of Conditions 7.2.7(a) (iv) and (a) (v).
 - E. Prior notification for the above inspection shall be given to the Illinois EPA as specified in Condition 7.2.10(b).
 - ii. If the owner or operator determines that it is unsafe to perform the seal gap measurements or to inspect the vessel to determine compliance

with Conditions 7.2.7(a)(iv) or (a)(v) because the floating roof appears to be structurally unsound and poses an imminent or potential danger to inspecting personnel, the owner or operator shall comply with the following requirements:

- A. The owner or operator shall measure the seal gaps or inspect the storage vessel no later than 30 calendar days after the determination that the roof is unsafe, or
 - B. The owner or operator shall empty and remove the storage vessel from service no later than 45 calendar days after determining that the roof is unsafe unless the vessel cannot be emptied and the owner or operator has elected to utilize an extension of up to 30 calendar days and maintains the records required by Condition 7.2.9(c). A maximum of two extensions may be utilized for an occurrence.
- iii. A. Visually inspect the external floating roof, the primary seal, the secondary seal, and fittings each time the storage vessel is emptied and degassed (Out-of-Service Inspection) to identify any deficiency or shortcoming in the roof's features, (i.e., external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric) that the Permittee shall repair the features prior to refilling the storage tank with VOL. [40 CFR 63.120(b)(10)]
- B. Prior notification for the above inspection shall be given to the Illinois EPA as specified in Condition 7.2.10(a).
- b. The Permittee shall fulfill the applicable testing and procedures requirements of 40 CFR 63.120(a) for each affected internal floating roof tank equipped with an internal floating roof or an external floating roof converted to an internal floating roof as follows:
- i. For each affected tank equipped with only a primary seal, the Permittee shall visually inspect the internal floating roof and the

seal through manholes and roof hatches on the fixed roof at least once per year (Annual Inspection) and visually inspect the internal floating roof and the seal each time the affected tank is emptied and degassed, and at least once every 10 years (Out-of-Service Inspection);

- ii. For each affected tank equipped with a double-seal system:
 - A. The Permittee shall visually inspect the internal floating roof, the primary seal, and the secondary seal each time the affected tank is emptied and degassed and at least once every 5 years (Five-Year Inspection).
 - B. The Permittee shall visually inspect the internal floating roof and the secondary seal through the manholes and roof hatches at least once per year (Annual Inspection) and visually inspect the internal floating roof, the primary seal, and the secondary seal each time the affected tank is emptied and degassed, and at least once every 10 years (Out-of-Service Inspection).
- iv. Prior notification for the above inspection shall be given to the Illinois EPA as specified in Condition 7.2.10(b).

7.2.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected tank to demonstrate compliance with Conditions 7.2.3 through 7.2.8, pursuant to Section 39.5(7)(b) of the Act:

- a. The Permittee shall fulfill the applicable recordkeeping requirements of 40 CFR 63.123 for each affected tank as follows:
 - i. Keep readily accessible records showing the dimensions of each affected tank for as long as the tank is in operation. [40 CFR 63.123(a)]
 - ii. Keep a record of all reports submitted in accordance with 40 CFR 63.654(e) including the Notification of Compliance Status, Periodic Reports, and other reports. [40 CFR 63.123(b)]

- iii. Keep a record of each Annual, Five Year and Out-of-Service Inspection performed as required by Condition 7.2.8(a)(i) and (a)(iii). The records shall include the following information: [40 CFR 63.123(d)]
 - A. The date the measurement was performed;
 - B. Who performed the measurement;
 - C. The raw data obtained in the measurement;
 - D. The calculations described in Condition 7.2.8(a)(i)(C and D); and
 - E. Summary of compliance.
- b. The Permittee shall maintain records of the following for each affected tank to demonstrate compliance with the Out-of-Service Inspection requirements of Condition 7.2.8(a)(iii):

Records that are sufficient to identify whenever the tank is empty for any reason or whenever repairs are made as a result of regular inspection or incident of roof damage or defect.
- c. The Permittee shall maintain records of the following for each seal inspection in which the decision was made to utilize an extension (as identified in Condition 7.2.8(b)) because a determination was made that the roof was unsafe:
 - i. Explanation of why it was unsafe to perform the inspection or seal gap measurement;
 - ii. Documentation that alternative storage was unavailable; and
 - iii. Specify a schedule of actions that will ensure the control equipment will be repaired or the affected tank will be emptied as soon as possible.
- d. The Permittee shall maintain records of the following for each seal inspection in which the decision was made to utilize an extension (as identified in Condition 7.2.7(b)(iv)) to repair the failure or empty the affected tank:
 - i. Description of the failure;

- ii. Documentation that alternative storage was unavailable; and
 - iii. Specify a schedule of actions that will ensure the control equipment will be repaired or the affected tank will be emptied as soon as possible.
- e. The Permittee shall maintain records to demonstrate compliance with the limits in Condition 7.2.6.
- f. The Permittee shall maintain records of the following equipment items for each affected storage tank to allow calculation of VOM emissions from the storage tanks so as to demonstrate compliance with the annual emission limitations in Condition 7.2.6 and for the purpose of quantifying emissions for the annual emission report. These records shall be updated whenever there is a change in status of a storage tank that is brought about by actions at the source, such as painting, and during periodic inspection;
 - i. The color of each affected tank;
 - ii. The condition of each storage tank; and
 - iii. The type and number of fittings, or a statement that the default settings regarding type and number of fittings in the most recent version of the TANKS program are used for emission estimates.
- g. The Permittee shall maintain records of the following items for each affected storage tank to allow calculation of VOM emissions from the storage tanks so as to demonstrate compliance with the annual emission limitations in Condition 7.2.6 and for the purpose of quantifying emissions for the annual emission report.
 - i. The identification and properties of each organic liquid stored at the source, as related to emissions, i.e., vapor pressure and molecular weight;

The following items shall be maintained on a monthly basis for the previous month:

- ii. The throughput (or change in tank level) of each organic liquid through each tank; and
- iii. The volatile organic material emissions attributable to each organic liquid stored in each tank, with supporting calculations,

calculated utilizing an approved USEPA methodology, such as the TANKS4 program;

h. **Optional Notification Concerning Actual Contents of Tanks**

All tanks are assumed to contain materials that require compliance with rules specified in Condition 7.4.3. The Permittee may submit to the Illinois EPA an annual written statement prior to the beginning of each year (calendar or otherwise specified) of the contents of selected tanks that may negate part of the requirements specified in Condition 7.4.3. This applies to both 35 IAC and 40 CFR 60 and 63 rules. For instance, the statement may list a low vapor pressure material (e.g., diesel oil) in tanks with floating roofs or the current material stored in a tank makes that tank not a Group 1 tank pursuant to the definition in 40 CFR 63 Subpart CC. The statement may then list ongoing requirements that will not have to be performed as a consequence of the different material, such as seal inspection. During the year the Permittee may revise individual tanks with a written notification, but the annual notification must list all tanks using this provision as the previous years statement will expire after one year. Notification is not required if the tank is switched to a material with less stringent requirements but continues to comply with the more stringent requirements.

- i. For any fixed roof tank listed in Table 4 of Attachment 1 that was constructed after June 11, 1973, the Permittee shall keep records to verify that the tank is not subject to floating roof or seal requirement of a NSPS, 40 CFR 60 Subparts K, Ka or Kb. These records may be capacity of the tank showing that it is below the applicable capacity or the vapor pressure of the material stored showing that it is below the applicable vapor pressure.

7.2.10 **Reporting and Notification Requirements**

- a. The Permittee shall notify the Illinois EPA, Compliance Unit and Regional Field Office, when an affected storage tank has been emptied and degassed, and at least 30 days before the planned refilling of the tank with organic HAPs, pursuant to 40 CFR 63.654(h)(2)(i) so the Illinois EPA may inspect the affected tank prior to refilling, except as allowed in 40 CFR 63.654(h)(2)(i)(B).
- b. The Permittee shall notify the Illinois EPA, Compliance Unit and Regional Field Office, at least

30 days before the planned performance of seal gap measurements on external floating roof tanks, pursuant to 40 CFR 63.654(h)(2)(ii), so the Illinois EPA may observe the measurements. Note that one notification may be made for a group of tanks and is valid for 90 days from the date the first tank in the group has the gap measurements made.

c. The Permittee shall promptly notify the Illinois EPA, Compliance Unit of noncompliance with the control, operating, or inspection requirements, as follows pursuant to Section 39.5(7)(f)(ii) of the Act:

i. Any storage of VPL in an affected tank that is not in compliance with the control requirements (due to absence of the features required by Condition 7.2.5), e.g., "no rim-mounted secondary seal," within 5 days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps to be taken to avoid future non-compliance.

ii. Any storage of VPL in an affected tank that is out of compliance with the control requirements (Condition 7.2.5) due to damage, deterioration, or other condition of the tank, within 30 days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps to be taken to avoid future non-compliance.

d. Pursuant to 40 CFR 63.654, the Permittee shall submit Periodic Reports no later than 60 days after each seal gap measurement required by Condition 7.2.8(a)(i), (ii), (iii), (iv), or (v) as follows:

i. When the requirements of Condition 7.2.7(a) are not met. This documentation shall include the following:

A. The date of the seal gap measurement;

B. The raw data obtained in the seal gap measurement and the calculations described in Condition 7.2.8(a);

C. A description of any seal condition specified in Condition 7.2.7(a)(ii) or (iii) that is not met;

- D. A description of the nature of and date the repair was made, or the date the vessel was emptied.
- ii. If an extension is utilized in accordance with Condition 7.2.8(a)(ii), the following shall be provided in the next periodic report:
 - A. Identification of the vessel;
 - B. The documentation required in Condition 7.2.9(c);
 - C. The date the vessel was emptied;
 - D. The nature of and date the repair was made.
- iii. If an extension is utilized in accordance with Condition 7.2.7(b)(iv), the following shall be provided in the next periodic report:
 - A. Identification of the vessel;
 - B. The documentation required in Condition 7.2.9(d);
 - C. The date the vessel was emptied;
 - D. The nature of and date the repair was made.
- iv. Any time in which the external floating roof has defects; or the primary seal has holes or other openings in the seal or seal fabric; or the secondary seal has holes, tears or other openings in the seal fabric that is identified during the visual inspections required by Condition 7.2.8(a)(iii), the following information shall be included:
 - A. Date of inspection;
 - B. Identification of storage vessel(s) with failure;
 - C. Description of failure;
 - D. Nature of and date of repair.
- e. The Permittee shall report if the annual emissions of VOM from Storage Tanks TK-A150, 151 or TK-F057, 059 exceed the allowable limits of Condition 7.2.6.

7.2.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.2.12 Compliance Procedures

- a. Compliance with the control and operating requirements of Condition 7.2.5 and 7.2.7 shall be demonstrated by the inspection, recordkeeping and reporting requirements of Condition 7.2.8, 7.2.9(a), (b), (c), (d), 7.2.10(a), (b), (c), and (d).
- b. Compliance with the emission limitations of Condition 7.2.6 shall be demonstrated by the recordkeeping and reporting requirements of Conditions 7.2.9(e) and 7.2.10(e).
- c. Emissions shall be calculated using the USEPA TANKS program and calculation procedures described in USEPA's AP-42, 5th ed., (September 1997) and average monthly ambient air data.

7.3 Unit: Catalytic Cracking Operations
 Control: CO Heater and Electrostatic Precipitators

7.3.1 Description

This facility operates two Catalytic Cracking Units (CCUs). The CCUs are continuous operations that use a fluidized catalyst to crack gas oils and resids into lower molecular weight products. There are two main sections in these units; the catalyst section which includes the riser/reactor and the catalyst regenerator, and the fractionation section which separates the product stream into various components. Coke forms on the catalyst when regenerated catalyst comes in contact with the feed stream in the riser/reactor and cracking occurs. After cracking, the product stream and "spent" catalyst are separated by the reaction cyclones with the product stream going to the fractionator and the catalyst returning to the regenerator. Catalyst is regenerated by burning the coke off the "spent" catalyst. The fractionator is a closed-vent process.

In addition to the emissions from the two CCUs, emissions of PM result from loading catalyst onto trucks and from operating supplemental air compressor engines to provide air to the CCUs.

Emissions of all regulated air pollutants result from these processes. All emissions resulting from burning coke in the catalyst regenerators are vented to CO heaters, and then electrostatic precipitators (ESPs). The multiclones are not classified as control equipment since the catalyst is reused. The ESPs control emissions of PM. The CO heaters (boilers) control emissions of CO further oxidizing it to CO₂. The CO heaters may also burn refinery fuel gas as a supplemental fuel.

7.3.2 List of Emission Units and Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
60	Catalytic Cracking Unit #1 (CCU-1) WRR-7	Heavy molecular weight hydrocarbons are cracked into lower molecular weight products. The catalyst regeneration part of the unit vents to multiclones and then through the control equipment.	CO Heater (0007), ESP (0006)
61	Catalyst Loading	Catalyst is loaded onto trucks from CCU-1.	None

Permit Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
62	Supplemental Air Compressor Engine	Diesel-fired compressor engines provide supplemental air for catalyst regeneration for CCU-1.	None
63	Catalytic Cracking Unit #2 (CCU-2) WRR-8	Heavy molecular weight hydrocarbons are cracked into lower molecular weight products. The catalyst regeneration part of the unit vents to multiclones and then through the control equipment.	CO Heater (0011), ESP (0010)
64	Catalyst Loading	Catalyst is loaded onto trucks from CCU-2.	None
65	Supplemental Air Compressor Engine	Diesel fired compressor engines provide supplemental air for catalyst regeneration for CCU-2.	None

7.3.3 Applicability Provisions and Applicable Regulations

- a.
 - i. The "affected catalytic cracking operations" for the purpose of these unit-specific conditions, are the catalytic cracking operations described in Conditions 7.3.1 and 7.3.2.
 - ii. The "affected catalyst loading operations" for the purpose of these unit-specific conditions, are the catalyst loading operations described in Conditions 7.3.1 and 7.3.2.
 - iii. The "affected compressor engines" for the purpose of these unit-specific conditions, are the air compressor engines described in Conditions 7.3.1 and 7.3.2.
- b. The affected catalytic cracking operations are subject to the emission limits and requirements identified in Section 5 of this permit. Note especially Section 5.2.3. The operations are also subject to the LDAR requirements in Section 7.10.
- c. Components associated with the affected catalytic cracking operations are subject to the fugitive emission regulations as addressed by Section 7.10, which includes inspection, recordkeeping, reporting requirements, and compliance procedures for fugitive emissions.

- d. Pursuant to 35 IAC 212.381, no person shall cause or allow the particulate matter emission rate from catalyst regenerators of fluidized catalytic converters to exceed in any one hour period, the rate determined using the following equations:

$$E = 4.10(P)^{0.67} \quad \text{for } P \text{ less than or equal to } 30 \text{ T/hr}$$

$$E = (55.0(P)^{0.11}) - 40.0 \quad \text{for } P \text{ greater than } 30 \text{ T/hr}$$

Where:

E = Allowable emission rate in lbs/hr; and

P = Catalyst recycle rate, including the amount of fresh catalyst added, in T/hr

- e. Except as further provided by 35 IAC 214, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any affected catalytic cracking operation to exceed 2000 ppm [35 IAC 214.301].

- f. Pursuant to 35 IAC 214.382(c)(3), no person shall cause or allow the total emission of sulfur dioxide into the atmosphere from the following source groupings to exceed the following amounts:

All catalytic cracking units - 3,430 lbs/hr
(1,560 kg/hr) [35 IAC 214.382(c)(3)(I)].

Pursuant to 35 IAC 214.382(d), compliance with the above limit shall be demonstrated on an three-hour block average basis.

- g. Notwithstanding 35 IAC 216.361(a) [cited in Condition 5.2.3(g)], any existing petroleum or petrochemical process using catalyst regenerators of fluidized catalytic converters equipped for in situ combustion of carbon monoxide, may emit a carbon monoxide waste gas stream into the atmosphere if the carbon monoxide concentration of such waste gas stream is less than or equal to 750 ppm corrected to 50 percent excess air [35 IAC 216.361(b)].

- h. Catalyst Loading Provisions

The affected catalyst loading operations are subject to 35 IAC 212.322(a), which provides that no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any process emission unit for which construction or modification

commenced prior to April 14, 1972, which, either alone or in combination with the emission of particulate matter from all other similar process emission at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.322 (see Condition 5.2.2(e)) [35 IAC 212.322(a)].

i. Compressor Engine Provisions

i. No person shall cause or allow the discharge of more than 3.6 Kg/Hr (8 lb/hr) of organic material into the atmosphere from any emission unit, except as provided in the following exception: If no odor nuisance exists the limitation of this Condition shall apply only to photochemically reactive material [35 IAC 215.301].

ii. The each affected compressor engine is subject to Condition 7.3.3(e) (35 IAC 214.301).

j. Startup Provisions

Pursuant to 35 IAC 201.262, the Permittee is authorized to operate the affected catalytic cracking operations in violation of the applicable board emission limits of 35 IAC 212.381 and 216.361(a) (Conditions 7.3.3(d) and (g), to the extent necessary to conduct a normal startup of the affected catalytic cracking operations. The Permittee has affirmatively demonstrated that all reasonable efforts have been made to minimize startup emissions, duration of individual starts, and frequency of startups. This authorization is subject to the following:

i. The authorization to exceed the PM emission standard only extends for a period of up to 48 hours following initial start-up of the unit during each normal startup event. The authorization to exceed the CO emission standard only extends for a period of up to 24 hours following initial start-up of the unit during each normal startup event, or until the CO heater is in service. If the startup period is expected to exceed these periods for a specific normal startup, the Illinois EPA's regional office shall be notified of the expected additional length of time required to complete the startup. The length of time may be extended if the Permittee can demonstrate that the emissions will be less during the extended period than if the unit is shutdown and restarted.

- ii. The Permittee shall take the following measures to minimize emissions resulting from startups, the duration of startups, and the frequency of startups:
 - A. Ammonia injection shall be used for conditioning the ESPs until they are fully energized, in order to increase the ESPs PM control efficiency.
 - B. The ESP shall be warmed to the maximum possible temperature prior to feed introduction in order to increase the ESPs PM control efficiency.
 - C. Implementation of additional established written startup procedures, including a pre-check of the unit, so as to minimize the duration of startups and the emissions associated with startups.
 - D. Implementation of established maintenance practices so as to minimize the duration of startups and the frequency of startups. These maintenance practices shall include maintenance activities before the unit is started up, when the unit is in operation, and when the unit is shut down.
- iii. The Permittee shall fulfill the applicable recordkeeping requirements of Condition 7.3.9(e).
- iv. Any startup which exceeds applicable board limits more than the extent necessary to conduct a normal startup, or any startup which does not meet the requirements of this Condition 7.3.3(j) shall be considered an exceedance of the requirements of this permit and subject to the reporting requirements for exceedances in Condition 7.3.10.

k. Malfunction and Breakdown Provisions

i. 35 IAC Requirements

Pursuant to 35 IAC 201.262, the Permittee is authorized to continue operation of the affected catalytic cracking operations in excess of the applicable board emission limits of 35 IAC 212.381 and 216.361(a) (Conditions 7.3.3(d) and (g) as a result of a malfunction or breakdown of a CO heater and/or ESP, as

necessary to prevent injury to persons or severe damage to equipment. This authorization is subject to the following:

- A. This authorization only extends for a period of up to 72 hours following the initial malfunction or breakdown event. If continued operation to prevent injury to persons or severe damage to equipment in excess of board limits is expected to exceed this period for a specific malfunction or breakdown, the Illinois EPA's regional office shall be notified of the expected additional length of time operation will continue. The length of time may be extended if the Permittee can demonstrate that the emissions will be less during the extended period than if the unit is shutdown and restarted.
- B. The Permittee shall take the following measures to minimize emissions resulting from malfunctions or breakdowns, the frequency of malfunctions or breakdowns, and the duration of operation in excess of board limits as a result of a malfunction or breakdown:
 1. Implementation of established written malfunction or breakdown procedures, so as to minimize the duration of continued operation resulting from malfunctions or breakdowns and the emissions associated with malfunctions or breakdowns.
 2. Implementation of established maintenance practices so as to minimize the duration of continued operation resulting from malfunctions or breakdowns and the frequency of malfunctions or breakdowns. These maintenance practices shall include maintenance activities before the unit is started up, when the unit is in operation, and when the unit is shut down.
- C. The Permittee shall fulfill the applicable recordkeeping requirements of Condition 7.3.9(f).

D. The Permittee shall fulfill the applicable reporting requirements of Condition 7.3.10(b).

E. Any excess emissions resulting from malfunction or breakdown which does not meet the requirements of this Condition 7.3.3(k) shall be considered an exceedance of the requirements of this permit and subject to the reporting requirements for exceedances in Condition 7.3.10.

ii. NESHAP Requirements

After the date when the SSM Plan and OM & M Plan discussed in Condition 7.3.3(1) are required to be implemented, the Permittee shall follow the plans during any malfunction or breakdown of the process or control equipment that increases emissions above that allowed by the applicable NESHAP rule.

1. NESHAP Provisions

i. Each catalytic cracking unit is subject to 40 CFR 63 Subpart UUU, but with a future compliance date of April 11, 2005 and a possible extension if interim requirements are met. There are compliance standards for metal HAPs and organic HAPs [40 CFR 63.1563-1565]. There are several options for compliance. Many of the rules for compliance in 40 CFR Subpart A, general provisions for NESHAP, are also applicable to this process. Table 44 of Subpart UUU states which provisions of Subpart A are applicable.

ii. Startup, Shutdown and Malfunction (SSM) Plan

The Permittee is required to have a written Startup, Shutdown and Malfunction (SSM) Plan for the equipment subject to the Petroleum Refinery rule as described in Condition 7.3.3(1)(i). The SSM plan is not required until the date that compliance is required, April 11, 2005. [40 CFR 63.6(e)(3)]

iii. Operation, Maintenance and Monitoring (OM&M) Plan

The Permittee is required to have a written operation, maintenance and monitoring plan for any control system and any continuous monitoring system employed for achieving and

determining compliance with the NESHAP listed above.

This OM&M plan must be submitted to the Illinois EPA with the notification of compliance status for review and approval. The contents of the OM&M plan and dates for submittal are listed in 40 CFR 63.1574(f).

7.3.4 Non-Applicability of Regulations of Concern

- a. 35 IAC 212.321 and 212.322 shall not apply to catalyst regenerators of fluidized catalytic converters [35 IAC 212.381].
- b. The provisions of 35 IAC 219.301 and 302, Use of Organic Material, shall not apply to fuel combustion emission sources [35 IAC 219.303]. Furthermore, the provisions of 35 IAC 219.301 and 302 does not apply to petroleum or petrochemical manufacturing processes pursuant to 35 IAC 219.441, except as stated in Condition 7.3.3(h).
- c. This permit is issued based on the affected catalytic cracking operations not being subject to 35 IAC 219 Subpart TT, because the affected catalytic cracking operations are subject to 35 IAC 219 Subpart R [Condition 5.2.3(a)], pursuant to 35 IAC 219.980(a)(1).
- d. The FCCUs are exempt from 40 CFR 63 Subpart CC (Refinery NESHAP) pursuant to 40 CFR 63.640(d)(4).

7.3.5 Operational and Production Limits and Work Practices

- a. The Permittee shall route and combust all waste gas streams generated by the affected catalytic cracking operations in a carbon monoxide boiler required in Condition 7.3.3(g), except as allowed by Conditions 7.3.3(j) and (k).
- b. The Permittee shall route all catalyst regenerator emissions from the affected catalytic cracking operations to an ESP at all times when the affected catalytic cracking operations are operating, except as provided in Conditions 7.3.3(j) and (k).
- c. The Permittee shall route and combust all waste gas streams generated by vapor blowdown in the flare (see Section 7.7) required in Condition 7.3.3(b).
- d. Diesel fuel shall be the only fuel used in the affected compressor engines. [T1]

- e. i. The daily coke burn rate of CCU-1 shall not exceed 490 tons.
- ii. The annual coke burn rate of CCU-1 shall not exceed 146,000 tons. Compliance with this limit shall be determined from a running total of 12 months of data. This limit shall remain in effect until June 30, 2004 at such time the continuous emissions monitoring system for NO_x shall be installed and certified.

7.3.6 Emission Limitations

- a. i. NO_x emissions from the CCU-1 shall not exceed 55.0 tons/month and 500.78 tons/year. This limitation is based on baseline emissions calculated for calendar years 2001 and 2002.
- ii. This permit is issued based on negligible emissions of VOM from the CCU-1. For this purpose, emissions shall not exceed 1.0 tons/month and 4.4 tons/year.

The above limitations were established in Permit 03030069, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21. [T1]

7.3.7 Testing Requirements

- a. Upon request by the Illinois EPA and/or USEPA, pursuant to Section 39.5(7)(b) of the Act and 35 IAC 219.105 and 212 Subpart A, the Permittee shall conduct testing of the affected catalytic cracking operations for purposes of demonstrating compliance to conditions of this permit according to USEPA approved methods of 40 CFR 60 Appendix A or other appropriate methods approved by the Illinois EPA or USEPA, at such reasonable times as may be specified by the Illinois EPA and/or USEPA. This test shall meet the following requirements:
 - i. The test shall be conducted by an approved independent testing service.
 - ii. The test shall be conducted during conditions which are representative of maximum emissions.
 - iii. The test shall be designed to measure the following parameters, as necessary:

- A. The emission rate of PM, so as to determine compliance with Condition 7.3.3(d).
 - B. The emission concentration of SO₂, so as to determine compliance with Condition 7.3.3(e).
 - C. The emission rate of SO₂, so as to determine compliance with Condition 7.3.3(f)
 - D. The emission concentration of CO, so as to determine compliance with Condition 7.3.3(g).
- b. The Permittee is required to conduct performance tests on these units to demonstrate compliance with the applicable standards within 150 days of the compliance date specified in 40 CFR 63.1563. See § 63.1571 for performance testing requirements or alternative dates.

7.3.8 Monitoring Requirements

- a. The Permittee shall maintain and operate a continuous opacity monitoring system (COM) on each CCU. This system shall be used to demonstrate compliance with Condition 5.2.2 (35 IAC 212.123) [35 IAC 201.401(a)(4)].
- i. These monitoring systems shall meet the Performance Specifications in Sections 3.1 through 3.8 of 40 CFR 51, Appendix P (1987);
 - ii. The monitor(s) shall be the basis for quarterly reporting of exceedances of Condition 7.3.3(d), in accordance with 35 IAC 201.405 (See also Condition 7.3.10(b)); and
 - iii. Notwithstanding the above, monitoring and recording are not applicable during any period of a monitoring system or device malfunction if the Permittee demonstrates that the malfunction was unavoidable and is being repaired as expeditiously as practicable, pursuant to 35 IAC 201.404.
- b. The Permittee shall comply with the monitoring requirements of 40 CFR 63.1572 or alternatives in § 63.1573. The monitors specified above in Conditions 7.1.8(a) or (b) may be acceptable if the monitors meet the requirements of Table 40 in Subpart UUU, which in turn reference 40 CFR 60 Appendix B.

- c. By June 30, 2004, the Permittee shall install, calibrate, maintain and operate continuous emissions monitoring systems for emissions of SO₂ and NO_x from the CCU-1. These monitoring systems shall be operated in accordance with 40 CFR 60.13 and Performance Specification 2, Appendix B, including associated recordkeeping and reporting requirements.

7.3.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected catalytic cracking operations to demonstrate compliance with Conditions 7.3.3, 7.3.5, and 7.3.6, pursuant to Section 39.5(7)(b) of the Act:

- a. The Permittee shall maintain records of the following items to demonstrate compliance with the PM emission limits in Condition 7.3.3(d):
 - i. Catalyst recycle rate, T/hr.
 - ii. Allowable PM emission rate by 7.3.3(d), lbs/hr.
- b. The Permittee shall maintain records of the following items to demonstrate compliance with the SO₂ emission limits in Conditions 7.3.3(f):
 - i. Average hourly concentration of SO₂ in the flue gas of the regenerator of each catalytic cracking unit as measured by the monitors required in Condition 7.3.8(c), % volume.
 - ii. Hourly average air flow rate into the regenerator of each catalytic cracking unit as measured by the monitoring systems required in Condition 7.3.8(c), mmscf/min.
 - iii. The sulfur content in the fresh feed to each catalytic cracking unit, % weight.
 - iv. Fresh feed rate, bbl/day.
 - v. Sulfur content of the hydrotreated feed to each catalytic cracking unit, % weight.
 - vi. Hydrotreated feed rate, bbl/day.
 - vii. RFG usage in CO heater, mmscf/hr.
 - viii. Sulfur content of the RFG used in CO boiler, % weight or ppm.

- ix. Sour water flow rate to each catalytic cracking unit, gpm.
 - x. Sulfur content of sour water, % weight.
 - xi. Combined emissions of SO₂ from the affected catalytic cracking operations as calculated by the compliance procedure described in Condition 7.3.12(k) on a three-hour block average basis, lbs/hr.
- c. The Permittee shall maintain records of the following items to quantify emissions from the affected catalytic cracking operations:
- i. Fresh feed rate to the affected catalytic cracking operations, bbl/day.
 - ii. Hours of operations from the affected catalytic cracking operations.
 - iii. Hours of operation of the affected compressor engines.
 - iv. Amount of catalyst loaded into trucks, tons/day.
 - v. Annual aggregate emissions of NO_x, CO, VOM, SO₂, and PM from the affected catalytic cracking operations as calculated by the compliance procedure described in Condition 7.3.12(k), ton/year.
- d. The Permittee shall maintain records of the following items for each Startup to demonstrate compliance with Condition 7.3.3(j):
- i. Date and duration of the startup, i.e., start time and time normal operation was achieved.
 - ii. Verification that the startup procedures, including a pre-check, were performed and met the requirements of Condition 7.3.3(j).
 - iii. Records of maintenance activities performed.
 - iv. If normal operation was not achieved within the authorized times of Condition 7.3.3(j), an explanation of why startup could not be achieved within the authorized time with the date and time the Illinois EPA's regional office was contacted, the person spoken to, items discussed, and follow-up instructions.

e. The Permittee shall maintain records of the following items for Malfunction and Breakdown to demonstrate compliance with Condition 7.3.3(k):

- i. Date and duration of the malfunction or breakdown, i.e., start time and time normal operation was achieved or time operation was shutdown.
- ii. The contaminants emitted, the measurements of all monitors required in Condition 7.3.8, and an estimate of the quantity of emissions, including supporting calculations.
- iii. Verification that the malfunction and breakdown procedures were performed and met the requirements of Condition 7.3.3(k).
- iv. Records of maintenance activities performed.
- v. If normal operation or shutdown was not achieved within the authorized time of Condition 7.3.3(k), an explanation of why normal operation or shutdown could not be achieved within the authorized time with the date and time the Illinois EPA's regional office was contacted, the person spoken to, items discussed, and follow-up instructions.

f. Records for Continuous Opacity Monitoring Systems

Pursuant to 35 IAC 201.407 and Section 39.5(7) of the Act, the Permittee shall maintain records for the opacity monitoring system of each affected FCC Unit required by Condition 7.3.8(a) that as a minimum shall include:

- i. Operating records for opacity monitoring system, including:
 - A. Opacity measurements;
 - B. Continuous monitoring system performance testing measurements;
 - C. Performance evaluations;
 - D. Calibration checks;
 - E. Maintenance and adjustment performed; and
 - F. Quarterly reports submitted in accordance with Condition 7.3.10(e).

- ii. Records to verify compliance with Condition 7.3.3(b) [Condition 5.2.2(c)], including:
 - A. Each 6-minute period when the opacity was above the limitation of Condition 7.3.3(b) (30 percent opacity) with date, time, whether it occurred during startup, malfunction/breakdown, or shutdown, and further explanation of the incident; and
 - B. Each hour when the measured opacity of an affected FCC Unit/affected CO heater was above the normal range, as specified in Condition 5.2.2, with date, time, operating condition if startup, malfunction/breakdown, or shutdown, further explanation of the incident, and whether the particulate matter standard of Condition 7.3.3(d) may have been exceeded, with explanation.
- g. The Permittee shall maintain appropriate records for each affected heater and affected CO heater (when operating independent of the associated FCC unit) so as to demonstrate compliance with 35 IAC 212.123 (Condition 7.3.3(b)).
- h. The Permittee shall maintain records of the following items for each exceedance of the limits in Conditions 7.3.3, 7.3.5, or 7.3.6, which shall include:
 - i. Identification of the limit that may have been exceeded.
 - ii. Duration of the possible exceedance.
 - iii. An estimate of the amount of emissions in excess of the applicable standard.
 - iv. A description of the cause of the possible exceedance.
 - v. When compliance was reestablished.
- i. The Permittee shall maintain records of the most recent tests required in Condition 7.3.7(a), which include the following pursuant to Section 39.5(7)(e) of the Act:
 - i. The date, place and time of sampling or measurements.
 - ii. The date(s) analyses were performed.

- iii. The company or entity that performed the analyses.
 - iv. The analytical techniques or methods used.
 - v. The results of such analyses.
 - vi. The operating conditions as existing at the time of sampling or measurement.
- j. The Permittee shall keep records of those items specified in the NESHAP, 40 CFR 63.1576.
- k. The Permittee shall maintain a file for the CCU-1 that contains the following information:
- i. The Permittee's determination of "Projected Actual Emissions" of PSD pollutants for the CCU-1 determined in accordance with 40 CFR 52.21(b) (41), that is, the maximum annual rate, in tons per year, at which the CCU-1 is projected to emit each pollutant regulated under PSD in any one of the ten years (12-month period) following the date the CCU-1 resumes regular operation after this project, with supporting documentation and calculations. In determining the projected actual emissions, the Permittee:
 - A. Shall consider all relevant information, including but not limited to, historical operational data, the source's own representations, the source's expected business activity and the source's highest projections of business activity, the source's filings with the State or Federal regulatory authorities, and compliance plans under the USEPA approved State Implementation Plan;
 - B. Shall include fugitive emissions to the extent quantifiable and emissions associated with startups, shutdowns, and malfunctions (if not otherwise excluded pursuant to paragraph (c)); and
 - C. Shall exclude, in calculating any increase in emissions that results from the particular project, that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions under 40 CFR.

52.21(b)(48) and that are also unrelated to the particular project, including any increased utilization due to product demand growth.

- ii. The Permittee's determination of "Baseline Actual Emissions" for each pollutant regulated under PSD determined in accordance with 40 CFR 52.21(b)(48)(ii), with supporting documentation and calculations.
 - iii. The Permittee's demonstration that the "actual-to-projected-actual" applicability test for this project does not show a net emissions increase for any pollutant regulated by PSD. An emissions increase is projected to occur if the sum of the difference between the projected actual emissions (as defined in 40 CFR 52.21(b)(41)) and the baseline actual emissions (as defined in 40 CFR 52.21(b)(48)(ii)) exceed zero.
1. i. The Permittee shall maintain the following operating records related to the CCU-1 on at least a daily basis:
- A. Total feed rate (barrels);
 - B. Coke burn rate;
 - C. Density and sulfur content of feed, until the continuous monitoring required by Condition 7.3.8(c) is operational;
 - D. Residue rate; and
 - E. Operating parameters for the CCU-1 cyclones and electrostatic precipitator.
- ii. The Permittee shall maintain records of monthly and annual coke burn rates.
- iii. The Permittee shall maintain the following emission records for CCU-1:
- A. SO₂ and NO_x emissions on a daily basis, as determined by continuous monitoring in accordance with Condition 4 (or daily operating records and emission calculations, until such monitors are operational).
 - B. SO₂, NO_x, CO and PM/PM₁₀ emissions on a monthly basis (tons/month and tons/year).

7.3.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of the affected catalytic cracking operations with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. Within 30 days of exceedance of the limits in Conditions 7.3.3, 7.3.5, or 7.3.6, the notification shall include:
 - i. Identification of the limit that may have been exceeded.
 - ii. Duration of the possible exceedance.
 - iii. An estimate of the amount of emissions in excess of the applicable standard.
 - iv. A description of the cause of the possible exceedance.
 - v. When compliance was reestablished.
- b. Reporting of Malfunctions and Breakdowns
 - i. Pursuant to 35 IAC 201.263, the Permittee shall immediately report to the Illinois EPA, Compliance Section and Regional Field Office by telephone or fax concerning continued operation of an emission source during a malfunction or breakdown of the emission source or related pollution control equipment when such continued operation would cause a violation of the standards or limitations of this Permit, the Act or regulations promulgated thereunder.
 - ii. Pursuant to 35 IAC 201.302, upon achievement of compliance, the Permittee shall give a written follow-up report within five (5) business days to the Illinois EPA, Compliance Section and Regional Field Office, providing a detailed explanation of the event and explanation why continued operation of the emission source was necessary, the length of time during which operation continued under such conditions, the measures by the Permittee to minimize and correct deficiencies with chronology, and when the repairs were

completed or when the emission source was taken out of service.

- c. The Permittee shall submit the following information along with its annual emission report:
 - i. A summary of exceedances of the limits in Conditions 7.3.3, 7.3.5, or 7.3.6, if any, which required notification to the Compliance Section in accordance with Condition 7.3.10(a).
 - ii. A summary of malfunctions and breakdowns which required notification to the Compliance Section in accordance with Condition 7.3.10(b).
- d. The Permittee shall fulfill the following reporting requirements for each test performed pursuant to Condition 7.3.7(a):
 - i. At least 30 days prior to the expected date of testing, a written test plan shall be submitted to the Illinois EPA for review. This plan shall describe the specific procedures for testing, including:
 - A. The expected date and time of the test.
 - B. The person(s) who will be performing the sampling and analysis and their experience with similar tests.
 - C. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the emission unit will be determined.
 - D. The specific determinations of emissions and operation which are intended to be made, including sampling and monitoring locations.
 - E. The specific sampling, analytical, and quality control procedures which will be used, with an identification of the standard methods upon which they are based.
 - F. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification.

- G. Any proposed use of an alternative test method, with detailed justification.
- ii. Notification of the actual date and time of the testing shall be submitted to the Illinois EPA at least 5 working days prior to the actual date of the test, so the Illinois EPA can arrange to have an observer present.
- iii. The results of the test shall be submitted to the Illinois EPA within 90 days after the testing is complete. These results shall be included in a final report, which shall include the following:
 - A. A summary of results.
 - B. A description of the test methods used, including a description of sampling points, sampling train, analysis equipment, and test schedule.
 - C. A detailed description of test conditions, including:
 - 1. Process information including the mode(s) of operation.
 - 2. A discussion of any preparatory actions taken, i.e., inspections, maintenance, and repair.
 - D. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.
 - E. An explanation of any discrepancies among individual tests or anomalous data.
 - F. The results of all quality control evaluations, including a copy of all quality control data.
- e. Within 30 days of the end of each calendar quarter, the Permittee shall submit to the Illinois EPA, a report for the preceding calendar quarter listing any and all opacity measurements which exceed 30%, averaged over a 6 minute period. If one 6 minute interval exceeds 30% opacity, that 6 minute interval shall be considered the beginning of an hour. For each such incident, these reports shall provide the following items:

- i. The date and time;
- ii. The opacity of individual measurements, based on 3 minute or smaller intervals;
- iii. Whether it occurred during startup, shut-down, or malfunction;

These reports shall also specify, the dates and times in which a COM was not in operation.

- f. The Permittee shall submit all notifications and reports required by the NESHAP, 40 CFR 63.1574 and 63.1575.
- g. Within 90 days of startup of the new regenerated catalyst standpipes and feed nozzles on CCU-1 (by October 30, 2003), the Permittee shall submit a report to the Illinois EPA, Bureau of Air containing a summary of the information required by Condition 7.3.9(k).
- h. The Permittee shall report to the Illinois EPA within 60 days after the end of any calendar year if actual emissions of any PSD pollutant exceed the baseline actual emissions by a significant amount and if such emissions differ from the preconstruction projections, in accordance with 40 CFR 52.21(r) (6) (v).

7.3.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected catalytic cracking operation without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

None

7.3.12 Compliance Procedures

- a. Compliance with the opacity requirements in Condition 5.2.2 shall be demonstrated by the monitoring requirements in Condition 7.3.8(a) and the recordkeeping requirements in Condition 7.3.9(f).
- b. Compliance with the PM emission limits in Condition 7.3.3(d) shall be demonstrated by the testing requirements in Condition 7.3.7(a), the operational requirements in Condition 7.3.5(c) and the recordkeeping requirements in Condition 7.3.9(a).

Emissions tests that met the requirements of Condition 7.3.7(a) was performed on both CCU-1 and CCU-2 on February 1, 1998. This test demonstrated that the affected catalytic cracking operations were in compliance with 7.3.3(d).

- d. Compliance with the SO₂ requirements of Condition 7.3.3(e) shall be demonstrated by the testing requirements in Condition 7.3.7(a).

Emissions tests that met the requirements of Condition 7.3.7(a) was performed on both CCU-1 and CCU-2 on February 1, 1998. This test demonstrated that the affected catalytic cracking operations were in compliance with 7.3.3(e).

- e. Compliance with the SO₂ requirements of Condition 7.3.3(f) shall be demonstrated by the records required in Conditions 7.3.9(b) and the emissions calculation procedure described in Condition 7.3.12(k).

- f. Compliance with the CO requirements of Condition 7.3.3(g) shall be demonstrated by the testing requirements in Condition 7.3.7(a), the operational requirements in Condition 7.3.5(a).

Emissions tests that met the requirements of Condition 7.3.7(a) was performed on both CCU-1 and CCU-2 on February 1, 1998. This test demonstrated that the affected catalytic cracking operations were in compliance with 7.3.3(g).

- g. Compliance with the VOM requirements of Condition 7.3.3(h) is considered to be assured if the Permittee meets the requirements of Condition 7.3.5(b) and (c).

- h. Compliance with the blowdown requirements of Condition 7.3.3(k) is considered to be assured if the Permittee meets the requirements of Condition 7.3.5(c).

- i. Compliance with the PM requirements for the affected catalyst loading operations in Condition 7.3.3(i) shall be demonstrated by the emissions calculation procedure in Condition 7.3.12(k).

- j. Compliance with the emission limitations for the affected compressor engines in Condition 7.3.3(j) is considered to be assured if the Permittee meets the requirements of Condition 7.3.5(d).

k. Emissions from the affected catalytic cracking operations shall be calculated using the following procedures:

i. Emissions of SO₂ from the affected catalytic cracking operations shall be determined by the following procedure:

$$E_T = E_{SW} + E_{COB} + E_R$$

Where:

E_T = Total SO₂ emissions from the affected catalytic cracking operations (lbs/hr).

E_{SW} = Emissions of SO₂ resulting from sour water sprays (lbs/hr).

E_{COB} = Emissions of SO₂ resulting from usage of RFG in CO boilers (lbs/hr).

E_R = Emissions of SO₂ resulting from the burning of coke in catalyst regenerators (lbs/hr).

A. SO₂ emissions resulting from sour water sprays, E_{SW} , shall be determined by the following equation:

$$E_{SW} = SW \times \frac{8.34 \text{ lbs}}{\text{gal}} \times \frac{S_{SW}}{100} \times \frac{60 \text{ min}}{\text{hr}} \times \frac{64 \text{ lb SO}_2}{32 \text{ lb S}}$$

Where:

SW = The total sour water flow rate into the affected catalytic cracking operations (gpm).

S_{SW} = The percent weight sulfur of the sour water.

B. SO₂ emissions resulting from the use of RFG in the CO boiler, E_{COB} , shall be determined using the following equation:

$$E_{COB} = U \times 950 \times S_U$$

Where:

U = The total RFG usage in the CO boilers (mmscf/hr).

S_C = The percent weight sulfur in the RFG.

- C. Emissions resulting from the burning of coke in the catalyst regenerators, E_R , shall be determined using the following procedure:

First calculate the sulfur content of the coke

$$S_C = \frac{FF (S_{FF}) + HF (S_{HF})}{FF + HF} \times 1.1 + (RF - 7.0) \times 0.0195$$

Where:

S_C = The percent weight sulfur of the coke.

S_{FF} = The percent weight sulfur in the fresh feed.

S_{HF} = The percent weight sulfur in the hydrotreated feed.

FF = The fresh feed flow rate (bbl/day).

HF = The hydrotreated feed flow rate (bbl/day).

RF = Total residue feed rate to unit (bbl/day)

Then calculate the flue gas flow rate:

$$FG = \frac{79(A)}{100 - V_{O_2} - V_{CO} - V_{CO_2}}$$

Where:

FG = The flue gas flow rate (mmscf/min).

A = The air flow rate into the regenerator (mmscf/min).

V_{O_2} = The percent volume of O_2 in flue gas.

V_{CO} = The percent volume of CO in flue gas.

V_{CO_2} = The percent volume of CO_2 in flue gas.

Then calculate the coke burn rate:

$$CB = \left[\frac{V_{CO} + V_{CO_2}}{100} FG \times \frac{12 \text{ lbs}}{\text{lb - mol}} \times \left(\frac{1}{1-H} \right) \right] \times \frac{1,000,000 \text{ scf}}{\text{mmscf}} \times \frac{60 \text{ min}}{\text{hr}} \times \frac{\text{lb - mol}}{379 \text{ scf}} \times \frac{2000 \text{ lb}}{\text{ton}}$$

Where:

CB = The coke burn rate (lbs/hr).

H = Weight % hydrogen on coke, assumed to be equal to 0.06

Finally, calculate the emissions of SO₂ resulting from burning coke:

$$E_s = CB \times \frac{S_c}{100} \times \frac{64 \text{ lb SO}_2}{32 \text{ lb S}}$$

- ii. Emissions of VOM, CO, PM, and NO_x from both CCUs shall be determined using either emission factors from AP-42 Table 5.1-1 or site-specific emission factors (e.g., stack test results):

<u>Pollutant</u>	<u>AP-42 Emission Factor (After Control)</u>
PM	45 lb/1,000 Barrels Fresh Feed
NO _x	71 lb/1,000 Barrels Fresh Feed
VOM	Negligible
CO	Negligible

- iii. Emissions resulting from the affected compressor engines shall be determined using manufacturer specified emission factors:

<u>Pollutant</u>	<u>Emission Factor (Lbs/Hr)</u>
PM	0.17
NO _x	3.97
VOM	0.26
CO	0.71
SO ₂	1.74

- iv. Emissions resulting from the affected catalyst loading operations shall be determined using emission factors from AP-42 Table 11.12-2:

<u>Pollutant</u>	AP-42 Emission Factor <u>(Lbs/Ton)</u>
PM	0.61

7.4 Unit: Catalytic Reforming Units (3)
Control: None

7.4.1 Description

Catalytic reforming is a process for upgrading low octane materials into higher octane products. The three catalytic reformers at this refinery operate in slightly different manners. CR-1 and CR-3 both have reaction and reformate stabilization sections and a regeneration section. They both have five reactors but CR-1 has six heaters while CR-3 has five heaters. In some phases hydrogen (H₂) is used but in others it is generated and then recycled. In the regeneration section coke that forms on the catalyst is burned off. One of the reactors is regenerated while the other four reactors are operating. Perchloroethylene is used for catalyst reactivation.

CR-2 has only two heaters and no regeneration section. Regeneration is performed during a turnaround and uses a different chloriding agent.

The process heaters for these units are included in Section 7.1

Other than regeneration, each system is a closed-vent process.

7.4.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Emission Control Equipment
66	WRR-21	Catalytic Reformer #1	None during material processing; to flare when depressurizing or hydrogen introduction; to scrubber during catalyst reactivation with chloriding agent
67	WRR-26	Catalytic Reformer #2	None during material processing; to flare when depressurizing or hydrogen introduction; to scrubber during catalyst reactivation with chloriding agent

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Emission Control Equipment
68	WRR-25	Catalytic Reformer #3	None during material processing; to flare when depressurizing or hydrogen introduction; to scrubber during catalyst reactivation with chloriding agent

7.4.3 Applicability Provisions and Applicable Regulations

- a. An "affected catalytic reformer" for the purpose of these unit-specific conditions, is a petroleum process unit identified in Condition 7.4.2. There are no open vents when processing petroleum.
- b.
 - i. These affected units are subject to a Refinery NESHAP, 40 CFR 63 Subpart UUU, but with a future compliance date of April 11, 2005. The regeneration process may require control equipment to be installed. Currently, as well as after 40 CFR 63 Subpart UUU becomes effective, these affected units are and will be subject to the equipment leaks provisions of 40 CFR 63 Subpart CC since they are petroleum refinery units in organic HAP service as identified in 40 CFR 63.640(a) and located at a source that is major for HAPs. See Section 7.8.

There are compliance standards for both organic HAP emissions and inorganic HAP emissions (40 CFR 63.1566 - 1567). The organic HAP emission standard is similar to 35 IAC 219.544 [Condition 5.2.3(d)] in that it requires the unit to be depressurized to a flare. Many of the rules for compliance in 40 CFR 63.6, general provisions for NESHAP, are also applicable to this process.

- ii. Startup, Shutdown and Malfunction (SSM) Plan

The Permittee is required to have a written Startup, Shutdown and Malfunction (SSM) Plan for the equipment subject to the Petroleum Refinery rule as described in Condition 7.3.3(b)(i). The SSM plan is not required until the date that compliance is required, April 11, 2005. [40 CFR 63.6(e)(3)]

iii. Operation, Maintenance and Monitoring (OM & M) Plan

The Permittee is required to have a written operation, maintenance and monitoring plan for any control system and any continuous monitoring system employed for achieving and determining compliance with the NESHAP listed above.

This OM & M plan must be submitted to the Illinois EPA with the notification of compliance status for review and approval. The contents of the OM & M plan and dates for submittal are listed in 40 CFR 63.1574(f).

- c. Catalytic Reforming Units 1 and 3 (CR-1, CR-3) are subject to the equipment leaks provisions of 40 CFR 61 Subpart J, which incorporates 40 CFR 61 Subpart V. It is also subject to the equipment leak provisions of 35 IAC 219 Subpart R (Section 219.445-463). See Section 7.10 on Fugitive Emissions.

7.4.4 Non-Applicability of Regulations of Concern

This permit is issued based on the affected catalytic reforming units not being subject to the New Source Performance Standards (NSPS), 40 CFR Part 60, Subpart J, GGG or QQQ for the following reasons:

- a. The affected catalytic reforming units are not subject to Subpart J, because the units are not Claus sulfur recovery units or fluid catalytic cracking units. Applicability or non-applicability of the rule to fuel combustion devices is addressed in Section 7.1 of this permit.
- b. This permit is issued based on the affected catalytic reforming units not being subject to 35 IAC 219 Subpart TT, because the affected catalytic reforming units are subject to 35 IAC 219 Subpart R [Condition 5.2.3(a)], pursuant to 35 IAC 219.980(a)(1).
- c. The affected catalytic reforming unit vents are exempted from 40 CFR 63 Subpart CC pursuant to 40 CFR 63.640(d)(4).

7.4.5 Control Requirements

There are no current control requirements but when the date for compliance with NESHAP is reached, control equipment or operating changes may be required. Although not currently required, any existing scrubber used during catalyst reactivation shall be operated properly to reduce emissions of chlorine/chlorides.

7.4.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected catalytic reforming units are subject to the following:

N/A

7.4.7 Testing Requirements

- a. These units may be required to conduct performance tests to demonstrate compliance with the applicable standards within 150 days of the compliance date specified in 40 CFR 63.1563. See § 63.1571 for performance testing requirements.
- b. Upon request by the Illinois EPA and/or USEPA, pursuant to Section 39.5(7)(b) of the Act, 35 IAC 219.105, and 40 CFR 63.571, the Permittee shall conduct testing of the affected catalytic cracking operations for purposes of demonstrating compliance to conditions of this permit according to USEPA approved methods of 40 CFR 60 Appendix A or other appropriate methods approved by the Illinois EPA or USEPA, at such reasonable times as may be specified by the Illinois EPA and/or USEPA. This test shall meet the following requirements:
 - i. The test shall be conducted by an approved independent testing service.
 - ii. The test shall be conducted during conditions which are representative of maximum emissions.

7.4.8 Monitoring Requirements

- a. The Permittee shall comply with the monitoring requirements of 40 CFR 63.1572 or alternatives in § 63.1573 after the dates specified by Subpart UUU.
- b. The Permittee shall comply with the equipment leaks monitoring requirements of 40 CFR 61 Subpart J, which incorporates Subpart V, and of 35 IAC 219 Subpart R. Further details are given in Section 7.10 of this permit.

7.4.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain the following records for the affected catalytic reforming units to demonstrate compliance with Condition 7.4.3(b), pursuant to Section 39.5(7)(b) of the Act:

- a. The Permittee shall keep records of those items specified in the NESHAP, 40 CFR 63.1576.
- b. Emissions of PM and chlorides during catalyst reactivation.

7.4.10 Reporting Requirements

The Permittee shall submit all notifications and reports required by the NESHAP, 40 CFR 63.1574 and 63.1575.

7.4.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.4.12 Compliance Procedures

- a. Since at the current time there is no emission standard for regeneration, compliance is assumed by following standard regeneration procedure. Emissions may be calculated from previous tests, engineering judgment or design standards and after performance testing using the results of the test.
- b. After implementation of the NESHAP Subpart UUU, compliance is met by conducting an initial performance test and then following the monitoring, recordkeeping and reporting requirements of Condition 7.4.8, 7.4.9 and 7.4.10.

7.5 Unit: Other Petroleum Processing Units
Control: Flare on Some Units

7.5.1 Description

The previous two petroleum processes had special rules that apply to them during a process called regeneration. The numerous units in this section have no vents directly to atmosphere. Vent gas is directed to a flare gas recovery system or the refinery fuel gas system (RFG) discussed in Section 7.7. One exception is a sulfuric acid handling system as part of one unit.

In the description only the name of the entire unit is listed and not the specific piece of equipment that vents to the refinery's gas recovery system.

Also by no vents this means process vents. Most of these processes have fuel combustion units that are included in Section 7.1. Fuel combustion emissions exit through their own stacks.

In addition to the vents that go to the flare, flue gas system, or plant hydrogen system these processes also have safety relief valves that vent to either a flare, the fuel gas system, or directly to atmosphere. Also, when the process is shutdown and the vessel emptied, if it is a pressurized vessel it must be vented to a flare or the fuel gas system to comply with 35 IAC 219.444 [Condition 5.2.3(d)].

7.5.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
69	WRR-16	Alkylation Unit	Flare System
69a	WRR-16	Sulfuric Acid Handling System	Caustic Scrubber
70	CFH WRR-8	Catalytic Feed Hydrotreater	Flare System
71	BT	Butane Treaters/Caustic Regenerators	Flare System
72	CAU WRR-5	Cracked Absorption Unit/Stabilizers	Flare System
73	DIH No. 2	Diesohexanizer No. 2	Flare System
74	DU-1 WRR-1	Distilling Unit No. 1	Flare System
75	DU-2 WRR-2	Distilling Unit No. 2	Flare System

Permit Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
76	LOT WRR-5	Light Oil Treaters, Closed Vents	Flare System
77	C3 Treaters	Propane/Propylene Treaters, to RFG	Flare System
78	RAU WRR-4	Rectified Absorption System, To RFG	Flare System
79	SWS	Gas Plant Sour Water Stripper, to RFG	Flare System
80	VF-1, VF-2, VF-3 WRR-6	Vacuum Flasher Units 1, 2, and 3, to RFG	Flare System
81	VBU WRR-6	Visbreaker Unit	Flare System
82	DHT WRR-23	Distillate Hydro-treater, to RFG	Flare System
83	HCU WRR-20	Hydrocracker Unit, to RFG also	Flare System
84	HDU-1 and 2 WRR-25	Hydrosulfurization Unit 1 and 2	Flare System
85	KHT WRR-24	Kerosene Hydrotreater, Vent to H ₂ System	Flare System
86	SGP WRR-22	Saturates Gas Plant, to RFG	Flare System
87	SMR WRR-20	Steam Methane Reformer, to H ₂ System	Flare System
88	LEU WRR-11	Lubricants Extraction Unit	Flare System
89	LHT WRR-12	Lubricants Hydrotreater, to H ₂ System	Flare System
90	VFC WRR-6	Vacuum Fractionator Column, Vent Directly to Heater of this Unit	Flare System
91	CNS WRR-69	Catalytic Naphtha Splitter	Flare System
92	HCHNT WRR-69	Heavy Catalytic Naphtha Hydrotreater	Flare System
93	GHT WRR-60	Gasoline Hydrotreater	Flare System

7.5.3 Applicability Provisions and Applicable Regulations

- a. An "affected petroleum processing unit" for the purpose of these unit-specific conditions, is a petroleum processing unit that vents only to a flare, the refinery fuel gas system, a hydrogen system or provides fuel for the unit itself.

b. Each affected petroleum processing unit is subject to the emission limits identified in Condition 5.2.2, 5.2.3, and 5.2.4 and the LDAR requirements in Section 7.10.

c. **Malfunction and Breakdown Provisions**

There are no malfunction or breakdown provisions for the process vents in these units. However, there are malfunction or breakdown provisions for the system that remove H₂S from the fuel combustion units that serve these processes. Those provisions are addressed in the process heaters section of this permit (Section 7.1).

d. **Startup and Shutdown Provisions**

All of these units are subject to the process turnaround requirement in Condition 5.2.3(d), that is, before any unit is opened it must be vented to a flare down to 5 psig.

e. The sulfuric acid handling system and associated caustic scrubber as part of the alkylation unit are subject to 35 IAC 214.303. This rule limits emissions of sulfuric acid or sulfur trioxide to 0.10 lbs/hr for sulfuric acid usage less than 1300 tons/year (100 percent acid basis) or to less than 0.5 lb/ton of acid for usage equal to or greater than 1300 tons/year.

7.5.4 **Non-Applicability of Regulations of Concern**

a. This permit is issued based on the affected petroleum process vents not being subject to 40 CFR 60 Subpart J because that subpart applies to only specific processes and these process vents are not among them. The fuel combustion units within these processes that are subject to Subpart J have applicability discussed in Section 7.1.

b. This permit is issued based on the affected petroleum processes not being subject to the miscellaneous process vent provisions of 40 CFR 63 Subpart CC because all streams from these processes are routed to the fuel gas system. See Condition 7.7.4 for more information.

c. This permit is issued based on the affected benzene extraction unit operations not being subject to 35 IAC 219 Subpart TT, because the affected benzene extraction unit operations are subject to 35 IAC 219 Subpart R, pursuant to 35 IAC 219.980(a)(1).

7.5.5 Control Requirements

None

7.5.6 Emission Limitations

There are no specific emission limitations for these units.

7.5.7 Testing Requirements

- a. Upon request by the Illinois EPA and/or USEPA, pursuant to Section 39.5(7)(b) of the Act, 35 IAC 219.105, and 40 CFR 63.571, the Permittee shall conduct testing of the affected petroleum processing operations for purposes of demonstrating compliance to conditions of this permit according to USEPA approved methods approved by the Illinois EPA or USEPA, at such reasonable times as may be specified by the Illinois EPA and/or USEPA. This test shall meet the following requirements:
 - i. The test shall be conducted by an approved independent testing service.
 - ii. The test shall be conducted during conditions which are representative of maximum emissions.
- b. Any testing of the flares, specified as control equipment in Condition 7.5.2, is discussed in Section 7.7.

7.5.8 Monitoring Requirements

Any monitoring for the flares which act as control equipment for process vents as specified in Condition 7.5.2, is discussed in Section 7.7 of this permit.

7.5.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected petroleum process unit to demonstrate compliance with Conditions 5.5.1 and 5.2.4, pursuant to Section 39.5(7)(b) of the Act:

- a. Any records required by the NESHAP, 40 CFR 63.654; and
- b. VOM are considered part of flare emissions as all process vents are ducted to a flare. See Section 7.7.

7.5.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of an affected petroleum

processing unit with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

Any reports required by the NESHAP, 40 CFR 63.654.

7.5.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.5.12 Compliance Procedures

- a. Compliance with the requirements of Conditions in 7.5.3 is determined by meeting the operating requirements of Condition 7.5.5, the testing requirements of Condition 7.5.7, the monitoring requirements of Condition 7.5.8, the recordkeeping requirements of 7.5.9 and the reporting requirements of Condition 7.5.10.
- b. Since the process vents are ducted to the fuel gas system/flare in Section 7.7 of this permit, emissions are included in the calculations presented there.

7.6 Unit: Benzene Extraction Unit (BEU)
Control: Flare

7.6.1 Description

The Benzene Extraction Unit recovers benzene from light reformat or other feedstock. First, the benzene in the feed is concentrated by distillation, then benzene is extracted from the benzene rich overhead using a solvent. The "fat" solvent is sent to a solvent recovery system where the benzene and other components are removed from the solvent. This unit is discussed separately because it is subject to some rules that do not apply to the remainder of the refining process. These rules are collectively called the HON Rule for Hazardous Organics NESHA and include 40 CFR 63 Subparts F, G, and H plus the general provisions of the NESHA, Subpart A.

In addition to the HON, this process is also subject to 40 CFR 61 Subparts J (Equipment Leaks of Benzene), Y (Benzene Storage Vessels), and FF (Benzene Waste Operations). Some of these rules are addressed in this section but others are covered elsewhere, i.e. equipment leaks in fugitive emission section and storage vessels in that section.

Two process heaters that are part of this unit are listed in Section 7.1.

7.6.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
94	WRR-19	Benzene Extraction Unit (BEU). Benzene is extracted from aromatic feedstocks	Flare

7.6.3 Applicability Provisions and Applicable Regulations

- a. An "affected chemical manufacturing unit" for the purpose of these unit specific conditions is a process in which one or more chemicals listed in Table 2 of 40 CFR 63 Subpart F is produced. This process is identified in Condition 7.6.2 but specific equipment in the process is not identified.
- b. The BEU is subject to 40 CFR 63 Subpart F, G, and H. The applicability for various requirements is as follows:
 - i. The heat exchange system requirements of 40 CFR 63.104 are applicable.

- ii. The maintenance wastewater requirements of 40 CFR 63.105 are applicable.
 - iii. The storage vessel provisions of 40 CFR 63.120-123 are applicable to Group 1 storage vessels. Storage vessels for material in this unit are included in Section 7.2. Other storage vessels may be Group 2 vessels.
 - iv. The process wastewater provisions of 40 CFR 63.132-145 are not applicable because the wastewater streams are classified as Group 2 wastewater streams, but they are subject to 40 CFR 61 Subpart FF.
 - v. The leak inspection provisions of 40 CFR 63.148 and Subpart H and 40 CFR 61 Subpart J are applicable but are addressed in Section 7.10, which covers all fugitive emission requirements.
 - vi. Although control technology and monitoring requirements do not apply to Group 2 units as stated previously, certain recordkeeping requirements to verify that a unit is classified as Group 2 unit are applicable.
- c. The affected benzene extraction unit operations are subject to the emission limits and requirements identified in Section 5 of this permit (Note: especially 5.2.3).

7.6.4 Non-Applicability of Regulations of Concern

- a. This permit is issued based on the affected benzene extraction unit operations not being subject to 35 IAC 219 Subpart TT, because the affected benzene extraction unit operations are subject to 35 IAC 219 Subpart R, pursuant to 35 IAC 219.980(a)(1).
- b. The BEU is exempt from 40 CFR 63 Subpart CC (Refinery NESHAP) pursuant to 40 CFR 63.640(g)(7).
- c. This permit is issued based on the BEU process vents not being Group 1 process vents based on the definition in 40 CFR 63.111. This definition is as follows. Group 1 process vent means a process vent for which the flow rate is greater than or equal to 0.005 standard cubic meter per minute, the total organic HAP concentration is greater than or equal to 50 parts per million by volume, and the total resource effectiveness index value, calculated according to § 63.115, is less than or equal to 1.0.

Therefore, the flare is not required to comply with 40 CFR 63.11(b).

7.6.5 Control Requirements

The flare shall be operated to assure that the unit complies with Condition 5.2.3(a). See Section 7.7 for operation of the flare.

7.6.6 Emission Limitations

In addition to Section 5 the affected BEU is subject to the following:

There are no specific emission limitations for this unit.

7.6.7 Operating and Testing Requirements

a. Startup, Shutdown and Malfunction (SSM) Plan.

The Permittee is required to have a written startup, shutdown, and malfunction (SSM) plan for the BEU unit on site under 40 CFR 63.6(e)(3).

The SSM Plan and any revision to that plan is incorporated by reference and is enforceable as a term and condition of this permit.

Revisions to the SSM Plan are automatically incorporated by reference into this permit and do not require a permit revision.

b. Upon request by the Illinois EPA and/or USEPA, pursuant to Section 39.5(7)(b) of the Act and 35 IAC 219.105, the Permittee shall conduct testing of the affected benzene extraction unit operations for purposes of demonstrating compliance to conditions of this permit according to USEPA approved methods approved by the Illinois EPA or USEPA, at such reasonable times as may be specified by the Illinois EPA and/or USEPA. This test shall meet the following requirements:

i. The test shall be conducted by an approved independent testing service.

ii. The test shall be conducted during conditions which are representative of maximum emissions.

7.6.8 Monitoring Requirements

a. The flare shall be equipped with a device capable of continuously detecting the presence of a pilot flame

as required by 40 CFR 63.114(a)(2) and the general NESHAP monitoring requirements of 40 CFR 63.8.

- b. The equipment leaks monitoring provisions are discussed in Section 7.10.

7.6.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected BEU unit to demonstrate compliance with Condition 7.6.3, pursuant to Section 39.5(7)(b) of the Act:

- a. Records that demonstrate that emission units classified as Group 2 units continue to maintain that status.
- b. Records that meet the requirements of the general recordkeeping provisions of the NESHAP, 40 CFR 63.10, the general recordkeeping provisions of the HON, 40 CFR 63.103, and the following specific provisions:
 - i. Records required by 40 CFR 63.104(f)(1) which relate to leak detection and repair of heat exchanger components in which a leak is detected.
 - ii. Records required by 40 CFR 63.105(e) which describe procedures for management of wastewater.
 - iii. Process vent recordkeeping requirements of 40 CFR 63.117 demonstrating that process vents are Group 2 and not Group 1.
 - iv. Storage vessel recordkeeping requirements of 40 CFR 63.123.
 - v. Process wastewater recordkeeping requirements of 40 CFR 63.147.
 - vi. Continuous record requirements of 40 CFR 63.152.
- c. Records required by the Part 61 NESHAP:
 - i. Equipment Leaks, 40 CFR 61.246
 - ii. Storage Vessels, 40 CFR 61.276
 - iii. Waste Operations, 40 CFR 61.356

7.6.10 Reporting Requirements

- a. The Permittee shall promptly notify the Illinois EPA, Compliance Section, of noncompliance of the affected BEU unit with the permit requirements as follows,

pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measure taken:

N/A

- b. The Permittee shall submit any reports required by the following NESHAP requirements, including changes in status of any unit currently a Group 2 unit to a Group 1 unit:
 - i. General requirements: 40 CFR 63.10;
 - ii. Heat exchange requirements: 40 CFR 63.104(f)(2);
 - iii. Process vent requirements: 40 CFR 63.117;
 - iv. Storage vessel requirements: 40 CFR 61.275 and 63.122;
 - v. Process wastewater requirements: 40 CFR 63.146;
 - vi. General HON requirements: 40 CFR 63.152; and
 - vii. Equipment leaks requirements: 40 CFR 61.247.

7.6.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.6.12 Compliance Procedures

- a. Performing the required equipment leaks inspections, operating the flare in accordance with Section 7.7 of this permit, meeting the heat exchange requirements of 40 CFR 63.104, keeping the records required by Condition 7.6.9, submitting reports required by Condition 7.6.10, and maintaining status of units as Group 2 units assures compliance with the regulations.
- b. Emissions to flare are accounted for in the section of this permit that covers operation of the flares.

7.7 Unit: Refinery Flare System Consisting of Gas Recovery System, Fuel Gas Treaters, Fuel Gas System and Flares
Control: None

7.7.1 Description

The Flare System is a safety device that collects and disposes of releases of process gas from safety relief valves, test instruments and monitors, waste process gas and blowdown, and gases collected via vents and drains during depressurization of vessels or equipment in preparation for turnaround or maintenance. The gases that are collected are usually of sufficient quantity that most of it may be compressed and recovered and then used in heaters and boilers after passing through amine absorbers to remove H₂S. The excess amount that cannot be compressed and recovered is sent to a flare. The process gases are generally hydrocarbons but may be hydrogen or any combination of hydrogen, hydrocarbon, sulfur compounds and inert gases. The flares burn the gases to form carbon dioxide, sulfur dioxide, and water. Only recovered gases are treated through the amine absorbers. If the compressor capacity is exceeded then these gases go directly to a flare and those gases are likely to contain more H₂S.

Hydrocarbon emissions to flare systems are kept to a minimum to prevent product loss. Some processes require a minor amount of venting during normal operation to eliminate non-condensables, such as nitrogen, as dictated by the nature of the process.

Except for the flare itself, which has a flame that discharges to the ambient air, the piping systems to the flare, including the gas recovery system and the amine fuel gas treaters, do not have open vents and are not listed as emission units. The purpose of the absorbers is to remove hydrogen sulfide (H₂S) from the major H₂S-rich fuel gas streams. This is accomplished by countercurrent contact of the fuel gas streams with a circulating, regenerated (i.e., "lean"), aqueous amine solution.

The H₂S rich (or "fat") amine solution is pumped to the sulfur plant (Section 7.8) for H₂S removal and conversion of the H₂S into elemental sulfur. The regenerated amine is circulated back to the absorbers.

The fuel gas generated on site may be blended with purchased natural gas before being used as fuel in process heaters and boilers. Blending is also a process with no vents.

Although the flares are stated to have no control equipment, they are equipped with a system for using steam

(i.e., steam-assisted) to assure more complete combustion and therefore are defined as smokeless.

There are no specifications on destruction efficiency or monitoring for flares that are used solely for safety releases. However, all of these flares are also control devices for process gases and to comply with the NESHAP process vent rule they must be operated in compliance with NESHAP flare requirements.

The wastewater treatment system has its own flare which is a control device and not included here.

7.7.2 List of Emission Units and Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
95	Alkylation Unit Flare	Hydrocarbons are preferably recovered by compressor system or unrecoverable amount is sent to flare.	None
96	Distilling Flare	Hydrocarbons are preferably recovered by compressor system or unrecoverable amount is sent to flare.	None
97	North Property Ground Flare	Hydrocarbons are preferably recovered by compressor system or unrecoverable amount is sent to flare.	None
98	Aromatics Low Pressure Flare	Hydrocarbons are preferably recovered by compressor system or unrecoverable amount is sent to flare.	None
99	Aromatics High Pressure Flare	Hydrocarbons are preferably recovered by compressor system or unrecoverable amount is sent to flare.	None

7.7.3 Applicability Provisions and Applicable Regulations

- a. An "affected flare" for the purposes of these unit-specific conditions, is a smokeless flare identified in Condition 7.7.2 that is used to safely

destruct releases from safety relief valves, vapor blowdown systems, process vents, etc.

- b. Pursuant to 35 IAC 219.143, each affected flare operated as a control device for the purposes of controlling emissions from safety relief valves and vapor blowdown systems shall be smokeless. Pursuant to the definition of a smokeless flare in 35 IAC 211.6050, the PM emitted to the atmosphere shall not have an appearance density or shade darker than No. 1 on the Ringlemann Chart, that is equivalent to an opacity of 20%.
- c. The affected flare systems are subject to the emission limits and requirements identified in Section 5 of this permit.
- d. To assure compliance with the smokeless flare requirement cited above, the Permittee has agreed to operate all of the flares in accordance with 40 CFR 60.18, as follows:
 - i. Flares shall be designed for and operated with no visible emissions as determined by the methods specified in Condition 7.7.7(b)(i) (40 CFR 60.18(f)), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours [40 CFR 60.18(c)(1)].
 - ii. Flares shall be operated with a flame present at all times, as determined by the methods specified in Condition 7.7.8(a) (40 CFR 60.18(f)) [40 CFR 60.18(c)(2)].
 - iii. An owner/operator has the choice of adhering to either the heat content specifications in Condition 7.7.3(d)(iii)(B) (40 CFR 60.18(c)(3)(ii)) and the maximum tip velocity specifications in Condition 7.7.3(d)(iv) (40 CFR 60.18(c)(4)), or adhering to the requirements in Condition 7.7.3(d)(iii)(A) (40 CFR 60.18(c)(3)(i) [40 CFR 60.18(c)(3)].
 - A. 1. Pursuant to 40 CFR 60.18(c)(3)(i)(A), flares shall be used that have a diameter of 3 inches or greater, are nonassisted, have a hydrogen content of 8.0 percent (by volume), or greater, and are designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity, V_{max} , as determined by the following equation:

$$V_{\text{L}} = (X_{\text{H}_2} - K_1) \times K_2$$

Where:

- V_{max} = Maximum permitted velocity, m/sec.
- K_1 = Constant, 6.0 volume-percent hydrogen.
- K_2 = Constant, 3.9 (m/sec)/volume-percent hydrogen.
- X_{H_2} = The volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946-77. (Incorporated by reference as specified in 40 CFR 60.17).

2. The actual exit velocity of a flare shall be determined by the method specified in Condition 7.7.7(b)(iii) (40 CFR 60.18(f)(4)) [40 CFR 60.18(c)(3)(i)(B)].
- B. Flares shall be used only with the net heating value of the gas being combusted being 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in Condition 7.7.7(b)(ii) (40 CFR 60.18(f)(3)) [40 CFR 60.18(c)(3)(ii)].
- iv. A. Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in Condition 7.7.7(b)(iii) (40 CFR 60.18(f)(4)), less than 18.3 m/sec (60 ft/sec), except as provided in Conditions 7.7.3(d)(iv)(B) and (C) (40 CFR 60.18(c)(4)(ii) and (iii)) below [40 CFR 60.18(c)(4)(i)].

- B. Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in Condition 7.7.7(b)(iii) (40 CFR 60.18(f)(4)), equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf) [40 CFR 60.18(c)(4)(ii)].
- C. Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in Condition 7.7.7(b)(iii) (40 CFR 60.18(f)(4)), less than the velocity, V_{max} , as determined by the method specified in Condition 7.7.7(b)(iv) (40 CFR 60.18(f)(5)), and less than 122 m/sec (400 ft/sec) are allowed [40 CFR 60.18(c)(4)(iii)].
- v. Air-assisted flares shall be designed and operated with an exit velocity less than the velocity, V_{max} , as determined by the method specified in Condition 7.7.7(b)(v) (40 CFR 60.18(f)(6)) [40 CFR 60.18(c)(5)].
- vi. Flares used to comply with this section shall be steam-assisted, air-assisted, or nonassisted [40 CFR 60.18(c)(6)].
- e. Owners or operators of flares used to comply with the provisions of 40 CFR 60.18 shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. Applicable subparts will provide provisions stating how owners or operators of flares shall monitor these control devices [40 CFR 60.18(d)].
- f. Flares used to comply with provisions of 40 CFR 60.18 shall be operated at all times when emissions may be vented to them [40 CFR 60.18(e)].
- g. No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any affected flare to exceed 2000 ppm [35 IAC 214.301].

7.7.4 Non-Applicability of Regulations of Concern

The five flares (Permit Emission Unit Nos. 95-99) are not subject to the performance and monitoring requirements of

40 CFR 63.11 because each of the flares is preceded by a fuel gas recovery system. Pursuant to 40 CFR 63.641 (definition of miscellaneous process vents), gaseous streams that are routed to a fuel gas system do not qualify as miscellaneous process vents under the Refinery NESHAP. However, the requirements of 40 CFR 60.18 are very similar if not identical to 40 CFR 63.11. }

7.7.5 Operational and Production Limits and Work Practices

- a. In accordance with the terms of the 1998 Consent Decree in Civil Action 98-652-GPM, the Permittee shall minimize sulfur dioxide emissions from the affected flares by maintaining the flare gas recovery system such that the mechanical availability of each flare gas recovery compressor (units C-7733, C-69031, and C-81075) is at least 90% on an annual basis.
- b. The Permittee shall not vent any gas stream to an affected flare containing greater than 2000 ppm of reduced sulfur compounds. This limit ensures that the affected flares meet the emission limits in Condition 7.7.3(h) (35 IAC 214.301).
- c. Each flare shall be equipped with an auto ignition system.

7.7.6 Emission Limitations

There are no specific emission limitations for these units.

7.7.7 Testing Requirements

- a. Upon request by the Illinois EPA and/or USEPA, pursuant to Section 39.5(7)(b) of the Act and 35 IAC 219.105, the Permittee shall conduct testing of the affected flare for purposes of demonstrating compliance to conditions of this permit according to USEPA approved methods of 40 CFR 60 Appendix A or other appropriate methods approved by the Illinois EPA or USEPA, at such reasonable times as may be specified by the Illinois EPA and/or USEPA. This test shall meet the following requirements:
 - i. The test shall be conducted by an approved independent testing service.
 - ii. The test shall be conducted during conditions which are representative of maximum emissions.
- b.
 - i. USEPA Reference Method 22 shall be used to determine the compliance of flares with the visible emission provisions of Condition 7.7.3(d)(i) (40 CFR 60.18). The observation

period is 2 hours and shall be used according to Method 22 [40 CFR 60.18(f)(1)].

- ii. Pursuant to 40 CFR 60.18(f)(3), the net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^n C_i H_i$$

Where:

- H_T = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20°C;
- C_i = Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77 (Incorporated by reference as specified in 40 CFR 60.17); and
- H_i = Net heat of combustion of sample component i , kcal/g mole at 25°C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 (incorporated by reference as specified in 40 CFR 60.17) if published values are not available or cannot be calculated.

- iii. The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by USEPA Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip [40 CFR 60.18(f)(4)].

- iv. Pursuant to 40 CFR 60.18(f)(5), the maximum permitted velocity, V_{max} , for flares complying with Condition 7.7.3(d)(iv)(C) (40 CFR 60.18(c)(4)(iii)) shall be determined by the following equation:

$$\text{Log}_{10}(V_{max}) = \frac{(H_v + 28.8)}{31.7}$$

Where:

- V_{max} = Maximum permitted velocity, M/sec

28.8 = Constant

31.7 = Constant

H_T = The net heating value as determined in Condition 7.7.7(b)(ii) (40 CFR 60.18(f)(3)).

- v. Pursuant to 40 CFR 60.18(f)(6), the maximum permitted velocity, V_{max} , for air-assisted flares shall be determined by the following equation:

$$V_{max} = 8.704 + 0.7084H_T$$

Where:

V_{max} = Maximum permitted velocity, m/sec

8.706 = Constant

0.7084 = Constant

H_T = The net heating value as determined in Condition 7.7.7(b)(ii) (40 CFR 60.18(f)(3)).

7.7.8 Monitoring Requirements

The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame [40 CFR 60.18(f)(2)].

7.7.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected flares to demonstrate compliance with Conditions 5.5.1, 7.7.3, 7.7.5, and 7.7.6, pursuant to Section 39.5(7)(b) of the Act:

- a. Date and duration of any time when the pilot flame monitoring equipment of an affected flare was not in operation, with explanation.
- b. Date and duration of any time when there was no pilot flame present at an affected flare, with explanation.
- c. The Permittee shall maintain records of the following items for each exceedance of the limits in Conditions 7.7.3, 7.7.5, or 7.7.6, which shall include:

- i. Identification of the limit that may have been exceeded.
 - ii. Duration of the possible exceedance.
 - iii. An estimate of the amount of emissions in excess of the applicable standard.
 - iv. A description of the cause of the possible exceedance.
 - v. When compliance was reestablished.
- d. The Permittee shall maintain records of the most recent tests required in Condition 7.7.7(a), which include the following pursuant to Section 39.5(7)(e) of the Act:
- i. The date, place and time of sampling or measurements.
 - ii. The date(s) analyses were performed.
 - iii. The company or entity that performed the analyses.
 - iv. The analytical techniques or methods used.
 - v. The results of such analyses.
 - vi. The operating conditions as existing at the time of sampling or measurement.
- e. VOM, NO_x, SO₂, and CO emissions from the flare (ton/yr).

7.7.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of the affected flares with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. In accordance with the terms of the 1998 Consent Decree in Civil Action 98-652-GPM, the Permittee shall submit a written report to the USEPA and Illinois EPA that sets forth the mechanical availability of each flare gas recovery compressor for the previous calendar year. In the event the mechanical availability of any flare gas recovery compressor is less than 90% on an annual basis, the Permittee shall include in the report the reasons that the mechanical availability was less than 90%

and the corrective measures that have been and will be undertaken to improve the mechanical availability of the flare gas recovery compressor.

- b. Within 30 days of exceedance of the limits in Conditions 7.7.3, 7.7.5, or 7.7.6, the notification shall include:
 - i. Identification of the limit that may have been exceeded.
 - ii. Duration of the possible exceedance.
 - iii. An estimate of the amount of emissions in excess of the applicable standard.
 - iv. A description of the cause of the possible exceedance.
 - v. When compliance was reestablished.
- c. The Permittee shall submit the following information along with its annual emission report:
 - i. A summary of exceedances of the limits in Conditions 7.7.3, 7.7.5, or 7.7.6, if any, which required notification to the Compliance Section in accordance with Condition 7.7.10(a).
- d. The Permittee shall fulfill the following reporting requirements for each test performed pursuant to Condition 7.7.7(a):
 - i. At least 30 days prior to the expected date of testing, a written test plan shall be submitted to the Illinois EPA for review. This plan shall describe the specific procedures for testing, including:
 - A. The expected date and time of the test.
 - B. The person(s) who will be performing the sampling and analysis and their experience with similar tests.
 - C. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the emission unit will be determined.

- D. The specific determinations of emissions and operation which are intended to be made, including sampling and monitoring locations.
 - E. The specific sampling, analytical, and quality control procedures which will be used, with an identification of the standard methods upon which they are based.
 - F. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification.
 - G. Any proposed use of an alternative test method, with detailed justification.
- ii. Notification of the actual date and time of the testing shall be submitted to the Illinois EPA at least 5 working days prior to the actual date of the test, so the Illinois EPA can arrange to have an observer present.
 - iii. The results of the test shall be submitted to the Illinois EPA within 90 days after the testing is complete. These results shall be included in a final report, which shall include the following:
 - A. A summary of results.
 - B. A description of the test methods used, including a description of sampling points, sampling train, analysis equipment, and test schedule.
 - C. A detailed description of test conditions, including:
 - 1. Process information including the mode(s) of operation.
 - 2. A discussion of any preparatory actions taken, i.e., inspections, maintenance, and repair.
 - D. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.
 - E. An explanation of any discrepancies among individual tests or anomalous data.

- F. The results of all quality control evaluations, including a copy of all quality control data.

7.7.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected flare without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

None

7.7.12 Compliance Procedures

- a. Compliance with the operating requirements of Condition 7.7.3(d), (e), and (f) is assured through proper operation of each affected flare, i.e., the presence of a flame, as demonstrated by the testing, monitoring, and recordkeeping requirements of Conditions 7.7.7(b), 7.7.8(a), and 7.7.9(a) and (b).
- b. Compliance with the SO₂ requirements of Condition 7.7.3(h) shall be demonstrated by the operating requirements in Condition 7.7.5(b) and the monitoring requirements in Condition 7.7.8(b). SO₂ emissions are calculated using best engineering judgment.
- c. VOM, NO_x and CO emissions shall be calculated using the emission factor in AP-42 Section 13.5.

7.8 Unit: Sulfur Recovery Units (SRU)
 Control: Offgas Treatment and Thermal Oxidizers

7.8.1 Description

The purpose of the Sulfur Recovery Units are to remove H₂S from fat amine in the amine regenerators and H₂S and NH₃ from sour water in the sour water stripper. The recovery units convert the H₂S into elemental sulfur using the Claus process and thermally convert the NH₃ into N₂. The SRUs consist of three (3) Claus trains, a sour water stripper, a sour water stripper feed tank, M-65^a, and three amine regenerators.

Gas exiting the SRU is still high in H₂S and SO₂, so it is sent to the Shell Claus Off-Gas Treatment Unit (SCOT). In the SCOT unit, SO₂ is converted into H₂S, the H₂S is concentrated using an absorber, and then sent back to the Sulfur Recovery Units.

The tail gas from the SCOT absorber is incinerated in two thermal oxidizers to convert traces of the remaining H₂S to SO₂.

Emissions result from incinerating SCOT unit tail gases, equipment leaks, waste gas streams, and vapor blowdown.

The amine regenerators are not listed as emissions units because the removing of the H₂S from the amine is a closed-vent process.

^a The applicable requirements for the sour water stripper feed tank, M-65, have been included in Section 7.2.

7.8.2 List of Emission Units and Pollution Control Equipment

Permittee Emission Unit No.	Unit Number	Description	Emission Control Equipment
100	Sulfur Recovery Unit No. 1 (SRU-1)	Production of Sulfur from Various Hydrogen Sulfide rich Refinery Streams	SCOT Unit, Thermal Oxidizers
101	Sulfur Recovery Unit No. 2 (SRU-2)	Production of Sulfur from Various Hydrogen Sulfide rich Refinery Streams	SCOT Unit, Thermal Oxidizers

7.8.3 Applicability Provisions and Applicable Regulations

a. The "affected sulfur recovery units" for the purpose of these unit-specific conditions, are the sulfur recovery units and associated equipment described in Conditions 7.8.1 and 7.8.2.

- b. The affected sulfur recovery units are subject to the emission limits and requirements identified in Section 5 of this permit.
- c. Components associated with the affected sulfur recovery units are subject to the fugitive emission regulations as addressed by Section 7., which includes inspection, recordkeeping, reporting requirements, and compliance procedures for fugitive emissions.
- d. In accordance with the terms of the 1998 Consent Decree in Civil Action 98-652-GPM, the Permittee shall operate the affected sulfur recovery units as follows:
 - i. The affected sulfur recovery units shall comply with the requirements for Claus sulfur recovery plants in NSPS for Petroleum Refineries, 40 CFR 60 Subparts A and J. These requirements are as follows:
 - A. For an oxidation control system or a reduction control system followed by incineration, 250 ppm by volume (dry basis) of sulfur dioxide (SO₂) at zero percent excess air [40 CFR 60.104(a)(2)(i)].
 - B. For a reduction control system not followed by incineration, 300 ppm by volume of reduced sulfur compounds and 10 ppm by volume of hydrogen sulfide (H₂S), each calculated as ppm SO₂ by volume (dry basis) at zero percent excess air [40 CFR 60.104(a)(2)(ii)].
 - ii. The Permittee shall operate the affected sulfur recovery units and associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions set forth in 40 CFR 60.11(d).
 - iii. The SCOT Unit will be operated at all times that the affected sulfur recovery unit or any individual Claus trains is operating, except during maintenance turnaround periods of the SCOT Unit.
 - iv. Maintenance turnaround periods of the SCOT Unit will be limited to 21 days in duration, and no more than one maintenance turnaround will occur every three years.

- v. During each maintenance turnaround for the SCOT Unit:
 - A. Emissions from the affected sulfur recovery units are exempt from the limit set forth in Condition 7.8.3(d)(i)(A) (40 CFR 60.104(a)(2)(i)).
 - B. Refinery-wide emissions will be reduced to offset 50% or more of the potential increase in sulfur dioxide emissions from the affected sulfur recovery units during the turnaround period. The offsets will include the following:
 - 1. Eliminate refinery flasher pitch combustion in process heaters and boilers;
 - 2. Limit sulfur production to 330 long tons per day or less at the Claus sulfur recovery plant;
 - 3. Minimize sulfur dioxide emissions produced by flaring consistent with safe practices and procedures; and
 - 4. For turnarounds occurring after 1999, reduce sulfur dioxide emissions from the catalytic cracking units by 50% of the allowable rate pursuant to 35 Ill. Adm. Code 214.382(c)(3)(I).
 - 5. Equivalent offsets may be obtained from alternative sources at the source. USEPA and Illinois EPA must be notified of the source of such alternative offsets no later than 6 months before any maintenance turnaround.
- e. No person shall cause or allow the emission of more than 1,000 ppm of sulfur dioxide into the atmosphere from any affected sulfur recovery unit in the St. Louis (Illinois) major metropolitan area designed to remove sulfur compounds from the flue gases of petroleum and petrochemical processes, except during the SCOT turnaround discussed in Condition 7.8.3(d)(v) [35 IAC 214.382(b)].
- f. i. Each sulfur recovery unit is subject to 40 CFR 63 Subpart UUU, but with a future compliance date of April 11, 2005. The compliance standards are discussed in 40 CFR 63.1567,

which reference HAP emission limits in Table 29 of Subpart UUU and operating limits in Table 30.

ii. Startup, Shutdown and Malfunction (SSM) Plan

The Permittee is required to have a written Startup, Shutdown and Malfunction (SSM) Plan for equipment subject to the Petroleum Refinery rule as described in Condition 7.8.3(f)(i). The SSM plan is not required until the date that compliance is required, April 11, 2005 [40 CFR 63.6(e)(3)].

iii. Operation, Maintenance and Monitoring (OM & M) Plan

The Permittee is required to have a written operation, maintenance and monitoring plan for any control system and any continuous monitoring system employed for achieving and determining compliance with the NESHAP listed above.

This OM & M plan must be submitted to the Illinois EPA with the notification of compliance status for review and approval. The contents of the OM & M plan and dates for submittal are listed in 40 CFR 63.1574(f).

7.8.4 Non-Applicability of Regulations of Concern

- a. 35 IAC 214.301 shall not apply to an affected sulfur recovery unit designed to remove sulfur compounds from the flue gases of petroleum and petrochemical processes [35 IAC 214.382(a)].
- b. The provisions of 35 IAC 219.301 and 302, Use of Organic Material, shall not apply to fuel combustion emission sources [35 IAC 219.303].
- c. This permit is issued based on the affected sulfur recovery units not being subject to 35 IAC 219 Subpart TT, because the affected sulfur recovery units are subject to 35 IAC 219 Subpart R, pursuant to 35 IAC 219.980(a)(1).
- d. The affected sulfur recovery units are not subject to the NESHAP for Petroleum Refineries, 40 CFR 63 Subpart CC because they are not in organic hazardous air pollutant service as defined in Section 63.641 because the liquids or gases processed do not contain at least 5% of the organic HAPs listed in Table of Subpart CC.

- e. Neither of the sulfur recovery units is subject to 35 IAC 216.361 because they are not considered to be petroleum or petrochemical processes.

7.8.5 Operational and Production Limits and Work Practices

Beginning April 11, 2005, the Permittee shall comply with the operating limits in Table 30 of 40 CFR 63 Subpart UUU.

7.8.6 Emission Limitations

There are no specific emission limitations for this unit, however, there are source wide emission limitations in Condition 5.5 that include this unit.

7.8.7 Testing Requirements

- a. Upon request by the Illinois EPA and/or USEPA, pursuant to Section 39.5(7)(b) of the Act and 35 IAC 219.105, the Permittee shall conduct testing of the affected sulfur recovery units for purposes of demonstrating compliance to conditions of this permit according to USEPA approved methods of 40 CFR 60 Appendix A or other appropriate methods approved by the Illinois EPA or USEPA, at such reasonable times as may be specified by the Illinois EPA and/or USEPA. This test shall meet the following requirements:
 - i. The test shall be conducted by an approved independent testing service.
 - ii. The test shall be conducted during conditions which are representative of maximum emissions.
- b. The Permittee shall comply with the following testing requirements for the affected sulfur recovery units in accordance with 40 CFR 60 Subpart J:
 - i. The owner or operator shall determine compliance with the SO₂ and the H₂S and reduced sulfur standards in Condition 7.8.3(d)(i) (40 CFR 60.104(a)(2)) as follows [40 CFR 60.106(f)]:
 - A. USEPA Method 6 shall be used to determine the SO₂ concentration. The concentration in mg/dscm obtained by Method 6 or 6C is multiplied by 0.3754 to obtain the concentration in ppm. The sampling point in the duct shall be the centroid of the cross section if the cross-sectional area is less than 5.00 m² (53.8 ft²) or at a point no closer to the walls than 1.00 m

(39.4 in.) if the cross-sectional area is 5.00 m² or more and the centroid is more than 1 m from the wall. The sampling time and sample volume shall be at least 10 minutes and 0.010 dscm (0.35 dscf) for each sample. Eight samples of equal sampling times shall be taken at about 30-minute intervals. The arithmetic average of these eight samples shall constitute a run. For Method 6C, a run shall consist of the arithmetic average of four 1-hour samples. Method 4 shall be used to determine the moisture content of the gases. The sampling point for USEPA Method 4 shall be adjacent to the sampling point for Method 6 or 6C. The sampling time for each sample shall be equal to the time it takes for two Method 6 samples. The moisture content from this sample shall be used to correct the corresponding Method 6 samples for moisture. For documenting the oxidation efficiency of the control device for reduced sulfur compounds, USEPA Method 15 shall be used following the procedures of the paragraph below [40 CFR 60.106(f)(1)].

- B. USEPA Method 15 shall be used to determine the reduced sulfur and H₂S concentrations. Each run shall consist of 16 samples taken over a minimum of 3 hours. The sampling point shall be the same as that described for Method 6 in the paragraph above. To ensure minimum residence time for the sample inside the sample lines, the sampling rate shall be at least 3.0 lpm (0.10 cfm). The SO₂ equivalent for each run shall be calculated after being corrected for moisture and oxygen as the arithmetic average of the SO₂ equivalent for each sample during the run. USEPA Method 4 shall be used to determine the moisture content of the gases as in the paragraph above. The sampling time for each sample shall be equal to the time it takes for four Method 15 samples [40 CFR 60.106(f)(2)].
- C. The oxygen concentration used to correct the emission rate for excess air shall be obtained by the integrated sampling and analysis procedure of USEPA Method 3 or 3A. The samples shall be taken simultaneously with the SO₂, reduced

sulfur and H₂S, or moisture samples. The SO₂, reduced sulfur, and H₂S samples shall be corrected to zero percent excess air using the following equation [40 CFR 60.106(f) (3)]

$$C_{adj} = C_{meas} \left[\frac{20.9_c}{(20.9 - \%O_2)} \right]$$

Where:

- C_{adj} = pollutant concentration adjusted to zero percent oxygen, ppm or g/dscm.
- C_{meas} = pollutant concentration measured on a dry basis, ppm or g/dscm
- 20.9_c = 20.9 percent oxygen-0.0 percent oxygen (defined oxygen correction basis), percent
- 20.9 = oxygen concentration in air, percent
- $\%O_2$ = oxygen concentration measured on a dry basis, percent

- c. The Permittee shall comply with any performance test requirements of the NESHAP, 40 CFR 63 Subpart UUU, 63.1571. This subpart includes dates by which testing must be completed.

7.8.8 Monitoring Requirements

The Permittee shall install, calibrate, maintain and operate a continuous monitoring system for the affected sulfur recovery units that meets the following requirements in accordance with 40 CFR 60.105(a) (5) through (a) (7):

- a. Pursuant to 40 CFR 60.105(a) (5), for Claus sulfur recovery plants with oxidation control systems or reduction control systems followed by incineration subject to Condition 7.8.3(d) (i) (A) (40 CFR 60.104(a) (2) (i)), an instrument for continuously monitoring and recording the concentration (dry basis, zero percent excess air) of SO₂ emissions into the atmosphere. The monitor shall include an oxygen monitor for correcting the data for excess air.
- i. The span values for this monitor are 500 ppm SO₂ and 10 percent O₂ [40 CFR 60.105(a) (5) (i)].

- ii. The performance evaluations for this SO₂ monitor under 40 CFR 60.13(c) shall use Performance Specification 2. Methods 6 and 3 shall be used for conducting the relative accuracy evaluations [40 CFR 60.105(a)(5)(ii)].
- b. Pursuant to 40 CFR 60.105(a)(6), for Claus sulfur recovery plants with reduction control systems not followed by incineration subject to Condition 7.8.3(d)(i)(B) (40 CFR 60.104(a)(2)(ii)), an instrument for continuously monitoring and recording the concentration of reduced sulfur and O₂ emissions into the atmosphere. The reduced sulfur emissions shall be calculated as SO₂ (dry basis, zero percent excess air).
 - i. The span values for this monitor are 450 ppm reduced sulfur and 10 percent O₂ [40 CFR 60.105(a)(6)(i)].
 - ii. The performance evaluations for this reduced sulfur (and O₂) monitor under 40 CFR 60.13(c) shall use Performance Specification 5, except the calibration drift specification is 2.5 percent of the span value rather than 5 percent. Methods 15 or 15A and Method 3 shall be used for conducting the relative accuracy evaluations. If Method 3 yields O₂ concentrations below 0.25 percent during the performance specification test, the O₂ concentration may be assumed to be zero and the reduced sulfur CEMS need not include an O₂ monitor [40 CFR 60.105(a)(6)(ii)].
- c. Pursuant to 40 CFR 60.105(a)(7), in place of the reduced sulfur monitor under the paragraph above, an instrument using an air or O₂ dilution and oxidation system to convert the reduced sulfur to SO₂ for continuously monitoring and recording the concentration (dry basis, zero percent excess air) of the resultant SO₂. The monitor shall include an oxygen monitor for correcting the data for excess oxygen.
 - i. The span values for this monitor are 375 ppm SO₂ and 10 percent O₂ [40 CFR 60.105(a)(7)(i)]
 - ii. For reporting purposes, the SO₂ exceedance level for this monitor is 250 ppm (dry basis, zero percent excess air) [40 CFR 60.105(a)(7)(ii)].

- iii. The performance evaluations for this SO₂ (and O₂) monitor under 40 CFR 60.13(c) shall use Performance Specification 5. Methods 15 or 15A and Method 3 shall be used for conducting the relative accuracy evaluations [40 CFR 60.105(a)(7)(iii)].
- d. The Permittee shall comply with the monitoring requirements of the NESHAP, 40 CFR 63 Subpart UUU, 63.1572. These requirements may include dates by which testing must be done as part of a compliance demonstration. The test methods may be the same or similar to the NSPS requirements specified in Condition 7.8.5(a), (b) or (c) above.

7.8.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected sulfur recovery units to demonstrate compliance with Conditions 5.5.1, 7.8.3, and 7.8.5, pursuant to Section 39.5(7)(b) of the Act:

- a. The Permittee shall maintain records of all data generated by the monitoring requirements in Condition 7.8.8 to demonstrate compliance with Conditions 7.8.3(d) and (e).
- b. The Permittee shall maintain the following records to determine emissions of SO₂ from the affected sulfur recovery units:
 - i. SCOT absorber overhead flow (mmscf/hr).
 - ii. Thermal oxidizer air and natural gas flows (mmscf/hr).
 - iii. SO₂ emissions in ppm as determined by the monitoring equipment required by Condition 7.8.8.
 - iv. Emissions of SO₂ (lbs/hr).
- c. The Permittee shall maintain records of the following items for each exceedance of the limits in Conditions 7.8.3, 7.8.5, or 7.8.6, which shall include:
 - i. Identification of the limit that may have been exceeded.
 - ii. Duration of the possible exceedance.
 - iii. An estimate of the amount of emissions in excess of the applicable standard.

- iv. A description of the cause of the possible exceedance.
- v. When compliance was reestablished.
- d. The Permittee shall maintain records of the most recent tests required in Condition 7.8.7, which include the following pursuant to Section 39.5(7)(e) of the Act:
 - i. The date, place and time of sampling or measurements.
 - ii. The date(s) analyses were performed.
 - iii. The company or entity that performed the analyses.
 - iv. The analytical techniques or methods used.
 - v. The results of such analyses.
 - vi. The operating conditions as existing at the time of sampling or measurement.
- e. The Permittee shall comply with the recordkeeping requirements of the NESHAP, 40 CFR 63 Subpart UUU, 63.1576 beginning April 11, 2005 or any records prior to that date as part of performance testing or other aspects of a compliance demonstration.

7.8.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of the affected sulfur recovery units with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. Pursuant to 40 CFR 60.105(e), for the purpose of reports under 40 CFR 60.7(c), periods of excess emissions from the affected sulfur recovery units that shall be determined and reported are defined as follows:

NOTE: All averages, except for opacity, shall be determined as the arithmetic average of the applicable 1-hour averages, e.g., the rolling 3-hour average shall be determined as the arithmetic average of three contiguous 1-hour averages.

- i. All 12-hour periods during which the average concentration of SO₂ as measured by the SO₂

continuous monitoring system under Condition 7.8.8(a) (40 CFR 60.105(a)(5)) exceeds 250 ppm (dry basis, zero percent excess air) [40 CFR 60.105(e)(4)(i)]; or

ii. All 12-hour periods during which the average concentration of reduced sulfur (as SO₂) as measured by the reduced sulfur continuous monitoring system under 40 CFR 60.105(a)(6) exceeds 300 ppm [40 CFR 60.105(e)(4)(ii)]; or

iii. All 12-hour periods during which the average concentration of SO₂ as measured by the SO₂ continuous monitoring system under 40 CFR 60.105(a)(7) exceeds 250 ppm (dry basis, zero percent excess air) [40 CFR 60.105(e)(4)(iii)].

b. In accordance with the terms of the 1998 Consent Decree in Civil Action 98-652-GPM, the Permittee shall fulfill the following reporting requirements for affected sulfur recovery units:

i. At least 30 days prior, the Permittee shall notify the USEPA and the Illinois EPA of the intention to conduct a maintenance turnaround of the affected sulfur recovery unit. This notification shall include the approximate date it will commence and a general explanation of the source of emissions offsets.

ii. The Permittee shall submit to the USEPA and Illinois EPA the start and end dates of each maintenance turnaround and the emission reductions (both actual and potential) provided as offsets, within 30 days of the conclusion of each maintenance turnaround.

c. Within 30 days of exceedance of the limits in Conditions 7.8.3, 7.8.5, or 7.8.6, the notification shall include:

i. Identification of the limit that may have been exceeded.

ii. Duration of the possible exceedance.

iii. An estimate of the amount of emissions in excess of the applicable standard.

iv. A description of the cause of the possible exceedance.

- v. When compliance was reestablished.
- d. The Permittee shall submit the following information along with its annual emission report:
 - i. A summary of exceedances of the limits in Conditions 7.8.3 or 7.8.5, if any, which required notification to the Compliance Section in accordance with Condition 7.8.10(a).
- e. The Permittee shall fulfill the following reporting requirements for each test performed pursuant to Condition 7.8.7(a):
 - i. At least 30 days prior to the expected date of testing, a written test plan shall be submitted to the Illinois EPA for review. This plan shall describe the specific procedures for testing, including:
 - A. The expected date and time of the test.
 - B. The person(s) who will be performing the sampling and analysis and their experience with similar tests.
 - C. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the emission unit will be determined.
 - D. The specific determinations of emissions and operation which are intended to be made, including sampling and monitoring locations.
 - E. The specific sampling, analytical, and quality control procedures which will be used, with an identification of the standard methods upon which they are based.
 - F. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification.
 - G. Any proposed use of an alternative test method, with detailed justification.
 - ii. Notification of the actual date and time of the testing shall be submitted to the Illinois

EPA at least 5 working days prior to the actual date of the test, so the Illinois EPA can arrange to have an observer present.

- iii. The results of the test shall be submitted to the Illinois EPA within 90 days after the testing is complete. These results shall be included in a final report, which shall include the following:
 - A. A summary of results.
 - B. A description of the test methods used, including a description of sampling points, sampling train, analysis equipment, and test schedule.
 - C. A detailed description of test conditions, including:
 - 1. Process information including the mode(s) of operation.
 - 2. A discussion of any preparatory actions taken, i.e., inspections, maintenance, and repair.
 - D. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.
 - E. An explanation of any discrepancies among individual tests or anomalous data.
 - F. The results of all quality control evaluations, including a copy of all quality control data.
- f. The Permittee shall comply with the notification and reporting requirements of the NESHAP, 40 CFR 63 Subpart UUU, 63.1574 and 63.1575. Some of the notifications may have to be done prior to the actual compliance date for the emission and operating standards, April 11, 2005.

7.8.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected sulfur recovery unit without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity

constituting construction or modification of the source, as defined in 35 IAC 201.102:

None

7.8.12 Compliance Procedures

- a. Compliance with the NSPS SO₂ and reduced sulfur requirements in Condition 7.8.3(d) is demonstrated by the testing requirements in Condition 7.8.7(b) and the monitoring requirements in Condition 7.8.8(a).
- b. Compliance with the SO₂ requirement in Condition 7.8.3(e) is assured as long as the affected sulfur recovery units meet NSPS SO₂ requirements in Condition 7.8.3(d).
- c. Emissions shall be determined based on the recordkeeping requirements in Condition 7.8.9 and the emission factors and formulas listed below. Note: Any emission test data from a representative emission source or more recent emission factor may be used:

Emissions of SO₂ from the affected sulfur recovery units shall be determined by the following equation:

$$E_{SO_2} = \frac{(F_{scot} + F_{to}) \times C_{SO_2} \times 64 \text{ lb SO}_2 / \text{lb mol}}{379 \text{ ft}^3 / \text{lb mol}}$$

Where:

E_{SO_2} = Emissions of SO₂ (lbs/hr)

F_{scot} = SCOT absorber overhead flow (mmscf/hr)

F_{to} = Thermal oxidizer air and natural gas flow (mmscf/hr)

C_{SO_2} = Emissions of SO₂ in ppm

- d. Compliance with the NESHAP, which becomes effective April 11, 2005 is assured by complying with the NSPS SO₂ requirement above.

7.9 Unit Logistics (Loading and Shipping)
Control: Absorber and Flare

7.9.1 Description

The part of the operation that ships various products is called logistics. This includes truck loading, tank car loading and marine barge loading.

There are a large number of tanks that are part of logistics but storage tanks are covered in Section 7.2 and in list form in Attachment 1.

7.9.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Emission Control Equipment
102a	LDG-TT-NEWRACK	Light Oil Truck Rack, Gasoline Mode	Vapor Recovery System (Absorber)
102b	LDG-TT-NEWRACK	Light Oil Truck Rack, Petroleum Products Other Than Gasoline	None
103	LDG-TC-OLD-RACK	Light Oil Tank Car Rack	None
104a	LDG-TT-ASPHALT	Asphalt Truck Rack	None
104b	LDG-TC-ASPHALT	Asphalt Tank Car Rack	None
105a	LDG-Barge-01 and 02	Barge Loading, Gasoline Mode	None
105b	LDG-Barge-01 and 02	Barge Loading (Non-Gasoline and Non-Benzene)	None
106	LDG-Barge-03	Barge Loading (Benzene)	Flare
107	APU	Asphalt Processing Unit	None
108	LDG-TC-PROP/BUT	East Tank Car Rack	North Property Ground Flare
109	LDG-TT-PROP/BUT	East Truck Rack	North Property Ground Flare

7.9.3 Applicability Provisions and Applicable Regulations

- a. An "affected logistic operation" for the purpose of these unit-specific conditions, is an operation for shipping of product and consisting of a number of individual systems as listed in Condition 7.9.2.
- b. Each affected logistic operation is subject to the emission limits identified in Section 5 and the LDAR requirements in Section 7.10.

- c. The light oil truck rack in gasoline mode is listed as an emission unit but it has not been used to ship gasoline since 1994 and is not equipped to meet the requirements of 40 CFR 63 Subpart CC, which incorporates the standard from 40 CFR 63 Subpart R, specifically Section 63.422(b) [10 mg/l] without a new control device. If the Permittee chooses to install a control device that meets this standard, the various requirements of the rule will be addressed at that time. This MACT limit will also meet the 35 IAC limit in 219.582(a) (1).
- d. The light oil and asphalt tank care loading operation and light oil truck loading operation are subject to 35 IAC 219.122(a) which states that no person shall cause or allow the discharge of more than 8 lb/hr of organic material into the atmosphere during the loading of any organic material from the aggregate loading pipes of any loading area having throughput greater than 40,000 gal/day into any railroad tank car, tank truck or trailer unless such loading area is equipped with submerged loading pipes. Exception: If no odor nuisance exists this limitation shall only apply to the loading of VOL with a vapor pressure of 2.5 psia or greater at 70°F.
- e. Emission Unit 106, the only barge loading spot where benzene may be loaded, is subject to 40 CFR 61 Subpart A and BB (Benzene Transfer Operations). The rule containing the standard (Section 61.302) requires that a vapor collection system collect all benzene vapors through a control device that reduces benzene emissions by 98%. A flare that meets the requirements of 40 CFR 60.18(b) through (f) is acceptable.

7.9.4 Non-Applicability of Regulations of Concern

- a. The gasoline barge terminal is not subject to the MACT standard in the NESHAP for Marine Tank Vessel Loading Operations [40 CFR 63.562(b)] because the substantive parts of the standard do not apply to existing sources with annual HAP emissions of less than 10 tons of an individual HAP and 25 tons of total HAPs, i.e., Group 2 sources. [40 CFR 63.560(a)] The barge terminal is not subject to the RACT standards in Subpart Y [40 CFR 62.562(c) and (d)] because the standard does not apply to sources with an annual throughput of less than 10 million barrels of gasoline and 200 million barrels of crude oil. [40 CFR 63.560(b)(1)] Source is defined as the marine terminal only. The Permittee does have the

option to install control equipment that meets the MACT requirement and delete this throughput limit.

- b. For the marine terminal loading gasoline, the control requirements of 35 IAC 219.762(b) and (c) do not apply from September 16 of one year through April 30 of the following year.
- c. A submerged loading pipe is not required for loading into pressurized vessels, because the units do not vent to the atmosphere except when the piping is disconnected.

7.9.5 Control Requirements, or Operational and Production Limits and Work Practices

- a. The barge loading operation shall be operated to maintain its current status as a Group 2 marine vessel terminal pursuant to the definition in 40 CFR 63.641, that is, maintain HAP emissions from barge loading to less than 10 tons of an individual HAP and 25 tons of combined HAPs per year. The barge loading operation shall also be operated with an annual throughput of less than 10 million barrels of gasoline and 200 million barrels of crude oil.
- b. The loading of gasoline and crude oil into marine vessels during the regulatory control period of May 1 to September 15 of each year shall not exceed 46,900 barrels/day.
- c. The control equipment listed in Condition 7.9.2 shall be operated to meet the required emission reduction requirements specified in Condition 7.9.3(d) and (e).
- d. Operation of the benzene barge loading.
 - i. Each marine vessel shall be loaded with the benzene product tank below atmosphere pressure (i.e., at negative pressure), or
 - ii. The marine vessel shall be vapor tight pursuant to the requirements described in [40 CFR 61.302(e) (1), (2), and (3)].
 - iii. Any other applicable requirements of 40 CFR 61.302(f) through (1).

7.9.6 Emission Limitations

There are no specific emission limitations for this unit, however, there are source wide emission limitations in Condition 5.5 that include this unit.

7.9.7 Testing Requirements

- a. The flare controlling the benzene barge loading operation is subject to the same test requirements as the flares listed in Section 7.7. This flare shall comply with the same testing requirements as in Condition 7.7.7.
- b. All barges that load benzene shall be tested for vapor tightness using EPA Method 21 as described in 40 CFR 60, Appendix A or otherwise comply with the provisions of 40 CFR 61.302(e).

7.9.8 Monitoring Requirements

- a. For the benzene barge loading operation flare, the Permittee shall install, calibrate, maintain, and operate according to manufacturer's specifications a heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light to indicate the presence of a flame during the entire loading cycle. [40 CFR 61.303(b)]
- b. For the benzene barge loading operation, the Permittee shall install, calibrate, maintain, and operate a recording pressure measurement device (magnehelic gauge or equivalent device) and an audible and visible alarm system that is activated when the pressure vacuum specified in Section 61.302(e)(1) [Condition 7.9.5(d)] is not attained. The owner or operator shall place the alarm system so that it can be seen and heard when cargo transfer is controlled and on the open deck. [40 CFR 61.303(f)]
- c. For the benzene barge loading operation, owners or operators using a vent system that contains valves that could divert a vent stream from a control device used to comply with the provisions of this subpart shall do one or a combination of the following:
 - i. Install a flow indicator immediately downstream of each valve that if opened would allow a vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere. The flow indicator shall be capable of recording flow at least once every 15 minutes.
 - ii. Monitor the valves once a month, checking the position of the valves and the condition of the car seal, and identify all times when the car seals have been broken and the valve position has been changed (i.e., from opened to closed for valves in the vent piping to the control device and from closed to open for valves that allow the streams to be vented

directly or indirectly to the atmosphere).
[40 CFR 61.303(g)]

- d. The flare controlling units 108 and 109 is included in Section 7.7 of this permit and thus subject to the monitoring requirements of Condition 7.7.8.

7.9.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected logistic operation to demonstrate compliance with Conditions 5.5.1, 7.9.3, 7.9.5, 7.9.7, and 7.9.8, pursuant to Section 39.5(7)(b) of the Act:

- a. Records required by the NESHAP, 40 CFR 61.304(e) [flare information] and 61.305(g) and (h) [vapor tightness determinations].
- b. Records that verify that the gasoline barge terminal continues to comply from exemption from the MACT standard. [See Condition 7.9.4(a) and 7.9.5(a)]
- c. Amount of gasoline and crude oil loaded into marine vessels during the regulatory control period from May 1 to September 15 of each year in order to verify compliance with Condition 7.9.5(b).
- d. Throughput of each loading operation.
- e. VOM emissions (lb/mo).

7.9.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of an affected logistic operation with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. Quarterly reports required by 40 CFR 61.304(f).
- b. Within 30 days if the gasoline barge terminal becomes a Group 1 marine terminal.

7.9.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.9.12 Compliance Procedures

- a. VOM emissions shall be calculated using AP-42 emission factors for marine loading, truck loading, and railcar loading.
- b. Emissions (lb/mo) = Emission Factor (lb/gal) x Throughput or Amount Loaded (gal/mo)
- c. For loading operations which have control equipment expressed as a percentage control efficiency, emissions calculations may be adjusted based on the emission test results for VOM reduced by the control device. An efficiency of 98% for the flares may be used.

7.10 Unit: Fugitive Emissions
Control: LDAR Program

7.10.1 Description

The Permittee operates petroleum refining process units that include components that are considered equipment in organic HAP service. LDAR is short for leak detection and repair.

7.10.2 List of Emission Units and Pollution Control Equipment

The Permittee has prepared two tables listing the equipment in organic HAP service by unit and by component type.

These two tables are in Attachment 2. Table 1 is a list of the Permittee's emission unit numbers with columns indicating applicability of the various rules listed in Condition 7.10.3(a) through (c). Table 2 lists the leak standard for various pieces of equipment (pumps, valves, compressors, etc.) and frequency of monitor, with a final column listing the most stringent standard. The most stringent may be a hybrid of two programs, for instance one requiring more frequent monitoring and another having a definition of a leaking component at a lower level. Except as noted in Table 2 of Attachment 2, Permittee shall comply with the most stringent requirements identified for each unit as identified in Attachment 2.

7.10.3 Applicability Provisions and Applicable Regulations

- a. An "affected petroleum refining process unit," for the purposes of these unit specific conditions is a petroleum refining process unit as identified in 40 CFR 63.640(a) located at a source that has the potential to emit 10 tons/year or more of any HAP or 25 tons/year or more of any combination of HAPs. Except as provided in the Refinery NESHAP, each unit in organic HAP service is subject to the equipment leak requirements of 40 CFR 63 Subpart CC. The specific requirement with this subpart (Section 63.648(a)) references the provisions of 40 CFR 60 Subpart VV.)
- b. Each affected petroleum refining process unit is also subject to 35 IAC 219.445-452 (Subpart R), except as noted in Table 1 of Attachment 2.
- c. Table 1 in Attachment 2 identifies equipment that is subject to the equipment leak requirements of the HON rule, 40 CFR 63 Subpart H (Section 63.160-182). These requirements are more stringent than the previously cited 40 CFR 60 Subpart VV and 35 IAC

219.445-452, and therefore compliance with 40 CFR 63 Subpart H shall be deemed compliance with 40 CFR 60 Subpart VV and 35 IAC 219.445-452.

7.10.4 Non-Applicability of Regulations of Concern

Pursuant to 40 CFR 63.640(p), equipment leaks that are also subject to the provisions of 40 CFR Parts 60 and 61 are required only to comply with the provisions of 40 CFR 63 Subpart CC.

7.10.5 Control Requirements

a. Compressors

- i. Each compressor, except compressors meeting the criteria specified in 40 CFR 60.482-3(h) or (i) and except as provided in 40 CFR 60.482-1(c), shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere [40 CFR 60.482-3(a)]. This requirement does not apply if the seals are equipped with a closed vent system which vents to a control device that meets the requirements of 40 CFR 60.482-10. [40 CFR 60.482-3(h)] These requirements also do not apply if the compressor is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and tested annually as provided for in 40 CFR 60.482-3(i).
- ii. The seal system shall be [40 CFR 60.482-3(b)]:
 - A. Operated with barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or
 - B. Equipped with a barrier fluid system that is connected by a closed vent system to a control device that complies with 40 CFR 60.482-10 (Condition 7.10.5(c)); or
 - C. Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.
- iii. The barrier fluid system shall be [40 CFR 60.482-3(c), (d), and (e)]:
 - A. In heavy liquid service or shall not be in VOC service; and

- B. Equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both so as to allow detection of a leak. This sensor shall be checked daily or be equipped with an audible alarm. [40 CFR 60.482-3(g)]
- C. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after the leak is detected, with the first attempt at repair being made no later than 5 days after detection, except as provided in Condition 7.10.8(f).

b. Sampling Connection Systems

Except for in-situ sampling systems and sampling systems without purges, each sampling connection system in greater than 5% organic HAP service shall be equipped with a closed-purge, closed-loop, or closed-vent system that meets one of the following requirements [40 CFR 60.482-5]:

- i. Returns the purged process fluid directly to the process line;
- ii. Collects and recycles the purged process fluid to the process line; or
- iii. Designed and operated to capture and transport all the purged process fluid to a control device that complies with the requirements of 40 CFR 60.482-10 (Condition 7.10.5(c)).

c. Closed Vent Systems and Control Devices

Pursuant to 40 CFR 60.482-10(d) and (m) flares used to comply with the requirements of 40 CFR 60 Subpart VV shall comply with the requirements of 40 CFR 60.18 and shall be operated at all times when emissions may be vented to it unless there is a recovery device prior to the flare.

- d. The above listed control requirements of Conditions 7.10.5(a) through (c) are for equipment subject to 40 CFR 63 Subpart CC (60 Subpart VV) as identified in Attachment 2. For equipment subject to 40 CFR 63 Subpart H, see that rule. The requirements are similar but may vary.

7.10.6 Emission Limitations

Specific emission limitations that include emissions from fugitive components associated with an emission unit are included in the unit specific sections of the permit.

7.10.7 Operating Requirements

a. Pressure Relief Devices in Gas/Vapor Service

- i. Except during pressure releases, each pressure relief device in gas/vapor service, except for pressure relief devices meeting the criteria specified in 40 CFR 60.482-4(c), shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background. [40 CFR 60.482-4(a)]
- ii. After each pressure release, each pressure relief device subject to (i) shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as allowed by Condition 7.10.8(f). [40 CFR 60.482-4(b)]

b. Open-ended Valves or Lines

- i. Except as provided for in 40 CFR 60.482-1(c), each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve that shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line [40 CFR 60.482-6(a)];
- ii. Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed [40 CFR 60.482-6(b)]; and
- iii. When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that required venting the line between the block valves but shall comply with (i) at all other times [40 CFR 60.482-6(c)].

- c. Operating requirements of Conditions 7.10.7(a) and (b) are for equipment subject to 40 CFR 63 Subpart CC (60 Subpart VV). For equipment subject to 40 CFR 63 Subpart H, see that rule. The requirements are similar but may vary.

7.10.8 Inspection and Monitoring Requirements

a. Pumps in Light Liquid Service

- i. Except pumps meeting the criteria specified in 40 CFR 60.482-2(d), (e), or (f) and as provided for in 40 CFR 64.482-1(c), each pump in light liquid service shall be monitored monthly to detect leaks (an instrument reading of 10,000 ppm or greater) by the methods specified in 40 CFR 60.485(b), Method 21. [40 CFR 60.482-2(a)(1)]
- ii. Each pump in light liquid service shall be visually inspected each calendar week for indication of liquid dripping from the pump seal. [40 CFR 60.482-2(a)(2)]
- iii. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after the leak is detected, with the first attempt at repair being made no later than 5 days after detection, except as provided in Condition 7.10.8(f). [40 CFR 60.482-2(c)]

b. Pressure Relief Devices in Gas/Vapor Service

Pressure relief devices subject to the requirements of Condition 7.10.7(a) shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in 40 CFR 60.485(c), Method 21, no later than 5 calendar days after a pressure release. [40 CFR 60.482-4(b)(2)]

c. Valves in Gas/Vapor Service and in Light Liquid Service Skip Period Leak Detection and Repair

Based on actual leak rates, the Permittee may select either of the following alternative monitoring frequencies.

- i. Review of prior monitoring data for valves and pumps show the equivalent of five consecutive quarterly leak detection periods with less than 2% of the valves leaking. Therefore, the Illinois EPA has determined that the Permittee qualifies for less frequent monitoring of valves and pumps as allowed by 40 CFR 63.648(b). The Permittee shall monitor for leaks at valves as follows:

Each valve, except valves meeting the criteria specified in 40 CFR 60.482-7(f), (g), or (h) shall be monitored annually (skip three quarterly leak detection periods) to detect leaks (an instrument reading of 10,000 ppm or greater) by the methods specified in 40 CFR 60.485(b) (Method 21).

- ii. In the event that the percent valves leaking during any annual leak monitoring period is greater than 2.0%, the Permittee shall fulfill the following leak monitoring and repair requirements in lieu of Condition 7.10.8(c) (i) [40 CFR 60.483-2(a) (4)]:
- A. Each valve, except valves meeting the criteria specified in 40 CFR 60.482-7(f), (g), or (h) shall be monitored monthly to detect leaks (an instrument reading of 10,000 ppm or greater) by the methods specified in 40 CFR 60.485(b) (Method 21) [40 CFR 60.482-7(a)];
 - B. Monitoring for any valve for which a leak is not detected for 2 successive months may be reduced to monitoring in only the first month of every quarter, beginning with the next quarter. If a leak in that valve is subsequently detected, the valve shall be monitored monthly until a leak is not detected for two consecutive months [40 CFR 60.482-7(c)];
 - C. After two consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, the Permittee may begin to skip one of the quarterly leak detection periods for valves in gas/vapor and light liquid service [40 CFR 60.483-2(a) (2)];
 - D. After five consecutive quarterly leak detection periods with the percent valves leaking equal to or less than 2.0%, the Permittee may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service (Condition 7.10.8(c) (i)) [40 CFR 60.483-2(a) (3)];
 - E. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after the leak is detected, with the first attempt at repair being made no later than 5 days

after detection, except as provided in Condition 7.10.8(f).

- d. **Pumps and Valves in Heavy Liquid Service, Pressure Relief Devices in Light Liquid Service or Heavy Liquid Service, and Flanges and Other Connectors**
 - i. Pumps and valves in heavy liquid service, pressure relief devices in light liquid service, and flanges and other connectors shall be monitored within five days by the methods specified in 40 CFR 60.485(b) (Method 21) if evidence of a potential leak (an instrument reading of 10,000 ppm or greater) is found by visual, audible, olfactory, or any other detection method [40 CFR 60.482-8(a)]; and
 - ii. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after the leak is detected, with the first attempt at repair being made no later than 5 days after detection, except as provided in Condition 7.10.8(f).
- e. **Closed Vent Systems and Control Devices**
 - i. The Permittee shall monitor the flare(s) used to comply with 40 CFR 60 Subpart VV to ensure that they are operated and maintained in conformance with their designs [40 CFR 60.482-10(e)];
 - ii. Each closed vent system, except closed vent systems meeting the criteria specified in 40 CFR 60.482-10(i), (j), or (k), that is constructed of hard-piping shall be visually inspected annually for visible, audible, or olfactory indications of leaks [40 CFR 60.482-10(f)];
 - iii. When a leak (an instrument reading greater than 500 ppm by volume above background or by visual inspection) is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after the leak is detected, with the first attempt at repair being made no later than 5 days after detection, except as provided in Condition 7.10.8(f).

f. Delay of Repairs

- i. Delay of repair of equipment for which leaks have been detected will be allowed for the following [40 CFR 60.482-9(a) and (b)]:
 - A. If the repair is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown; or
 - B. For equipment which is isolated from the process and which does not remain in VOC service.
- ii. Delay of repair for valves will be allowed if [40 CFR 60.482-9(c) and (e)]:
 - A. The Permittee demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair;
 - B. When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with 40 CFR 60.482-10 (Condition 7.10.5(c));
 - C. Delay of a repair beyond a unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown. [40 CFR 60.482-9(e)]
- iii. Delay of repair for pumps will be allowed if [40 CFR 60.482-9(d)]:
 - A. Repair requires the use of a dual mechanical seal system that includes a barrier fluid; and
 - B. Repair is completed as soon as practicable, but not later than 6 months after the leak is detected.

- g. The inspection and monitoring requirements of Conditions 7.7.8(a) through (f) are for equipment subject to 40 CFR 63 Subpart CC (60 Subpart VV). For equipment subject to 40 CFR 63 Subpart H, see that rule. The requirements are similar but may vary.

7.10.9 Recordkeeping Requirements

- a. For each leak detected from pumps, compressors, or valves, the Permittee shall [40 CFR 60.486(b)]:
 - i. Attach a weatherproof and readily visible identification to the leaking equipment, marked with an equipment identification number;
 - ii. The identification on a valve may be removed after the valve has been monitored for two successive months as specified in Condition 7.10.8(c) (ii) (B) and no leak has been detected during those two months;
 - iii. The identification on equipment other than a valve, may be removed after the leak has been repaired.
- b. For each leak detected from pumps, compressors, or valves, the Permittee shall record the following information in a log that is kept in a readily accessible location [40 CFR 60.486(c)]:
 - i. The instrument and operator identification numbers and the equipment identification numbers;
 - ii. The date the leak was detected and the dates of each attempt to repair the leak;
 - iii. Repair methods applied in each attempt to repair the leak;
 - iv. "Above 10,000" if the maximum instrument reading measured by the methods specified in 40 CFR 60.485(a) (Method 21) after each repair attempt is equal to or greater than 10,000 ppm;
 - v. "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak;
 - vi. The signature of the owner or operator (or designate) whose decision it was that repair

- could not be affected without a process shutdown;
 - vii. The expected date of successful repair of the leak if a leak is not repaired within 15 days;
 - viii. Dates of process unit shutdown that occur while the equipment is unrepaired; and
 - ix. The date of successful repair of the leak.
- c. For each closed vent system and control device used to comply with the requirements of 40 CFR 60 Subpart VV, the Permittee shall maintain the following information in a readily accessible location [40 CFR 60.486(d)]:
- i. Detailed schematics, design specifications, and piping and instrumentation diagrams;
 - ii. The dates and descriptions of any changes in the design specifications;
 - iii. A description of the parameter or parameters monitored, as required by Condition 7.10.8(e)(i), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for monitoring;
 - iv. Periods when the closed vent system and control device required to comply with 40 CFR 60 Subpart VV are not operated as designed, including periods when a flare pilot light does not have a flame; and
 - v. Dates of startups and shutdowns of closed vent systems and control devices used to comply with the requirements of 40 CFR 60 Subpart VV.
- d. The Permittee shall maintain the following information regarding all equipment subject to the requirements of 40 CFR 60 Subpart VV. This information shall be recorded in a log and kept in a readily accessible location [40 CFR 60.486(e)]:
- i. A list of identification numbers for equipment subject 40 CFR 60 Subpart VV;
 - ii. A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of 40 CFR

- 60.482-2(e), 482-3(i), and 482-7(f), signed by the owner or operator;
- iii. A list of equipment identification numbers for pressure relief devices required to comply with 40 CFR 60.482-4 (Condition 7.10.7(a));
 - iv. The dates of each compliance test as required by 40 CFR 60.482-2(e), 482-3(i), 482-4, and 482-7(f), including the background level measured during each compliance test, and the maximum instrument reading measured during each compliance test; and
 - v. A list of identification numbers for equipment in vacuum service.
- e. The Permittee shall maintain a log at a readily accessible location that includes the following information pertaining to all valves subject to the requirements of 40 CFR 60.482-7(g) and (h) [40 CFR 60.486(f)]:
- i. A list of identification numbers for valves that are designated as unsafe-to-monitor, an explanation for each valve stating why the valve is unsafe-to-monitor, and the plan for monitoring each valve; and
 - ii. A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the plan for monitoring each valve.
- f. The Permittee shall maintain the following records if choosing to use the skip period leak detection and repair method of monitoring [40 CFR 60.486(g)]:
- i. A schedule of monitoring; and
 - ii. The percent of valves found leaking each monitoring period.
- g. The Permittee shall maintain a log at a readily accessible location that includes the following information [40 CFR 60.486(h)]:

Design criterion for pumps and compressors that indicates failure of the seal, barrier fluid system, or both, as required pursuant to 40 CFR 60.482-2(d)(5) and 60.482-3(e)(2) and explanation of the design criterion and any

changes to this criterion and the reason for the change.

- h. The Permittee shall maintain information and data used to demonstrate that a piece of equipment is not in VOC service [40 CFR 60.486(j)].
- i. The recordkeeping requirements of Conditions 7.10.9(a) through (h) are for equipment subject to 40 CFR 63 Subpart CC (60 Subpart VV). For equipment is subject to 40 CFR 63 Subpart H, see that rule. The requirements are similar but may vary.
- j. i. The Permittee shall maintain the following records pursuant to 35 IAC 219 Subpart Q. If identical information is contained in any of the records required by 40 CFR programs, a separate records is not required.
 - A. A monitoring program including identification of all components, a format for the monitoring log, a description of the monitoring equipment and a method to identify all leaking components. [35 IAC 219.446]
 - B. A leaking components monitoring log that contains, as a minimum, the following information:
 - 1. The name of the process unit where the component is located;
 - 2. The type of component (e.g., valve, seal);
 - 3. The identification number of the component;
 - 4. The date on which a leaking component is discovered;
 - 5. The date on which a leaking component is repaired;
 - 6. The date and instrument reading of the recheck procedure after a leaking component is repaired;
 - 7. A record of the calibration of the monitoring instrument;

8. The identification number of leaking components which cannot be repaired until turnaround; and

9. The total number of components inspected and the total number of components found leaking during that monitoring period. [35 IAC 219.448]

k. VOM Emissions (tons/yr).

7.10.10 Reporting Requirements

The Permittee shall submit semiannual reports to the Illinois EPA Compliance Section. This report shall include the following information [40 CFR 60.487]:

- a. Process unit identification.
- b. Number of valves subject to the requirements of 40 CFR 60.482-7, excluding those valves designated for no detectable emissions under the provisions of 40 CFR 60.482-7(f).
- c. Number of pumps subject to the requirements of 40 CFR 60.482-2, excluding those pumps designated for no detectable emissions under the provisions of 40 CFR 60.482-2(e) and those pumps complying with 40 CFR 60.482-2(f).
- d. Number of compressors subject to the requirements of 40 CFR 60.482-3, excluding those compressors designated for no detectable emissions under the provisions of 40 CFR 60.482-3(i) and those compressors complying with 40 CFR 60.482-3(h).
- e. For each month during the semi-annual reporting period:
 - i. Number of valves for which leaks were detected as described in 40 CFR 60.482(7)(b) or 60.483-2;
 - ii. Number of valves for which leaks were not repaired as required in 40 CFR 60.482-7(d)(1);
 - iii. Number of pumps for which leaks were detected as described in 40 CFR 60.482-2(b) and (d)(6)(i);
 - iv. Number of pumps for which leaks were not repaired as described in 40 CFR 60.482-2(c) and (d)(6)(ii);

- v. Number of compressors for which leaks were detected as described in 40 CFR 60.482-3(f);
 - vi. Number of compressors for which leaks were not repaired as required in 40 CFR 60.482-3(g) (1); and
 - vii. The facts that explain each delay of repair, and where appropriate, why a process unit shutdown was technically infeasible.
- f. Dates of process unit shutdowns which occurred within the semi-annual reporting period.
 - g. The reporting requirements of Condition 7.10.10(a) through (f) are for equipment subject to 40 CFR 63 Subpart CC (60 Subpart VV). For the equipment subject to 40 CFR 63 Subpart H, see that rule. The requirements are similar but may vary.
 - h. Any reports required by 35 IAC 219.449.

7.10.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.10.12 Compliance Procedures

Compliance with the control, operating, and inspection and monitoring requirements of Condition 7.10.5, 7.10.7, and 7.10.8 shall be demonstrated by the recordkeeping and reporting requirements of Condition 7.10.9 and 7.10.10.

7.11 Unit: Cooling Water Towers (CWT)
Control: None

7.11.1 Description

The cooling towers are an integral part of the cooling water system that circulates water to the refinery process units to remove heat from process streams via heat exchangers. The cooling towers "cool" the process water by means of evaporation before the water is returned to the process units. The total design circulation rate for the cooling water system is 300,000 gpm.

Chrome compounds are not used in any of the cooling towers.

7.11.2 List of Emission Units and Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
110	CWT-11A	Non-Contact Process Water Cooling Tower	None
111	CWT-12B	Non-Contact Process Water Cooling Tower	None
112	CWT-13	Non-Contact Process Water Cooling Tower	None
113	CWT-14	Non-Contact Process Water Cooling Tower	None
114	CWT-15	Non-Contact Process Water Cooling Tower	None
115	CWT-16	Non-Contact Process Water Cooling Tower	None
116	CWT-17	Non-Contact Process Water Cooling Tower	None
117	CWT-19	Non-Contact Process Water Cooling Tower	None
118	CWT-2	Non-Contact Process Water Cooling Tower	None
119	CWT-20	Non-Contact Process Water Cooling Tower	None
120	CWT-2A	Non-Contact Process Water Cooling Tower	None
121	CWT-7	Non-Contact Process Water Cooling Tower	None
122	CWT-9C	Non-Contact Process Water Cooling Tower	None

7.11.3 Applicability Provisions and Applicable Regulations

- a. The "affected cooling towers" for the purpose of these unit-specific conditions, are the cooling towers described in Conditions 7.11.1 and 7.11.2.

- b. The affected cooling towers are subject to the emission limits and requirements identified in Section 5 of this permit.
- c. Pursuant to 40 CFR 63.402, the Permittee shall not use chromium-based water treatment chemicals in any affected cooling tower.
- d. Each affected cooling tower shall comply with the monitoring, recordkeeping, and reporting requirements of 35 IAC 219.986(d) as included in Conditions 7.11.8, 7.11.9, and 7.11.10.
- e. Any cooling tower that supplies cooling water to a process subject to the Hazardous Organic NESHAP, 40 CFR 63 Subpart F (e.g., BEU) must comply with the heat exchanger system requirements of 40 CFR 63.104.

7.11.4 Non-Applicability of Regulations of Concern

The fugitive emissions monitoring program (LDAR) of Section 7.10 does not apply to these cooling towers as the towers and piping contain mostly water. Another type of monitoring is discussed in Condition 7.11.8.

7.11.5 Operational and Production Limits and Work Practices

Chromium compounds shall not be used in any of the cooling water towers.

7.11.6 Emission Limitations

There are no specific emission limitations for this unit, however, there are source wide emission limitations in Condition 5.5 that include this unit.

7.11.7 Testing Requirements

- a. Upon request by the Illinois EPA and/or USEPA, pursuant to Section 39.5(7)(b) of the Act and 35 IAC 219.105, the Permittee shall conduct testing of the affected cooling towers for purposes of demonstrating compliance to conditions of this permit according to USEPA approved methods of 40 CFR 60 Appendix A or other appropriate methods approved by the Illinois EPA or USEPA, at such reasonable times as may be specified by the Illinois EPA and/or USEPA. This test shall meet the following requirements:
 - i. The test shall be conducted by an approved independent testing service.

- ii. The test shall be conducted during conditions which are representative of maximum emissions.

7.11.8 Monitoring Requirements

In accordance with the procedures identified in the cooling tower inspection and monitoring program submitted to the Illinois EPA in Federally Enforceable State Operating Permit 72110631 pursuant to 35 IAC 219.986(d) (3) (C), the affected cooling towers are subject to the following:

a. Sample Locations

- i. Samples shall be taken of the cooling water supply and return flows for the affected cooling towers as follows:

Cooling Water Sample Locations

<u>Cooling Towers</u>	<u>Department</u>	<u>Sample Points</u>
CWT-2 and CWT-2A	Distilling	CWT-2/2A Common Supply and Return
CWT-14 and CWT-17	Distilling	CWT-14/17 Common Supply and Return
CWT-19	Distilling	CWT-19 Supply and Return
CWT-7	Aromatics	CWT-7 Supply and Return
CWT-15	Aromatics	CWT-15 Supply and Return
CWT-9C	CCU/Alky	CWT-9C Supply and Return
CWT-11A	CCU/Alky	CWT-11A Supply and Return
CWT-20	CCU/Alky	CWT-20 Supply and Return
CWT-12B	Aromatics	CWT-12B Supply and Return
CWT-13 and CWT-16	Aromatics	CWT-13/16 Common Supply and Return

b. Sample Handling

- i. Samples shall be taken in Volatile Organic Analysis (VOA) vials. The vials are to be liquid full and capped such that the sample contains no air space. This method of sampling will minimize any losses of VOM to the atmosphere.

- ii. The supply and return samples shall be taken at approximately the same time for each affected cooling tower. The samples shall be analyzed on the same day as they are sampled.

c. Parameters Measured

- i. Total Carbon (TC) analysis shall be used as the primary leak detection measurement. The TC of the return flow shall be compared against that of the supply to look for any increases.
- ii. The test shall be ran on a TOC analyzer in the TC mode. In this mode, a microportion of the water sample shall be injected into a heated reaction chamber where it is vaporized and all the carbon is oxidized to CO₂. The CO₂ shall be measured by means of an infrared analyzer
- iii. For this method the samples are not filtered, acidified, or sparged prior to the analysis. This minimizes the loss of any light hydrocarbons which may be present.
- iv. This analytical method will pick up inorganic carbon as well as organic carbon. However, the concentration of the inorganic carbon will be the same in both the supply and return flows, so any increases in the TC reading shall be attributed to organic carbon.
- v. The residual chlorine level in the towers shall be used as a secondary measure of a hydrocarbon leak in a tower, since most hydrocarbon leaks will lead to a chlorine depletion. This test shall be part of the weekly inspection program performed on all towers. The method of the residual chlorine analysis shall be the Sodium Phosphate Dibasic color wheel/photometric test.

d. Monitoring and Inspection

- i. CWT-20 shall be subject to weekly monitoring for an increase in TC in the return line since it has a circulation rate in excess of 25,000 gallons per minute. The other affected cooling towers shall be monitored on a monthly basis for an increase in TC in the return line since their circulation rates are less than 25,000 gallons per minute. Additional testing shall be performed in the event a leak is suspected.

- ii. In addition, all affected cooling towers shall be subject to a weekly inspection program. The program shall consist of the following elements:
 - A. Chlorine residual test.
 - B. Observed high chlorine or chlorine precursor demand.
 - C. Evidence of foaming.
 - D. Discolored water.
 - E. Hydrocarbon odor.
 - F. Visible floating hydrocarbon.
 - G. Biological growth on the tower wood or screens.
- iii. An inspection checklist containing these elements shall be completed weekly for each affected cooling tower system. The checklist shall include steps to take if the inspection parameters indicate the presence of a leak.

e. Leak Criteria

- i. A leak shall be detected if a statistically significant increase of 1 ppm in TC concentration at the 95 percent confidence level is observed (as determined using the Monitoring Cooling Water Towers for Leaks Recommended Statistical Analysis submitted to the Agency dated December 22, 1994). This leak criteria shall be consistent with the cooling water tower leak criteria described in the Hazardous Organic National Emission Standard for Hazardous Air Pollutants (NESHAP) for Synthetic Organic Chemical Manufacturing Industry (SOCMI) chemical manufacturing processes at 40 CFR 63.104(b)(v).
 - ii. If the sampling indicates the presence of a leak, a second set of supply and return line samples shall be analyzed to confirm the presence of the leak as soon as possible. If the presence of a leak is confirmed, efforts to identify and locate the leaking components shall begin.
- f. Pursuant to 35 IAC 219.986(d)(1)(B) and 219.986(d)(4), when a leak is identified, initiate

and carry out steps to identify the specific leaking component or components as soon as practicable, but in no event later than three days after detection of the leak in an affected cooling water tower.

- g. Pursuant to 35 IAC 219.986(d)(1)(C) and 219.986(d)(4), when a leaking component is identified, it shall be repaired or removed from service as soon as possible, but no later than 30 days after the leak in the cooling water tower is detected, unless the leaking component cannot be repaired until the next scheduled shutdown for maintenance.
- h. Upon completion of any repair or removal of a leaking component, the supply and return water samples shall be retested for TC to confirm that the leak has been repaired or eliminated.

7.11.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected cooling towers to demonstrate compliance with Conditions 5.5.1, 7.11.3, 7.11.5, and 7.11.6, pursuant to Section 39.5(7)(b) of the Act:

- a. In accordance with 35 IAC 219.986(d)(5), the Permittee shall maintain records of the following items, and such other items as may be appropriate to allow the Illinois EPA to review compliance with the limits in this Section.
 - i. Records of inspection and monitoring activity, including date, time, and identification of the tower that was sampled.
 - ii. Records of each leak identified in each affected cooling tower, with date, time and nature of observation or measured level of parameter.
 - iii. Records of activity to identify leaking components, with date initiated, summary of components inspected with dates, and method of inspection and observations.
 - iv. Records of activity to remove a leaking component from service or repair a leaking component, with date initiated and completed, description of actions taken and the basis for determining the leak in such tower has been eliminated. If the leaking component is not identified, repaired or eliminated within 30

days of initial identification of a leak in such tower, this report shall include specific reasons why the leak could not be eliminated sooner including all other intervening periods when the process unit was out of service, actions taken to minimize VOM losses prior to elimination of the leak and any actions taken to prevent the recurrence of a leak of this type.

- v. Records of all non-contact process water cooling towers that are exempt from the requirements of 35 IAC 219.986(d)(3)(B) and (d)(3)(C).
- b. The Permittee shall maintain records of the following items for each exceedance of the limits in Conditions 7.11.3, 7.11.5, or 7.11.6, which shall include:
- i. Identification of the limit that may have been exceeded.
 - ii. Duration of the possible exceedance.
 - iii. An estimate of the amount of emissions in excess of the applicable standard.
 - iv. A description of the cause of the possible exceedance.
 - v. When compliance was reestablished.
- c. The Permittee shall maintain records of the most recent tests required in Condition 7.11.7(a), which include the following pursuant to Section 39.5(7)(e) of the Act:
- i. The date, place and time of sampling or measurements.
 - ii. The date(s) analyses were performed.
 - iii. The company or entity that performed the analyses.
 - iv. The analytical techniques or methods used.
 - v. The results of such analyses.
 - vi. The operating conditions as existing at the time of sampling or measurement.
- d. VOM and PM Emissions (ton/yr).

7.11.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of the affected cooling towers with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. In accordance 35 IAC 219.986(d)(6), the owner or operator of a non-contact process water cooling tower shall submit an annual report to the Illinois EPA which provides:
 - i. The number of leaks identified in each cooling tower.
 - ii. A general description of activity to repair or eliminate leaks which were identified.
 - iii. Identification of each leak which was not repaired in 30 days from the date of identification of a leak in such a tower, with description of the leaks, explanation why the leak was not repaired in 30 days.
 - iv. Identification of any periods when required inspection and monitoring activities were not carried out.
- b. Within 30 days of exceedance of the limits in Conditions 7.11.3, 7.11.5, or 7.11.6, the notification shall include:
 - i. Identification of the limit that may have been exceeded.
 - ii. Duration of the possible exceedance.
 - iii. An estimate of the amount of emissions in excess of the applicable standard.
 - iv. A description of the cause of the possible exceedance.
 - v. When compliance was reestablished.
- c. The Permittee shall submit the following information along with its annual emission report:
 - i. A summary of exceedances of the limits in Conditions 7.11.3, 7.11.5, or 7.11.6, if any, which required notification to the Compliance

Section in accordance with Condition
7.11.10(a).

- d. The Permittee shall fulfill the following reporting requirements for each test performed pursuant to Condition 7.11.7(a):
- i. At least 30 days prior to the expected date of testing, a written test plan shall be submitted to the Illinois EPA for review. This plan shall describe the specific procedures for testing, including:
 - A. The expected date and time of the test.
 - B. The person(s) who will be performing the sampling and analysis and their experience with similar tests.
 - C. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the emission unit will be determined.
 - D. The specific determinations of emissions and operation which are intended to be made, including sampling and monitoring locations.
 - E. The specific sampling, analytical, and quality control procedures which will be used, with an identification of the standard methods upon which they are based.
 - F. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification.
 - G. Any proposed use of an alternative test method, with detailed justification.
 - ii. Notification of the actual date and time of the testing shall be submitted to the Illinois EPA at least 5 working days prior to the actual date of the test, so the Illinois EPA can arrange to have an observer present.
 - iii. The results of the test shall be submitted to the Illinois EPA within 90 days after the

testing is complete. These results shall be included in a final report, which shall include the following:

- A. A summary of results.
- B. A description of the test methods used, including a description of sampling points, sampling train, analysis equipment, and test schedule.
- C. A detailed description of test conditions, including:
 - 1. Process information including the mode(s) of operation.
 - 2. A discussion of any preparatory actions taken, i.e., inspections, maintenance, and repair.
- D. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.
- E. An explanation of any discrepancies among individual tests or anomalous data.
- F. The results of all quality control evaluations, including a copy of all quality control data.

7.11.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected cooling tower without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

None

7.11.12 Compliance Procedures

- a. Compliance with the monitoring requirements of Condition 7.11.8 is assured by the recordkeeping and reporting requirements of 7.11.9(a) and 7.11.10(a).
- b. i. VOM emissions may be calculated using the emission factor in AP-42, Table 5.1-2 (January

1995). The controlled emission factor of 0.7 lb/10⁶ gallons of cooling water due to the testing program required by 35 IAC 219.986(d). [See Condition 7.11.8]

- ii. PM-10 emissions may be calculated using the emission factor in AP-42, Table 13.4-1 (January 1995). The emission factor is 0.019 lb/10³ gallons of cooling water.
- iii. In lieu of the above, the Permittee may use site specific calculations of VOM and PM emissions. These site specific calculations shall be based on the dissolved solids and VOM content of the blowdown water from the cooling towers.

7.12 Unit: Wastewater Treatment System (WWTS)
 Control: Flare with Installed Spare

7.12.1 Description

Much wastewater is generated in a refinery and this water is treated before discharge into the river. There are both process wastewater and stormwater streams that feed into the system.

7.12.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
123	WWTS	Units to Flare ^a : Primary Treatment/Lift Station/Collection/Bar Screen/Neutralization/CPI Oil Separators/Air Disengageent/DNF-1 and 3/DNF Sump/Two Centrifuge Holding Tanks (C-63 and C-64) and Ancillary Equipment as Part of Solids Dewatering/Centrifuges (SP-11320 and SP-11321) and Centrate Vessel (V-5300)/Tanks B-121, CH-278, C-46 and 47, D-52 thru 54	Primary Flare and Installed Spare
124	WWTS	Biotreaters/Clarifiers/Ponds and Lagoons	None

^a Many units vent to the flare through a header.

7.12.3 Applicability Provisions and Applicable Regulations

- a. The "affected wastewater treatment system" for the purpose of these unit-specific conditions, is a system for treating water prior to discharge to the river. The units in the system are listed in Condition 7.12.2.
- b. The affected WWTS is subject to the emission limits identified in Condition 5.2.2.
- c. Equipment in the wastewater treatment system, including the primary oil-water separation equipment, the benzene waste header, the oily wastewater sewer drains, and slop oil storage tanks, D-52, D-53, D-54 and B-121 are subject to NSPS, 40 CFR 60 Subparts A and QQQ for petroleum refineries wastewater systems.

- d. Equipment controlled by the vent control system and flare, the benzene waste header and the sample recycle vessel are subject to a NESHAP, 40 CFR 61 Subpart A and FF for benzene waste operations.
- e. The storage tanks must comply with the requirements of 40 CFR 60 Subpart Kb. This is due to the capacity and construction date of the tank, or a result of the tank having to comply with 40 CFR 60 Subpart QQQ or 40 CFR 61 Subpart FF which reference Subpart Kb as a compliance method.
- f. Any Group 1 wastewater stream pursuant to the definition in 40 CFR 63.641 (Subpart CC Petroleum Refineries) shall comply with 40 CFR 61 Subpart FF which has already been cited in Condition 7.12.3(d) above.
- g. The WWTS is subject to 35 IAC 219 Subpart TT because these units are not subject to 35 IA 219 Subpart R. Compliance with the control requirements of the above-referenced NESHAP requirements assures compliance with the Subpart TT requirements for the controlled units as Subpart TT requires 81% control and the NESHAP requires 98% control.
- h. Units subject to 40 CFR 60, 61 and/or 63 may use the provision of the Consolidated Air Rule (40 CFR 65) to comply.
- i. The leak monitoring requirements of the WWTS pursuant to 40 CFR 60 and 61 and 35 IAC Subpart R are described in Section 7.10 of this permit.

7.12.4 Non-Applicability of Regulations of Concern

- a. This permit is issued based on the affected WWTS not being subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected WWTS is subject to a NSPS proposed after November 15, 1990, pursuant to 40 CFR 64.2(b)(1)(i) or does not use an add-on control device to achieve compliance with an emission limitation or standard (e.g., clarifiers and lagoons).
- b. The biosolids holding tank (C-65), biosolids press draining tank (B-143), and biosolids filtrate surge tank (B-144) are used to process solids and are therefore not subject to 40 CFR 61.

7.12.5 Control or Operational Requirements

- a. To comply with the NSPS, 40 CFR 60 Subpart Kb, Tank A-149 must meet the requirements for an external floating roof tank with double seals described in Section 60.112b(a)(2). The other tanks that vent to a header and flare must meet the requirements described in Section 60.112b(a)(3).
- b. The benzene waste header shall be operated in accordance with the individual drain system requirements of the NSPS, 40 CFR 60.692-2(c).
- c. The benzene waste heater shall be operated in accordance with the Individual Drain System requirements of the NESHAP, 40 CFR 61.346(b)(3), including:
 - i. The unburied portion of each sewer line shall be visually inspected initially and thereafter quarterly for indication of cracks, gaps, or other problems that could result in benzene emissions pursuant to 40 CFR 61.346(b)(4)(iv).
 - ii. Except as provided in 40 CFR 61.350, when a broken seal, gap, crack, or other problem is identified, first effort at repair shall be made as soon as practicable, but not later than 15 calendar days after identification pursuant to 40 CFR 61.346(b)(5).
- d. The sample recycle vessel (V-1637) shall be operated in accordance with the tank requirements of the NESHAP, 40 CFR 61.343(b).
- e. The vent control system shall meet the closed-vent systems requirements of the NSPS, 40 CFR 60.692-5(e) and NESHAP, 40 CFR 61.349(a)(1) including:
 - i. Semi-annual inspection for no detectable emissions, pursuant to 40 CFR 60.692-5(e)(1).
 - ii. Purging the closed-vent system to direct vapor to the control device, pursuant to 40 CFR 60.692-5(e)(2).
 - iii. Installation of a flow indicator to ensure that vapors are being routed to the flare pursuant to 40 CFR 60.692-5(e)(3) and installation of a flow indicator at the entrance to any bypass lines that could divert the stream away from the flare, pursuant to 40 CFR 61.349(a)(ii).

- iv. All gauging and sampling devices shall be gas-tight except when gauging or sampling, pursuant to 40 CFR 60.692-5(e)(4) and 40 CFR 61.349(a)(1)(iii).
- v. When emissions are detected, first efforts to eliminate the emissions shall be made as soon as practicable but not later than 30 calendar days, pursuant to 40 CFR 60.692-5(e)(5).
- f. Operation of the flare:
 - i. The flare shall be installed and operated to receive vapor from the following equipment with a total loading not to exceed 25.0 mmBtu/hour, average: the air disengagement system, DAF-1, DAF-3, the DAF effluent sump, the spent caustic tank (CH-278), the TOC waste tanks (C-46/47), slop oil tanks (D-52/53/54), the main lift station, bar screens, neutralizers, CPI separators, and CPI oil tank (B-121).
 - ii. The flare shall be operated to reduce VOM emissions by 98% by meeting the requirements of 40 CFR 60.18. These requirements are listed in Condition 7.7.3(d), (e), and (f) and 7.7.5(b) and (c).
- g. Process wastewater from Junction Box #6 shall not be discharged to the open stormwater channel.
- h. Covers on junction boxes or the former oil/water separators shall be sealed and kept in place at all times during operation except for inspection and maintenance.

7.12.6 Emission Limitations

In addition to Condition 5.2.2, unit is subject to the following:

Emissions from the affected vent control system and flare shall not exceed the following limits:

<u>Pollutant</u>	<u>Emissions</u>	
	<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
NO _x	0.7	7.0
CO	2.0	19.7

These limits are based on the maximum rate.

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the

current month plus the preceding 11 months (running 12 month total) [T1].

The above limitations contain revisions to previously issued Permit 89020016. The source has requested that the Illinois EPA establish conditions in this permit that allow various refinements from the conditions of this aforementioned permit, consistent with the information provided in the CAAPP application. The source has requested these revisions and has addressed the applicability and compliance of Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits continue to ensure that the construction and/or modification addressed in this permit does not constitute a new major source or major modification pursuant to these rules. These limits are the primary enforcement mechanism for the equipment and activities permitted in this permit and the information in the CAAPP application contains the most current and accurate information for the source. Specifically, the hourly rate in the construction permit was replaced with a monthly rate for ease of recordkeeping [T1R].

7.12.7 Testing Requirements

Upon request by the Illinois EPA and pursuant to Section 39.5(7)(b) of the Act and 35 IAC 219.105, the Permittee shall conduct testing of the affected flare. Details of testing requirements are the same as in Condition 7.7.7 of this permit.

7.12.8 Inspection and Monitoring Requirements

- a. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame [40 CFR 60.18(f)(2)].
- b.
 - i. Each closed-vent system and control device shall be visually inspected initially and quarterly thereafter. The visual inspection shall include inspection of ductwork and piping and connections to covers and control devices for evidence of visible defects such as holes in ductwork or piping and loose connections. [40 CFR 61.349(f)]
 - ii. Except as provided in 40 CFR 61.350 (Condition 7.12.8(b)(iii)), if visible defects are observed during an inspection, or if other problems are identified, or if detectable emissions are measured, a first effort to

repair the closed-vent system and control device shall be made as soon as practicable but no later than 5 calendar days after detection. Repair shall be completed no later than 15 calendar days after the emissions are detected or the visible defect is observed. [40 CFR 61.349(g)]

- iii. A. Delay of repair of facilities or units that are subject to the provisions of 40 CFR 61 Subpart FF will be allowed if the repair is technically impossible without a complete or partial facility or unit shutdown. [40 CFR 61.350(a)]
- B. Repair of such equipment shall occur before the end of the next facility or unit shutdown. [40 CFR 61.350(b)]
- c. Owners or operators using a closed-vent system that contains any bypass line that could divert a vent stream from a control device used to comply with 40 CFR 61 Subpart FF shall:
 - i. Visually inspect the bypass line valve at least once every month, checking the position of the valve and the condition of the car-seal or closure mechanism required under 40 CFR 61.349(a)(1)(ii) (Condition 7.12.5(e)(iii)). [40 CFR 61.354(f)(1)]
 - ii. Visually inspect the reading from each flow monitoring device required by 40 CFR 61.349(a)(1)(ii) (Condition 7.12.5(e)(iii)) at least once each operating date to check that vapors are being routed to the control device as required. [40 CFR 61.354(f)(2)]
- d. Pursuant to 40 CFR 60.355(h) the owner or operator shall test equipment for compliance with no detectable emissions as required by Condition 7.12.5(e)(iii) in accordance with the following requirements:
 - i. Monitoring shall comply with Method 21 from Appendix A of 40 CFR Part 60. [40 CFR 61.355(h)(1)]
 - ii. The detection instrument shall meet the performance criteria of Method 21. [40 CFR 61.355(h)(2)]

- iii. The instruments shall be calibrated before use on each day of its use by the procedures specified in Method 21. [40 CFR 61.334(h) (3)]
- iv. Calibration gases shall be:
 - A. Zero air (less than 10 ppm of hydrocarbon in air). [40 CFR 61.355(h) (4) (i)]
 - B. A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane. [40 CFR 61.355(h) (4) (ii)]
- v. The background level shall be determined as set forth in Method 21. [40 CFR 61.355(h) (5)]
- vi. The instrument probe shall be traversed around all potential leak interfaces as close as possible to the interface as described in Method 21. [40 CFR 61.355(h) (6)]
- vii. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared to 500 ppm for determining compliance. [40 CFR 61.355 (h) (7)]

7.12.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected WWTS to demonstrate compliance with Conditions 5.5.1, 7.12.3, 7.12.5, and 7.12.6, pursuant to Section 39.5(7) (b) of the Act:

- a. Date and duration of any time when the pilot flame monitoring equipment of the affected flare was not in operation, with explanation.
- b. Date and duration of any time when there was no pilot flame present at the affected flare, with explanation or records showing that the installed spare flare was operating.
- c. Any records required by a NSPS or NESHAP rule, as follows:
 - i. 40 CFR 60.115b for NSPS Subpart Kb.
 - ii. 40 CFR 60.697 for NSPS, Subpart QQQ.
 - ii. 40 CFR 61.356 for NESHAP, Subpart FF.

- d. The Permittee shall maintain records of the most recent tests required in Condition 7.12.7, which include the following pursuant to Section 39.5(7)(e) of the Act:
 - i. The date, place and time of sampling or measurements.
 - ii. The date(s) analyses were performed.
 - iii. The company or entity that performed the analyses.
 - iv. The analytical techniques or methods used.
 - v. The results of such analyses.
 - vi. The operating conditions as existing at the time of sampling or measurement.
- e. VOM, NO_x and CO emissions (ton/year).

7.12.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of an affected WWTS with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. Any time the primary flare failed to operate and the installed spare flare was not activated.
- b. Any notification or reports required by a NSPS or NESHAP, as follows:
 - i. 40 CFR 60.115b for NSPS, Subpart Kb.
 - ii. 40 CFR 61.397 for NESHAP, Subpart FF.
 - iii. 40 CFR 60.698 for NSPS, Subpart QQQ.
- c. Any exceedance of the limits in Condition 7.12.6.

7.12.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected WWTS without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting

construction or modification of the source, as defined in 35 IAC 201.102:

None

7.12.12 Compliance Procedures

- a. VOM, NO_x and CO emissions shall be calculated using the emission factors in AP-42, Section 13.5, as follows:

<u>Pollutant</u>	<u>Emission Factor</u> <u>(Lb/mmBtu)</u>
VOM	0.06 ^a
NO _x	0.068
CO	0.37

^a The factor specified in the Table is 0.14 but that is total hydrocarbons. The above value adjusts for the non VOMs within the total hydrocarbons.

- b. Emissions from the uncontrolled units (clarifiers, lagoons, etc.) shall be calculated using WATER9 or equivalent.

7.13 Unit: Gasoline Dispensing Tanks
 Controls: Submerged Loading Pipe and Vapor Balance System

7.13.1 Description

The Permittee operates two tanks for dispersing of gasoline into vehicles used at the refinery. These tanks are subject to the same standards as a gasoline tank that serves the general public, e.g. at a convenience store.

7.13.2 List of Emission Units and Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Emission Control Equipment
125	Point 0096	Two Fixed Roof Tank TK-H032; and TK-H033, 5700 gallons each	Submerged Loading Pipe and Vapor Balance

7.13.3 Applicability Provisions and Applicable Regulations

- a. The "affected gasoline dispensing tanks" for the purpose of these unit-specific conditions, are gasoline tanks used to fill vehicles used in Wood River Refinery and described in Condition 7.13.2.
- b. Each affected gasoline dispensing tank is subject to the emission limits identified in Condition 5.2.2.
- c. No person shall cause or allow the loading of any organic material into any stationary tank having a storage capacity of greater than 946 l (250 gal), unless such tank is equipped with a permanent submerged loading pipe or an equivalent device approved by the Illinois EPA according to the provisions of 35 IAC 201, and further processed consistent with 35 IAC 219.108 [35 IAC 219.122(b)].
- d. The affected tank is subject to 35 IAC 219.583(c), which provides no person shall cause or allow the transfer of gasoline from any delivery vessel into any stationary storage tank at a gasoline dispensing operation unless:
 - i. The tank is equipped with a submerged loading pipe [35 IAC 219.583(a)(1)]; and
 - ii. The vapors displaced from the storage tank during filling are processed by a vapor control system that includes one or more of the following:

- A. A vapor collection system that meets the requirements of Condition 7.13.5(c) (see also 35 IAC 219.583(d)(4)) [35 IAC 219.583(a)(2)(A)]; or
 - B. A refrigeration-condensation system or any other system approved by the Illinois EPA and approved by the USEPA as a SIP revision, that recovers at least 90 percent by weight of all vaporized organic material from the equipment being controlled [35 IAC 219.583(a)(2)(B)]; and
 - C. The delivery vessel displays the appropriate sticker pursuant to the requirements of 35 IAC 219.584(b) or (d) [35 IAC 219.583(a)(2)(C)]; and
- iii. All tank vent pipes are equipped with pressure/vacuum relief valves with the pressure/vacuum relief valve shall be set to resist a pressure of at least 3.5 inches water column and to resist a vacuum of no less than 6.0 inches water column [35 IAC 219.583(a)(3)].
- e. The affected tank is subject to 35 IAC 219.585, which provides that:
- i. No person shall sell, offer for sale, dispense, supply, offer for supply, or transport for use in Illinois gasoline whose Reid vapor pressure exceeds the applicable limitations set forth in Conditions 7.13.3(e)(ii) and (e)(iii) (see also 35 IAC 219.585(b) and (c)) during the regulatory control periods, which shall be May 1 to September 15 for retail outlets, wholesale purchaser-consumer, operations, and all other operations [35 IAC 219.585(a)].
 - ii. The Reid vapor pressure of gasoline, a measure of its volatility, shall not exceed 7.2 psi (49.68 kPa) during the regulatory control period in 1995 and each year thereafter [35 IAC 219.585(b)].
 - iii. The Reid vapor pressure of ethanol blend gasolines having at least nine percent (%) but not more than percent (%) ethyl alcohol by volume of the blended mixture, shall not exceed the limitations for gasoline set forth

in Condition 7.13.3(e)(ii) (see also 35 IAC 219.585(b)) by more than 1.0 psi (6.9 kPa). Notwithstanding this limitation, blenders of ethanol blend gasolines whose Reid vapor pressure is less than 1.0 psi above the base stock gasoline immediately after blending with ethanol are prohibited from adding butane or any product that will increase the Reid vapor pressure of the blended gasoline [35 IAC 219.585(c)].

7.13.4 Non-Applicability of Regulations of Concern

- a. The affected tank is not subject to the NSPS for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984, 40 CFR 60 Subpart Kb, because the affected tank has a capacity less than 40 m³.
- b. The affected tank is not subject to the limitations of 35 IAC 219.120, Control Requirements for Storage Containers of VOL, pursuant to 35 IAC 219.119, because the affected tank is used to store a petroleum liquid and the capacity is less than 151 m³ (40,000 gal).
- c. The affected tank is not subject to the requirements of 35 IAC 219.121, Storage Containers of VPL, pursuant to 35 IAC 219.123(a)(2), which exempts storage tanks with a capacity less than 151.42 m³ (40,000 gal).
- d. The affected gasoline dispensing tanks are not subject to 40 CFR 63 Subpart CC (Petroleum Refinery MACT) because they are not storage vessels associated with a petroleum refining process unit or a gasoline loading rack. For the same reason they are not subject to 35 IAC 219 Subpart R.
- e. This permit is issued based on the affected gasoline dispensing tanks not being subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected gasoline dispensing tanks do not have potential pre-control device emissions of the applicable regulated air pollutant that equals or exceeds major source threshold levels.

7.13.5 Operational and Production Limits and Work Practices

- a. The affected tank shall only be used for the storage of gasoline.

- b. Pursuant to 35 IAC 219.583(c), each owner of a gasoline dispensing operation shall:
 - i. Install all control systems and make all process modifications required by Condition 7.13.3(c) (see also 35 IAC 219.583(a)) [35 IAC 219.583(c) (1)];
 - ii. Provide instructions to the operator of the gasoline dispensing operation describing necessary maintenance operations and procedures for prompt notification of the owner in case of any malfunction of a vapor control system [35 IAC 219.583(c) (2)]; and
 - iii. Repair, replace or modify any worn out or malfunctioning component or element of design [35 IAC 219.583(c) (3)].

- c. Pursuant to 35 IAC 219.583(d), each operator of a gasoline dispensing operation shall:
 - i. Maintain and operate each vapor control system in accordance with the owner's instructions [35 IAC 219.583(d) (1)];
 - ii. Promptly notify the owner of any scheduled maintenance or malfunction requiring replacement or repair of a major component of a vapor control system [35 IAC 219.583(d) (2)];
 - iii. Maintain gauges, meters or other specified testing devices in proper working order [35 IAC 219.583(d) (3)]; and
 - iv. Operate the vapor collection system and delivery vessel unloading points in a manner that prevents:
 - A. A reading equal to or greater than 100 percent of the LEL (measured as propane) when tested in accordance with the procedure described in EPA 450/2-78-051 Appendix B [35 IAC 219.583(d) (4) (A)]; and
 - B. Avoidable leaks of liquid during the filling of storage tanks [35 IAC 219.583(d) (4) (B)].

7.13.6 Emission Limitations

There are no specific emission limitations for these units.

7.13.7 Testing Requirements

- a. Pursuant to 35 IAC 219.583(a)(4), no person shall cause or allow the transfer of gasoline from any delivery vessel into any stationary storage tank at a gasoline dispensing operation unless the owner or operator of a gasoline dispensing operation demonstrates compliance with Condition 7.13.3(d)(iii) (see also 35 IAC 219.583(a)(3)), by March 15, 1995 or 30 days after installation of each pressure/vacuum relief valve, whichever is later, and at least annually thereafter, by measuring and recording the pressure indicated by a pressure/vacuum gauge at each tank vent pipe. The test shall be performed on each tank vent pipe within two hours after product delivery into the respective storage tank. For manifold tank vent systems, observations at any point within the system shall be adequate. The owner or operator shall maintain any records required by this Condition for a period of three years.
- b. Within 15 business days after discovery of the leak by the owner, operator, or the Illinois EPA, repair and retest a vapor collection system which exceeds the limits of Condition 7.13.5(c)(4)(A) (see also 35 IAC 219.583(d)(4)(A)) [35 IAC 219.583(d)(5)].
- c. Upon reasonable request by the Illinois EPA, pursuant to Section 39.5(7)(b) of the Act, the Reid vapor pressure of gasoline and the ethanol content of ethanol blend gasolines shall be determine according to the methods specified below:
 - i Pursuant to 35 IAC 219.585(d), all sampling of gasoline required pursuant to the provisions of Conditions 7.13.7(c)(ii) and (c)(iii) (see also 35 IAC 219.585(e) and (f)) shall be conducted by one or more of the following approved methods or procedures:
 - A. For manual sampling, ASTM D4057 [35 IAC 219.585(d)(1)];
 - B. For automatic sampling, ASTM D4177 [35 IAC 219.585(d)(2)]; or
 - C. Sampling procedures for Fuel Volatility, 40 CFR 80 Appendix D [35 IAC 219.585(d)(3)].

- ii. The Reid vapor pressure of gasoline shall be measured in accordance with either test method ASTM D323 or a modification of ASTM D323 known as the "dry method" as set forth in 40 CFR 80, Appendix E. For gasoline - oxygenate blends which contain water-extractable oxygenates, the Reid vapor pressure shall be measured using the dry method test [35 IAC 219.585(e)].
- iii. The ethanol content of ethanol blend gasolines shall be determined by use of one of the approved testing methodologies specified in 40 CFR 80, Appendix F [35 IAC 219.585(f)].

7.13.8 Monitoring Requirements

None

7.13.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected gasoline dispensing tanks to demonstrate compliance with Condition 7.13.3, pursuant to Section 39.5(7)(b) of the Act:

- a. Records of the testing of the affected tank pursuant to Condition 7.13.7, which include the following [Section 39.5(7)(e) of the Act]:
 - i. The date, place and time of sampling or measurements;
 - ii. The date(s) analyses were performed;
 - iii. The company or entity that performed the analyses;
 - iv. The analytical techniques or methods used;
 - v. The results of such analyses; and
 - vi. The operating conditions as existing at the time of sampling or measurement.
- b. Each storage vessel with a design capacity less than 40,000 gallons is subject to no provisions of 35 IAC Part 219 other than those required by maintaining readily accessible records of the dimensions of the storage vessel and analysis of the capacity of the storage vessel [35 IAC 219.129(f)].

- c. Design information for the tank showing the presence of a permanent submerged loading pipe;
- d. Maintenance and repair records for the tank, as related to the repair or replacement of the loading pipe;
- e. The throughput of the affected tank, gal/mo and gal/yr; and
- f. The annual VOM emissions from the affected tank based on the material stored, the tank throughput, and the applicable emission factors and formulas with supporting calculations.

7.13.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of an affected gasoline dispensing tanks with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. Any storage of VOL in an affected tank that is not in compliance with the requirements of Conditions 7.13.3(c) and (d)(i) (see also 35 IAC 219.122(b) and 219.583(a)(1)), e.g., no "permanent submerged loading pipe," within five days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps taken to avoid future non-compliance;
- b. Any storage of VOL in an affected tank that is out of compliance with the requirements of Conditions 7.13.3(c) and (d)(i) (see also 35 IAC 219.122(b) and 219.583(a)(1)) due to damage, deterioration, or other condition of the loading pipe, within 30 days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps to be taken to avoid future non-compliance;
- c. Upon request by the Illinois EPA, the owner or operator of a gasoline dispensing operation which claims to be exempt from the requirements of 35 IAC 219.586 shall submit records to the Illinois EPA within 30 calendar days from the date of the request which demonstrate that the gasoline dispensing operation is in fact exempt; and

- d. The storage of any VOL or VPL other than the material specified in Condition 7.13.5(a) within 30 days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps to be taken to avoid future non-compliance.

7.13.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.13.12 Compliance Procedures

Compliance with the emission limits shall be based on the recordkeeping requirements in Condition 7.13.9 and the emission factors and formulas listed below:

For the purpose of estimating VOM emissions from each affected tank, the versions 4.0 of the TANKS program are acceptable.

8.0 GENERAL PERMIT CONDITIONS

8.1 Permit Shield

Pursuant to Section 39.5(7)(j) of the Act, the Permittee has requested and has been granted a permit shield. This permit shield provides that compliance with the conditions of this permit shall be deemed compliance with applicable requirements which were applicable as of the date the proposed permit for this source was issued, provided that either the applicable requirements are specifically identified within this permit, or the Illinois EPA, in acting on this permit application, has determined that other requirements specifically identified are not applicable to this source and this determination (or a concise summary thereof) is included in this permit.

This permit shield does not extend to applicable requirements which are promulgated after August 6, 2003 (the date of issuance of the draft permit) unless this permit has been modified to reflect such new requirements.

8.2 Applicability of Title IV Requirements (Acid Deposition Control)

This source is not an affected source under Title IV of the CAA and is not subject to requirements pursuant to Title IV of the CAA.

8.3 Emissions Trading Programs

No permit revision shall be required for increases in emissions allowed under any USEPA approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for elsewhere in this permit and that are authorized by the applicable requirement [Section 39.5(7)(o)(vii) of the Act].

8.4 Operational Flexibility/Anticipated Operating Scenarios

8.4.1 Changes Specifically Addressed by Permit

Physical or operational changes specifically addressed by the Conditions of this permit that have been identified as not requiring Illinois EPA notification may be implemented without prior notice to the Illinois EPA.

8.4.2 Changes Requiring Prior Notification

The Permittee is authorized to make physical or operational changes that contravene express permit terms without applying for or obtaining an amendment to this permit, provided that [Section 39.5(12)(a)(i) of the Act]:

- a. The changes do not violate applicable requirements;

- b. The changes do not contravene federally enforceable permit terms or conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements;
- c. The changes do not constitute a modification under Title I of the CAA;
- d. Emissions will not exceed the emissions allowed under this permit following implementation of the physical or operational change; and
- e. The Permittee provides written notice to the Illinois EPA, Division of Air Pollution Control, Permit Section, at least 7 days before commencement of the change. This notice shall:
 - i. Describe the physical or operational change;
 - ii. Identify the schedule for implementing the physical or operational change;
 - iii. Provide a statement of whether or not any New Source Performance Standard (NSPS) is applicable to the physical or operational change and the reason why the NSPS does or does not apply;
 - iv. Provide emission calculations which demonstrate that the physical or operational change will not result in a modification; and
 - v. Provide a certification that the physical or operational change will not result in emissions greater than authorized under the Conditions of this permit.

8.5 Testing Procedures

Tests conducted to measure composition of materials, efficiency of pollution control devices, emissions from process or control equipment, or other parameters shall be conducted using standard test methods. Documentation of the test date, conditions, methodologies, calculations, and test results shall be retained pursuant to the recordkeeping procedures of this permit. Reports of any tests conducted as required by this permit or as the result of a request by the Illinois EPA shall be submitted as specified in Condition 8.6.

8.6 Reporting Requirements

8.6.1 Monitoring Reports

If monitoring is required by any applicable requirements or conditions of this permit, a report summarizing the required monitoring results, as specified in the conditions of this permit, shall be submitted to the Air Compliance Section of the Illinois EPA every six months as follows [Section 39.5(7)(f) of the Act]:

<u>Monitoring Period</u>	<u>Report Due Date</u>
January - June	September 1
July - December	March 1

All instances of deviations from permit requirements must be clearly identified in such reports. All such reports shall be certified in accordance with Condition 9.9.

8.6.2 Test Notifications

Unless otherwise specified elsewhere in this permit, a written test plan for any test required by this permit shall be submitted to the Illinois EPA for review at least 60 days prior to the testing pursuant to Section 39.5(7)(a) of the Act. The notification shall include at a minimum:

- a. The name and identification of the affected unit(s);
- b. The person(s) who will be performing sampling and analysis and their experience with similar tests;
- c. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the source and any control equipment will be determined;
- d. The specific determination of emissions and operation which are intended to be made, including sampling and monitoring locations;
- e. The test method(s) which will be used, with the specific analysis method, if the method can be used with different analysis methods;
- f. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification; and

- g. Any proposed use of an alternative test method, with detailed justification.

8.6.3 Test Reports

Unless otherwise specified elsewhere in this permit, the results of any test required by this permit shall be submitted to the Illinois EPA within 60 days of completion of the testing. The test report shall include at a minimum [Section 39.5(7)(e)(i) of the Act]:

- a. The name and identification of the affected unit(s);
- b. The date and time of the sampling or measurements;
- c. The date any analyses were performed;
- d. The name of the company that performed the tests and/or analyses;
- e. The test and analytical methodologies used;
- f. The results of the tests including raw data, and/or analyses including sample calculations;
- g. The operating conditions at the time of the sampling or measurements; and
- h. The name of any relevant observers present including the testing company's representatives, any Illinois EPA or USEPA representatives, and the representatives of the source.

8.6.4 Reporting Addresses

- a. The following addresses should be utilized for the submittal of reports, notifications, and renewals:
 - i. Illinois EPA - Air Compliance Section
Illinois Environmental Protection Agency
Bureau of Air
Compliance Section (MC 40)
P.O. Box 19276
Springfield, Illinois 62794-9276
 - ii. Illinois EPA - Air Regional Field Office
Illinois Environmental Protection Agency
Division of Air Pollution Control
2009 Mall Street
Collinsville, Illinois 62234

iii. Illinois EPA - Air Permit Section

Illinois Environmental Protection Agency
Division of Air Pollution Control
Permit Section (MC 11)
P.O. Box 19506
Springfield, Illinois 62794-9506

iv. USEPA Region 5 - Air Branch

USEPA (AE - 17J)
Air & Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604

- b. Unless otherwise specified in the particular provision of this permit, reports shall be sent to the Illinois EPA - Air Compliance Section with a copy sent to the Illinois EPA - Air Regional Field Office.

8.7 Obligation to Comply with Title I Requirements

Any term, condition, or requirement identified in this permit by T1, T1R, or T1N is established or revised pursuant to 35 IAC Part 203 or 40 CFR 52.21 ("Title I provisions") and incorporated into this permit pursuant to both Section 39.5 and Title I provisions. Notwithstanding the expiration date on the first page of this permit, the Title I conditions remain in effect pursuant to Title I provisions until the Illinois EPA deletes or revises them in accordance with Title I procedures.

9.0 STANDARD PERMIT CONDITIONS

9.1 Effect of Permit

9.1.1 The issuance of this permit does not release the Permittee from compliance with State and Federal regulations which are part of the Illinois State Implementation Plan, as well as with other applicable statutes and regulations of the United States or the State of Illinois or applicable ordinances, except as specifically stated in this permit and as allowed by law and rule [Section 39.5(7)(j)(iv) of the Act].

9.1.2 In particular, this permit does not alter or affect the following:

- a. The provisions of Section 303 (emergency powers) of the CAA, including USEPA's authority under that Section;
- b. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;
- c. The applicable requirements of the acid rain program consistent with Section 408(a) of the CAA; and
- d. The ability of USEPA to obtain information from a source pursuant to Section 114 (inspections, monitoring, and entry) of the CAA.

9.1.3 Notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

9.2 General Obligations of Permittee

9.2.1 Duty to Comply

The Permittee must comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the CAA and the Act, and is grounds for any or all of the following: enforcement action, permit termination, revocation and reissuance, modification, or denial of a permit renewal application [Section 39.5(7)(o)(i) of the Act].

The Permittee shall meet applicable requirements that become effective during the permit term in a timely manner unless an alternate schedule for compliance with the applicable requirement is established.

9.2.2 Duty to Maintain Equipment

The Permittee shall maintain all equipment covered under this permit in such a manner that the performance or operation of such equipment shall not cause a violation of applicable requirements.

9.2.3 Duty to Cease Operation

No person shall cause, threaten or allow the continued operation of any emission unit during malfunction or breakdown of the emission unit or related air pollution control equipment if such operation would cause a violation of an applicable emission standard, regulatory requirement, ambient air quality standard or permit limitation unless such malfunction or breakdown is allowed by a permit condition [Section 39.5(6)(c) of the Act].

9.2.4 Disposal Operations

The source shall be operated in such a manner that the disposal of air contaminants collected by the equipment operations, or activities shall not cause a violation of the Act or regulations promulgated thereunder.

9.2.5 Duty to Pay Fees

The Permittee must pay fees to the Illinois EPA consistent with the fee schedule approved pursuant to Section 39.5(18) of the Act, and submit any information relevant thereto [Section 39.5(7)(o)(vi) of the Act]. The check should be payable to "Treasurer, State of Illinois" and sent to: Fiscal Services Section, Illinois Environmental Protection Agency, P.O. Box 19276, Springfield, Illinois 62794-9276.

9.3 Obligation to Allow Illinois EPA Surveillance

Upon presentation of proper credentials and other documents, the Permittee shall allow the Illinois EPA, or an authorized representative to perform the following [Section 39.5(7)(a) and (p)(ii) of the Act and 415 ILCS 5/4]:

- a. Enter upon the Permittee's premises where an actual or potential emission unit is located; where any regulated equipment, operation, or activity is located or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect during hours of operation any sources, equipment (including monitoring and air pollution control

equipment), practices, or operations regulated or required under this permit;

- d. Sample or monitor any substances or parameters at any location:
 - i. At reasonable times, for the purposes of assuring permit compliance; or
 - ii. As otherwise authorized by the CAA, or the Act.
- e. Obtain and remove samples of any discharge or emission of pollutants authorized by this permit; and
- f. Enter and utilize any photographic, recording, testing, monitoring, or other equipment for the purposes of preserving, testing, monitoring, or recording any activity, discharge or emission at the source authorized by this permit.

9.4 Obligation to Comply with Other Requirements

The issuance of this permit does not release the Permittee from applicable State and Federal laws and regulations, and applicable local ordinances addressing subjects other than air pollution control.

9.5 Liability

9.5.1 Title

This permit shall not be considered as in any manner affecting the title of the premises upon which the permitted source is located.

9.5.2 Liability of Permittee

This permit does not release the Permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the sources.

9.5.3 Structural Stability

This permit does not take into consideration or attest to the structural stability of any unit or part of the source.

9.5.4 Illinois EPA Liability

This permit in no manner implies or suggests that the Illinois EPA (or its officers, agents or employees) assumes any liability, directly or indirectly, for any

loss due to damage, installation, maintenance, or operation of the source.

9.5.5 Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege [Section 39.5(7)(o)(iv) of the Act].

9.6 Recordkeeping

9.6.1 Control Equipment Maintenance Records

A maintenance record shall be kept on the premises for each item of air pollution control equipment. As a minimum, this record shall show the dates of performance and nature of preventative maintenance activities.

9.6.2 Records of Changes in Operation

A record shall be kept describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under this permit, and the emissions resulting from those changes [Section 39.5(12)(b)(iv) of the Act].

9.6.3 Retention of Records

- a. Records of all monitoring data and support information shall be retained for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit [Section 39.5(7)(e)(ii) of the Act].
- b. Other records required by this permit shall be retained for a period of at least 5 years from the date of entry unless a longer period is specified by a particular permit provision.

9.7 Annual Emissions Report

The Permittee shall submit an annual emissions report to the Illinois EPA, Compliance Section no later than May 1 of the following year, as required by 35 IAC Part 254.

9.8 Requirements for Compliance Certification

Pursuant to Section 39.5(7)(p)(v) of the Act, the Permittee shall submit annual compliance certifications. The compliance

certifications shall be submitted no later than May 1 or more frequently as specified in the applicable requirements or by permit condition. The compliance certifications shall be submitted to the Air Compliance Section, Air Regional Field Office, and USEPA Region 5 - Air Branch. The addresses for the submittal of the compliance certifications are provided in Condition 8.6.4 of this permit.

- a. The certification shall include the identification of each term or condition of this permit that is the basis of the certification; the compliance status; whether compliance was continuous or intermittent; the method(s) used for determining the compliance status of the source, both currently and over the reporting period consistent with the conditions of this permit.
- b. All compliance certifications shall be submitted to USEPA Region 5 in Chicago as well as to the Illinois EPA.
- c. All compliance reports required to be submitted shall include a certification in accordance with Condition 9.9.

9.9 Certification

Any document (including reports) required to be submitted by this permit shall contain a certification by a responsible official of the Permittee that meets the requirements of Section 39.5(5) of the Act [Section 39.5(7)(p)(i) of the Act]. An example Certification by a Responsible Official is included as an attachment to this permit.

9.10 Defense to Enforcement Actions

9.10.1 Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit [Section 39.5(7)(o)(ii) of the Act].

9.10.2 Emergency Provision

- a. An emergency shall be an affirmative defense to an action brought for noncompliance with the technology-based emission limitations under this permit if the following conditions are met through properly signed, contemporaneous operating logs, or other relevant evidence:
 - i. An emergency occurred as provided in Section 39.5(7)(k) of the Act and the Permittee can identify the cause(s) of the emergency.

Normally, an act of God such as lightning or flood is considered an emergency;

- ii. The permitted source was at the time being properly operated;
 - iii. The Permittee submitted notice of the emergency to the Illinois EPA within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken; and
 - iv. During the period of the emergency the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission limitations, standards, or regulations in this permit.
- b. This provision is in addition to any emergency or upset provision contained in any applicable requirement. This provision does not relieve a Permittee of any reporting obligations under existing federal or state laws or regulations.

9.11 Permanent Shutdown

This permit only covers emission units and control equipment while physically present at the indicated source location(s). Unless this permit specifically provides for equipment relocation, this permit is void for the operation or activity of any item of equipment on the date it is removed from the permitted location(s) or permanently shut down. This permit expires if all equipment is removed from the permitted location(s), notwithstanding the expiration date specified on this permit.

9.12 Reopening and Reissuing Permit for Cause

9.12.1 Permit Actions

This permit may be modified, reopened, and reissued, for cause pursuant to Section 39.5(15) of the Act. The filing of a request by the Permittee for a permit modification, revocation, and reissuance, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition [Section 39.5(7)(o)(iii) of the Act].

9.12.2 Reopening and Revision

This permit must be reopened and revised if any of the following occur [Section 39.5(15)(a) of the Act]:

- a. Additional requirements become applicable to the equipment covered by this permit and three or more years remain before expiration of this permit;
- b. Additional requirements become applicable to an affected source for acid deposition under the acid rain program;
- c. The Illinois EPA or USEPA determines that this permit contains a material mistake or inaccurate statement when establishing the emission standards or limitations, or other terms or conditions of this permit; and
- d. The Illinois EPA or USEPA determines that this permit must be revised to ensure compliance with the applicable requirements of the Act.

9.12.3 Inaccurate Application

The Illinois EPA has issued this permit based upon the information submitted by the Permittee in the permit application. Any misinformation, false statement or misrepresentation in the application shall be grounds for revocation under Section 39.5(15)(b) of the Act.

9.12.4 Duty to Provide Information

The Permittee shall furnish to the Illinois EPA, within a reasonable time specified by the Illinois EPA any information that the Illinois EPA may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to the Illinois EPA copies of records required to be kept by this permit, or for information claimed to be confidential, the Permittee may furnish such records directly to USEPA along with a claim of confidentiality [Section 39.5(7)(o)(v) of the Act].

9.13 Severability Clause

The provisions of this permit are severable, and should any one or more be determined to be illegal or unenforceable, the validity of the other provisions shall not be affected. The rights and obligations of the Permittee shall be construed and enforced as if this permit did not contain the particular provisions held to be invalid and the applicable requirements underlying these provisions shall remain in force [Section 39.5(7)(i) of the Act].

9.14 Permit Expiration and Renewal

The right to operate terminates on the expiration date unless the Permittee has submitted a timely and complete renewal

application. For a renewal to be timely it must be submitted no later than 9 and no sooner than 12 months prior to expiration. The equipment may continue to operate during the renewal period until final action is taken by the Illinois EPA, in accordance with the original permit conditions [Section 39.5(5)(1), (n), and (o) of the Act].

10.0 ATTACHMENTS

10.1. Attachment 1 - List and Details of Storage Tanks

This attachment consists of four tables of significant emission unit tanks by various types and/or location with the source, as follows:

Table 1 External Floating Roof Tanks Located in Logistics Department

Table 2 Other External Floating Roof Tanks

Table 3 Internal Floating Roof Tanks

Table 4 Fixed Roof Tanks

Note that there are many tanks that are considered insignificant emission unit in Section 3 of this permit.

These tables do not include two gasoline dispensing tanks, which are in Section 7.13, or tanks associated with the wastewater treatment system, which are in Section 7.12.

Table 1 - External Floating Roof Tanks Located in the Logistics Department^a

Tank No.	Capacity	Year Constructed
TK-A 016	3,381,000	Pre-1972
TK-A 024	3,410,000	Pre-1972
TK-A 025	3,364,000	Pre-1972
TK-A 027	3,364,000	Pre-1972
TK-A 028	3,410,000	Pre-1972
TK-A 031	5,527,000	Pre-1972
TK-A 032	3,411,000	Pre-1972
TK-A 033	3,973,000	Pre-1972
TK-A 034	5,527,000	Pre-1972
TK-A 035	3,376,000	Pre-1972
TK-A 037	4,061,000	Pre-1972
TK-A 040	5,628,000	Pre-1972
TK-A 041	5,628,000	Pre-1972
TK-A 052	3,360,000	Pre-1972
TK-A 057	2,285,000	Pre-1972
TK-A 058	2,285,000	Pre-1972
TK-A 059	3,385,000	Pre-1972
TK-A 060	3,385,000	Pre-1972
TK-A 061	3,360,000	Pre-1972
TK-A 065	3,410,000	Pre-1972
TK-A 066	3,410,000	Pre-1972
TK-A 067	3,410,000	Pre-1972
TK-A 068	3,410,000	Pre-1972
TK-A 069	3,410,000	Pre-1972
TK-A 070	3,410,000	Pre-1972
TK-A 071	3,410,000	Pre-1972
TK-A 072	3,410,000	Pre-1972
TK-A 073	5,527,000	Pre-1972
TK-A 074	5,527,000	Pre-1972
TK-A 075	5,527,000	Pre-1972
TK-A 076	5,527,000	Pre-1972
TK-A 077	5,527,000	Pre-1972
TK-A 078	5,527,000	Pre-1972
TK-A 079	5,527,000	Pre-1972
TK-A 080	5,527,000	Pre-1972
TK-A 081	5,527,000	Pre-1972
TK-A 082	5,527,000	Pre-1972
TK-A 083	5,527,000	Pre-1972
TK-A 084	5,527,000	Pre-1972
TK-A 088	5,527,000	Pre-1972
TK-A 089	5,527,000	Pre-1972
TK-A 090	5,527,000	Pre-1972
TK-A 094	5,527,000	Pre-1972
TK-A 095	5,527,000	Pre-1972
TK-A 096	5,527,000	Pre-1972
TK-A 097	12,227,000	1976
TK-A 106	4,061,000	Pre-1972

Tank No.	Capacity	Year Constructed
TK-A 107	4,061,000	Pre-1972
TK-A 108	4,061,000	Pre-1972
TK-A 109	4,061,000	Pre-1972
TK-A 110	4,746,000	Pre-1972
TK-A 111	4,746,000	Pre-1972
TK-A 112	2,285,000	Pre-1972
TK-A 113	4,011,000	Pre-1972
TK-A 115	4,061,000	Pre-1972
TK-A 119	3,410,000	Pre-1972
TK-A 120	3,410,000	Pre-1972
TK-A 121	4,061,000	Pre-1972
TK-A 123	3,410,000	Pre-1972
TK-A 124	6,346,000	Pre-1972
TK-A 125	6,346,000	Pre-1972
TK-A 127	3,410,000	Pre-1972
TK-A 128	4,061,000	Pre-1972
TK-A 129	6,346,000	Pre-1972
TK-A 130	6,346,000	Pre-1972
TK-A 134	6,346,000	Pre-1972
TK-A 135	6,346,000	Pre-1972
TK-A 136	7,220,000	Pre-1972
TK-A 137	7,220,000	Pre-1972
TK-A 138	7,220,000	Pre-1972
TK-A 139	7,220,000	Pre-1972
TK-A 140	6,346,000	Pre-1972
TK-F 061	1,266,000	Pre-1972
TK-F 081	1,382,000	Pre-1972
TK-F 082	1,382,000	Pre-1972
TK-G 006	3,801,000	Pre-1972
TK-G 007	2,705,000	Pre-1972

^a All tanks may store volatile petroleum liquids with a maximum vapor pressure of 12.5 psia. The tanks are classified as Group 1 tanks pursuant to the NESHAP and equipped with vapor-mounted resilient filled primary seal and a rim-mounted secondary seal. All floating roof tanks have no vapor space and meet the requirement for submerged loading.

Any tank constructed after June 11, 1973 is subject to 40 CFR 60 (NSPS) but meeting the requirements of a NESHAP Group 1 tank meets the NSPS requirements.

Table 2 - Other External Floating Roof Tanks^a

Tank No.	Capacity (Gallons)	Location	Maximum Vapor Pressure, psia	Seal Type	Year Built
TK-CH 290	105,000	Alky/Cracking	11.1	Dual Mechanical Seal	1992
TK-F 063	430,000	Alky/Cracking	1.5	Mechanical Seal Primary/No Secondary	Pre-1972
TK-C 029	114,000	Distilling/Gas	12.5	Mechanical Shoe Primary/Rim-Mounted Secondary	Pre-1972
TK-A 019	3,360,000	Hydroprocessing	1.5	Mechanical Shoe Primary/No Secondary	Pre-1972
TK-A 019-1	3,373,000	Aromatics	11.1	Mechanical Shoe Primary/Rim-Mounted Secondary	2004

^a The tanks with secondary seals may store a volatile petroleum liquid with a vapor pressure up to 12.5 psia or Group 1 material pursuant to a NESHAP. Tanks without secondary seals may not store materials with a vapor pressure exceeding 1.5 psia. All floating roof tanks have no vapor space and meet the requirement for submerged loading.

Any tank constructed after June 11, 1973 is subject to 40 CFR 60 (NSPS) but meeting the requirements of a NESHAP Group 1 tank meets the NSPS requirements.

^b These are limits that comply with applicable rules. There may be lower limits in order to comply with annual emission limits in construction permits.

Table 3 - Internal Floating Roof Tanks^a

Tank No.	Capacity (Gallons)	Location	Maximum Vapor Pressure, psia	Seal Type	Year Built
TK-A 045	5,225,000	Logistics	12.5	Vapor-Mounted Resilient Filled	Pre-1972
TK-A 053	5,288,000	Logistics	12.5	Vapor-Mounted Resilient Filled	Pre-1972
TK-A 054	4,406,000	Logistics	12.5	Vapor-Mounted Resilient Filled	Pre-1972
TK-A 062	2,285,000	Logistics	11.1	Liquid-Mounted Resilient Filled	Pre-1972
TK-A 063	2,285,000	Logistics	11.1	Liquid-Mounted Resilient Filled	Pre-1972
TK-A 064	2,285,000	Logistics	11.1	Vapor-Mounted Resilient Filled	Pre-1972
TK-A 116	3,385,000	Logistics	12.5	Vapor-Mounted Resilient Filled	Pre-1972
TK-A 122	5,527,000	Logistics	7.5	Vapor-Mounted Resilient Filled	Pre-1972
TK-A 150	7,350,000	Logistics	7.5 ^b	Vapor-Mounted Resilient Filled	1991
TK-A 151	7,678,000	Logistics	11.1 ^b	Vapor-Mounted Resilient Filled	1991
TK-F 002	620,000	Logistics	12.5	Vapor-Mounted Resilient Filled	Pre-1972
TK-F 004	907,000	Logistics	12.5	Vapor-Mounted Resilient Filled	Pre-1972
TK-F 011	623,000	Logistics	12.5	Vapor-Mounted Resilient Filled	Pre-1972
TK-F 021	705,600	Logistics	12.5	Vapor-Mounted Resilient Filled	Pre-1972
TK-F 033	1,050,000	Logistics	12.5	Vapor-Mounted Resilient Filled	Pre-1972
TK-F 057	1,285,000	Logistics	5.0 ^b	Vapor-Mounted Resilient Filled	Pre-1972
TK-F 059	1,070,000	Logistics	5.0 ^b	Vapor-Mounted Resilient Filled	Pre-1972
TK-F 068	606,000	Logistics	11.1	Vapor-Mounted Resilient Primary/Rim-Mounted Secondary	Pre-1972
TK-F 072	708,000	Logistics	11.1	Vapor-Mounted Resilient Primary/Rim-Mounted Secondary	Pre-1972
TK-F 010	720,000	Distilling/Gas	11.1	Vapor-Mounted Resilient Primary/Rim-Mounted Secondary	Pre-1972
TK-F 051	846,000	Alkyl Cracking	12.5	Vapor-Mounted Resilient Primary/Rim-Mounted Secondary	Pre-1972
TK-F 067	630,000	Utilities	12.5	Vapor-Mounted Resilient Filled	Pre-1972

^a Tanks with a listed maximum vapor pressure of 12.5 may only store a volatile petroleum liquid. Tanks with a listed maximum vapor pressure of 11.1 may store a volatile organic liquid in addition to a volatile petroleum liquid. These tanks are also Group 1 tanks with respect to NESHAP, Subpart CC. All floating roof tanks have no vapor space and meet the requirement for submerged loading.

Any tank constructed after June 11, 1973 is subject to 40 CFR 60 (NSPS) but meeting the requirements of a NESHAP, Subpart CC Group 1 tank also meet the NSPS requirements.

Tanks TK-A 062, 063 and 064 are subject to 40 CFR 61 Subpart Y (Benzene Storage Vessels). Compliance with the requirements of a NESHAP, Subpart CC Group 1 tank also meet the Subpart Y requirements.

b These are limits from state permits that assure that the VOM emission limits in Condition 7.2.6 are met.

Table 4 - Fixed Roof Tanks^a

Tank No.	Capacity	Location	Year Built
Tanks with vapor pressure up to 1.5 psia			
TK-B 102	18,000	Alky/Cracking	Pre-1972
TK-CH 168	9,400	Alky/Cracking	Pre-1972
TK-CH 223	14,000	Alky/Cracking	Pre-1972
TK-D 050	110,000	Alky/Cracking	Pre-1972
TK-FW 003	2,000	Alky/Cracking	Pre-1972
TK-L 117	18,000	Alky/Cracking	Pre-1972
TK-L 168	28,000	Alky/Cracking	Pre-1972
TK-CH 150	28,000	Distilling/Gas	Pre-1972
TK-CH 253	7,500	Distilling/Gas	1980
TK-CH 275	400	Distilling/Gas	1988
TK-D 009	222,000	Distilling/Gas	
TK-D 010	222,000	Distilling/Gas	
TK-D 043	223,000	Distilling/Gas	
TK-E 020	67,000	Distilling/Gas	
TK-SUMP-C3 #1	900	Distilling/Gas	Pre-1972
TK-SUMP-C3 #2	500	Distilling/Gas	Pre-1972
TK-SUMP-DU2	700	Distilling/Gas	Pre-1972
TK-SUMP-LOT	1,400	Distilling/Gas	Pre-1972
TK-V 2690	37,000	Distilling/Gas	Pre-1972
TK-C 034	42,000	Hydroprocessing	Pre-1972
TK-CH 112	635,000	Hydroprocessing	Pre-1972
TK-CH 246	21,000	Hydroprocessing	Pre-1972
TK-CH 264	21,000	Hydroprocessing	1982
TK-H 030	18,000	Hydroprocessing	Pre-1972
TK-H 031	18,000	Hydroprocessing	Pre-1972
TK-A 004	1,501,000	Lubes	Pre-1972
TK-A 133	3,483,000	Lubes	Pre-1972
TK-D 037	224,000	Lubes	Pre-1972
TK-D 046	222,000	Lubes	Pre-1972
TK-F 024	643,000	Lubes	Pre-1972
TK-F 025	636,000	Lubes	Pre-1972
TK-F 034	617,000	Lubes	Pre-1972
TK-L 102	114,000	Lubes	Pre-1972
TK-L 178	1,009,000	Lubes	Pre-1972
TK-L 180	1,010,000	Lubes	Pre-1972
TK-L 181	1,009,000	Lubes	Pre-1972
TK-L 182	1,009,000	Lubes	Pre-1972
TK-L 190	1,379,000	Lubes	Pre-1972
TK-L 192	1,379,000	Lubes	Pre-1972
TK-C 047	47,000	Environmental Operations	1989
TK-CH 235	66,000	Environmental Operations	Pre-1972
TK-CH 245	46,000	Environmental Operations	1979
TK-CH 278	110,000	Environmental Operations	1988
TK-E 034	113,000	Environmental Operations	1989
TK-M 053	132,000	Environmental Operations	Pre-1972
TK-T 005	6,000	Environmental Operations	1989

Tank No.	Capacity	Location	Year Built
TK-V 4550	14,000	Environmental Operations	1995
TK-A 010	3,729,000	Logistics	Pre-1972
TK-A 022	3,378,000	Logistics	Pre-1972
TK-A 029	3,378,000	Logistics	Pre-1972
TK-A 039	5,725,000	Logistics	Pre-1972
TK-A 042	5,725,000	Logistics	Pre-1972
TK-A 046	5,725,000	Logistics	Pre-1972
TK-A 047	5,725,000	Logistics	Pre-1972
TK-A 048	5,725,000	Logistics	Pre-1972
TK-A 049	5,725,000	Logistics	Pre-1972
TK-A 050	2,200,000	Logistics	Pre-1972
TK-A 100	5,527,000	Logistics	Pre-1972
TK-A 101	5,527,000	Logistics	Pre-1972
TK-A 102	3,384,000	Logistics	Pre-1972
TK-A 103	3,384,000	Logistics	Pre-1972
TK-A 104	3,384,000	Logistics	Pre-1972
TK-A 105	5,527,000	Logistics	Pre-1972
TK-A 114	3,468,000	Logistics	Pre-1972
TK-A 117	6,477,000	Logistics	Pre-1972
TK-A 118	6,477,000	Logistics	Pre-1972
TK-A 131	2,284,000	Logistics	Pre-1972
TK-A 141	4,145,000	Logistics	Pre-1972
TK-A 142	4,145,000	Logistics	Pre-1972
TK-A 143	6,345,000	Logistics	Pre-1972
TK-A 144	11,280,000	Logistics	1974
TK-A 146	11,280,000	Logistics	1974
TK-A 147	11,280,000	Logistics	1974
TK-A 148	11,280,000	Logistics	1980
TK-A 157	3,217,000	Logistics	2002
TK-C 028	223,000	Logistics	Pre-1972
TK-C 032	305,000	Logistics	Pre-1972
TK-C 045	40,000	Logistics	Pre-1972
TK-CH 210	24,000	Logistics	Pre-1972
TK-F 012	709,000	Logistics	Pre-1972
TK-F 035	607,000	Logistics	Pre-1972
TK-F 050	1,284,000	Logistics	Pre-1972
TK-F 056	1,322,000	Logistics	Pre-1972
TK-F 065	1,0169,000	Logistics	Pre-1972
TK-F 066	720,000	Logistics	Pre-1972
TK-F 069	663,000	Logistics	Pre-1972
TK-F 070	708,000	Logistics	Pre-1972
TK-F 073	706,000	Logistics	Pre-1972
TK-F 074	706,000	Logistics	Pre-1972
TK-OF 075	706,000	Logistics	Pre-1972
TK-F 076	1,802,000	Logistics	Pre-1972
TK-F 077	1,802,000	Logistics	Pre-1972
TK-F 078	1,803,000	Logistics	Pre-1972
TK-F 080	1,389,000	Logistics	Pre-1972
TK-L 028	110,000	Logistics	Pre-1972
TK-L 029	110,000	Logistics	Pre-1972

Tank No.	Capacity	Location	Year Built
TK-L 030	114,000	Logistics	Pre-1972
TK-L 031	114,000	Logistics	Pre-1972
TK-L 032	118,000	Logistics	Pre-1972
TK-L 033	118,000	Logistics	Pre-1972
TK-L 034	114,000	Logistics	Pre-1972
TK-L 035	49,000	Logistics	Pre-1972
TK-L 036	49,000	Logistics	Pre-1972
TK-L 046	109,000	Logistics	Pre-1972
TK-L 064	421,000	Logistics	Pre-1972
TK-L 119	223,000	Logistics	Pre-1972
TK-L 120	223,000	Logistics	Pre-1972
TK-L 122	132,000	Logistics	Pre-1972
TK-L 123	141,000	Logistics	Pre-1972
TK-L 124	80,000	Logistics	Pre-1972
TK-L 125	643,000	Logistics	Pre-1972
TK-L 126	643,000	Logistics	Pre-1972
TK-L 127	228,000	Logistics	Pre-1972
TK-L 139	124,000	Logistics	Pre-1972
TK-L 140	228,000	Logistics	Pre-1972
TK-L 141	228,000	Logistics	Pre-1972
TK-L 147	123,000	Logistics	Pre-1972
TK-L 156	215,000	Logistics	Pre-1972
TK-L 158	716,000	Logistics	Pre-1972
TK-L 159	216,000	Logistics	Pre-1972
TK-L 160	424,000	Logistics	Pre-1972
TK-L 161	126,000	Logistics	Pre-1972
TK-L 162	1,036,000	Logistics	Pre-1972
TK-L 163	1,020,000	Logistics	Pre-1972
TK-L 164	707,000	Logistics	Pre-1972
TK-L 165	707,000	Logistics	Pre-1972
TK-L 166	707,000	Logistics	Pre-1972
TK-L 167	227,000	Logistics	Pre-1972
TK-L 169	223,000	Logistics	Pre-1972
TK-L 170	227,000	Logistics	Pre-1972
TK-L 171	217,000	Logistics	Pre-1972
TK-L 172	223,000	Logistics	Pre-1972
TK-L 173	1,036,000	Logistics	Pre-1972
TK-L 184	220,000	Logistics	Pre-1972
TK-L 185	220,000	Logistics	Pre-1972
TK-L 187	220,000	Logistics	Pre-1972
TK-L 188	701,000	Logistics	Pre-1972
TK-L 189	1,378,000	Logistics	Pre-1972
TK-L 191	1,379,000	Logistics	Pre-1972
TK-L 193	450,000	Logistics	Pre-1972
TK-N 067	414,000	Logistics	Pre-1972
TK-N 069	420,000	Logistics	Pre-1972
TK-N 070	420,000	Logistics	Pre-1972
TK-N 071	420,000	Logistics	Pre-1972
TK-N 072	420,000	Logistics	Pre-1972
TK-V 1622	20,000	Logistics	1994

Tank No.	Capacity	Location	Year Built
TK-CH 117	10,000	Utilities	Pre-1972
Tanks with vapor pressure up to 0.75 psia			
TK-CH 213	56,000	Alky/Cracking	1977
TK-CH 214	56,000	Alky/Cracking	1977
TK-CH 215	190,000	Alky/Cracking	1977
TK-CH 218	365,000	Alky/Cracking	1977
TK-CH 222	190,000	Alky/Cracking	1977
TK-CH 263	244,000	Alky/Cracking	1983
TK-V 1931	1,100	Alky/Cracking	Pre-1972
TK-CH 267	169,000	Distilling/Gas	1983
TK-A 154	2,520,000	Logistics	1994
TK-A 155	2,520,000	Logistics	1994
TK-A 156	5,508,000	Logistics	1997

^a All of these fixed roof tanks are equipped with submerged loading pipes.

Any tank constructed after June 11, 1973 is subject to NSPS 40 CFR 60 Subparts K, Ka or Kb. These fixed roof tanks do not meet the requirement for storing a high vapor pressure material. Records must be kept of the vapor pressure of the material stored or the capacity of the tank.

10.2 Attachment 2 - LDAR Program

Table 1 LDAR Regulatory Applicability By Unit				
Permit Emission Unit Number	Permittee Unit Number	35 IAC 219.447	Refinery MACT (Via 40 CFR 60, VV)	Other LDAR Rules
67	ALKY (WRR-16)	Applicable	Not Applicable	None
58	CCU-1 (WRR-7)	Applicable	Applicable	None
61	CCU-2 (WRR-8)	Applicable	Applicable	None
65	CR #2 (WRR-26)	Applicable	Applicable	None
68	CFH (WRR-8)	Applicable	Not Applicable	None
69	BT	Applicable	Not Applicable	None
70	CAU (WRR-5)	Applicable	Applicable	None
71	DIH No. 2	Applicable	Applicable	None
72	DU-1 (WRR-1)	Applicable	Applicable	None
73	DU-2 (WRR-2)	Applicable	Applicable	None
74	LOT (WRR-5)	Applicable	Applicable	None
75	C3 Treaters	Applicable	Not Applicable	None
76	RAU (WRR-4)	Applicable	Applicable	None
77	SWS	Applicable	Applicable	None
78	VF-1, VF-2, VF-3 (WRR-6)	Applicable	Not Applicable	None
79	VBU (WRR-6)	Applicable	Applicable	None
80	DHT (WRR-23)	Applicable	Applicable	None
81	HCU (WRR-20)	Applicable	Applicable	None
82	HDU 1 and 2 (WRR-25)	Applicable	Applicable	None
83	KHT (WRR-24)	Applicable	Not Applicable	None
84	SGP (WRR-22)	Applicable	Applicable	None
85	SMR (WRR-20)	Applicable	Not Applicable	None
86	LEU (WRR-11)	Applicable	Applicable	None
87	LHT (WRR-12)	Applicable	Applicable	None

Table 1 LDAR Regulatory Applicability By Unit				
Permit Emission Unit Number	Permittee Unit Number	35 IAC 219.447	Refinery MACT (Via 40 CFR 60, VV)	Other LDAR Rules
88	VFC (WRR-6)	Applicable	Not Applicable	None
64	CR #1 (WRR-21)	Applicable	Applicable	None
66	CR #3 (WRR-25)	Applicable	Applicable	None
	Logistics (Interunit)	Applicable	Applicable	None
	RFG System to Boilers	Applicable	Applicable	None
92	BEU (WRR-19)	Applicable	Not Applicable	40 CFR 63 Subpart H
	Docks	Applicable	Applicable	40 CFR 63 Subpart H
	OMC Motor Lab	Not Applicable	Applicable	40 CFR 63 Subpart H
	Quality Assurance	Not Applicable	Applicable	40 CFR 61 Subpart FF
89	CNS (WRR-69)	Applicable	Applicable	None
90	HCNHT (WRR-69)	Applicable	Applicable	
91	CHT (WRR-60)	Applicable	Applicable	

Table 2 Summary of Applicable Standards				
Component	Rule			"Most Stringent"
	35 IAC 219.445	40 CFR 63 H (subsumes 40 CFR 61 J, V)	40 CFR 63 CC	
Pump (LL)	Annual (between March 1 and June 1) 10,000 ppmv. Weekly AVO	Monthly 1000 (HON only) (Quality Improvement Program required if 6-month rolling average > 10%) Weekly AVO.	If > 5% HAP, Monthly 10,000 ppmv, Weekly AVO	Monthly 10,000 ppmv Weekly AVO. (Except at HON, which retains 1000 ppmv threshold and QIP trigger)
Pump (HL)	Annual (between March 1 and June 1) 10,000 ppmv. Weekly AVO	Unscheduled AVO. If evidence of leak, assume leak and repair, or monitor Win 5 days and repair at 2000 ppmv (HON only).	If > 5% HAP, Unscheduled AVO. If evidence of leak monitor w/in 5 days. Repair at 10,000 ppmv	As needed if leaking. 10,000 ppmv (except at HON, which retains 2000 ppmv threshold)
Valve (LL)	Annual (between March 1 and June 1) 10,000 ppmv	Monitor monthly if >2% leak rate. Monitor quarterly if <2% leak rate. Monitor semi-annual if <1% leak rate. Monitor annually if <0.5% leak rate. 500 ppmv *Permittee to chose implemented frequency based on historical leak rates	Monitor monthly. Monitor quarterly if no leaks for 2 months. Monitor annually if <2% leak rate for 5 quarters. 10,000 ppmv *Permittee to chose implemented frequency based on historical leak rates	Monitor monthly. Monitor quarterly if no leaks for 2 months. Monitor annually if <2% leak rate for 5 quarters. 10,000 ppmv (except at HON, which retains 500 ppmv threshold)
Valve (HL)	Annual (between March 1 and June 1) 10,000 ppm	As needed if leaking. 500 ppmv (HON only)	If > 5% HAP, As needed if leaking. 10,000 ppmv	As needed if leaking. 10,000 ppmv (except at HON, which retains 500 ppmv threshold)

Table 2 Summary of Applicable Standards				
Component	Rule			"Most Stringent"
	35 IAC 219.445	40 CFR 63 H (subsumes 40 CFR 61 J, V)	40 CFR 63 CC	
Valve (G)	Quarterly 10,000 ppmv	Monitor monthly if $\geq 2\%$ leak rate. Monitor quarterly if $< 2\%$ leak rate. Monitor semi-annual if $< 1\%$ leak rate. Monitor annually if $< 0.5\%$ leak rate. 500 ppmv (HON only). *Permittee to chose implemented frequency based on historical leak rates.	Monitor monthly. Monitor quarterly if no leaks for 2 months. Monitor annually if $< 2\%$ leak rate for 5 quarters. 10,000 ppmv *Permittee to chose implemented frequency based on historical leak rates.	Monitor monthly. Monitor quarterly if no leaks for 2 months. Monitor annually if $< 2\%$ leak rate for 5 quarters 10,000 ppmv (except HON, which retains 500 ppmv threshold)
Compressor	Quarterly 10,000 ppmv	Inspect daily unless equipped with seal sensor alarm.	Inspect daily unless equipped with seal sensor alarm.	Quarterly 500 ppmv
Agitator (LL)	Not regulated	Monthly, 1000 ppmv, weekly AVO. (HON only)	Not regulated	Monthly, 500 ppmv (HON only or if $> 5\%$ HAP)
Agitator (HL)	Not regulated	Unscheduled AVO. If evidence of leak, assume leak and repair, or monitor Win 5 days and repair at 10000 ppmv (HON only).	Not regulated	At HON only. Unscheduled AVO. If evidence of leak, assume leak and repair, or monitor Win 5 days and repair at 10000 ppmv (HON only).
Fitting/Connector (LUG)	Not regulated	Annual. 500 ppmv.	Monitor within 5 days if indicators suggest a leak. 10,000 ppmv	Monitor within 5 days if indicators suggest a leak. 10,000 ppmv
Fitting/Connector (HL)	Not regulated	Unscheduled AVO. If evidence of leak, assume leak and repair, or monitor Win 5 days and repair at 500 ppmv (HON only).	Unscheduled AVO. If above 10,000 ppmv, repair	Unscheduled AVO. If evidence of leak, assume leak and repair, or monitor Win 5 days and repair at 500 ppmv.

Table 2 Summary of Applicable Standards				
Component	Rule			"Most Stringent"
	35 IAC 219.445	40 CFR 63 H (subsumes 40 CFR 61 J, V)	40 CFR 63 CC	
Drains	Monitor annually between March 1 and June 1. 10,000 ppmv	Not regulated	Monitor annually between March 1 and June 1. 10,000 ppmv	Monitor annually between March 1 and June 1. 10,000 ppmv
Pressure Relief Valves (G)	Quarterly 10,000 ppmv. Also w/in 24 hrs of any vent to atmosphere.	Quarterly 500 ppmv. Also monitor w/in 5 days after release to atmosphere.	Quarterly 500 ppmv. Also monitor within 5 days after release to atmosphere.	Quarterly, 500 ppmv. Also monitor within 24 hours after release to atmosphere.
Pressure Relief Valves (L)	Monitor annually between March 1 and June 1. 10,000 ppmv	Unscheduled AVO. If evidence of leak, assume leak and repair, or monitor w/in 5 days and repair at 500 ppmv (HON only).	If >5% HAP, Unscheduled AVO. Monitor w/in 5 days. Repair at 10000 ppmv.	Unscheduled AVO. Repair at 500 ppmv.
Difficult to Monitor valves (LUG)	Monitor inaccessible valves annually	500 ppmv. Difficult: annually	10,000 ppmv. Difficult: annually NDE: annual at 500 ppmv	10,000 ppmv. Difficult: annually NDE: annual at 500 ppmv
Closed Vent Systems	Not regulated	Visual annually	Monitor initially. Visual annually. 500 ppmv	Monitor initially. Visual annually. 500 ppmv

For light liquid valves not regulated by the HON, repairs are required at 10,000 ppmv. For these valves, any repairs initiated at lower levels are voluntary.

Except for HON and certain gaseous components, only components leaking above 10,000 ppmv will be reported.

10.3 Attachment 3 - Example Certification by a Responsible Official

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 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.

Signature: _____

Name: _____

Official Title: _____

Telephone No.: _____

Date Signed: _____

10.4 Attachment 4 - Guidance on Revising This Permit

The Permittee must submit an application to the Illinois EPA using the appropriate revision classification in accordance with Sections 39.5(13) and (14) of the Act and 35 IAC 270.302. Specifically, there are currently three classifications for revisions to a CAAPP permit. These are:

1. Administrative Permit Amendment;
2. Minor Permit Modification; and
3. Significant Permit Modification.

The Permittee must determine, request, and submit the necessary information to allow the Illinois EPA to use the appropriate procedure to revise the CAAPP permit. A brief explanation of each of these classifications follows.

1. Administrative Permit Amendment

- Corrects typographical errors;
- Identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change at the source;
- Requires more frequent monitoring or reporting by the Permittee;
- Allows for a change in ownership or operational control of the source where no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new Permittees has been submitted to the Illinois EPA. This shall be handled by completing form 272-CAAPP, REQUEST FOR OWNERSHIP CHANGE FOR CAAPP PERMIT; or
- Incorporates into the CAAPP permit a construction permit, provided the conditions of the construction permit meet the requirements for the issuance of CAAPP permits.

2. Minor Permit Modification

- Do not violate any applicable requirement;
- Do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;

- Do not require a case-by-case determination of an emission limitation or other standard, or a source-specific determination of ambient impacts, or a visibility or increment analysis;
- Do not seek to establish or change a permit term or condition for which there is no corresponding underlying requirement and which avoids an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
 - A federally enforceable emissions cap assumed to avoid classification as a modification under any provision of Title I of the CAA; and
 - An alternative emissions limit approved pursuant to regulations promulgated under Section 112(i)(5) of the CAA.
- Are not modifications under any provision of Title I of the CAA;
- Are not required to be processed as a significant permit modification; and
- Modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches.

An application for a minor permit modification shall include the following:

- A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;
- The source's suggested draft permit/conditions;
- Certification by a responsible official that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used; and
- Information as contained on form 271-CAAPP, MINOR PERMIT MODIFICATION FOR CAAPP PERMIT for the Illinois EPA to use to notify USEPA and affected States.

3. Significant Permit Modification

- Applications that do not qualify as either minor permit modifications or as administrative permit amendments;

- Applications requesting a significant change in existing monitoring permit terms or conditions;
- Applications requesting a relaxation of reporting or recordkeeping requirements; and
- Cases in which, in the judgment of the Illinois EPA, action on an application for modification would require decisions to be made on technically complex issues.

An application for a significant permit modification shall include the following:

- A detailed description of the proposed change(s), including all physical changes to equipment, changes in the method of operation, changes in emissions of each pollutant, and any new applicable requirements which will apply as a result of the proposed change. Note that the Permittee need only submit revised forms for equipment and operations that will be modified.

The Illinois EPA requires the information on the following appropriate forms to be submitted in accordance with the proper classification:

- Form 273-CAAPP, REQUEST FOR ADMINISTRATIVE PERMIT AMENDMENT FOR CAAPP PERMIT; or
- Form 271-CAAPP, MINOR PERMIT MODIFICATION FOR CAAPP PERMIT; or
- Form 200-CAAPP, APPLICATION FOR CAAPP PERMIT (for significant modification).

Application forms can be obtained from the Illinois EPA website at <http://www.epa.state.il.us/air/forms>.

Note that the request to revise the permit must be certified for truth, accuracy, and completeness by a responsible official.

Note that failure to submit the required information may require the Illinois EPA to deny the application. The Illinois EPA reserves the right to require that additional information be submitted as needed to evaluate or take final action on applications pursuant to Section 39.5(5)(g) of the Act and 35 IAC 270.305.



Illinois Environmental Protection Agency
 Division Of Air Pollution Control -- Permit Section
 P.O. Box 19506
 Springfield, Illinois 62794-9506

Application For Construction Permit (For CAAPP Sources Only)	For Illinois EPA use only
	I.D. number:
	Permit number:
Date received:	

This form is to be used by CAAPP sources to supply information necessary to obtain a construction permit. Please attach other necessary information and completed CAAPP forms regarding this construction/modification project.

Source Information			
1. Source name:			
2. Source street address:			
3. City:		4. Zip code:	
5. Is the source located within city limits? <input type="checkbox"/> Yes <input type="checkbox"/> No			
6. Township name:	7. County:	8. I.D. number:	

Owner Information		
9. Name:		
10. Address:		
11. City:	12. State:	13. Zip code:

Operator Information (if different from owner)		
14. Name		
15. Address:		
16. City:	17. State:	18. Zip code:

Applicant Information	
19. Who is the applicant? <input type="checkbox"/> Owner <input type="checkbox"/> Operator	20. All correspondence to: (check one) <input type="checkbox"/> Owner <input type="checkbox"/> Operator <input type="checkbox"/> Source
21. Attention name and/or title for written correspondence:	
22. Technical contact person for application:	23. Contact person's telephone number:

This Agency is authorized to require and you must disclose this information under 415 ILCS 5/39. Failure to do so could result in the application being denied and penalties under 415 ILCS 5 et seq. It is not necessary to use this form in providing this information. This form has been approved by the forms management center.

Summary Of Application Contents	
<p>24. Does the application address whether the proposed project would constitute a new major source or major modification under each of the following programs:</p> <p>a) Non-attainment New Source Review – 35 IAC Part 203; b) Prevention of Significant Deterioration (PSD) – 40 CFR 52.21; c) Hazardous Air Pollutants: Regulations Governing Constructed or Reconstructed Major Sources – 40 CFR Part 63?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>25. Does the application identify and address all applicable emissions standards, including those found in the following:</p> <p>a) Board Emission Standards – 35 IAC Chapter I, Subtitle B; b) Federal New Source Performance Standards – 40 CFR Part 60; c) Federal Standards for Hazardous Air Pollutants – 40 CFR Parts 61 and 63?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>26. Does the application include a process flow diagram(s) showing all emission units and control equipment, and their relationship, for which a permit is being sought?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>27. Does the application include a complete process description for the emission units and control equipment for which a permit is being sought?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>28. Does the application include the information as contained in completed CAAPP forms for all appropriate emission units and air pollution control equipment, listing all applicable requirements and proposed exemptions from otherwise applicable requirements, and identifying and describing any outstanding legal actions by either the USEPA or the Illinois EPA? Note: The use of "APC" application forms is not appropriate for applications for CAAPP sources. CAAPP forms should be used to supply information.</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>29. If the application contains TRADE SECRET information, has such information been properly marked and claimed, and have two separate copies of the application suitable for public inspection and notice been submitted, in accordance with applicable rules and regulations?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Not Applicable, No TRADE SECRET information in this application</p>

Note 1: Answering "No" to any of the above may result in the application being deemed incomplete.

Signature Block	
<p>This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete.</p>	
<p>30. I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate and complete.</p> <p>Authorized Signature:</p>	
<p>BY:</p> <p>_____</p> <p style="text-align: center;">AUTHORIZED SIGNATURE</p> <p>_____</p> <p style="text-align: center;">TYPED OR PRINTED NAME OF SIGNATORY</p>	<p>_____</p> <p style="text-align: center;">TITLE OF SIGNATORY</p> <p>_____/_____/_____</p> <p style="text-align: center;">DATE</p>

Note 2: An operating permit for the construction/modification permitted in a construction permit must be obtained by applying for the appropriate revision to the source's CAAPP permit, if necessary.

10.6 Attachment 6 - Guidance on Renewing This Permit

Timeliness - Pursuant to Section 39.5(5)(n) of the Act and 35 IAC 270.301(d), a source must submit to the Illinois EPA a complete CAAPP application for the renewal of a CAAPP permit not later than 9 months before the date of permit expiration of the existing CAAPP permit in order for the submittal to be deemed timely. Note that the Illinois EPA typically sends out renewal notices approximately 18 months prior to the expiration of the CAAPP permit.

The CAAPP application must provide all of the following information in order for the renewal CAAPP application to be deemed complete by the Illinois EPA:

1. A completed renewal application form 200-CAAPP, APPLICATION FOR CAAPP PERMIT.
2. A completed compliance plan form 293-CAAPP, COMPLIANCE PLAN/SCHEDULE OF COMPLIANCE FOR CAAPP PERMIT.
3. A completed compliance certification form 296-CAAPP, COMPLIANCE CERTIFICATION, signed by the responsible official.
4. Any applicable requirements that became effective during the term of the permit and that were not included in the permit as a reopening or permit revision.
5. If this is the first time this permit is being renewed and this source has not yet addressed CAM, the application should contain the information on form 464-CAAPP, COMPLIANCE ASSURANCE MONITORING (CAM) PLAN.
6. Information addressing any outstanding transfer agreement pursuant to the ERMS.
7. a. If operations of an emission unit or group of emission units remain unchanged and are accurately depicted in previous submittals, the application may contain a letter signed by a responsible official that requests incorporation by reference of existing information previously submitted and on file with the Illinois EPA. This letter must also include a statement that information incorporated by reference is also being certified for truth and accuracy by the responsible official's signing of the form 200-CAAPP, APPLICATION FOR CAAPP PERMIT and the form 296-CAAPP, COMPLIANCE CERTIFICATION. The boxes should be marked yes on form 200-CAAPP, APPLICATION FOR CAAPP PERMIT, as existing information is being incorporated by reference.

- b. If portions of current operations are not as described in previous submittals, then in addition to the information above for operations that remain unchanged, the application must contain the necessary information on all changes, e.g., discussion of changes, new or revised CAAPP forms, and a revised fee form 292-CAAPP, FEE DETERMINATION FOR CAAPP PERMIT, if necessary.
8. Information about all off-permit changes that were not prohibited or addressed by the permit to occur without a permit revision and the information must be sufficient to identify all applicable requirements, including monitoring, recordkeeping, and reporting requirements, for such changes.
9. Information about all changes made under 40 CFR 70.4(b)(12)(i) and (ii) that require a 7-day notification prior to the change without requiring a permit revision.

The Illinois EPA will review all applications for completeness and timeliness. If the renewal application is deemed both timely and complete, the source shall continue to operate in accordance with the terms and conditions of its CAAPP permit until final action is taken on the renewal application.

Notwithstanding the completeness determination, the Illinois EPA may request additional information necessary to evaluate or take final action on the CAAPP renewal application. If such additional information affects your allowable emission limits, a revised form 292-CAAPP, FEE DETERMINATION FOR CAAPP PERMIT must be submitted with the requested information. The failure to submit to the Illinois EPA the requested information within the time frame specified by the Illinois EPA, may force the Illinois EPA to deny your CAAPP renewal application pursuant to Section 39.5 of the Act.

Application forms may be obtained from the Illinois EPA website at <http://www.epa.state.il.us/air/forms.html>.

If you have any questions regarding this matter, please contact a permit analyst at 217/782-2113.

Mail renewal applications to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Permit Section (MC 11)
P.O. Box 19506
Springfield, Illinois 62794-9506

DGP:psj

CALCULATION SHEET

Facility <u>ConocoPhillips Wood River Ref</u>	F.I.D. <u>119 090 AAA</u>
Anal. Eng. <u>DGP</u> Date <u>11 06 04</u>	PN <u>95120306</u>
Rev. Eng. _____ Date _____	Date Rec. <u>12 27 95</u>

CAAPP application for a major oil refinery.

In addition to being in the Part 219 area for VOM emissions this site is major for several NESMAP requirements. There is a refinery NESMAP that is already effective and one that has a future compliance date. It is also subject to a Part 61 NESMAP for benzene.

There are also a number of NSPS worthy for fuel combustion.

I did allow this site to see a preliminary draft and so there were not a lot of comments on the public notice draft.

The USEPA did not comment on this draft but based on the situation with 3M on use of a date for nonapplicability of NSPS, I removed all references to dates for NSPS units. They had been in the public notice draft. I told Neal Sabnis of ConocoPhillips and he said that was okay.

Recommend grant