From: McGill, Richard
To: Brown, Don
Subject: docket as PC in R20-18; FW: 35 IAC 249
Date: Wednesday, December 16, 2020 3:52:41 PM

Good afternoon, Mr. Clerk:

Please docket—as a public comment in R20-18—this forwarded email exchange with JCAR staff.

Thank you.

Richard R. McGill, Jr.
Illinois Pollution Control Board
Senior Attorney for Research & Writing
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(312) 814-6983

From: Eastvold, Jonathan C. <JonathanE@ilga.gov>
Sent: Wednesday, December 16, 2020 2:07 PM
To: McGill, Richard <Richard.McGill@illinois.gov>
Cc: stopetoinlakecounty@gmail.com; Bloomberg, David E. <David.Bloomberg@Illinois.gov>; Vetterhoffer, Dana <Dana.Vetterhoffer@Illinois.gov>
Subject: [External] RE: 35 IAC 249

Thank you for agreeing to the Extension. I've asked Stop EtO to respond to the points raised by IEPA in the hearing transcript. Meanwhile, I have the following three questions for PCB and IEPA:

IEPA maintains that the proposed testing locations are far enough away from known ethylene oxide emitters to prevent artificially high measurements of background EtO because "it has appeared that EtO is a highly localized pollutant" (transcript of 6/25 hearing, p. 21).

1. On what evidence is this claim based?

2. How should this claim be reconciled with the following sources? (Specifically, if we do not know where background EtO is coming from, how do we know that measurements from a testing site 3 or 4 miles from a known source will not be inflated due to that proximity—especially given the 120-day half-life of atmospheric EtO? Wouldn't that half-life give EtO molecules time to go much further than 3-4 miles?)

   A. USEPA FAQ on EtO (https://www.epa.gov/hazardous-air-pollutants-ethylene-oxide/frequent-questions-basic-information-about-ethylene-oxide#distance):

      "I would like to know how exactly ethylene oxide travels in the air/through the wind, and on average, what is the distance/range for which surrounding communities should be concerned of cancer risks as well?

Ethylene oxide can last in the air for weeks and can be transported with prevailing winds. At higher temperatures, especially above 50 degrees Fahrenheit, and stronger winds, we would expect ethylene oxide to transport farther away from the emission source more effectively."

B. American Chemistry Council, Ethylene Oxide Product Stewardship Guidance Manual (2007) (https://www.americanchemistry.com/ProductsTechnology/Ethylene-Oxide/EO-Product-Stewardship-Manual-3rd-edition/EO-Product-Stewardship-Manual-Environmental-Effects-of-Ethylene-Oxide.PDF):

"Earlier studies suggested that EO is not persistent in air due to washout by rain and degradation by chemical processes. However, more recent work has indicated that EO was not readily deposited by rain, and the dominant chemical removal process is the reaction with the hydroxyl radical. Based on the most recent determinations of the average atmospheric hydroxyl radical concentration and its reaction rate with EO, the atmospheric half-life of EO is estimated to be 105 days."

C. World Health Organization, "Concise International Chemical Assessment Document 54: Ethylene Oxide", section 5.1 (https://www.who.int/ipcs/publications/cicad/en/cicad54.pdf) :

"The atmospheric half-lives for ethylene oxide following vapour-phase reactions with photochemically produced hydroxyl radicals, assuming an atmospheric concentration of 1 × 10^6 radicals/cm^3, were estimated to be 120 days (Atkinson, 1986), 99 days (Lorenz & Zellner, 1984), 151 days (C. Zetzsch, personal communication, 1985, cited in Atkinson, 1986), and between 38 and 382 days (Howard et al., 1991).

The theoretical atmospheric lifetimes (approximately 1.43 × t ½) for ethylene oxide were estimated at ~200 days (Bunce, 1996) and 330 days (Winer et al., 1987) and were calculated based on the reaction with hydroxyl radicals at a concentration of 8.0 × 10^5 and 1.0 × 10^6 radicals/cm^3, respectively. Such lifetimes are expected to be long enough to allow a very small percentage of the amount emitted to reach the stratosphere (Bunce, 1996).

D. IEPA Technical Support Document Attachment A: "Update on Ethylene Oxide Monitoring Activities (A Presentation of Lewis Weinstock, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, 10/3/19)", page 14:

"Summary – Current Measurement Challenges with EtO … What don't we know: … What are the sources of EtO being measured away from known sources?"

3. Would any harm be done by switching testing sites to the ones suggested by Stop EtO?

Thanks in advance for your time and assistance.

Sincerely,

Jonathan C. Eastvold, Ph.D.
Rules Analyst III

Illinois General Assembly
Joint Committee on Administrative Rules
700 Stratton Building
Springfield IL 62706

During the COVID-19 emergency, please call or text my mobile at 217-816-9481
JonathanE@ilga.gov

From: McGill, Richard [mailto:Richard.McGill@illinois.gov]
Sent: Tuesday, December 15, 2020 10:03 AM
To: Eastvold, Jonathan C. <JonathanE@ilga.gov>
Subject: RE: 35 IAC 249

Good morning, Jonathan:

The Board agrees to the extension but shares information (below and attached) already in the Board's rulemaking record (docket R20-18) that addresses concerns over whether the proposed locations for IEPA's ambient monitoring would risk yielding unrepresentative EtO background levels due to nearby EtO sources.

During our rulemaking, the Board had concerns like those expressed in Stop EtO's public comment. On the record, we inquired with IEPA about the potential for air monitoring locations in urban areas skewing the Statewide ambient levels, especially because of nearby EtO sources. IEPA adequately addressed our concerns.

Specifically, we pre-filed questions for IEPA on this issue and followed up on its responses at the first hearing held on June 25, 2020 (Tr.). We asked IEPA to clarify whether ambient levels determined under the proposed rule would represent the background concentrations of EtO where air quality is not impacted by permitted EtO emitting sources. IEPA answered: "Yes, ambient levels determined under the proposed rule are intended to represent the background concentrations of ETO where air quality is not impacted by the permitted ETO-emitting sources." 06/24/2020 IEPA Resp. at 1.

We also asked IEPA to update its Technical Support Document (TSD) Table 1 listing to include all permitted EtO emitting sources within the State, as well as the distance between the sources and the nearest monitor location and major highway. In response, IEPA provided an updated table, which indicates the nearest EtO source to: the Northbrook monitoring location is 4.2 miles; the Schiller Park monitoring location is 4.7 miles; and the Alton monitoring location is 15.1 miles. 06/24/2020 IEPA Resp., Attach A.

At hearing, we followed up on the potential impact of the EtO sources on the levels measured by the monitors in the vicinity of the EtO sources. IEPA witness, David Bloomberg, stated that the monitors are not close enough to the sources to be impacted by them. Tr. at 20. He also noted: "So since it has appeared that ETO is a highly localized pollutant, we do not think it being three-and-a-half miles away would be an issue." Generally, a localized pollutant is one that does not travel far from the source.

Additionally, Board Hearing Officer Kaminski asked Bloomberg if the Northbrook and Schiller Parks EtO monitors should be replaced with monitors in the regions of Kane or McHenry County not impacted by multiple EtO sources, considering IEPA's response that ambient levels determined under the proposed rules are intended to represent the background concentrations of EtO where air quality is not impacted by the permitted EtO emitting sources. Tr. at 22-23. Bloomberg stated that there is no need to replace the monitors because they are not impacted by EtO sources. Tr. at 23.

I have attached the relevant transcript pages, as well as IEPA's updated table with EtO sources and their distances to monitors.

If you have any other questions, please let me know. Thank you.

Best regards,

Richard

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From: Eastvold, Jonathan C. <JonathanE@ilga.gov>
Sent: Monday, December 14, 2020 7:21 PM
To: McGill, Richard <Richard.McGill@illinois.gov>
Subject: [External] 35 IAC 249

Given the late-arriving public comment from Stop EtO, would PCB be willing to extend this rulemaking and provide an opportunity for EPA to comment?

Thanks for your consideration.

Jonathan C. Eastvold, Ph.D.
Rules Analyst III

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