

**The Kentucky Bar Association
Environment, Energy & Natural Resources Law
Section presents:**

**2025 Environment, Energy & Natural
Resources Law Section
CLE Seminar**



**This program has been approved in Kentucky
for 5.5 CLE credits.**

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The Kentucky Bar Association
Office of Continuing Legal Education for
Kentucky Bar Association Environment, Energy & Natural Resources Law Section**

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2025 Environment, Energy & Natural Resources Law Section CLE Seminar

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2025 KBA Environment, Energy & Natural Resources Law Section CLE Seminar
April 22, 2025
Dentons Bingham Greenebaum
Louisville, Kentucky

AGENDA

- | | |
|-----------------------|--|
| 8:30-8:55 a.m. | Registration, Coffee & Bagels |
| 8:55 a.m. | Welcome & Opening Remarks
Bradley Strait, Chair
KBA Environment, Energy & Natural Resources Law Section |
| 9:00-9:45 a.m. | Effective Public Participation with Agency Actions
(0.75 CLE credit)
Amy K. Tempus-Doom, P.E. |
| 9:45-10:30 a.m. | Update on Enforcement Issues
(0.75 CLE credit)
Jarrod Bell |
| 10:30-10:45 a.m. | Break |
| 10:45-11:45 a.m. | Air Update
(1 CLE credit)
Rachael Hamilton
Michael Kennedy, P.E. |
| 11:45 a.m.-12:45 p.m. | Lunch (catered) |
| 12:45-1:00 p.m. | Break & Return to Seats |
| 1:00-2:00 p.m. | Kentucky Legislative Update
(1 CLE credit)
Audrey Ernstberger
R. Clay Larkin |
| 2:00-3:00 p.m. | PFAS Update
(1 CLE credit)
Larry D. Hughes, P.G. |
| 3:00-3:15 p.m. | Break |
| 3:15-4:15 p.m. | State PSC/Energy Updates
(1 CLE credit)
John E.B. "J.E.B." Pinney |
| 4:15 p.m. | Closing Remarks |

PRESENTER BIOGRAPHIES

Jarrold Bell, Director
Division of Enforcement
Kentucky Department for Environmental Protection
Frankfort, KY

Jarrold Bell has over 30 years of experience with the Kentucky Department for Environmental Protection, starting as a waste inspector in the fall of 1991. Program experience includes air and waste inspections, compliance, enforcement, and permitting. He was appointed as Director in August 2024. Prior to this post he served as the branch manager of the Division for Air Quality Field Operations Branch where he led the day-to-day operations of 65 field staff across eight regional offices. He has also worked for the Division of Waste Management in the hazardous waste, UST, and DOE Oversight programs, served as a technical and regulatory advisor to the Air Director, made many presentations on a variety of compliance issues, and supervised the DAQ Frankfort Regional Office. Jarrold is originally from Somerset, KY, and received his B.A. from Western Kentucky University and his J.D. from the Brandeis School of Law at the University of Louisville. Jarrold was admitted to practice before the Kentucky Bar in 2002.

Audrey Ernstberger
Kentucky Resources Council
Frankfort, KY

Audrey Ernstberger graduated from Centre College and earned her J.D. from the University of Louisville Louis D. Brandeis School of Law in 2019. During law school, her energy law class and her experience as a Resilience Justice Fellow researching equitable environmental access for vulnerable communities inspired her to pursue a career in environmental law. Shortly after law school, she pursued an LL.M. in Energy and Environmental Law from The George Washington University Law School, where she attended classes and worked as a research assistant to identify legal obstacles to preplanning electric grid redevelopment after a natural disaster. Before joining the Council, she worked for the Legislative Research Commission as a Legislative Analyst for the House and Senate Economic Development and Workforce Investment Committee. Her advocacy experience includes her time as a student attorney at Harvard Legal Aid Bureau, where she and her co-counsel won a government benefits case on appeal.

Rachael Hamilton, Director
Louisville Metro Air Pollution Control District
Louisville, KY

Rachael Hamilton is Director of the Louisville Metro Air Pollution Control District (APCD). She has more than 30 years of environmental regulatory experience. Her field experience includes work for the Florida Department of Health, the Florida Department of Environmental Protection, and the Indiana Department of Health. Ms. Hamilton has a bachelor's degree in biology, *cum laude*, from Salem College. After earning her J.D. from the Louis D. Brandeis School of Law at the University of Louisville, she spent eight years in private practice focusing on environmental law. She joined APCD in 2009.

Larry D. Hughes, P.G.
Office of the Commissioner
Kentucky Department for Environmental Protection
Frankfort, KY

Mr. Hughes is a professional geologist and has worked for over 35 years in the private and government environmental sectors. Mr. Hughes presently serves as an Environmental Scientist Consultant II for the Office of the Commissioner, Kentucky Department for Environmental Protection. He has served as project manager, supervisor, and branch manager in the Energy and Environment Cabinet's RCRA, UST, and Superfund programs. During his time in the Cabinet, Mr. Hughes has been involved with numerous high-profile emergency and Superfund site investigations and cleanups and has authored and co-authored various state program regulations. Mr. Hughes presently serves on behalf of the Commissioner independently staffing, directing, and managing scientific projects and programs for the Department. He serves as a technical and scientific advisor to the Commissioner regarding the Department for Environmental Protection (DEP) programs and speaks on behalf of and is empowered to make decisions on behalf of the Commissioner as a technical authority on multiple program and policy issues. He provides specialized scientific expertise, evaluates and provides assistance to the Commissioner involving complex environmental programs with significant program impact regarding emerging contaminants and developing department issues related to Air, Water & Waste Management programs. Mr. Hughes also serves as the Department's team leader on the development of new groundwater corrective action regulations, PFAS studies, staff training related to regulations, other scientific related categories, and training towards sustaining the agency's technical expertise.

Michael Kennedy, P.E., Director
Division for Air Quality
Kentucky Department for Environmental Protection
Frankfort, KY

Michael Kennedy is director of the Division for Air Quality of the Kentucky Department for Environmental Protection. He previously served as environmental engineering branch manager for DAQ's permit review branch and as an environmental engineer consultant. He received his bachelor's degree in biosystems and agricultural engineering from the University of Kentucky College of Engineering.

R. Clay Larkin
Dentons Bingham Greenebaum
Lexington, KY

Clay Larkin is a partner in the Dentons Lexington office. Recognized in the fields of environmental and energy & natural resources law by Chambers and *Super Lawyers*® magazines, Mr. Larkin has devoted a significant amount of his practice to the representation of energy and mining companies with an emphasis on the coal, oil and gas, and electricity generation industries. He received his B.A. from Western Kentucky University and his J.D., *Order of the Coif*, from the University of Kentucky J. David Rosenberg College of Law. Mr. Larkin is a member of the Kentucky Bar Association, Kentucky Coal Association, Federalist Society, and the Energy & Mineral Law Foundation, serving as its president in 2022-23.

John E.B. (“J.E.B.”) Pinney
Executive Advisor
Kentucky Public Service Commission
Frankfort, KY

J.E.B. Pinney joined the Commission in 1999 as a staff attorney, a position he held until becoming the Commission’s General Counsel in 2017. He has been an Executive Advisor to the Commission since July 2021. J.E.B. holds a J.D. from the University of Kentucky’s J. David Rosenberg College of Law and a B.A. in government from Georgetown University.

Amy K. Tempus-Doom, P.E.
Division for Air Quality
Kentucky Department for Environmental Protection
Frankfort, KY

Amy K. Tempus-Doom has served as an environmental engineer consultant in the Permit Review Branch for the Kentucky Department for Environmental Protection’s Division for Air Quality since 2023. Prior to her current position, she worked in the Permit Review Branch for more than nine years as both a permit engineer and engineering supervisor for a team of six engineers. She works on complex air permits and air permit related issues in the branch, from PSD implications at large metallurgical facilities to Title V permitting for landfills and highly time-sensitive construction projects. Ms. Tempus-Doom received her B.S. in chemical engineering in 2013 from the University of Louisville and her professional engineering license in 2017. Prior to working for KDAQ, she worked in various manufacturing facilities in environmental engineering and quality engineering positions.

EFFECTIVE PUBLIC PARTICIPATION WITH AGENCY ACTIONS

Amy K. Tempus-Doom, P.E.

Public participation is an integral part of many of the actions the Division for Air Quality (Division) takes, but often the agency receives feedback on permitting actions that can be difficult to take action on. We will take a more complete look at the process of issuing a permit action and how the agency makes determinations and provides tools to help potential commenters make actionable comments.

I. WHAT TYPES OF ACTIONS ARE REQUIRED TO BE MADE AVAILABLE FOR PUBLIC PARTICIPATION?

- A. Regulatory Changes: [KRS 13A.270](#)
- B. State Implementation Plan (SIP) Changes
- C. Annual Ambient Air Quality Monitoring Plan
- D. State Plans (for Clean Air Act §111(d) pollutants)
- E. Air Emissions Fee: [401 KAR 50:038](#)
- F. Permitting Actions
 - 1. Title V: [401 KAR 52:020](#) incorporates by reference the “[Cabinet Provisions and Procedures for Issuing Title V Permits.](#)” The Division currently has approximately 235 Title V sources. Public notice is required to:
 - a. Draft initial Title V permits for new or existing sources;
 - b. Draft new source Review (NSR) permits (included in an initial Title V permit or significant revision, these are not issued separately from the Title V permit). The Division is somewhat unique in U.S. EPA Region 4 in that its permitting program is “merged”, *i.e.*, its permitting actions are combined construction/operating actions. For instance, the draft Title V operating permit constitutes a proposed NSR permit (preliminary determination); subsequently, the pro-posed Title V operating permit constitutes a final NSR permit (final determination);
 - c. Draft Title V significant permit revisions;
 - d. Draft Title V permit renewals;
 - e. Permit reopening.
 - 2. Federally Enforceable State Origin Permits (FESOP/Conditional Major): [401 KAR 52:030](#) incorporates by reference the “[Cabinet Provisions and](#)

[Procedures for Issuing Federally-Enforceable Permits for Non-Major Sources.](#)” Public notice is required to:

- a. Draft initial FESOP permits for new or existing sources;
 - b. Draft FESOP significant permit revisions;
 - c. Draft FESOP permit renewal;
 - d. Permit reopening.
3. Last year, the agency processed more than 360 permitting actions (all types of permits, excluding registrations).
 4. While this presentation will focus on public participation related to permitting, the general recommendations related to “what makes a good public comment” apply no matter the action.

II. WHAT IS THE AGENCY’S GENERAL PROCESS LEADING INTO THE PUBLIC PARTICIPATION STEP FOR PERMITTING ACTIONS?

- A. The Division receives permitting applications that must meet the requirements of the applicable regulation for the action (*i.e.*, [401 KAR 52:020](#) or [401 KAR 52:038](#)).
- B. The Division reviews the application for administrative completeness and technical completeness and identifies any missing or incorrect information at this stage. If the facility is missing any information, a notice of deficiency (NOD) is issued to the facility. If the required information is not received after three NODs have been issued, the review is terminated and the facility may re-apply with a complete application.
- C. Once the Division has determined the application to be complete, the Division begins further review and processing of the permit application.
 1. Review includes completing and checking emission calculations, reviewing regulatory applicability, comparing with similar facilities as appropriate, writing permit documents, etc. For NSR projects, review includes Best Available Control Technology (BACT) and/or Lowest Achievable Emission Rate (LAER) review and research, modeling review, and determination of the correct project emissions increase values.
 2. The Permit Review Branch consists of approximately 36 engineering positions, plus support staff. Many of our engineers are licensed professional engineers in Kentucky or are working towards becoming licensed. All of our engineers have accredited engineering degrees in a range of focuses (chemical engineering, bioengineering, mining engineering, mechanical engineering, etc.). There is also a range of institutional/experiential knowledge, but some of our engineers have been in the branch for over 20 years.

- D. The permit engineer drafts a Permit (either from scratch or by revising an existing permit in the case of a significant revision) and a Statement of Basis & Summary document, as well as any ancillary documents (the public notice, letters, etc.).
1. The Statement of Basis is an important and difficult document to write because its sole purpose is to “set forth the legal and factual basis for the draft permit conditions (including references to the applicable statutory or regulatory provisions).” [401 KAR 52:100, Section 10(2)] Each Statement of Basis is drafted on a case-by-case basis for each application at each source.
 - a. In 2001, the U.S. EPA published helpful guidance on what should be included in this document, much of which is still relevant today: <https://www.epa.gov/sites/default/files/2015-08/documents/sbguide.pdf>
 - b. The Division has a general template for the form of the document that is used internally to aid in consistency, but each permit reviewer drafts their own document for review and approval in order to meet requirements of 40 CFR part 70 and help the public and U.S. EPA be better informed about the action the agency is taking.
 2. The permit document must include all required items in the Cabinet Provisions and Procedures. The permit document is not intended to explain or expound upon agency decisions regarding regulation applicability or determinations, but rather provides a concise, organized legal document containing the exact requirements of the applicable regulations and the provisions and procedures. Pursuant to Section 1c.V. of the Cabinet Provisions and Procedures, “The permit may contain other provisions, which the cabinet deems necessary to ensure compliance with applicable requirements.” When the agency includes provisions to meet this requirement, they are typically cited as 401 KAR 52:020, Section 10 or 401 KAR 52:030, Section 10.
- E. Once the permit engineer drafts the permit package, it is then reviewed by the engineer’s supervisor (also an engineer). After the supervisor review, it is next reviewed by one of the branch consultants (also engineers). After both of these reviews are completed, the permit package is cleared to publish.
- F. A final QC check is done by the Division’s permit support section for formatting or numbering errors, and then the package is published the next day on the Cabinet’s website here: <https://eec.ky.gov/Environmental-Protection/Air/Pages/Public-Notices.aspx>
1. If the public notice is also published in the local newspaper, the website notice will be posted the day the notice appears in the newspaper.
 2. Website publication includes general facility identification information, a copy of the notice, the draft permit, the statement of basis & summary, a

consolidated application file, and the start and end date of the public notice period.

3. If the agency is scheduling a public hearing, the terms of requesting and attending the hearing will be included in the notice.

III. WHAT RULES GOVERN PUBLIC PARTICIPATION IN PERMITTING? [401 KAR 52:100](#)

A. Agency Rules

1. Pursuant to [401 KAR 52:100, Section 4](#): The cabinet shall provide public notice of a public comment period and any scheduled public hearing on the cabinet's website at <https://eec.ky.gov>. This shall be the cabinet's consistent method of public notice. The cabinet may provide additional notice to the public through other methods, including newspapers, newsletters, and press releases.
2. All information listed in [401 KAR 52:100, Section 5](#) must be included. The Division ensures this is accomplished using internal templates for the notice.
3. Pursuant to [401 KAR 52:100, Section 2](#), the Cabinet is obligated to provide thirty (30) days for public comment and prepare a response to the comments received during the comment period. It is important to note that the 30 days is “calendar” days not “business” days.
4. Pursuant to [401 KAR 52:100, Section 2\(3\)](#), the Cabinet shall consider:
 - a. All written comments received during the public comment period;
 - b. Comments received in alternate format to accommodate persons with disabilities; and
 - c. The permit applicant's written response concerning the public comments, if received not later than ten (10) days after the close of the public comment period. Generally, the Division provides all comments to the applicant at the close of the comment period and informs the applicant of their opportunity to respond, but they are not obligated to do so. When comments are of a highly technical nature, providing these responses can help the agency more effectively respond to commenters’ concerns.
5. Pursuant to [401 KAR 52:100, Section 3](#), a public hearing shall be held if the cabinet determines that on the basis of written requests received, material issues have been raised concerning the terms and conditions of the permit, or the permit action is of significant interest to the public.
 - a. The Cabinet shall provide notice on the Cabinet’s website at least 30 days prior to the scheduled public hearing.

- b. This 30-day notice for the hearing does not extend or add days to the public comment period.
 - c. Typically, if the Division determines that a public hearing may be needed for an action, the Division co-advertises the public hearing with the public notice (because hearings also require a 30-day notice of when and where they will occur), with the caveat in the notice that if no one requests the hearing during the 30-day comment period, it will be canceled.
6. Pursuant to [401 KAR 52:100, Section 6](#), the Cabinet is required to send the public notice to several specified recipients, including a mailing list of people who request to be notified of permitting actions.

B. Public Rules

- 1. Submit comments during the public comment period via mail or email at AIRKentucky@ky.gov.
- 2. Make sure the comments raised are reasonably specific (if the commenter wishes to preserve the ability to successfully petition the EPA).
- 3. Make sure the comments are submitted to the correct location (as specified in the public notice).
- 4. The U.S. EPA can also make comments during the public comment period; this is separate from an objection to the permit or action on a petition.

IV. WHAT DO EFFECTIVE PUBLIC COMMENTS LOOK LIKE?

- A. They have been submitted by the deadline.
- B. They have been prepared after thoughtful review of both the permit and statement of basis & summary documents.
- C. They are reasonably specific, and where possible, cite specific terms or page numbers.
- D. They take into consideration the scope of the Division's scope and legal authorities.
- E. They offer solutions/corrections.
- F. They are clear and concise.
- G. They include attachments with supporting data for claims made by the commenter or offer suggested replacement language.

H. Example: Very Helpful vs. Less Constructive Comments

1. Very helpful: “Condition 10 talks about monitoring startups, shutdowns and malfunctions but does not say how these need to be tracked. The proposal should include specific monitoring requirements. Additionally, Condition 15 says that the operators must notify the division promptly of any malfunctions but there is no definition of what promptly means. The proposal should specify a number of days rather than use the word promptly.”
 2. Less constructive: “Emissions from industrial operations are bad for the environment and public health, and you should not be allowing them to pollute like this. This proposed rulemaking should not be approved.”
- I. If the comments are lengthy, it helps the Division respond more quickly if the comments are submitted in Microsoft Word or both PDF/Word documents so the comments can be quickly copy/pasted instead of being re-typed, but this is not a requirement.

V. WHAT HAPPENS AFTER PUBLIC COMMENTS ARE RECEIVED?

- A. Pursuant to the Cabinet Provisions and Procedures: The cabinet shall issue or deny the permit within sixty (60) days after the public and affected state review is complete and shall respond to comments received during the comment period.
- B. The Division prepares a “Response to Comments” document. This document includes the comments received, and the Division’s response to each comment, including a description of changes made, if any. Where there are multiple comments received on the same topic, the Division may group these comments together by topic such that the agency does not have to provide the same response multiple times.
- C. The Division makes any changes to the permit and statement of basis & summary documents necessitated by the comments received. If the changes are significant, the Division will re-issue the draft and go back to public comment after internal review. If there are no significant changes, the proposed permit package is prepared by the permit engineer, reviewed by the supervisor and consultant, signed by the Director, and then issued. The proposed permit is then sent to U.S. EPA for their 45-day review period.
1. Proposed Title V permits can be found here: <https://www.epa.gov/caa-permitting/kentucky-proposed-title-v-permits>.
 2. PSD permit activity can be found here: <https://www.epa.gov/caa-permitting/psd-permit-activity-region-4>.
- D. After the U.S. EPA’s 45-day review period, if no comments are received from the U.S. EPA and the U.S. EPA does not object to the permit, the final permit package is prepared, reviewed by the supervisor, signed by the Director, and issued.

Permits and related permit documents are searchable using the eSearch tool:
<https://eec.ky.gov/Environmental-Protection/Air/Pages/Permit%20Search%20Online.aspx>

VI. WHAT IF THE COMMENTER DOES NOT BELIEVE THE DIVISION RESPONDED TO THEIR COMMENTS ADEQUATELY?

- A. Citizen Petitions pursuant to 401 KAR 52:100, Section 10(9)
<https://www.epa.gov/title-v-operating-permits/title-v-petitions>
1. Must be made within 60 days following the end of the U.S. EPA's 45-day review period.
 2. Must be based only on objections raised with reasonable specificity during the public comment period, unless:
 - a. The petitioner can demonstrate that it was impractical to raise the objection within the public comment period; or
 - b. The grounds for objection arose after the end of the public comment period.
- B. Contact the Division for clarification on any responses that are not clear or are difficult to understand. The Division strives for clarity in responses to comments but recognizes that sometimes it can be difficult to achieve.

VII. WHAT ARE OTHER WAYS THE PUBLIC CAN INTERACT WITH THE AGENCY OUTSIDE OF PUBLIC COMMENT PERIODS?

- A. Contact us! If you have questions or concerns, call or email the Division. We can answer many questions quickly or set up a conference call if the question is more complex.
- B. If there are specific changes you want to see in the program, and you can provide good examples, reach out to the Director. We're happy to engage with all stakeholders.
- C. File a Kentucky Open Records Request for any documents you would like to review but cannot find. If you need help determining how to make the request or whether the documents you are looking for even exist, you can always reach out via phone or email to the relevant agency to ask questions before emailing the KORA email at EEC.KORA@ky.gov.
- D. <https://eec.ky.gov/pages/Open-Records.aspx>.

**ENERGY AND ENVIRONMENT CABINET, KENTUCKY DEPARTMENT FOR ENVIRONMENTAL
PROTECTION CURRENT ENFORCEMENT PROCESS AND PROCEDURES**

Jarrod Bell, Director, Kentucky Division of Enforcement

Getting a Notice of Violation (NOV) from the Kentucky Department for Environmental Protection (DEP) happens about 4,000 to 5,000 times a year on average. Being on the receiving end of one of these notices can be quite disconcerting for many individuals and businesses. But what does it mean? What does the DEP expect when it issues these notices to the various persons, businesses, and entities subject to the complex laws and regulations passed by both state and federal legislatures?

The powers and duties of the KY DEP are spelled out in [KRS Chapters 151](#) and [224](#). These statutes also authorize the enforcement process discussed here including the maximum civil penalties that may be assessed depending on which statutes or regulations are violated. These maximums range from \$1,000 to as much as \$25,000 per day per violation.¹

Notices of Violation (NOVs) are a regular and routine part of the inspection and compliance review process of the DEP programs (Air, Waste Management, and Water), are normally issued as part of the inspection or review report, and are considered the start of the enforcement process in DEP.

This is distinguished from the way many other agencies, including the federal EPA and even the Louisville Air Pollution Control Board, issue NOVs which are often issued weeks or months after the inspection and are part of a long back and forth set of meetings and discussions, up to actual resolution. The DEP issues the NOV much earlier in the process to lay out our position on violations identified, ask for corrective action, and start the discussion towards resolution. An NOV from DEP is not a final agency action.

Resolution may be as simple as a written response with a plan to prevent the recurrence of an error or omission. Examples of common required corrective actions:

- Cleanup of an open dump
- Stopping an unpermitted or above limit discharge
- Repair of an air pollution control device.

For the vast majority of NOVs a prompt and complete response to the issuing inspector, office, or program will result in a violation being resolved. This is typically in the form of a “sufficient at this time” letter notifying the responsible party the agency considers the matter returned to compliance. Do not ignore an NOV. Action from the receiving responsible party and a response are expected.

For more serious violations, for corrective actions requiring a longer timeline, or for violations that cannot be resolved at the program level, the NOV may be referred to the DEP’s Division of Enforcement (DENF) for more formal resolution.

Once referred to the DENF, a case specialist in the Civil Enforcement Branch is assigned to review the particulars of the violations and the state of corrective action, level of good faith effort at

¹ [KRS 224.99](#) & [KRS 151.990](#).

compliance, and all other relevant factors necessary to begin the process of informal settlement negotiations. Our case specialists are environmental scientists and are trained in both DEP technical requirements as well as negotiation skills and act as liaison between the responsible party and the Cabinet. Their job is to achieve compliance by sharing information, explaining requirements and expectations, seeking common ground, and offering mechanisms for formal resolution.

The typical resolution at this stage includes the assessment of a civil penalty in accordance with the statutory limitations and the particular factors of each case. These factors are not set by statute or regulation but have been established as part of an Order of the Secretary referred to as *Natural Resources and Environmental Protection Cabinet (NREPC) v. Wendell Maggard* (1994):

1. the seriousness of the violation, taking into account such factors as:
 - a) the susceptibility of the site to environmental harm of the type concerned in the case,
 - b) the physical, geographic and chronological extent of the violation,
 - c) the inherent danger to the environment or human health and safety posed by a violation of the type concerned in the case,
 - d) the substantive nature of the violation, e.g.; whether it is a reporting violation or a violation of a substantive standard of the law or regulations, and
 - e) whether the violation is correctable and if so, the type and extent of remedial efforts required to correct the violation, taking into account any secondary harm to the environment which may be caused thereby;
2. the economic benefit (if any) resulting from the violation;
3. the economic impact of the penalty on the violator, including the cost of remediation;
4. the history of other violations on the site by this violator;
5. the culpability of the violator;
6. the good faith actions of the violator to remedy the violation, comply with the law or obey an order of the Cabinet;
7. such other matters as imposition of a just penalty would require; and
8. the number of days the Cabinet shows the violator to have violated the law.

These factors have not been directly challenged, but they have been cited in an unpublished opinion of the Kentucky Court of Appeals.²

The case specialist evaluates all these factors and establishes an appropriate civil penalty. This penalty may be adjusted based on information and justifications provided during the negotiation process. To start this process, an initial letter to the responsible party is sent setting a date and time for an enforcement conference. The conference is designed to lay out the Cabinet's case and offer the responsible party both the opportunity to question the violations and provide supplemental information that has bearing on the case. Depending on the results of the initial enforcement conference, a revised offer of settlement may be made in writing or additional conferences scheduled to continue the discussion and allow for additional information to be provided. Information expected at these conferences includes plans and schedules for corrective actions and/or documentation that a return to compliance has been achieved.

² *Flaget Fuels, Inc. v. Com., Env'tl. & Pub. Prot. Cabinet*, 2004-CA-002364-MR, 2005 WL 2574148 (Ky. App. Oct. 14, 2005), unpublished.

An agreement in principle towards a resolution document is the goal of these conferences. A typical resolution document may be as simple as a demand letter for an agreed-to civil penalty. In other cases where a plan and schedule for steps that need to be taken must be agreed to, then an Agreed Order document may be negotiated. These administrative orders are a common resolution mechanism, and after execution, are filed with the Cabinet's Office of Administrative Hearings. The Cabinet's preferred draft format and content for these orders are drafted by the case specialist and reviewed by the Cabinet Office of Legal Services before being proffered to the responsible party for review and signature. If signed by the responsible party, the Agreed Order is then signed by the Cabinet Secretary as a final agency action.

In addition to an agreed-upon penalty, an Agreed Order often contains language requiring the completion of a corrective action plan with detailed schedules and target dates for completion of milestone events. Depending on the term anticipated, the order may also include routine reporting on progress, typically on a quarterly basis. The Cabinet will often establish stipulated penalty amounts for missed deadlines or failures to meet certain terms of the order or corrective action. These stipulated penalties are negotiable and are fact dependent.

The executed Agreed Order is then enforceable by both parties in circuit court. For most DEP program statutes and regulations, Franklin Circuit Court is the statutorily designated court of jurisdiction.

For those situations when no agreement can be reached with the Division of Enforcement, a case referral is made to the Cabinet Office of Legal Services for the filing of an Administrative Complaint in the Cabinet's Office of Administration Hearings (OAH) to request a hearing. The regulations regarding procedure and process before the OAH are established in regulation at [400 KAR Chapter 001](#).³

After discovery and a hearing, the Hearing Officer prepares Findings of Fact and Conclusions of Law and presents a recommended final order to the Secretary of the Cabinet. The Secretary has the discretion to adopt the final order as written or amend the draft order consistent with law. This Final Order of the Secretary is an appealable final agency action subject to judicial review.

Let's take an actual case summary and discuss the different paths the scenario might take.

Acme Inc. is a manufacturer in the widget market internationally, and a worldwide supplier of widgets. Acme Inc. holds a minor KPDES permit No. KY0xxxx for Acme Inc. located at 100 Main St., Anytown in Springfield County. KPDES permit No. KY0xxxx became effective on April 1, 2022, and shall expire on March 31, 2027. The wastewater type collected is from stormwater runoff from facility grounds only. The design and average annual flows of this facility are precipitation dependent with two outfalls (001 and 002) that report monthly with no treatment type.

Acme Inc. has been referred to the Division of Enforcement (DENF) by the Compliance and Operations Branch (COB) due to numerous and continuing exceedance violations of their permitted limits. COB has issued nine (9) NOVs for

³ [400 Ky. Admin. Regs. 1:001 thru 120](#) (2018).

violations received between July 2020 and May 2024, most notably for pH and Total Suspended Solids (TSS).

On October 30, 2024, representatives of Acme Inc. telephonically met with DENF to discuss the cited violations. The representatives discussed a few facility operation upgrades to help with their violations.

This is a very typical scenario, and it offers a chance to see the many missed opportunities to avoid the formal enforcement process.

- What could Acme have done to avoid this referral to Enforcement?
- What kinds of details could they provide to the case specialist to minimize the penalty?
- What would you advise if your client had information disputing the violations?

To avoid the referral and resolve the violations in this scenario, a timely response to the first NOV in 2020 would have gone a long way toward saving a trip to Enforcement. A written response with meaningful steps planned to be taken to improve wastewater treatment to meet the permit limits is the goal the DEP seeks in any of its NOVs. Compliance is the best resolution. This case would likely never have been referred for penalty and formal resolution if Acme had been actively demonstrating to the referring office that at least progress was being made.

The detail that would make a difference to the case specialist at this point is concrete documentation that new resources, new staff, and new equipment has been or is being acquired to specifically address the violations cited over the last four years. Better filtration systems, an engineering plan to upgrade existing equipment with a budget number, and target completion date is the best scenario at this point in the process.

One possible option to discuss with your client is the possibility of proposing a Supplemental Environmental Project (SEP). DENF is very open to these proposals. An SEP is a project to provide tangible environmental or public health benefits to the affected community or environment that is closely related to the violation being resolved, but goes beyond what is required under federal, state, or local laws. The voluntary agreement to perform an SEP is one factor that is considered in determining an appropriate settlement penalty. While KY DEP is not bound by the federal policy memo on SEPs,⁴ this resource is an excellent guide on the types of projects that would be found to be acceptable. SEPs provide for the opportunity to give back to the neighbors and the environment more directly rather than solely by paying a cash penalty. SEPs are also often a good way to improve the relations between the community and the responsible party.

No one is perfect. If your client believes the violation alleged by the DEP is in error, then make sure they express that belief as soon as possible in the process, ideally when the NOV is first issued. If this can't be resolved before referral to DENF then bring it up again at the enforcement conference. The goal of the DEP is fair and consistent compliance, not justifying mistakes. Make your case during the enforcement conference. Technical staff from the program are normally involved at this stage, and they want to know if they have the facts wrong or if their determination was erroneous. Even if the DEP sticks by its position, the next steps would involve the complaint to the Office of Administrative Hearings. This independent arm of the Cabinet is staffed by professionals that are knowledgeable

⁴ <https://www.epa.gov/enforcement/supplemental-environmental-projects-seps>.

about both the standards of the Cabinet and the tenets of due process. Their findings and recommended orders are often not 100 percent in line with the DEP complaint and plea for relief. Even the final Order of the Secretary is then appealable to Franklin Circuit Court.

In most scenarios a well-made argument and clear presentation of facts and figures that make a demonstration of actual compliance is the best defense to any penalty.

During all of these steps in the process, the violator/responsible party may, of course, be represented by counsel. Our only ask is that the case specialist or other cabinet representative they will be meeting with be advised of this fact so that the Cabinet can make arrangements for our Office of Legal Services to schedule our counsel to be present as well.

Kentucky Air Update

KBA Environmental, Energy & Natural Resources Law Section

Michael Kennedy, P.E.
Director
Kentucky Division for Air Quality
April 22, 2025



Kentucky Division for Air Quality Mission Statement

To protect human health and the environment by achieving and maintaining acceptable air quality through:

- Operation of a comprehensive air monitoring network;
- Creating effective partnerships with air pollution sources and the public;
- Timely dissemination of accurate and useful information and data;
- Judicious use of program resources; and
- Maintenance of a reasonable and effective compliance program.



Kentucky Air Quality Update: Policy, History, and Outlook

- Roots of Clean Air Legislation
- PM2.5 NAAQS Update
- 2015 Ozone Transport SIP/FIP
- Emission Fee regulation
 - HB 346
- GHG Endangerment Finding
- Regional Haze



3

The Roots of Clean Air Legislation

- Donora Smog (1948): 20 deaths, 6,000 ill due to industrial pollution in Pennsylvania.
- Great London Smog (1952): Thousands died from coal smoke buildup.
- Sparked public awareness and led to air pollution control laws.



The Clean Air Act: A Historical Milestone

- Enacted in 1963, major overhaul in 1970.
 - Established NAAQS and required SIPs.
- 1970 - President Richard Nixon consolidated federal environmental agencies to create the U.S. Environmental Protection Agency.
 - Research, monitoring, and enforcement across all medias.



1990 Clean Air Act Amendments

- Title I: NAAQS and SIP revisions.
- Title II: Emission standards for vehicles.
- Title III: Hazardous Air Pollutants.
- Title IV: Acid Rain Program.
- Title V: Operating permits.
- Title VI: Stratospheric ozone protection.



Kentucky Statutory Authority

- KRS Chapter 224 provides environmental regulatory authority.
- Delegates power to Energy and Environment Cabinet.
- DAQ responsible for monitoring, permitting, and compliance.



PM2.5 NAAQS

- On February 7, 2024, EPA announced a new PM2.5 at 9 micrograms/cubic meter annual standard
 - Previous standard was 12 micrograms/cubic meter established in 2012
 - <https://www.epa.gov/pm-pollution/timeline-particulate-matter-pm-national-ambient-air-quality-standards-naaqs>

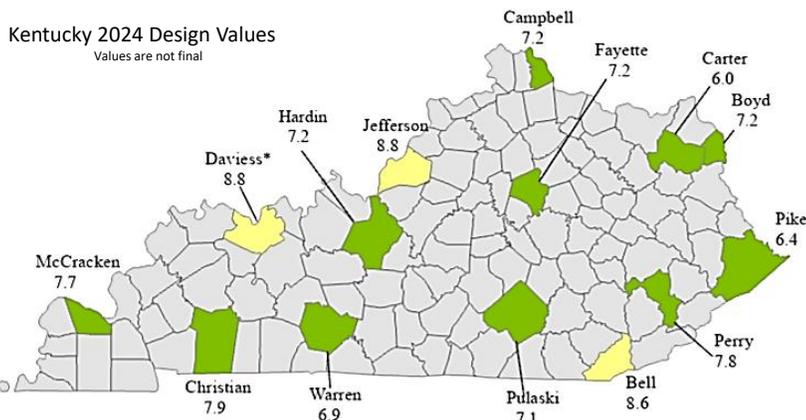


PM2.5 Area Designations

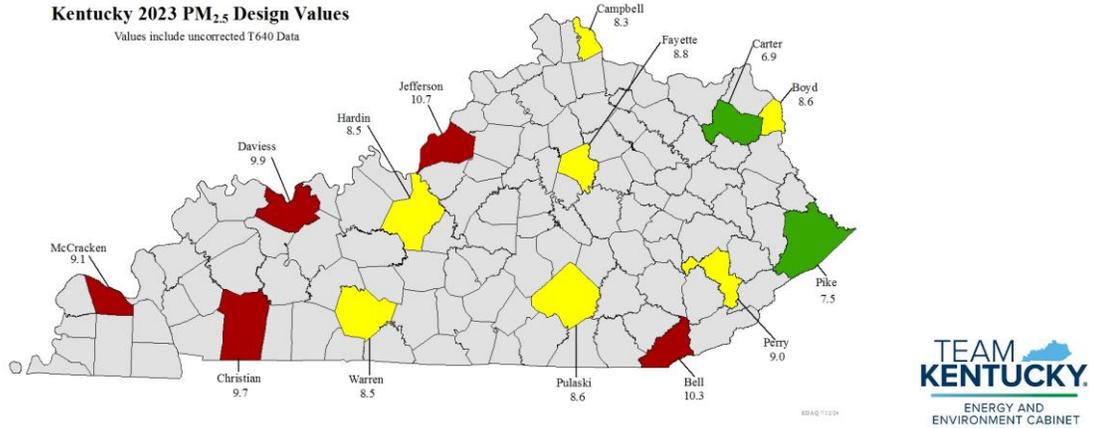
- On February 7, 2025, Energy and Environment Cabinet submitted all counties in Kentucky as attainment/unclassifiable.
- Based on a combination of 2023 and 2024 Design values.



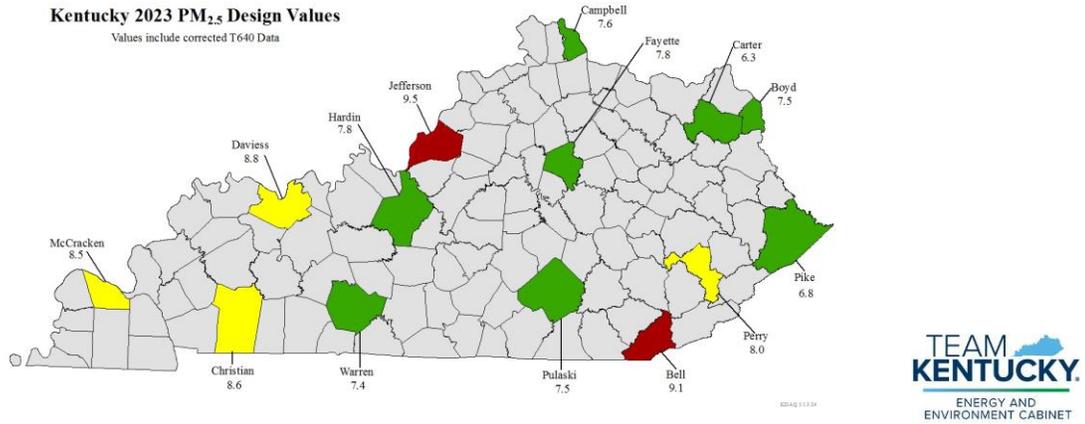
PM2.5 2024 Design Values



PM2.5 2023 Design Values – Feb 2024



PM2.5 2023 Design Values



PM2.5 timeline

February 7, 2025
States submit area
recommendations

May 6, 2027
States submit
Infrastructure SIPs



February 6, 2026
EPA promulgates
final designations



2024 PM2.5 Issues

- 9 $\mu\text{g}/\text{m}^3$ is a hurdle for PSD modeling.
 - PSD background
 - Updated 2024 design values



2015 Ozone Transport SIP/FIP

- According to EPA's 2016v3 model, Kentucky NOx sources impact 3 Connecticut nonattainment monitors above the 0.7 ppb level.
- Impacts are less than 1 ppb
- EPA guidance and comments led Kentucky to submit a SIP that showed our impact was not significant.



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2015 Ozone Transport SIP/FIP

- Kentucky's Infrastructure SIP, including Good Neighbor provisions, submitted to EPA Jan. 9, 2019.
 - EPA proposed disapproval for Good Neighbor provisions of Kentucky SIP
 - February 22, 2022 ([87 FR 9498](#))
 - EPA proposed Good Neighbor FIP
 - April 6, 2022 ([87 FR 20036](#))
 - EPA finalized disapproval for Good Neighbor provisions of Kentucky SIP
 - February 13, 2023 ([88 FR 9336](#))
 - EPA finalized Good Neighbor FIP
 - March 15, 2023 ([88 FR 36654](#))



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2015 Ozone Transport SIP/FIP

- December 6, 2024 – Sixth Circuit vacated EPA’s disapproval.
- EPA – Petition for a writ of certiorari
 - Question presented –
 - Whether EPA’s disapproval action is subject to review only in the D.C. Circuit.



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2015 Ozone Transport SIP/FIP

- FIP is currently stayed across all states.



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Air Emissions Fee

- DAQ budget is majority from air emission fees.
 - Changes to 401 KAR §50:038
 - Exception for fire pump emergency generators
 - Bill for emissions in excess of 4,000 tons per pollutant
- Regulation update was withdrawn.



HB 346

- Like - Changes to 401 KAR §50:038
 - Exemption for fire pump emergency generators
 - Bill for emissions in excess of 4,000 tons per pollutant
- Differences
 - Exempts all emergency generators
 - Retroactive refunds - estimated \$1,000,000



Greenhouse Gas Endangerment Finding

- April 2, 2007 – *Massachusetts v. EPA* – Supreme Court ruled that the EPA Administrator must make a determination on GHG from new motor vehicles.
- April 17, 2009 – 74 FR 66496 – The Administrator finds that six greenhouse gases taken in combination endanger both the public health and the public welfare of current and future generations.
- Under Section 202(a) – Emission standards for new motor vehicles or new motor vehicle engines.



Greenhouse Gas Endangerment Finding

- Rules that could be impacted by a reversal of endangerment finding include –
 - Vehicle Corporate Average Fuel Economy “CAFE” standards
 - EGU GHG rules – 111(b) and 111(d)
 - Oil and Gas Methane Rule
 - Some landfill rules may be impacted



GHG Power plant rule

New and Reconstructed Fossil Fuel-fired Combustion Turbines Subpart TTTTa

Unit Type	BSER	Emissions Standard	Compliance Date
Based-load turbines and NGCC	CCS with 90% capture	97 – 139 lb CO ₂ /MWh	January 1, 2032
Intermediate load	Highly efficient generation	1,190 – 1,560 lb CO ₂ /MWh	
Low Load	Lower-emitting fuels	120 – 160 lb CO ₂ /MMBtu	

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GHG Power plant rule

Emission Guidelines for Existing Fossil Fuel-fired Steam EGUs (111(d)) Subpart UUUUb

Unit Type	BSER and Emission Reductions	Compliance Date
Long term units (retire after 2040)	CCS with 90% capture - 88.4% reduction in CO ₂ emission rate	January 1, 2032
Intermediate term units (retire before January 1, 2039)	Co-firing natural gas at 40% - 16% reduction in CO ₂ emission rate	January 1, 2030
Short term units (retire prior to 2032)	Permanently cease operations	January 1, 2032

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Regional Haze

- Rule designed to improve visibility in National Parks.
- DAQ worked with a group of states to model emissions that impact National Parks.
- DAQ modified two facilities permits to reduce impacts.
- Received numerous comments during public comment.



Contact Information

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Louisville Air Update

KBA Environment, Energy and Natural Resources Law Section



AIR POLLUTION CONTROL DISTRICT

Rachael Hamilton, Director
Louisville Metro Air Pollution Control District
April 22, 2025

Air Pollution Control in Louisville

Concerned about the growing problem of air pollution, city leaders in 1945 formed the Louisville Smoke Commission. That evolved into the Louisville Metro Air Pollution Control District, which today is responsible for enforcing national, state, and local air pollution laws and regulations – including the federal Clean Air Act – in Louisville/Jefferson County



Daytime air pollution over downtown Louisville in 1943

Air Pollution Control in Louisville

Following the Donora, PA and London “killer fog” events, Kentucky in 1952 adopted KRS Chapter 77 to provide counties in the Commonwealth an opportunity to address air pollution concerns.

Since then, the Louisville Metro Air Pollution Control District is the Commonwealth’s first and only Air Pollution Control District.



AIR POLLUTION
CONTROL DISTRICT

Clean Air Act §101

(a) Findings

The Congress finds—

- (1) that the predominant part of the Nation's population is located in its rapidly expanding metropolitan and other urban areas, which generally cross the boundary lines of local jurisdictions and often extend into two or more States;
- (2) that the growth in the amount and complexity of air pollution brought about by urbanization, industrial development, and the increasing use of motor vehicles, has resulted in mounting dangers to the public health and welfare, including injury to agricultural crops and livestock, damage to and the deterioration of property, and hazards to air and ground transportation;
- (3) that air pollution prevention (that is, the reduction or elimination, through any measures, of the amount of pollutants produced or created at the source) and air pollution control at its source is the primary responsibility of States and local governments; and
- (4) that Federal financial assistance and leadership is essential for the development of cooperative Federal, State, regional, and local programs to prevent and control air pollution.



AIR POLLUTION
CONTROL DISTRICT

U.S. Environmental Protection Agency

- Agency formed to “protect human health and the environment”
- Conducts research
- Administers programs to protect the air and water, regulate toxic substances and solid and hazardous wastes, and respond to environmental emergencies



AIR POLLUTION
CONTROL DISTRICT

KY Division for Air Quality

- **KRS 224.20-120** In setting standards, the Cabinet “shall give due recognition to the quantity of characteristics of air contaminants or the duration of their presence in the atmosphere. It shall take into consideration in this connection such factors, among others, found by it to be proper and just, existing physical conditions, public benefit, that the degree of conformance therewith that may be proper as to an essentially residential area of the state may not be proper as to a highly industrial area of the state, and, further, the relationship between the intensity and composition of air pollution and the health of the public and damage to or interference with enjoyment of property. It shall give reasonable consideration to the interests of all parties concerned.”



Energy &
Environment
Cabinet



AIR POLLUTION
CONTROL DISTRICT

What We Do

- Monitor and collect information
- Develop policies and regulatory programs
- Issue and enforce permits
- Educate and assist
- Policy development



AIR POLLUTION
CONTROL DISTRICT

Air Pollution Control District

- To whom do we report?
 - The Community
 - Environmental Protection Agency
 - Ky. Division for Air Quality
 - Air Pollution Control Board
 - Louisville Metro Government
- How are we funded?
 - Federal Grants
 - Permit Fees
 - Emission Fees
 - Program Fees
 - Louisville Metro General Fund

APCD Goals

Ensure healthy air for
breathing

Help local businesses meet
air quality standards



AIR POLLUTION
CONTROL DISTRICT

APCD Air Monitoring Stations



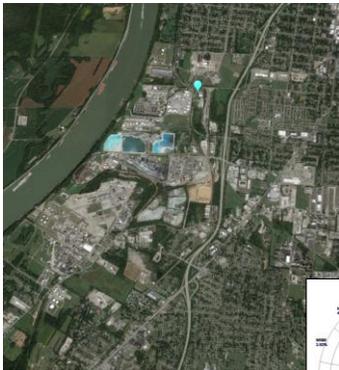
Air Monitoring Stations

- Algonquin Parkway
- Cannons Lane
- Carrithers Middle School
- Durrett Lane Near Road
- Watson Lane Elementary School



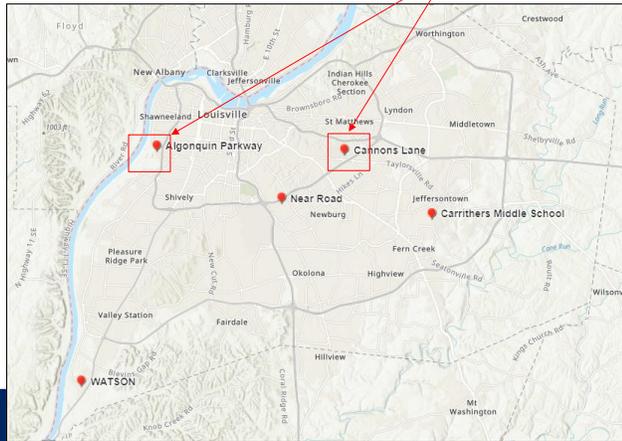
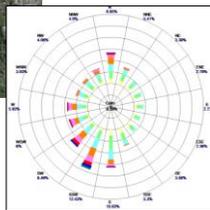
AIR POLLUTION CONTROL DISTRICT

Air Toxics / PAMS Monitoring



Rubbertown (Satellite View)

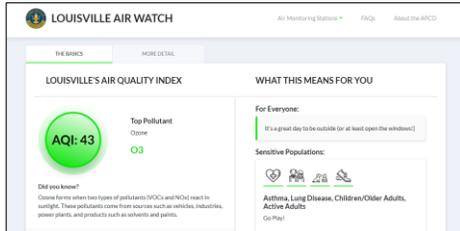
Monitoring Equipment



AIR POLLUTION CONTROL DISTRICT

Where can I find air monitoring data?

- [Louisville Air Watch](#)



- [Air Pollution Control Board](#)
- [Air Quality Report](#)

Louisville Metro Air Pollution Control District
PM_{2.5} Monitoring Report
June 2020

This report summarizes PM_{2.5} data collected by Federal Reference Method (FRM) and Federal Equivalent Method (FEM) instruments. Measurements are reported as 24-hour averages in micro-grams per cubic meter (µg/m³). The data are subject to further quality assurance checks and are not final.

PM_{2.5} Monthly Data Summary for May 2020

Site Name	Maximum		Minimum		Sample	Monthly Average
	Conc.	Date	Conc.	Date		
Fayette Training*	12.4	5/2/20	3.2	5/29/20	NA	6.4
Dorset Lane*	10.2	5/14/20	3.2	5/21/20	NA	6.9
Common Lane	10.7	5/5/20	2.9	5/21/20	NA	6.9
Waters Lane	13.6	5/2/20	2.9	5/29/20	NA	7.8
Overall	13.6	5/2/20	2.9	5/29/20	NA	6.8

* Fayette Training replaced Southwest on 5/5/2020

PM_{2.5} Monthly Averages Tracking Table for 2010-2020

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Months
2010	13.3	16.3	12.2	12.2	11.0	14.1	16.8	16.4	11.0	17.0	12.6	13.7	4
2011	15.2	10.6	9.7	8.6	12.1	15.1	15.7	16.2	11.5	9.0	7.6	9.9	3
2012	8.9	9.5	9.2	7.2	11.7	10.8	12.5	11.8	6.6	7.3	13.1	10.6	8



Permits

- Permits specify the many air pollution regulations applicable to the source
- Permits explain how the source will comply with the regulations
 - Ex: Limit on production
- More like a contract than a building permit
 - An agreement between the APCD and a regulated entity



Who needs a permit?

- **Exempt** – low potential emissions; no federal rules
- **Registered** – low actual emissions; federal rules
- **Minor** – “facility,” but low emissions
- **FEDOOP** – major potential, but limited actual emissions
- **Title V** – large emitters



AIR POLLUTION
CONTROL DISTRICT

What's in a permit?

- Statement of Basis (Summary)
- Standards
 - Many are specifically prescribed in the regulations
 - Some are developed during the permitting process
 - They are not just numeric standards
- Monitoring/Recordkeeping
 - Production rates, temperature, pressure, material contents
- Reporting
- Testing (initial or periodic; 3rd party testers; EPA methods)



AIR POLLUTION
CONTROL DISTRICT

The Strategic Toxic Air Reduction (STAR) Program

- Regulatory program seeking to **reduce harmful contaminants in Louisville’s air**
- Lists toxic air contaminants (TACs)
- Establishes framework for estimating risks associated with toxic air contaminants



Total Air Toxics 2005 - 2023

Louisville/Jefferson County Sources	2005 Air Releases in Pounds	2023 Air Releases in Pounds	% Change
Electric Generating Utilities (EGUs)	4,703,167	258,493	95% Decrease
Non-EGUs	3,449,042	809,018	77% Decrease
Total	8,152,209	1,067,511	87% Decrease

Source: [EPA Toxics Release Inventory](#)

Compliance Assurance

- Perform Industrial Inspections and Review Periodic Reports
- Perform Investigations into community issues like odors and dust
- Provide Compliance Assistance to help businesses follow the rules



AIR POLLUTION
CONTROL DISTRICT

Risk Management Program

- Purpose
 - Designed to prevent accidental chemical releases and minimize the consequences of releases that do occur
- Elements and Requirements
 - A stationary source with a threshold quantity of a listed chemical must register a plan with the EPA and maintain elements of their plan in accordance with the rule



AIR POLLUTION
CONTROL DISTRICT

Small Business Environmental Compliance Assistance Program

- Small business definition
 - Independently owned/operated
 - 100 or fewer employees
 - NOT a major source of emissions
- Free, confidential, and non-regulatory
- Services include
 - Onsite and technical assistance
 - Education outreach (workshops, seminars, literature)
 - Small business advocacy



Community Compliance

- Investigations during routine surveillance and in response to community complaints
- Document compliance with General Provisions:
 - [Regulation 1.11 Control of Open Burning](#)
 - [Regulation 1.13 Control of Objectionable Odors to the Ambient Air](#)
 - [Regulation 1.14 Control of Fugitive Particulate Emissions](#)



Enforcement

- KRS 77.990 – authorizes civil penalties up to \$10,000 per day per violation.
- Warning Letter
- Issuing a Notice of Violation (NOV)
 - Settlement less than \$5,000
 - Agreed Board Order more than \$5,000
 - Administrative Hearing if an agreement is not reached/possible

- Examples
 - [Board Order Agreements](#)
 - [Enforcement Status Reports](#)



**AIR POLLUTION
CONTROL DISTRICT**

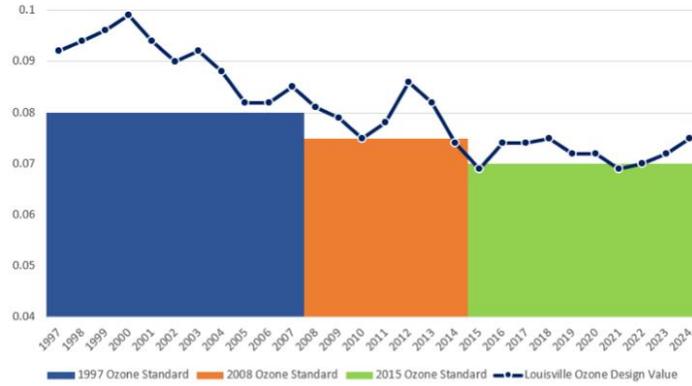
Current NAAQS Status

Pollutant	Standard	Preliminary '24 Design Values	Status
Carbon Monoxide	2 nd Highest 8-hour average below 9 ppm	2.0 ppm	Attainment
	2 nd Highest 1 hour average below 35 ppm	3.3 ppm	Attainment
Lead*	Three month rolling average below 0.15 µg/m ³	N/A*	Attainment
Nitrogen Dioxide	Annual average below 0.053 ppm	0.0134 ppm	Attainment
	98 th Percentile of hourly averages below 0.100 ppm	0.0463 ppm	Attainment
Sulfur Dioxide	99 th Percentile of hourly averages below 75 ppb	15 ppb	Attainment
	Annual average below 10 ppb	1.0 ppb	Attainment
Particulate Matter (PM ₁₀)	Highest 24-hour average below 150 µg/m ³	0 Exceedances	Attainment
Particulate Matter (PM _{2.5})	Annual average below 9 µg/m ³	9.3 µg/m ³	Attainment*
	98 th Percentile of 24-hour Average below 35 µg/m ³	23 µg/m ³	Attainment
Ozone	4 th Highest 8-hour average below .070 ppm	.075 ppm	Nonattainment



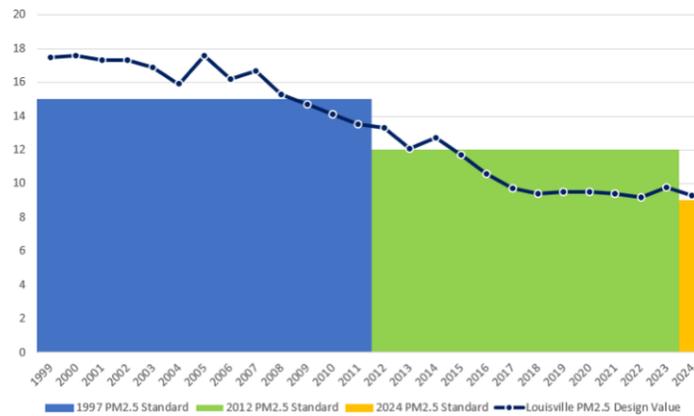
**AIR POLLUTION
CONTROL DISTRICT**

Louisville Ozone Air Quality



AIR POLLUTION CONTROL DISTRICT

Louisville PM_{2.5} Air Quality



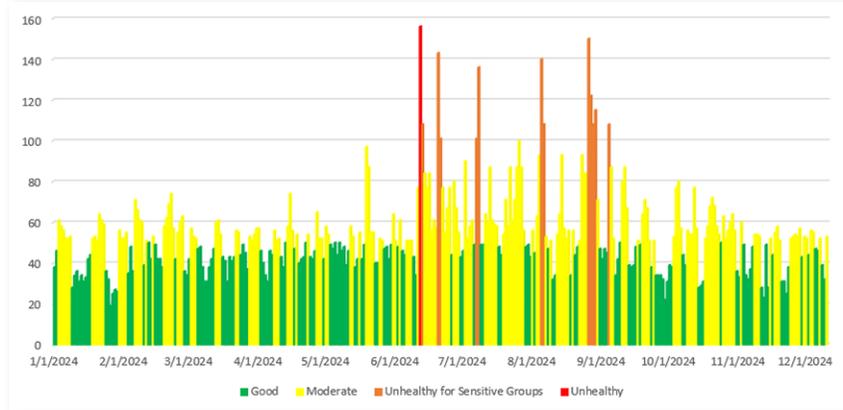
Louisville's PM2.5 Design Value through 2024



AIR POLLUTION CONTROL DISTRICT

AQI Trends in 2024

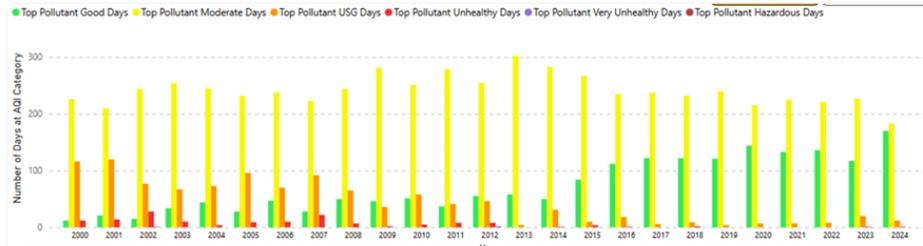
An area's daily AQI value for a given day is set by the air monitoring site in the area with the highest AQI value on that day. The daily AQI value for each site is set by the pollutant with the highest daily AQI value at that site.



Daily AQI Values in Louisville - 2024



AQI Trends Over Time



Amount of AQI Days by Category, Each Year through 2024 - per APCD's AQI Dashboard

The chart above, which can be produced using [APCD's AQI Trends Dashboard](#), shows the Louisville area's annual totals of daily AQI values by category since 2000. Louisville has seen a gradual but significant improvement in air quality since 2000. This can be seen clearly through an increase in Good air quality days and a decrease in poor air quality days (in the USG category or worse). This progress has been largely due to significant reductions in local emissions of air pollution from a variety of sources.



QUESTIONS?

Louisville Metro
Air Pollution Control District

701 W. Ormsby Ave.
Ste. 303
Louisville, Ky. 40203

(502) 574-6000
www.louisvilleky.gov/APCD



AIR POLLUTION
CONTROL DISTRICT

I. INTRODUCTION

This presentation addresses legislation introduced during the 2025 session of the Kentucky General Assembly, on topics which may be of interest to the environmental law practitioner. Because this paper was submitted during the session, the status of the bills discussed below will not be current as to the time of the seminar, so the final outcome of each bill is “to be determined.”

II. ADMINISTRATIVE LAW

- A. [House Bill 6](#) (Williams, Banta, Roberts, Rudy, Thomas)

Limitation on Adoption of Administrative Regulations. This bill would impose substantial limitations on the ability of Kentucky administrative branch agencies to promulgate new regulations. With limited exceptions, it would require any agency proposing to promulgate a regulation to certify that the regulation meets one of the following criteria: (a) will not have a “major economic impact” (*i.e.*, compliance costs over \$500,000); (b) is necessary to meet an immediate threat to public health, safety or welfare; (c) is necessary to prevent loss of federal or state funds; (d) is necessary to meet a deadline established by state or federal law or regulation; (e) is necessary to comply with an order of a court of competent jurisdiction; or (f) relates to licensure of or regulation of health facilities or services. The certification would be required to be provided by the Governor.

As of the date of this writing, the bill was voted out of the House.

- B. [Senate Bill 20](#) (Nunn, Wheeler, Higdon, Mills, Rawlings, Reed, West). This is the Senate companion to [HB 6](#) above and is essentially identical.
- C. [Senate Bill 84](#) (Rawlings, Funke, Frommeyer, Nunn, Reed, Tichenor, Wheeler)

Judicial Review/Deference to Administrative Agencies. This bill would essentially codify the holding in [Loper Bright Enterprises v. Raimondo](#), 603 U.S. 369 (2024), and require that Kentucky’s courts not defer to an administrative agency’s interpretation of ambiguous statutes or regulations. It would also require that courts resolve ambiguous cases “against increased agency authority.”

* Dentons Bingham Greenebaum, Lexington, KY, Clay.larkin@dentons.com, 859.288.4615.

**Kentucky Resources Council, Inc., Frankfort, KY, audrey@kyrc.org, 502.689.2289.

The bill was a priority of the Senate and passed that chamber by a vote of 28-6 on February 18. As of this writing, it was referred to the House Licensing, Occupations, & Administrative Regulations Committee.

The bill and the urgency in pressing its passage is interesting in light of Kentucky courts' rather confusing statements as to whether they ever fully deferred to administrative interpretations in the first place. See *Comm'r of Dep't of Workplace Standards, Education and Labor Cabinet v. Kalkreuth Roofing & Sheet Metal, Inc.*, 2024 Ky. App. LEXIS 92, 2024 WL 4469215 (Ky. App. Oct. 11, 2024) (noting, without citation, that "Kentucky has generally adhered to the doctrine of 'Chevron deference'...", but then stating that *Loper Bright* "has no real impact" in Kentucky because, among other reasons, "the Kentucky Supreme Court has also recognized that the courts have the ultimate responsibility in matters of statutory construction, and a reviewing court is not bound by an administrative body's interpretation of a statute" and "[o]n issues of law, courts are authorized to review on a *de novo* basis."); see also *Henry v. Parrish*, 211 S.W.2d 418, 422 (Ky. 1948) ("The scope of [an administrative agency's] authority is necessarily limited. If there is any fair or reasonable doubt concerning the existence of a particular power here sought to be invoked, it should be resolved against the [agency]."); *United Sign, Ltd. v. Commonwealth*, 44 S.W.3d 794, 798 (Ky. App. 2000) ("Any doubts concerning the existence or extent of an administrative agency's power should be resolved against the agency."); *Laurel Mt. Res., LLC v. Commonwealth*, 360 S.W.3d 791, 800 (Ky. App. 2012).

D. [Senate Bill 23](#) (West and numerous co-sponsors)

Administrative Regulation Review Process. This bill was introduced to close a perceived loophole in [KRS Chapter 13A](#)'s regulation review process. Under the [Chapter 13A](#) regulation review process, agencies promulgating regulations must submit them for review by the Administrative Regulation Review Sub-committee (ARRS) as well as a legislative committee of jurisdiction. These committees in turn have the opportunity to find regulations deficient. However, agencies have the option to "defer" consideration of the regulations in certain circumstances. Recently, there was a perception that repeated deferrals, often occurring during the review hearing, were delaying final action by the committees. This bill would establish a deadline for agencies to request deferral and grant the ARRS and jurisdictional committees a more active role in the process.

This was a priority bill which has already passed both the Senate (38-0) and House (92-1) and is awaiting the Governor's signature or veto.

III. AIR QUALITY

A. [House Bill 22/Senate Bill 62](#) (Multiple co-sponsors)

Criminal Atmospheric Pollution. This bill would establish a new crime of "criminal atmospheric pollution" for the release of certain substances in the atmosphere. The focus of the bill appears to be "geoengineering" of weather or the environment via

atmospheric emissions. The broad language of some of the bill's defined terms appears to require further scrutiny as to whether other authorized activities will be unintentionally included within its provisions. As of this writing, neither the House nor Senate version had received a committee hearing.

B. [House Bill 137](#) (Gooch, Johnson, Williams)

Air Quality Monitoring Data. This bill would prohibit the admission into evidence in proceedings before the Energy and Environment Cabinet or Louisville Metro Air Pollution Control District of air quality data that is not collected using a USEPA-approved test method. An amendment was added to expressly allow the admission of data "accepted by USEPA for enforcement purposes." There is a question of whether the bill, even as amended, runs afoul of the EPA's interpretation of the credible evidence rule codified in [§§113\(a\) and \(e\)](#) of the Clean Air Act. The bill has passed the House and, as of this writing, is awaiting action in the Senate.

C. [House Bill 346](#) (Lewis)

Air Emission Fees. Kentucky's air quality regulatory program is funded through assessment of fees on emissions. The fair allocation of emission fees across regulated sources of emissions has been a difficult topic to address since the inception of the program. Recently, concern has been raised, primarily by the distillery industry, concerning the assessment of fees on emergency stationary internal combustion engines. Essentially, distilleries that would otherwise be assessed zero emission fees are paying emissions fees based on potential emissions from these emergency engines. This has resulted in at least one unsuccessful attempt to amend Kentucky's fee regulations, and in litigation. *See, Heaven Hill Distilleries, Inc. v. EEC*, File No. DAQ-24-1-0388.

The bill was reported favorably out of the House Natural Resources committee on February 20, with a committee substitute which would allow facilities that would otherwise not have had to pay the fees to seek a refund for any 2023 fee payments made. The bill is now awaiting action on the House floor.

IV. WATER QUALITY

[Senate Bill 89](#) (Madon and numerous co-sponsors)

Definition of Waters of the Commonwealth and Long-Term Treatment Bonding Requirements. This bill would amend the existing definition of "waters of the Commonwealth" to coincide with the federal Clean Water Act's definition of "waters of the United States." There is disagreement among the supporters and opponents of the bill as to the impact of these changes. The bill would also revise two provisions of Kentucky's surface mining laws concerning "long-term treatment" of mining discharges. This long-term treatment bonding provision addresses a recent proposed rulemaking by the Cabinet that is currently being repeatedly deferred in the ARRS process. The bill passed the Senate (30-5) and is awaiting action in the House.

V. WASTE MANAGEMENT

A. [House Bill 102](#) (Kulkarni, Marzian, Roarx)

PFAS. This bill would establish a “PFAS Working Group” and would also establish state-level requirements for reporting the manufacture of products for sale or distribution in the Commonwealth, as well as reporting of PFAS releases in the Commonwealth. The bill has not received a committee hearing.

B. [House Bill 295](#) (Marzian, Chester-Burton)

Plastics. This bill would prohibit the intentional release of more than 25 plastic balloons and ban the use of plastic single-use bags, plastic straws, and Styrofoam food containers. The bill has not received a committee hearing.

C. [House Bills 371](#), [697](#), and [698](#) (Raymer)

Residual Waste Landfills. All three of these bills would impose new requirements on “residual landfills” (see [401 KAR 48:005 Section 1\(75\)](#) for definition). [HB 371](#) would impose certain requirements currently applicable only to municipal solid waste facilities on residual landfills. [HB 697](#) would prohibit certain wastes generated out of state from being disposed of in Kentucky residual landfills. [HB 698](#) would impose the environmental remediation fee on residual landfills and adopt a new definition of residual waste facility. Two of the bills, [HB 697](#) and [HB 698](#), have not received a committee hearing, vote, or other activity. As of this writing, [HB 371](#) was given two readings, and two floor amendments containing clarifying language were filed.

VI. ENERGY

A. [Senate Bill 8](#) (Stivers)

Public Service Commission Reorganization. This bill would substantially reform the make-up of the Kentucky Public Service Commission (PSC). It would expand the PSC from three members to five, with two members appointed by the Kentucky State Auditor. The bill would impose more specific requirements concerning eligibility for PSC commissioners and would require that no more than three commissioners be of the same political party. It would also allow the PSC to set the salaries of its executive director and professional staff, without regard to existing state salary scale limitations. The bill has received two readings and is currently before the Natural Resources and Energy committee in the Senate.

B. [Senate Bill 108](#) (West)

Solar Energy Land Development Limitation. This bill would prohibit utilities from constructing solar energy developments if the result of the construction would be that such developments cover more than 1 percent of the total land area of a county. It would also prohibit the construction of solar facilities on land acquired by use of eminent domain and would require that any future petitions for eminent domain

acquisition certify that the land acquired will not be used in violation of the restriction in the statute. The bill has not received any committee hearing, vote or other activity.

C. [Senate Bill 179](#) (Carroll)

Nuclear Development Funding. In 2024, the General Assembly created a Nuclear Energy Development Authority which was given the task of increasing Kentucky’s role in the nuclear industry. [SB 179](#) expands the role of the Authority to include the ability to make direct grants to certain participants in the nuclear ecosystem, and funds up to \$10 million in grants in the first year. The bill has unanimously passed the Senate and is awaiting action in the House.

D. [House Bill 519](#) (Fugate and multiple co-sponsors)

Retirement of Fossil Fuel-Fired Power Plants. This bill would amend [KRS 278.264](#) to prohibit a utility from recovering from customers the cost of decommissioning any fossil fuel-fired generating unit in which the utility has any undepreciated investment. The bill has not received a committee hearing or other activity.

VII. GENERAL

A. [House Bill 470](#) (Stalker, Banta)

Right to a Healthy Environment. Would propose to amend the [Kentucky Constitution §1](#) to include a “right to a healthy environment.” Such an amendment would have to go before the voters of Kentucky for ratification. The bill has received no activity.

B. [Senate Bill 79](#) (McDaniel)

Personnel Policies. Following the pandemic, remote work has become an accepted part of many workplaces, including state government. Taking a lead from the federal “Department of Government Efficiency,” this bill would restrict state employees – including nearly all off-based environmental regulators – from engaging in “telework” more than two days per month. The bill contains limited exceptions for inspectors and others whose general job duties require them to be out of the office. There is a question about whether the definition of “telework” will actually reduce the responsiveness of regulators, who may not be able to return phone calls or emails when outside of the office under the terms of the bill. The bill passed the Senate 25-10 and is awaiting activity in the House.

KENTUCKY DEPARTMENT FOR ENVIRONMENTAL PROTECTION PRESENTATION ON PER- AND POLYFLUOROALKYL SUBSTANCES

Larry D. Hughes, P.G.

I. FOCUS

- A. Origins, History, and Regulatory Genesis of Per- and Polyfluoroalkyl Substances (PFAS)
- B. What PFAS Are
- C. PFAS Impact and Concerns on Human Health (Risk) & the Environment (Risk Conditions)
- D. Sources and Presence of PFAS in the Environment
- E. Kentucky PFAS State of Affairs and KDEP's Efforts to Date
- F. Present and Future Resource, Statutory, and Regulatory Working Considerations, Issues, and Challenges

II. SUMMARY

Per- and polyfluoroalkyl substances (PFAS) are a group of more than 5,000 man-made fluorinated chemicals that, due to their unique chemical properties, have been widely used in consumer products and industrial applications. Over the past 70 years, their extensive use in commercial, consumer, and industrial products, combined with growing concerns about potential health effects, has created challenges for federal and state agencies in addressing these emerging contaminants. PFAS compounds are highly persistent in the environment and do not break down easily, resulting in their presence at low levels in soil, streams, groundwater, and drinking water across the United States.

In Kentucky, the Department for Environmental Protection has developed and is implementing a comprehensive, evolving, and ongoing strategy to address the unique challenges posed by PFAS. The Commonwealth's PFAS strategy and action plan provide a flexible and systematic approach to assessing the potential impacts on human health and the environment within the Commonwealth. To effectively address this issue, it is crucial to first gain a thorough and specific understanding of the complexity and scale of PFAS contamination in Kentucky, ensuring that responses are measured and evidence-based.

This presentation is aimed at giving one a 50,000-foot view survey of the history, development, and challenges as the agency has come to understand, and thereby a more concrete and comprehensive understanding of this complex, substantial and extensive issue.

III. PRESENTATION OUTLINE

- A. “What are Per- and Polyfluoroalkyl Substances (PFAS)?”
 - 1. Section 1 PFAS history, production, & regulatory emergence.
 - 2. Section 2 PFAS comparison to previous contaminants & programs.
 - 3. Section 3 PFAS chemistry & nomenclature.
- B. PFAS Protection of Human Health & the Environment
 - 1. Section 1 PFAS risk to the body.
 - 2. Section 2 PFAS risk occurrence & impact to the environment – groundwater.
- C. Kentucky PFAS State of Affairs – What Has KDEP Done?
 - 1. Section 1 KDEP’s PFAS strategy.
 - 2. Section 2 KDEP’s PFAS groundwater studies.
 - 3. Section 3 Kentucky active PFAS sites.
 - 4. Section 4 KDEP’s PFAS ranking project.
- D. PFAS KDEP Statutory & Regulatory Considerations
 - 1. Section 1 Current applicable PFAS statutes & regulations.
 - 2. Section 2 PFAS specific regulatory & technical issues.
 - 3. Section 3 Future PFAS statutes & regulations.

Kentucky Department for Environmental Protection
Per- & Polyfluoroalkyl Substances

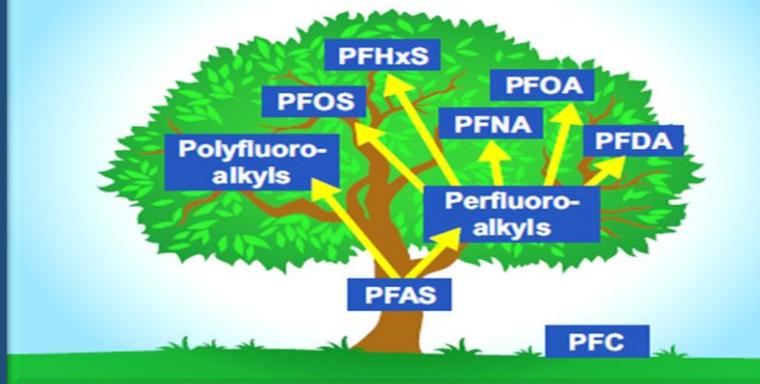


Larry D. Hughes, P.G. Environmental Scientist Consultant II
Office of the Commissioner
Department for Environmental Protection

April 14, 2025

I. "What are
Per- and Polyfluoroalkyl Substances
(a.k.a. PFAS)?"

Family Tree of Perfluoroalkyl and
Polyfluoroalkyl Substances



Section 1 PFAS History, Production, & Regulatory Emergence



Brief Timeline PFAS Accidental Discovery

- PFAS have existed for over **70 years**.
- PFAS is the group of and group name of numerous other PFAS chemicals.
- **1938: Polytetrafluoroethylene (PTFE)** was discovered by **accident** by Roy J. Plunkett.
 - ❖ Assigned by **DuPont** to develop a **new alternative to existing fluorocarbon-based refrigerants**.
 - ❖ Discovered that a frozen, compressed sample of the fluorocarbon tetrafluoroethylene had spontaneously *formed a white, waxy solid that would be dubbed PTFE* and later trademarked by **DuPont** as **Teflon®**.
 - ❖ The next question was, *“What are we going to do with this stuff?”*

Brief Timeline PTFE First Use

- **1942 – 1948:** Dupont, Teflon[®], the *Manhattan Project* Race for the Atomic Bomb:
 - ❖ The chemical was used in material for **gaskets and valves**,
 - ❖ To hold toxic **uranium hexafluoride** in pipes at the project's uranium plant in **Oak Ridge, Tennessee**.
- ⚠ • **1944:** **Three (3)** scientists **died** in **DuPont's** organic chemicals section after being exposed to PFAS-containing chemicals.
- **1950s – Present Day:** PFAS widely used in manufacturing & consumer products.

Brief Timeline Toxicity & Environmental Discovery

- **2000:** PFAS was unregulated until the **early 2000s** when:
 - The **toxicity** of the substances was discovered by **U.S. EPA**,
 - It was dubbed "**forever chemicals**" because of how slowly they break down over time in environmental media,
 - **Manufacturers of PFAS knowingly kept** this information **from** the **U.S. EPA** until late **1990s**.
- **2006:** U.S. EPA **phased out legacy PFAS**, Perfluorooctanoic acid (PFOA) & PFOS in the U.S. However, both are **still used worldwide**.
- **2016:** The U.S. EPA classified PFAS as an **emerging contaminant** due to its **toxicological** effects & **prevalence** in the environment.

Brief Timeline Regulatory

- Major U.S. EPA Regulatory Milestones to Date:
 - **2017:** Initial Health Advisory (HA) for two (2) PFAS: PFOA & PFOS (70 ppt)
 - **2022:** EPA updated in an interim HA for PFOA & PFOS (0.004 & 0.02 ppt).
 - **2023:** Maximum Contaminant Level (MCL) for:
 - ❖ PFOA & PFOS, PFHxS, HFPO-DA, PFNA, & PFBS (4.0 & 10), &
 - ❖ Health Index (HI) <1.0 for a mixture of four (4) other PFAS (PFHxS, HFPO-DA, PFNA, & PFBS).
 - **2024:** Listing for PFOA & PFOS as CERCLA Hazardous Substance ("Superfund).
 - **2024:** Proposal to List Nine (9) Per- and Polyfluoroalkyl Compounds as Resource Conservation and Recovery Act (RCRA) Hazardous Constituents:

Perfluorooctanoic acid	Perfluorohexanesulfonic acid
Perfluorooctanesulfonic acid	Perfluorodecanoic acid
Perfluorobutanesulfonic acid	Perfluorohexanoic acid
Hexafluoropropylene oxide-dimer acid	Perfluorobutanoic acid
Perfluorononanoic acid	



Other Significant PFAS Regulatory

- Regional Screening Levels (RSLs).
 - **2022:** Listed eleven (11) PFAS.
 - **2024:** Expanded to twenty-six (26) PFAS.
- Protection of Groundwater Soil Screening Levels (SSLs).
 - ***Three (3) to five (5) magnitudes** lower than soil RSLs for Residential Land Use.
 - ****Groundwater** will always be the driver for PFAS!
 - *****Additivity** will always be an issue for PFAS!
- Near future:
 - PFAS already a RCRA (Hazardous Waste) "Listed Hazardous Waste" under RCRA's general narrative authority for emerging contaminants, &
 - PFAS to be designed as Hazardous Air Pollutant (HAP).

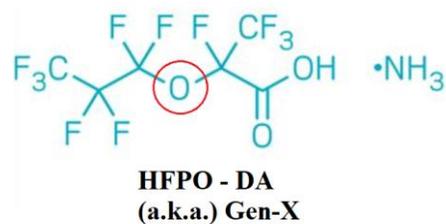
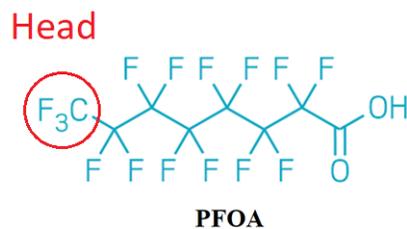


PFAS Occurrence

- EPA **12,000+** PFAS chemicals **identified** as of **2024**.
- Presently, the **most complete** formal list of PFAS lists **4,967+** PFAS.
- Present *U.S. EPA Method 533* used for water/groundwater analysis, analyzes for **33** PFAS.
- Early focus **2017** & the MCL focus is on **six (6)** PFAS: Toxicology have been most studied to date:
 - Perfluorooctanoic acid (**PFOA**),
 - Perfluorooctane sulfonate (**PFOS**),
 - Gen-X (**HFPO-DA**),
 - Perfluorobutane sulfonate (**PFBS**),
 - Perfluorohexanesulfonic acid (**PFHxS**), &
 - Perfluorononanoic acid (**PFNA**).
- PFOA used to produce **Teflon® (PTFE)**, replaced by **Gen-X (HFPO-DA)**.
- PFOS used to produce **Scotchgard® (PFOS)**, replaced by **PFBS**.

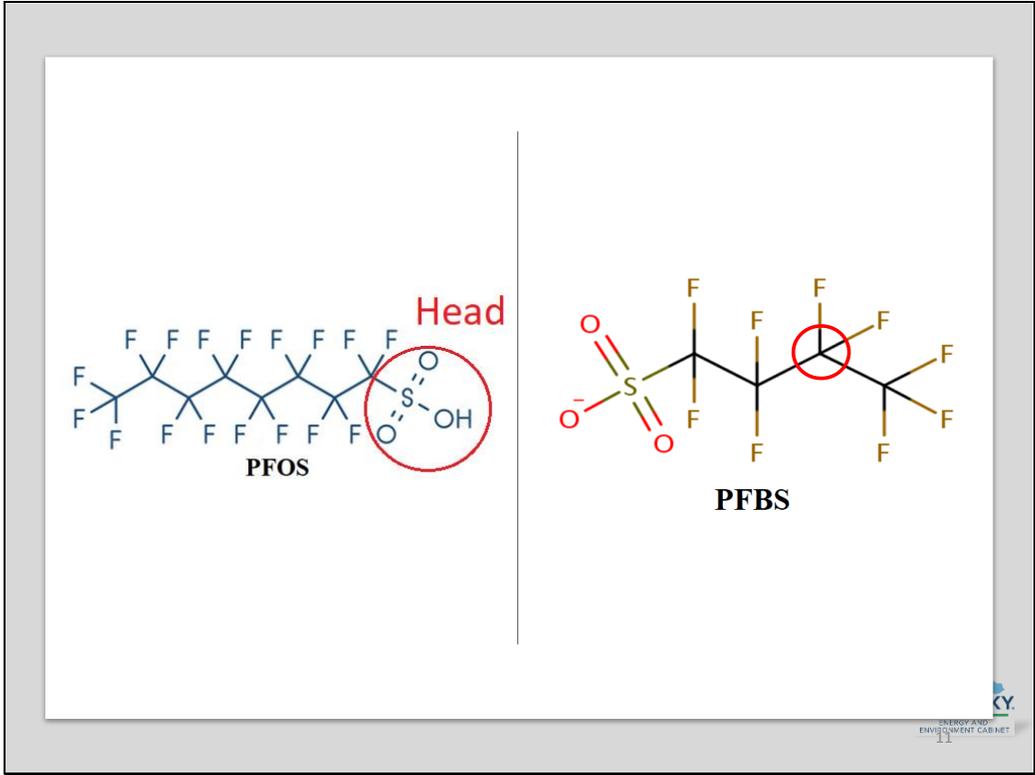
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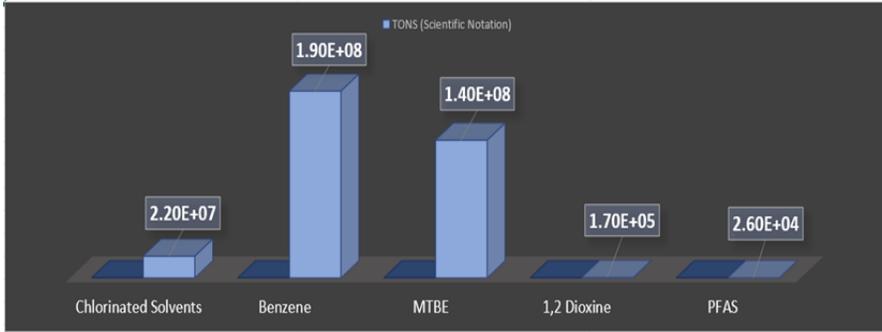
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The 12 PFAS Originator Producers	Fluoropolymer Market Share	Net Sales 2022 (All Chemicals, USD)
3M	5.00%	\$34,200,000,000
AGC Inc.	4.00%	\$15,400,000,000
Archroma	not publicly traded	not publicly traded
Arkema	7.00%	\$12,300,000,000
BASF	NA	\$93,100,000,000
Bayer	NA	\$54,100,000,000
Chemours	12.00%	\$6,700,000,000
Daikin	11.00%	\$23,500,000,000
Dongyue	13.00%	\$2,900,000,000
Honeywell	NA	\$144,000,000,000
Merck	NA	\$23,700,000,000
Solvay	8.00%	\$14,300,000,000

Total National PFAS Production Vs. Other Hazardous Chemical Categories

TOTAL PRODUCTION TONNES U.S.		
CHEMICAL	TONS (Narrative)	TONS (Scientific Notation)
Chlorinated Solvents	22 Million	2.20E+07
Benzene	190 Million	1.90E+08
MTBE	14 Million	1.40E+08
1,2 Dioxine	170 Thousand	1.70E+05
PFAS	26 Thousand	2.60E+04



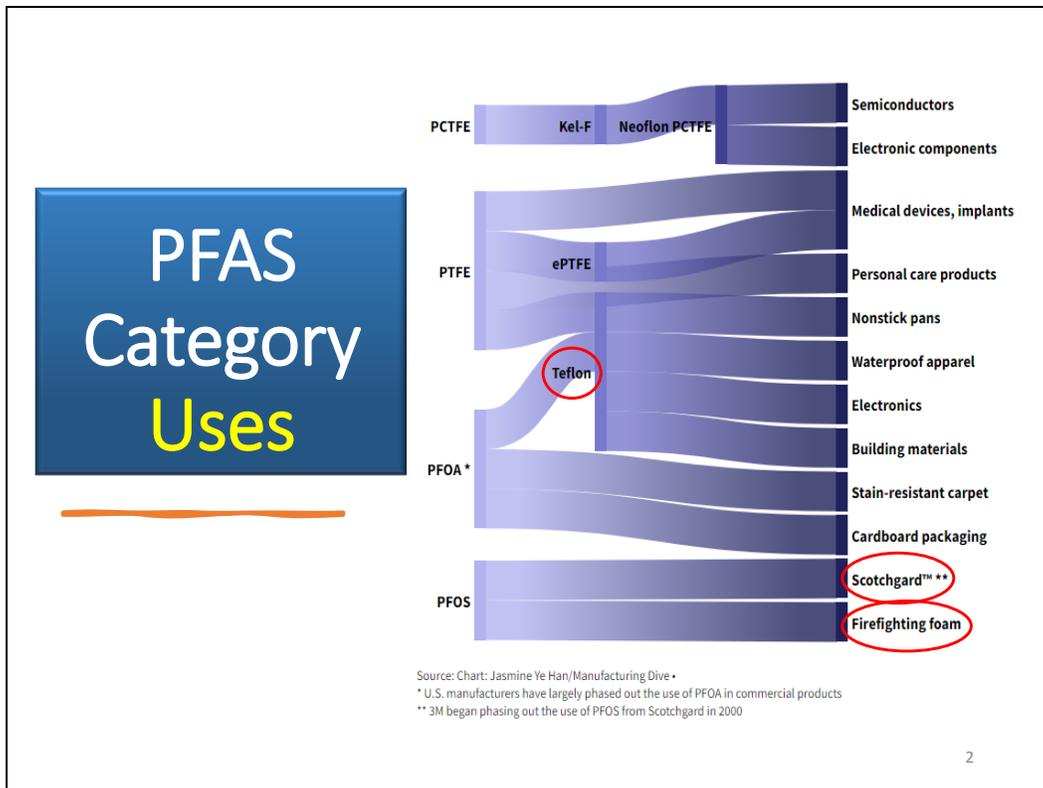
Worldwide PFAS Benefit Revenue Vs. Societal Harm Cost



Whale vs dolphin. The profits of PFAS are not even in the same ballpark as the societal cost.

Note: Adapted After Chemsec.org





2

PFAS Occurrence

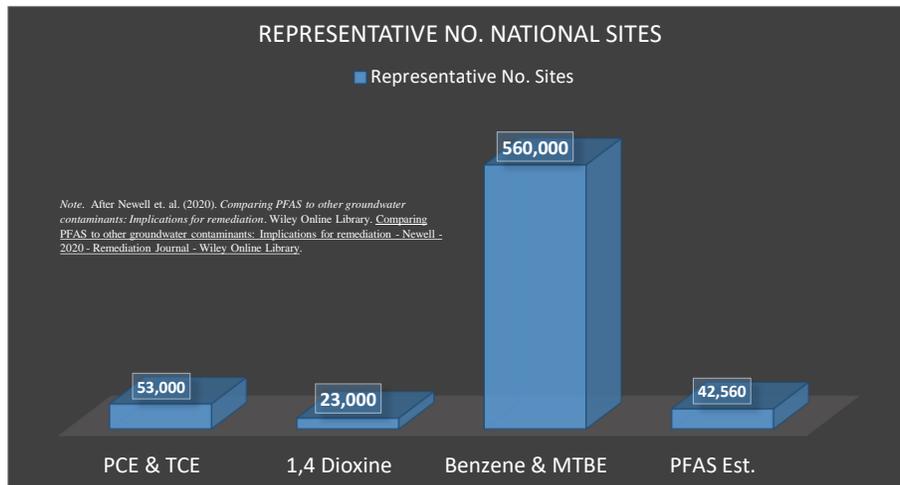
- Found in **ALL environmental media** (air, soil, sediments, surface water, and groundwater),
- Very **persistent & ubiquitous** in the environment,
- **Fate & transport** in the environment is practically **limitless**,
- ***Transfers** with little overall loss of mass between environmental media,
- ****** Found to **uptake & bioaccumulate** significantly in the food chain, and
- Found in **human & animal** blood, muscle tissue, and dominantly in the liver tissue.

3

Section 2 PFAS Comparison Vs. Previous Contaminants & Programs



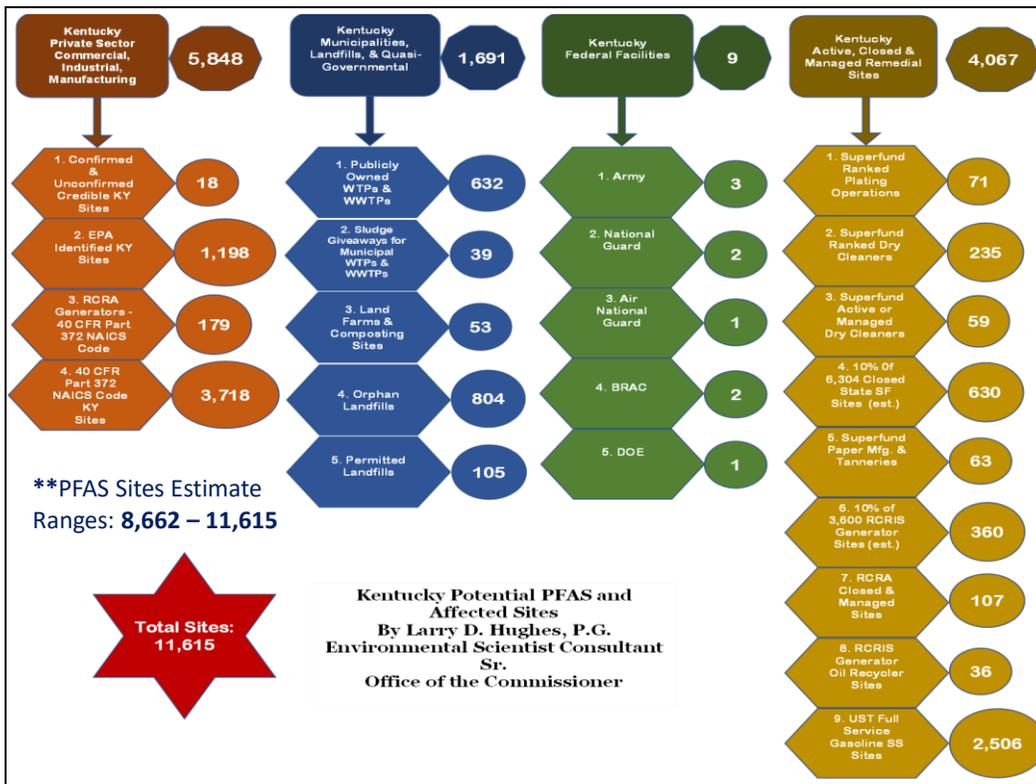
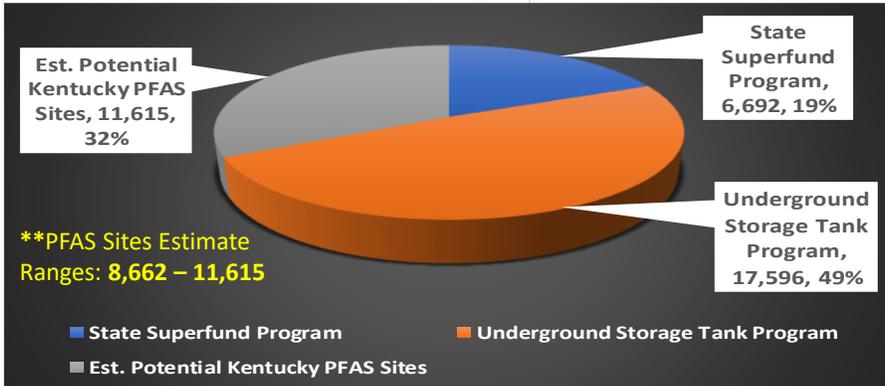
Number of Groundwater Sites Contaminant Type Nationally



Historic Kentucky Programs Scope & Magnitude PFAS

Number of Program Sites - Kentucky

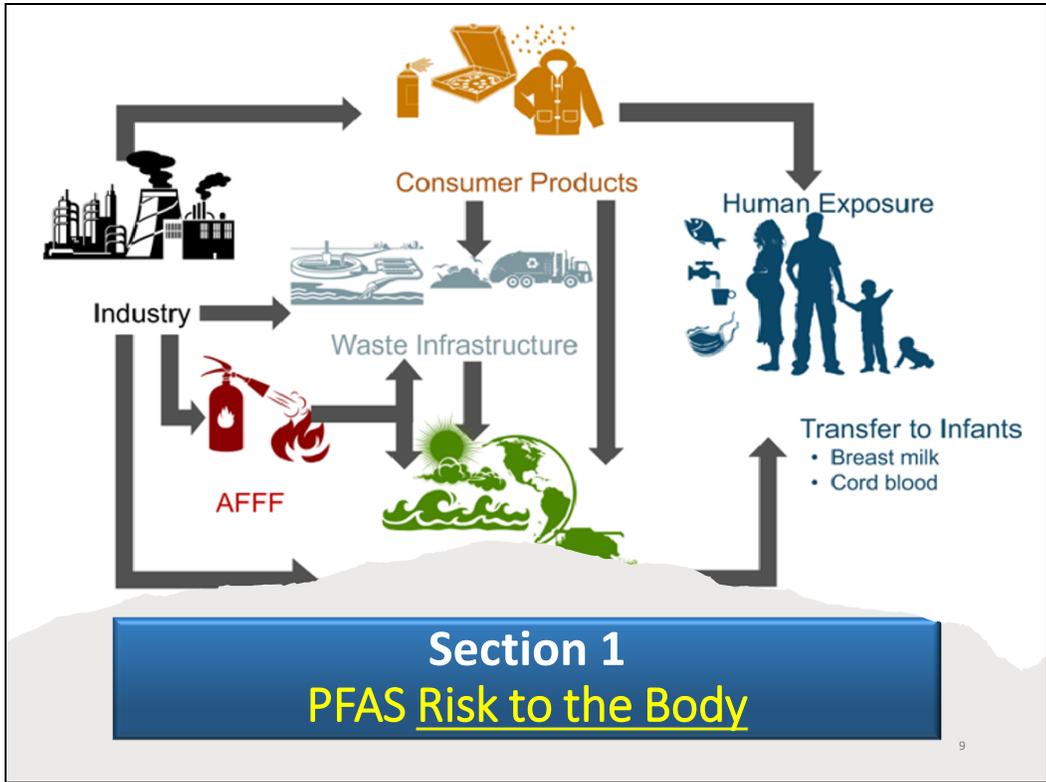
Remedial Program	Number of Remedial Sites
State Superfund Program	6,692
Underground Storage Tank Program	17,596
Est. Potential Kentucky PFAS Sites	11,615



II. PFAS
Protection of Human Health & the Environment

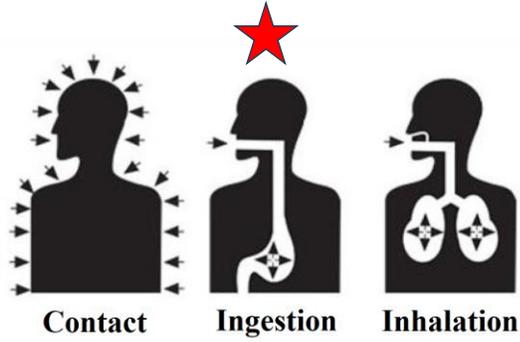
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PFAS Risk to the Body

- Of the **three (3)** risk routes the greatest human health risk exposure to PFAS is through **ingestion**.
- Why? Presently the *greatest & broadest* risk related to PFAS in the environment is **long-term risk**.
- The **ingestion** risk scenario requires drinking impacted waters above a certain level over time...
 - At **2 liters per day**, (*Rate*)
 - **350 days per year**, (*Frequency*)
 - For **25 years** (*Duration*).
- PFAS contamination in **groundwater is the greatest risk threat** due to its...
 - **Persistence** contaminating resource aquifers, &
 - **Longevity** creating the most consistent, viable, & realized risk exposure duration scenario.

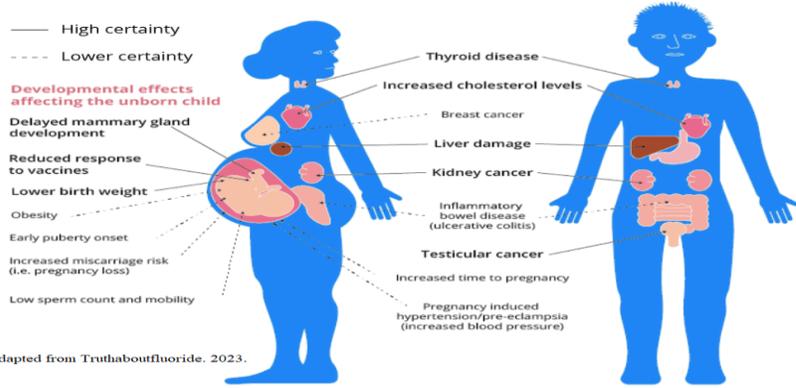


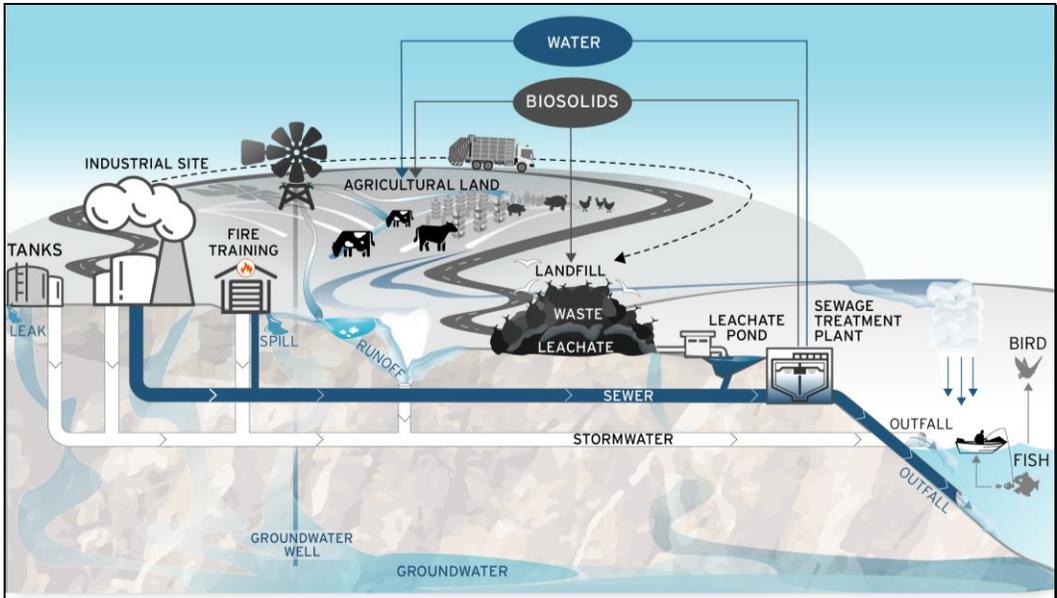
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PFAS Impacts Human Health

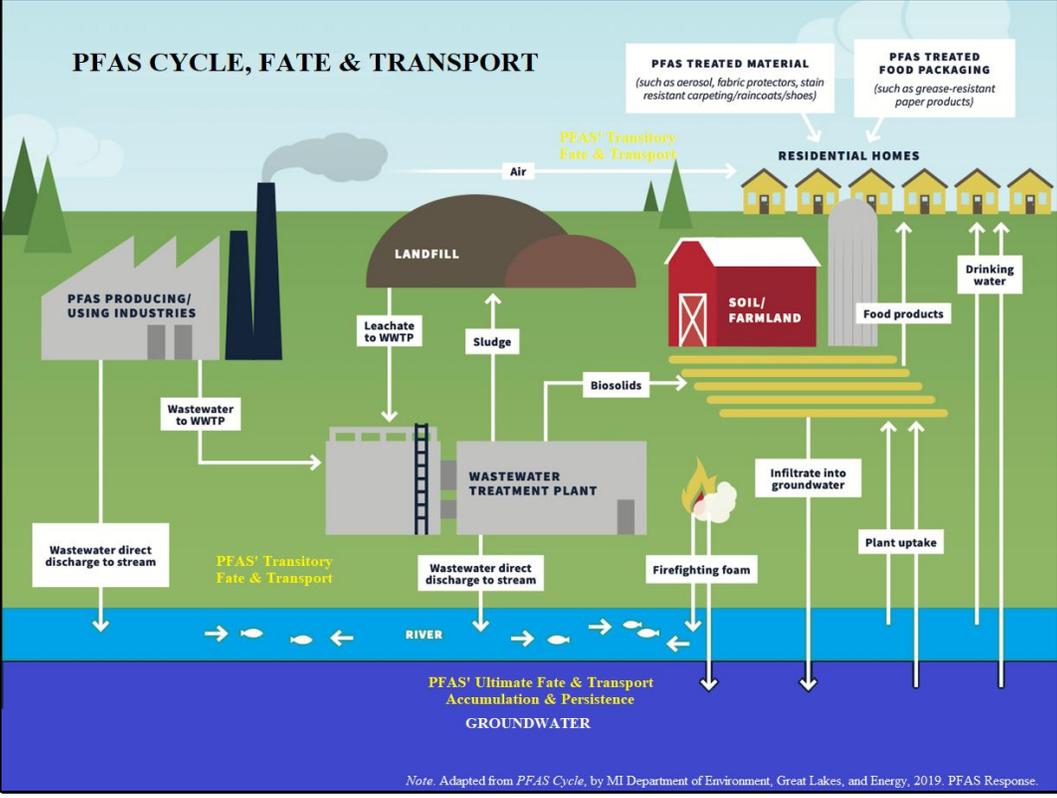
PFAS EFFECTS ON HUMAN HEALTH

MORE THAN 9,000 TYPES OF PFAS EXIST AND NOT ALL HAVE BEEN STUDIED IN DETAIL. HOWEVER, THE ONES THAT HAVE BEEN STUDIED ARE LINKED TO A LONG LIST OF HEALTH EFFECTS...



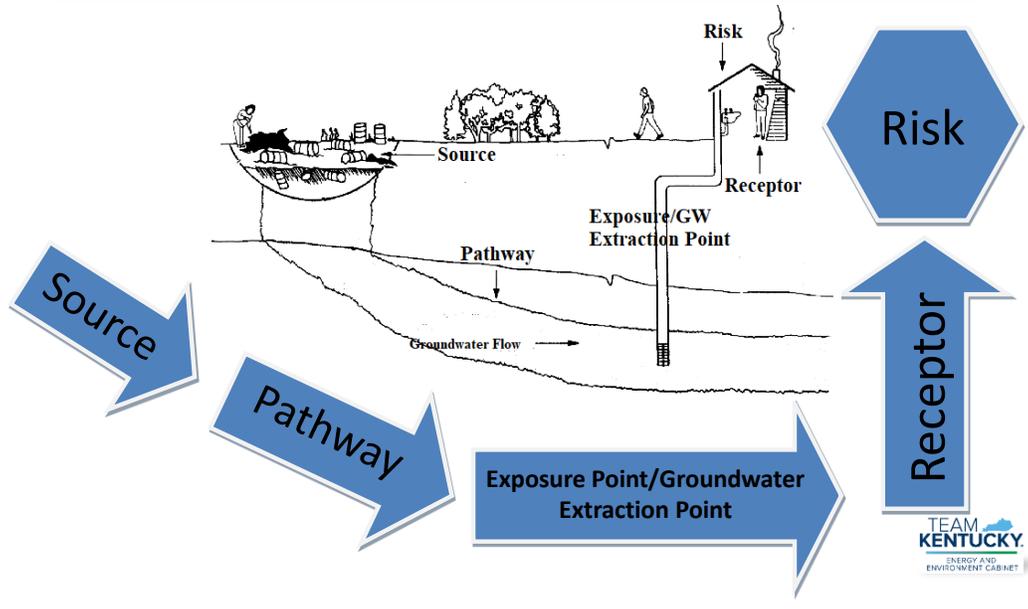


Section 2
PFAS Risk Occurrence & Impact to Environment





The *Basic Paradigm* of the Conceptual Site Model



PFAS Groundwater

- In terms of **(1) human health risk**, **(2) resource damage**, **(3) short- & long-term impact & clean-up**: PFAS contamination in **groundwater** is the **most threatening, damaging, & challenging**.
- **All transport routes of PFAS through other environmental media (e.g. air & soil) end in impact to the groundwater.**
- PFAS are **non-degrading, non-binding, & transforming** in groundwater causing:
 - Extreme **duration (Centuries++)** in groundwater means **widespread & permanent resource asset damages to the Commonwealth's groundwater.**
 - Greatest **risk, ecological, & human health threat in groundwater** due to its **longevity & broad ubiquity** in **resource aquifers**, &
 - Its longevity creates the most **viable & realized** risk exposure duration scenario.
- Thus, PFAS is of a **major concern** for **groundwater** contamination due to overall: **(1) human health risk & (2) permanent natural resource damage.**

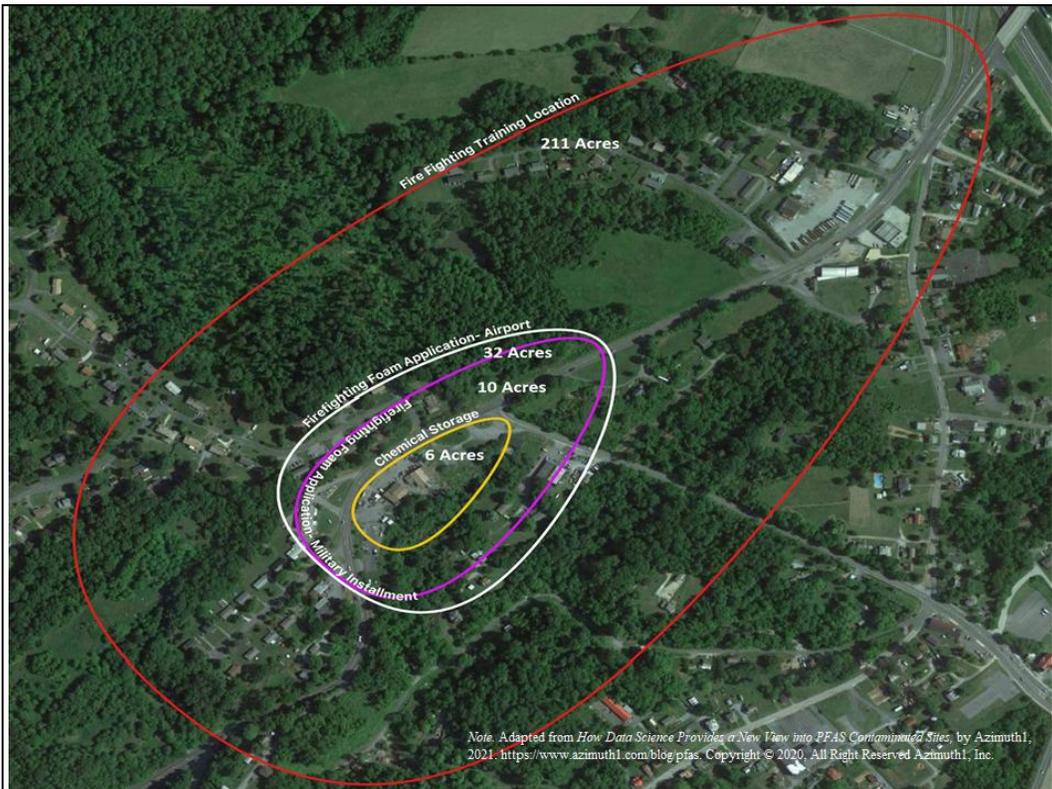
PFAS

Most At-Risk Group in Groundwater

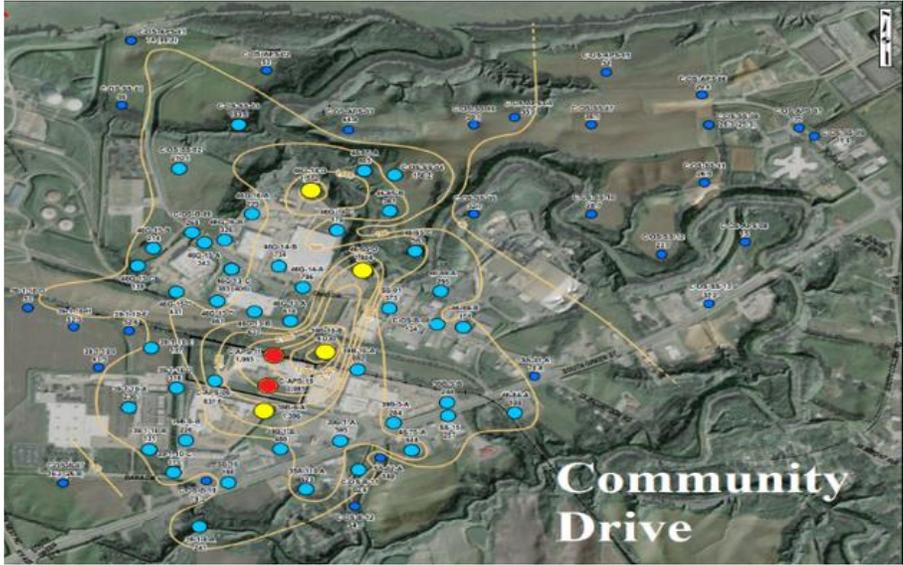
- The primary involuntary risk exposure scenario for ingestion is by **drinking water from municipal, private points of delivery, & agricultural water wells** sourced in **groundwater**.
- Groundwater impacted by PFAS facilitate the necessary **permanence & duration** for a **realized risk** through *ingestion* of drinking water:
 - It is there to drink for **25+ years**.
 - **Multiple** risk generations **four (4) to forty (40)**.
- The most **identifiable & disadvantaged** risk exposure group due to ingestion of PFAS are present & future private **domestic use wells (DUWs) & agricultural use wells (Ag Wells)**.

Do PFAS Groundwater Plumes Go On & On Without Limits?

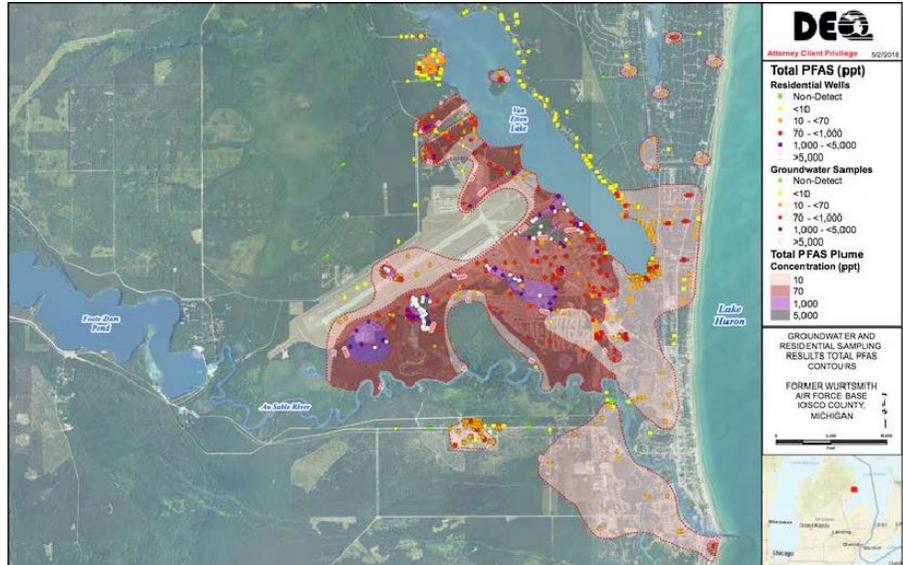
- No, but...
- **Organic chemical (chlorinated solvents & petroleum)** plume lengths are *limited* due to **biodegradation**.
- **Metals & radionuclides** plumes are *limited* by **adsorption** on humic soil & aquifer materials.
- These two (2) mechanisms are missing for **PFAS** plums *yielding much bigger, but not limitless plumes*.



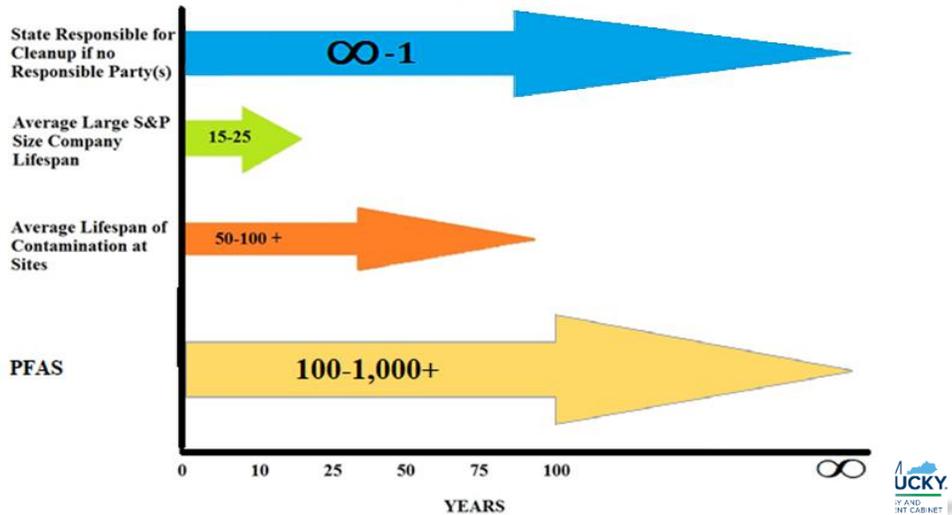
PFAS Facilities in Henderson, Kentucky
 PFAS Plume
 ≈ 1.3 Mi. x 0.5 Mi. from a Source @ 365,000,000+ ppt



Wurtsmith Air Force Base
 Iosco County, MI
 PFAS Plume
 ≈ 6 Mi. x 6 Mi. from a Source @ 5,000+ ppt



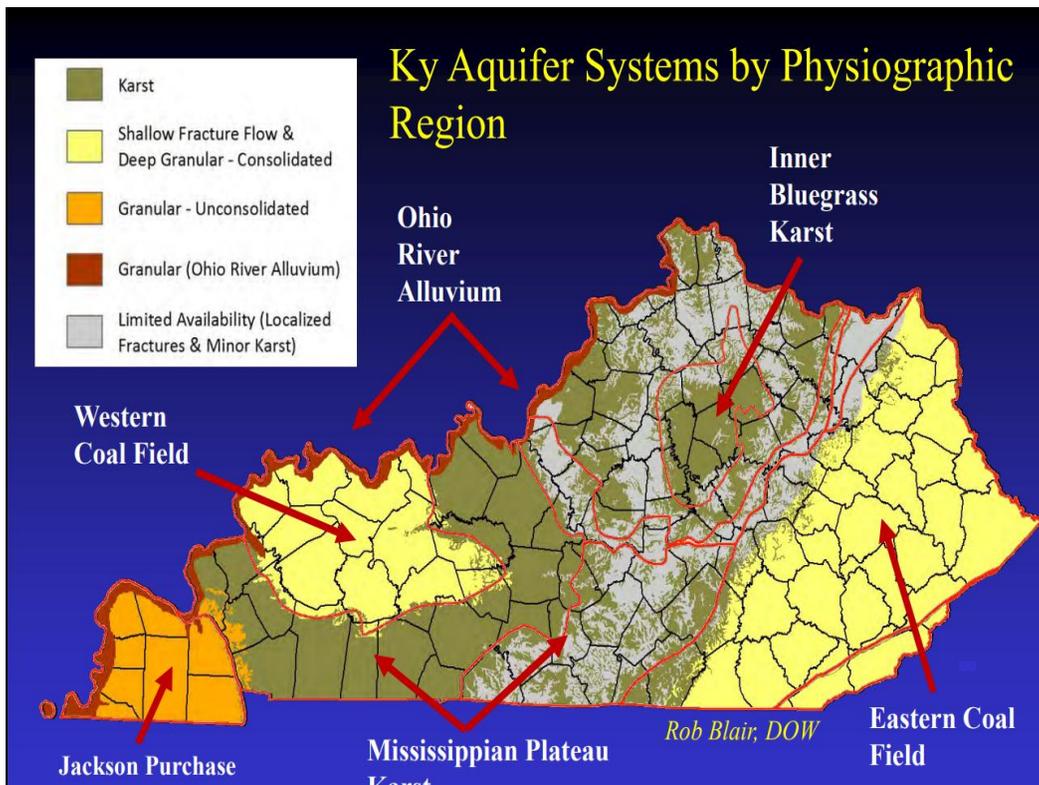
PFAS Persistence Whose Problem Is It?



PFAS Drivers in Order of Influence:

- **Risk Conditions:** The **geology & aquifer matrix** drives everything,
- **Risk Toxicology:** The general **chemistry** category of the constituents (**PFAS**) released, &
- **Risk Persistence:** The **when, how, & duration** of the **release** of PFAS (how long has a release been occurring & how old is the plume caused by the release).

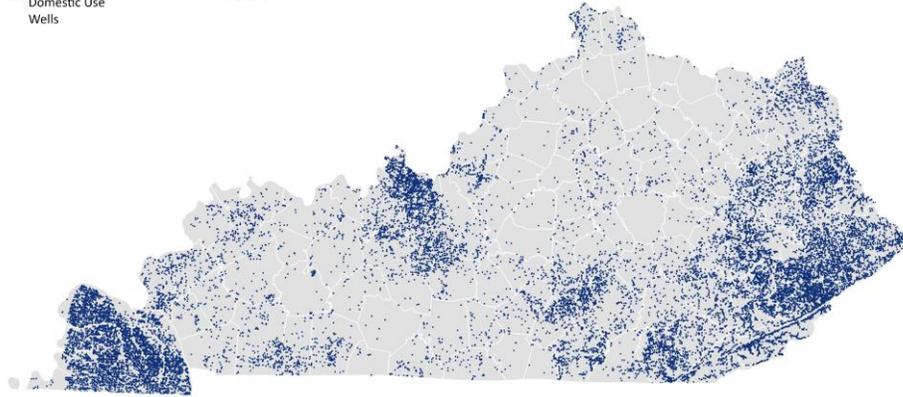
The Two (2) Basic Geologies in Kentucky



Domestic Use Wells

Legend
Kentucky
Statewide
Domestic Use
Wells

Count
31,017

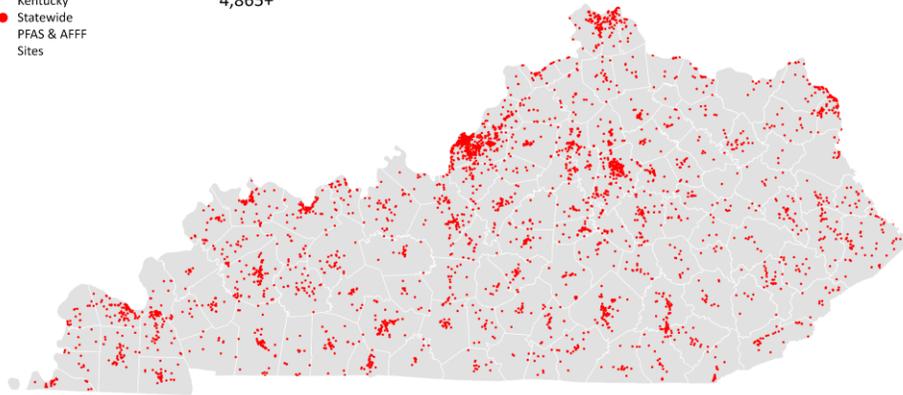


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Potential PFAS Sites

Legend
Potential
Kentucky
Statewide
PFAS & AFFF
Sites

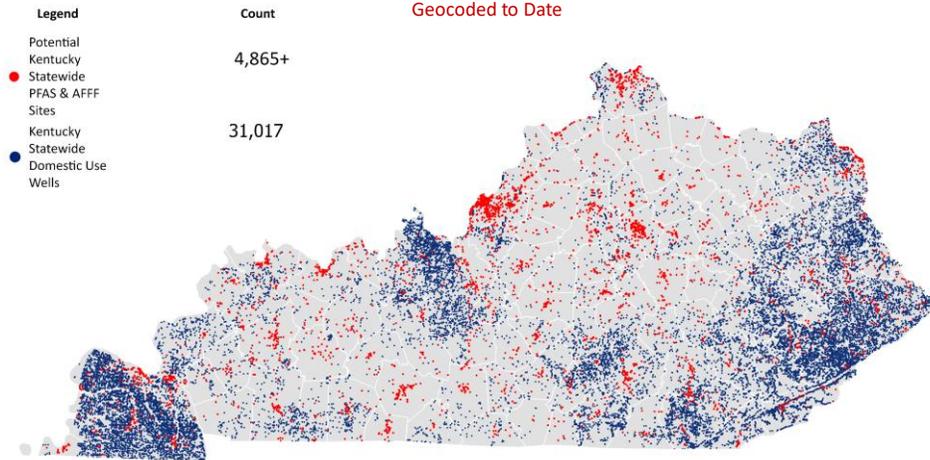
Count
4,865+



Kentucky Energy and Environment Cabinet
**LEAVE
KENTUCKY.**
ENERGY AND
ENVIRONMENT CABINET
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Potential PFAS Sites and Domestic Use Wells

Approximately a **Third to Half**
of Suspect PFAS Sites
Geocoded to Date

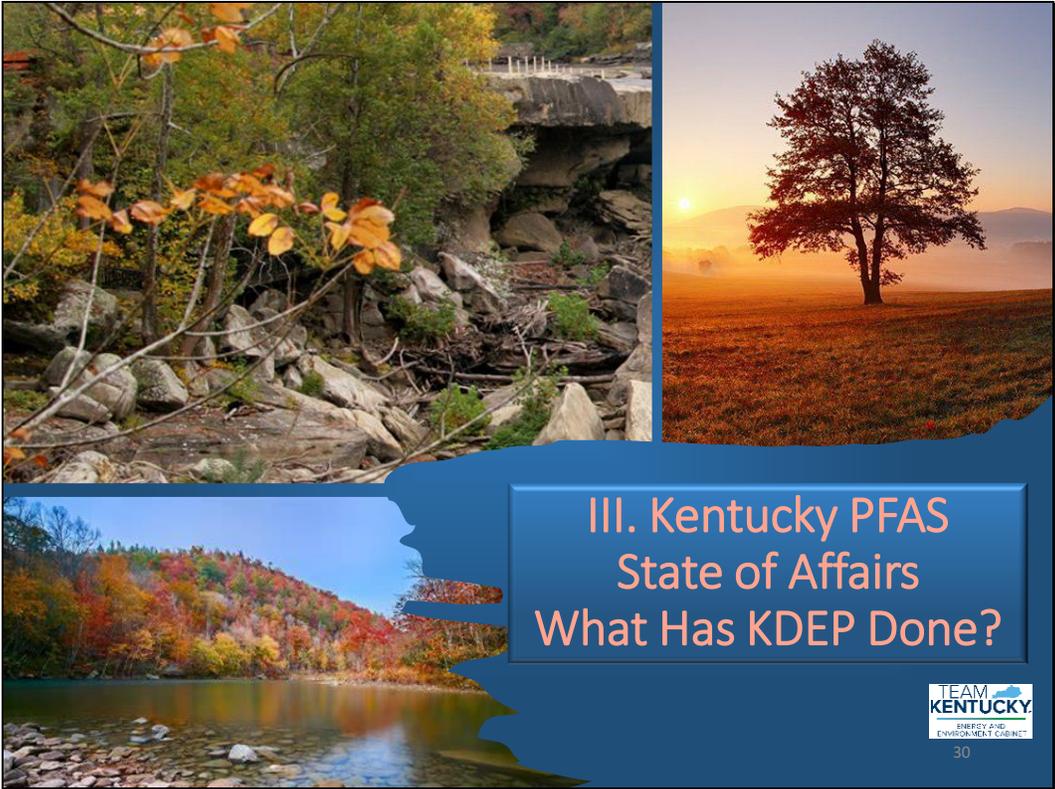


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Comparison of DUW Impacts

Contaminant Category	Program	Number of Sites To Date with Investigatory Data Complete	Number of DUWs Impacted To Date
Petroleum (LNAPL)	Underground Storage Tank	17,596	19
Chlorinated (DNAP), Metals, Radionuclide	Superfund	6,692	6
Per- & Polyfluoroalkyl Substances (PFAS)	Superfund PFAS (Characterized Sites TD)	3 (8,662 to 11,343)	16

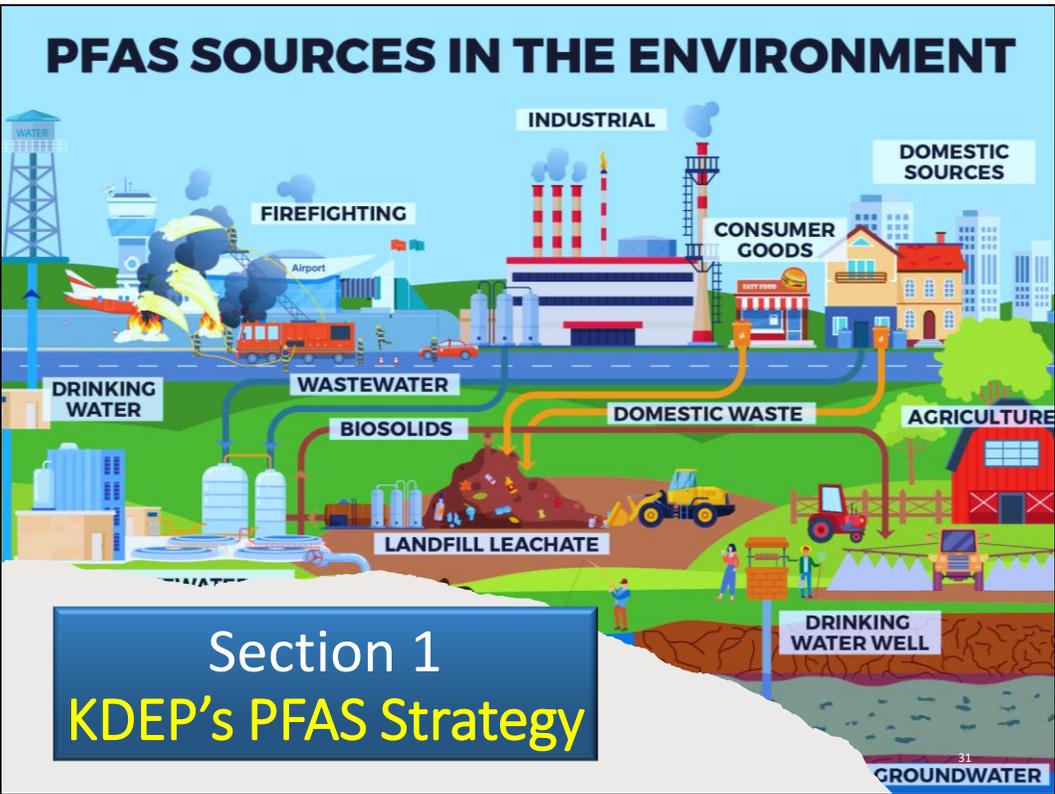
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III. Kentucky PFAS State of Affairs What Has KDEP Done?

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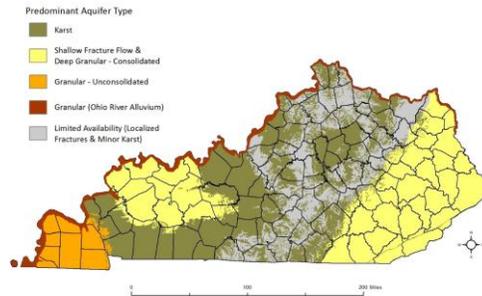
KDEP's PFAS Strategy - 1

- Due to the prevailing risk pathway, fate & transport, & characteristics of PFAS, the KDEP's strategy (2016-present), has been **two (2) fold**:
 - **(1)** Assess the most urgent *potential* risk exposures of PFAS using a **deterministic model**.
 - Analyzing for potential PFAS impacts working backwards from the highest "at-risk" exposure points to Kentucky citizens,
 - ❖ Public drinking water from surface water & groundwater sources;
 - ❖ Domestic Use Wells & related groundwater supplies;
 - ❖ Fish Tissue studies.

KDEP's PFAS Strategy - 2

- **(2)** Assess the over-all potential **magnitude, scope, & types** of sources of PFAS across the Commonwealth:
 - ❖ **Industrial** PFAS producing & handling sectors;
 - ❖ **Municipalities**;
 - ❖ Downstream **receivers & accumulators** of PFAS;
 - ❖ **Commercial** PFAS containing product sectors;
 - ❖ **Direct use & application** of AFFF; and
 - ❖ **Federal facilities**.

Section 2 KDEP's Environmental PFAS Studies



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KDEP's PFAS Strategy Studies

- To accomplish these **two (2)** crucial goals, the KDEP has initiated & continues a number of studies including:
 - Statewide PFAS **Drinking Water Study (2019)**
 - Statewide PFAS **Surface Water Study (2021)**
 - *Expanded* Statewide PFAS **Drinking Water Study (2023 – On-Going)**
 - **PFAS Fish Tissue Program (2022 – On-Going)**
 - **Dry Cleaner PFAS Study (2022-23, Processing Data & Information)**
 - **U.S. EPA Industrial Sector “Presumed Release PFAS” PFAS Study (2022-24, Processing Data & Information)**
 - Statewide PFAS Groundwater, Surface Water, and Potential Receptors Risk Mapping & Analysis **(2017 - On-Going)**
 - *****PFAS Site Risk Ranking & Risk Scoring (2024 – On-Going)**
 - **Historic Orphaned Landfill Leachate PFAS Study (2023-2024, Processing Data & Information)**
 - **PFAS Bio-Solids PFAS Assessment Study (Late 2025)**

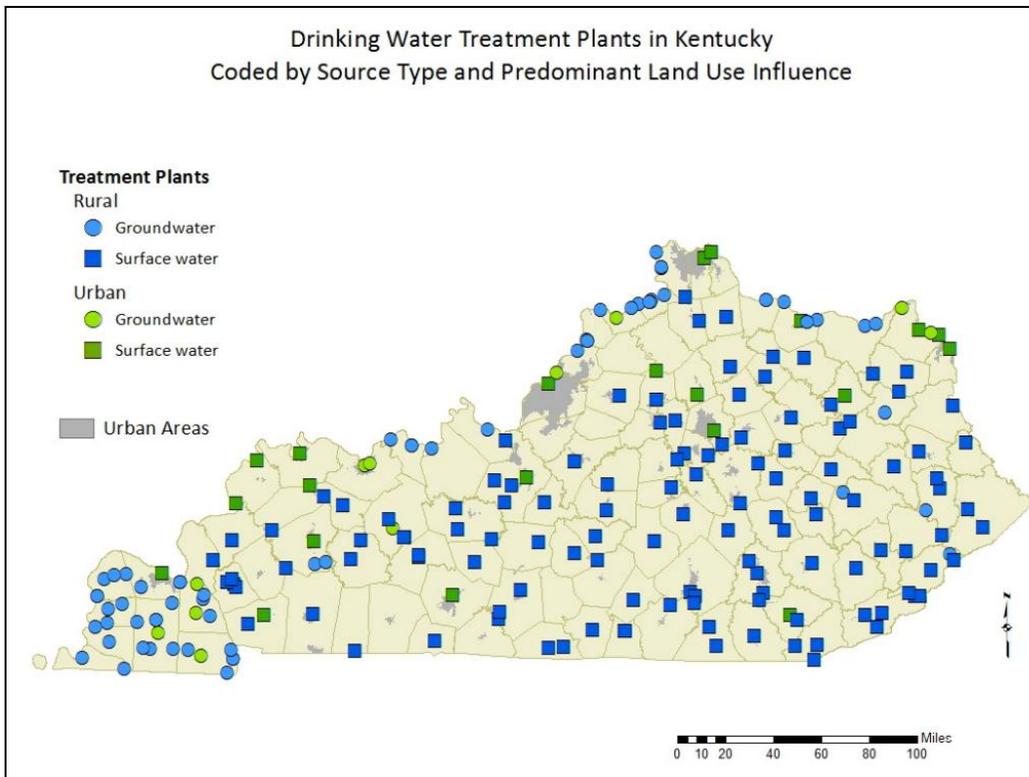
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KDEP PFAS DRINKING WATER STUDY

Initial & Expanded PFAS Drinking Water Study Summary To Date

- **2019** WTP facilities sampled: **Eighty-one (81)**.
- **2023** WTP facilities sampled: **One hundred-thirteen (113)**.
- Total = **One hundred ninety-four (194)**.
- Total **Sample** Analysis Exceedances U.S. EPA **Promulgated MCLs: Twenty-two (22)**.
- WTP **Facility** Exceedances U.S. EPA **Promulgated MCLs: Thirteen (13)**.
- *These PFAS results & reports are available on the KY Division of Water's PFAS web page:*
<https://eec.ky.gov/Environmental-Protection/Water/Protection/Pages/PFAS.aspx>



KDEP PFAS FISH TISSUE STUDY

Kentucky Fish Tissue Study Background

- To Date: **300+** fish sample results received for **40+ waterbodies** across the Commonwealth of Kentucky.
- PFAS most **frequently detected**: PFOS, PFOA, PFBS, PFHpA, PFHxS
- To lower potential health risks associated with PFAS, the DEP, Department for Public Health, and Department of Fish and Wildlife Resources recommend that citizens **follow existing statewide fish consumption guidance for mercury** and any site-specific advisories.
- PFAS results and reports are available on the KY Division of Water's PFAS web page:
<https://eec.ky.gov/Environmental-Protection/Water/Protection/Pages/PFAS.aspx>



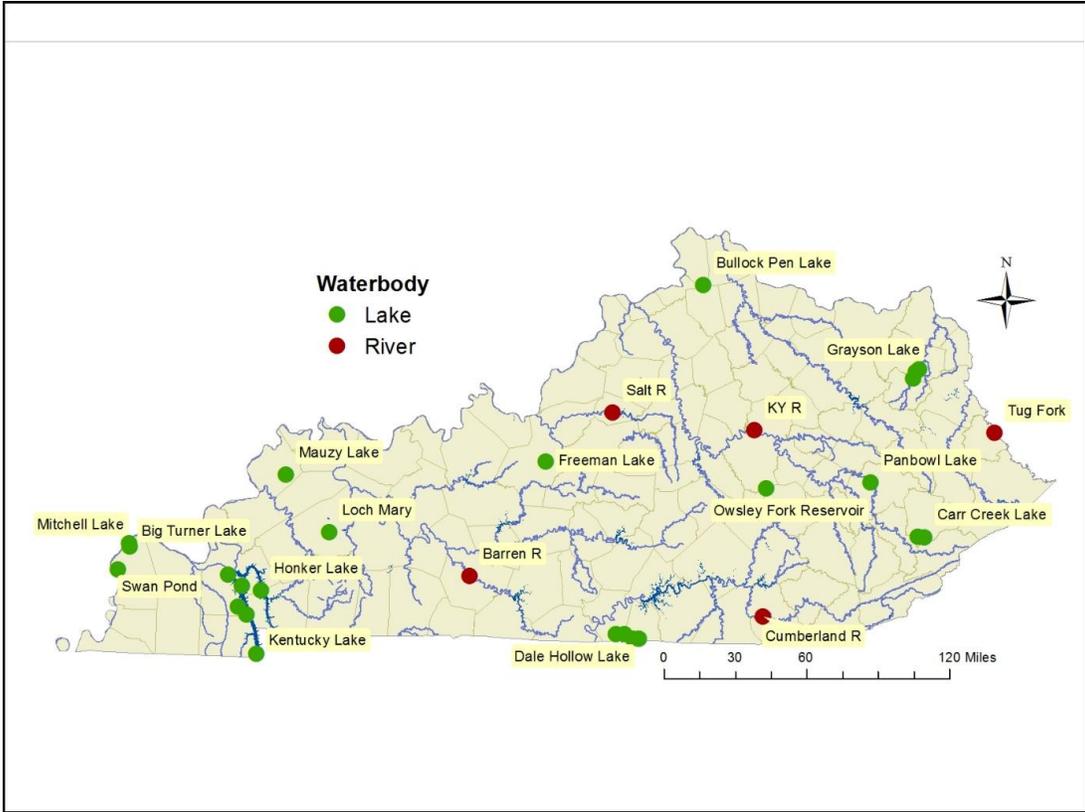
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Kentucky Fish Tissue Study Summary To Date

- PFAS detections in **100%** of fish tissue samples collected & analyzed to date.
- PFOS ranged from **310 to 50,000 ppt**.
- The average PFOS water concentration from the Stream Study was **13,000 ppt**.
- The average PFAS fish tissue concentration so far is **5,000 ppt**.
- KDEP Water Studies & Fish Tissue Studies are Available at: <https://eec.ky.gov/Environmental-Protection/Water/Protection/Pages/PFAS.aspx>



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DRY CLEANER PFAS STUDY

Kentucky Dry Cleaner PFAS Study Background

- **Dry cleaner fluid, PCE, extracts out PFAS** from clothing.
- **PFAS extracted from PCE** is then released to the environment (ultimately to groundwater) via the same mechanisms that PCE is.
- **>75%** of dry cleaners have releases of **PCE** to groundwater, & therefore **>75%** will have **PFAS** releases as well.
- The KDEP initiated & completed a dry cleaner groundwater study, **2022 - 2024** to assess the impacts of PFAS to Kentucky from dry cleaners.

Kentucky Dry Cleaner - PFAS Study Findings

- Selected **sixteen (16)** former dry cleaner facilities still requiring remediation under Superfund for PCE impacts to groundwater.
- **100%** of the **Sixteen (16)** dry cleaners have been sampled & analyzed.
- PFAS has been detected in **significant concentrations** at **100%** of Dry Cleaner sites groundwater sampled.
- Total PFAS concentrations in groundwater **ranged from 4.47 ppt (>MCL) to 48,882 ppt (12,221 times the MCL)**
- The **average** PFAS concentration in groundwater was **1,140 ppt (285 time the MCL)**.

Kentucky Dry Cleaner - PFAS Study Impacts

- Estimated Potential Number of Consumptive Water Wells Impacted by PFAS by Orphan & Abandoned Landfills in the Commonwealth of Kentucky:
 - Domestic Use Wells: **2,052**.
 - Public Water Supply Wells: **372**.
 - Agriculture, Silviculture, & Irrigation Wells: **507**.
- *White Paper* of findings and analysis mid to late **2025**.

PFAS HANDLER – USER INDUSTRIAL SECTOR PFAS STUDY

Kentucky Industrial - PFAS Study Background

- U.S. EPA identified PFAS Handling Industry Sectors Under via NAICs Codes as **“Presumed Releases of PFAS”**.
- KDEP Selected **Twenty-Four (24)** Former U.S. EPA Identified NAICs Coded Sector Industries for PFAS Sampling **2023 – 2024**.
- These Facilities Still Required Various LTMOM **Under State Superfund** for Other Constituents of Concern (COCs).
- These are the **Second Highest Tier** of PFAS Release Sites within the **Industrial & Commercial** Sectors.
 - Release Verified.
 - Presumed Release Industrial sector
 - Likely Release Based on Study(s)
 - Potential Release Based on Industrial or Commercial Sector.



Kentucky Industrial - PFAS Study Findings

- All **Twenty-Four (24)** Industrial Sites’ Groundwater Have Been Sampled and Analyzed for PFAS.
- **100%** of The Industrial Sites Had Detections of PFAS in the Groundwater.
- The Data & Analysis Are Just Beginning.
- There are Approximately **1,198** U.S. EPA **“Presumed Release of PFAS”** Sites in the Commonwealth of Kentucky.



Kentucky Industrial - PFAS Study Impacts

- Impact Estimates, Data, & Analysis **In Process**.
- *White Paper* of findings and analysis mid to late **2025**.

ORPHAN & ABANDON LANDFILL PFAS STUDY

Kentucky Abandoned & Orphan Landfill PFAS Study Background

- **Kentucky orphan landfills:**
 - A formerly permitted **municipal** solid waste disposal facility or **abandoned** solid waste disposal sites & facilities.
 - Ceased accepting wastes before **July 1, 1992**, and that was not closed in accordance with 401 KAR Chapters **47** and **48**.
- Most operated in the prime time-frame of PFAS use: Early **1960s** forward.
- **802** orphan landfills in Kentucky.
- No viable PRPs.
- **Seventeen (17)** selected for leachate, spring, groundwater sampling **2023 – 2024**.
- Sampling & PFAS analysis completed **2024**.

National Active Landfill PFAS Leachate Studies Background

**Table 4-3
Michigan vs. Worldwide PFOA and PFOS Leachate
Concentrations Ranges**

Region	PFOA (ppt)	PFOS (ppt)
Michigan*	16 to 3,200	9 to 960
United States	30 to 5,000	3 to 800
Europe	ND to 1,000	ND to 1,500
Australia	17 to 7,500	13 to 2,700
China	281 to 214,000	1,150 to 6,020
Worldwide Range	ND to 214,000	ND to 6,020

* Based on leachate analyses from 32 MWRA-member landfills participating in this statewide study and leachate data obtained on MiWaters.com.

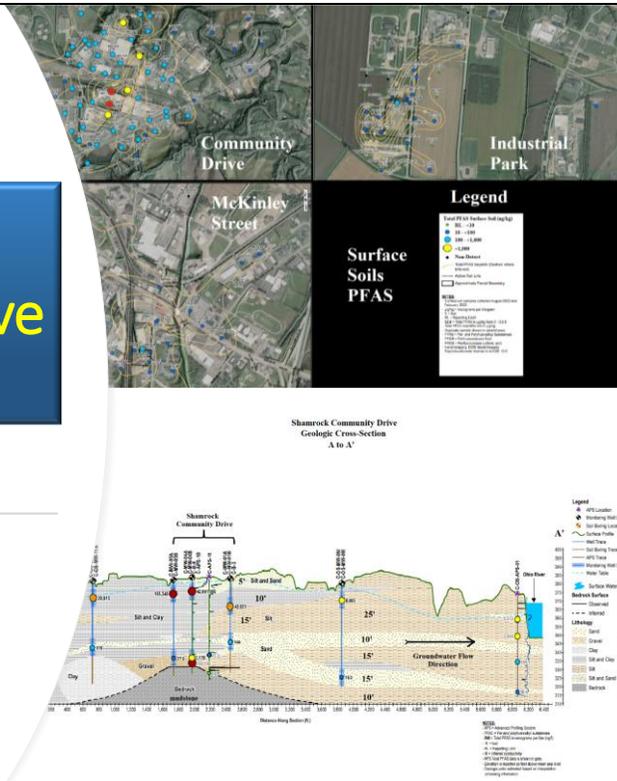
Kentucky Abandoned & Orphan Landfill PFAS Study Findings

- *White paper* of findings and analysis mid to late **2025**.
- Data is still under analysis, thus far:
 - PFAS detected in **100%** of studied orphan landfill sites.
 - PFAS detects range from multiple single digits ng/L (ppt) to several hundred ng/L.

Kentucky Abandoned & Orphan Landfill Impacts

- Consumptive Water Impacts.
- Estimated Potential Number of Consumptive Water Wells Impacted by PFAS by Orphan & Abandoned Landfills in the Commonwealth of Kentucky:
 - Domestic Use Wells: **2,052**.
 - Public Water Supply Wells: **372**.
 - Agriculture, Silviculture, & Irrigation Wells: **507**.
- *White Paper* of findings and analysis mid to late **2025**.

Section 3 Kentucky Active PFAS Sites



Active PFAS Industrial PFAS Sites

Forty-Nine (49) Active Industrial PFAS Sites

- Three (3) sites, Shamrock, Inc. Henderson, KY (est. 2017).
- Eleven (11) Henderson Other Industrial Sites. (2024).
- Southshore WTP & Area (est. 2017).
- Henderson WWTP & Area (est. 2022).
- Nebo, KY Donaldson Farm Biosolids & Area (est. 2023).
- Mayfield WTP & Area (est. 2023).
- CCMA (est. 2023).
- Twelve (12) Sites in the Calvert City Complex Other Industrial Sites (2024).
- Metals Mfg. Hopkinsville, KY Contemporary AFFF & PFAS (2023).
- Murray City Landfill (2024).
- N. Marshall WTP & Area (est. 2023).
- Somerset WTP & WWTP & Area (est. 2023).
- Lewisport WTP & Area (est. 2023).
- Cynthiana WTP & Area (2024+).
- Liberty Tire Fire Legacy AFFF Event (2025).
- River Metals Recycling Contemporary AFFF Event, Owensboro, KY (2025).
- Creative Liquids, Nicholasville, KY (2025).

Active & Scheduled PFAS Federal Facility PFAS Sites

Nine (9) Active Federal Facility PFAS Sites

- Former KY Bluegrass Army Depot – Avon (est. 2025)
- Air Force Kentucky Air National Guard – Louisville Muhammed Ali International Airport (est. 2017)
- Paducah Gaseous Diffusion Plant - PGDP (est. 2019)
- Boone Center National Guard ANG (est. 2020)
- Wendell H. Ford Regional Training Center ANG (est. 2020)
- Fort Campbell, Kentucky (est. 2020)
- Fort Knox, Kentucky (est. 2020)
- KY Bluegrass Army Depot (est. 2025)
- Navy Maine Brunswick NAS - BRAC (NOSL) (2024)

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Section 4 KDEP's PFAS Ranking Project



PFAS Sites

Rank Criteria - Scoring Parameters

- PFAS site ranking is based:
 - On **four (4)** parameters:
 - ❖ **Regional geology.**
 - ❖ **Proximity of three (3)** types of *active* consumptive water wells.
 - ❖ **Statistical** number of *active* domestic use wells in a defined radius.
 - ❖ **Status** or **type** of PFAS site/facility.
 - Using **six (6)** scoring criteria.
 - ❖ Proximity of nearest active **domestic use wells** within **five (5)** radii.
 - ❖ Proximity of nearest active **agricultural use wells** within **five (5)** radii.
 - ❖ Proximity of nearest **public water supply wells** within **five (5)** radii.
 - ❖ The **five (5) geologic sensitivity regions** of Kentucky, inversely applied for **long-term risk** assessment of PFAS.
 - ❖ **Five (5)** statistically defined ranges of **active domestic use wells** within a **four (4)** mile range.
 - ❖ **Five (5) category status or types of PFAS sites/facilities** based on release, likelihood of release, & likely magnitude of a release.



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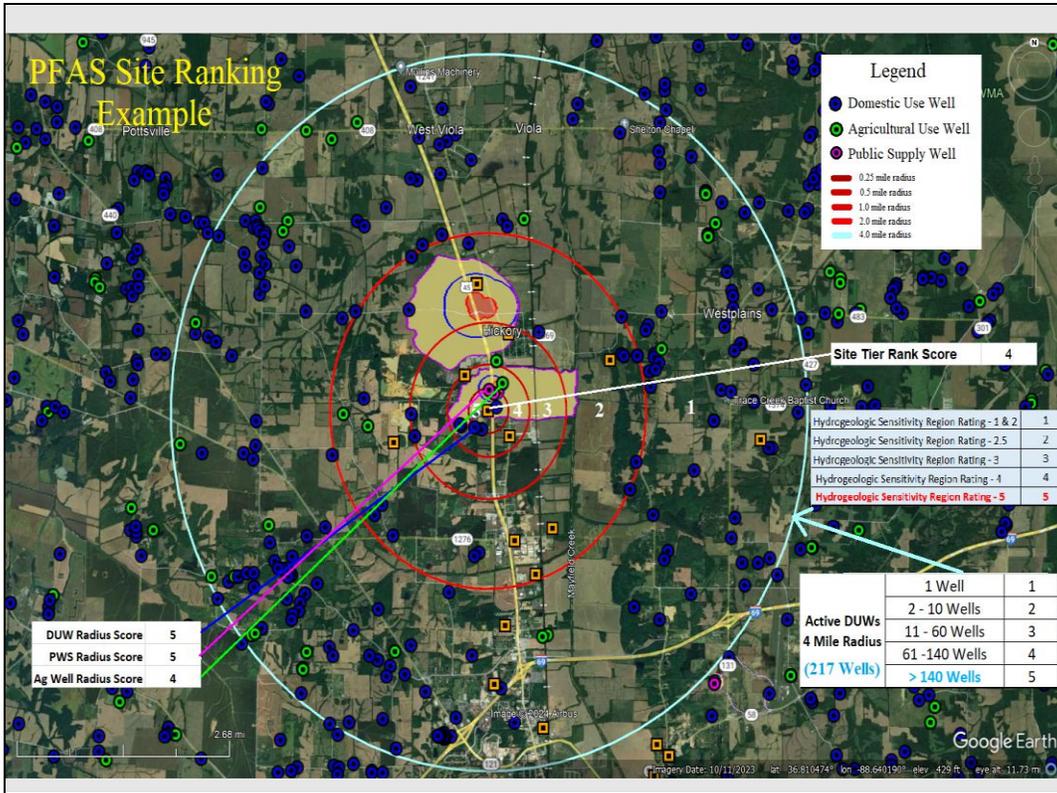
PFAS Site Ranking System

- Based on the KDEP CSM: **PFAS greatest risk is groundwater.**
- **All six (6) criteria** contribute to the scoring.
- **Rank** is based **five (5) risk score ranges.**
- The **Risk Score** is based the **sum of the criteria scores.**
- **Risk scoring value** further triage sites within a given Rank:
 - Site A = Rank 2, Raw Score 24
 - Site B = Rank 2, Raw Score 20
 - Site C = Rank 2, Raw Score 19

Rank Score Worse to Least	Risk Score Ranges
Rank 1	24 - 30
Rank 2	19 - 24
Rank 3	13 - 18
Rank 4	7 - 12
Rank 5	0 - 6



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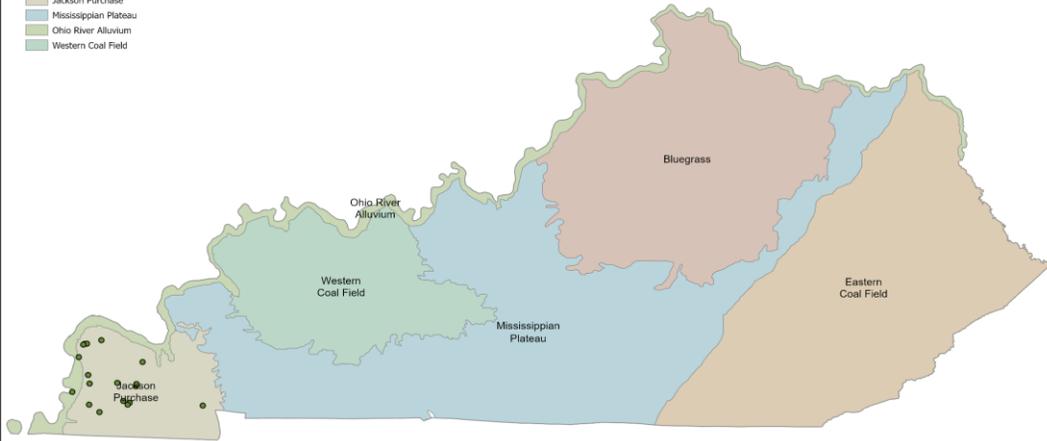
Ranking Distribution Sites to Date

Rank	Ranked PFAS Sites (06/10/2024)
Rank 1	20
Rank 2	409
Rank 3	2,737
Rank 4	1,709
Rank 5	1
Total =	4,876
	*3,786 Remain
	**8,662 Total

Rank 1 PFAS Release Sites

Legend

- Rank 1 PFAS release sites
- Physiographic Regions - Simplified
- Bluegrass
 - Eastern Coal Field
 - Jackson Purchase
 - Mississippian Plateau
 - Ohio River Alluvium
 - Western Coal Field

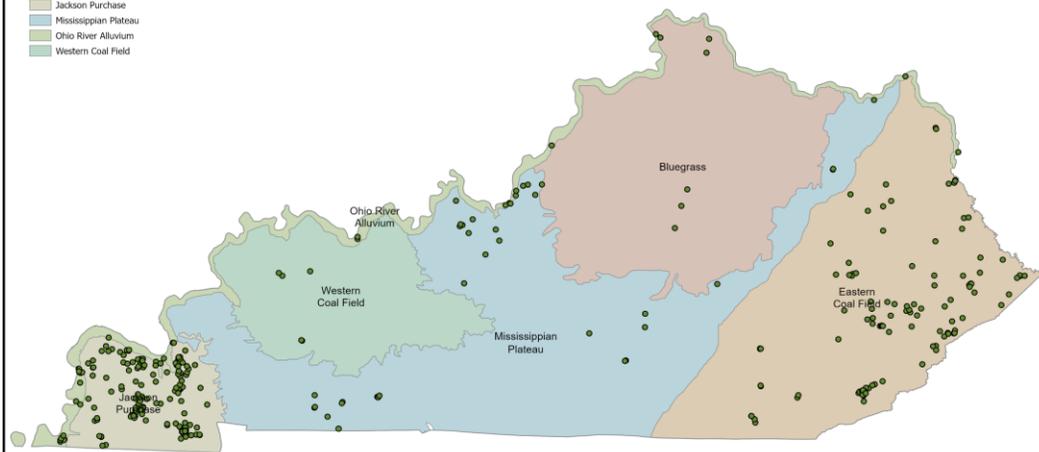


Sources: KYDEP, Kentucky General Assembly

Rank 2 PFAS Release Sites

Legend

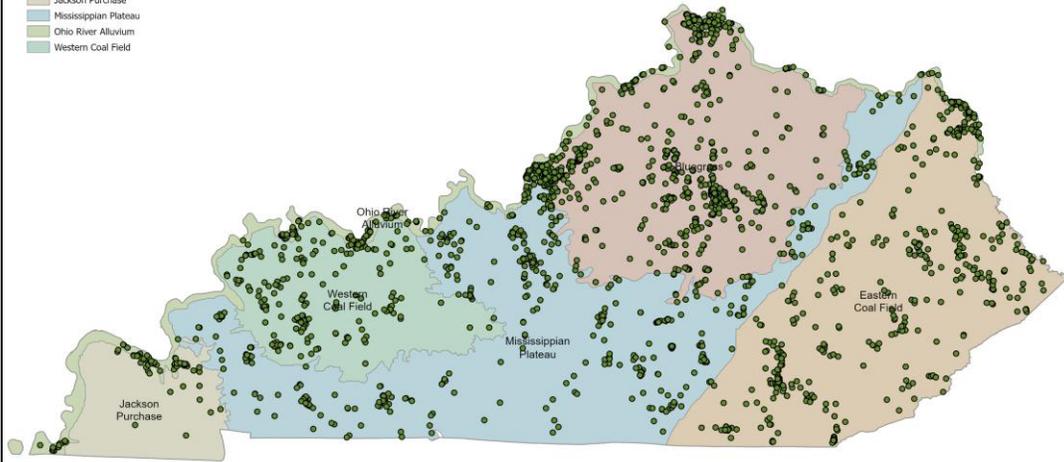
- Rank 2 PFAS release sites
- Physiographic Regions - Simplified
- Bluegrass
 - Eastern Coal Field
 - Jackson Purchase
 - Mississippian Plateau
 - Ohio River Alluvium
 - Western Coal Field



Sources: KYDEP, Kentucky General Assembly

Rank 3 PFAS Release Sites

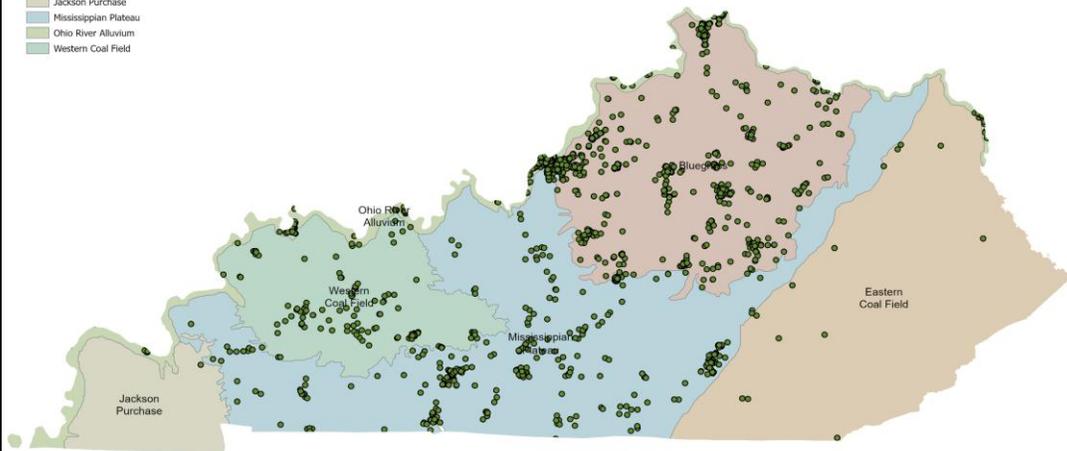
- Legend**
- Rank 3 PFAS release sites
- Physiographic Regions - Simplified**
- Bluegrass
 - Eastern Coal Field
 - Jackson Purchase
 - Mississippian Plateau
 - Ohio River Alluvium
 - Western Coal Field



Sources: KYDEP, Kentucky General Assembly

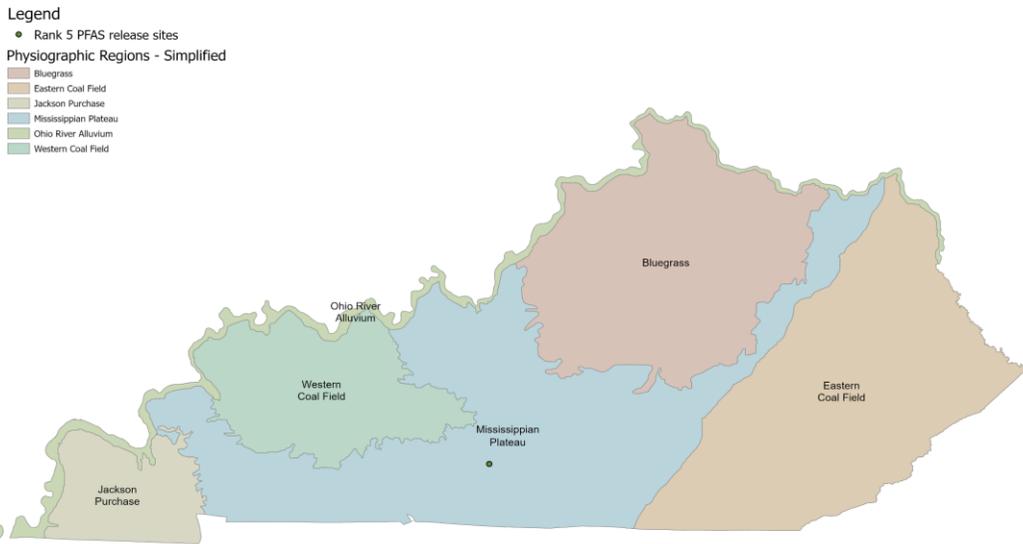
Rank 4 PFAS Release Sites

- Legend**
- Rank 4 PFAS release sites
- Physiographic Regions - Simplified**
- Bluegrass
 - Eastern Coal Field
 - Jackson Purchase
 - Mississippian Plateau
 - Ohio River Alluvium
 - Western Coal Field



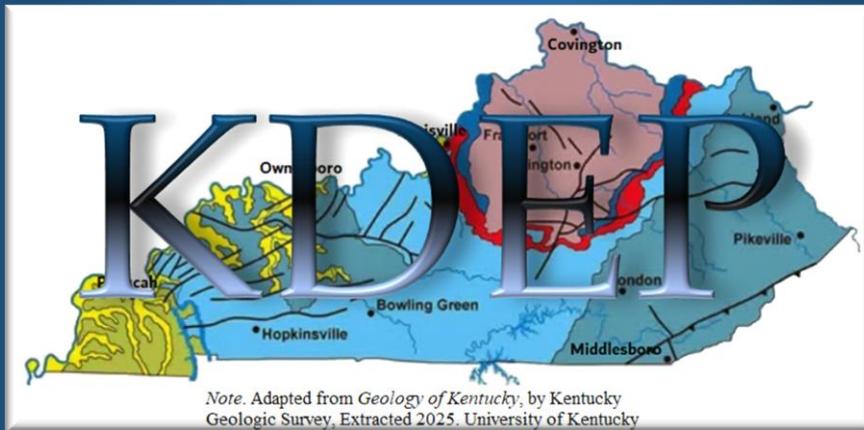
Sources: KYDEP, Kentucky General Assembly

Rank 5 PFAS Release Sites



Sources: KYDEP, Kentucky General Assembly

IV. PFAS KDEP Statutory & Regulatory Considerations



Note. Adapted from *Geology of Kentucky*, by Kentucky Geologic Survey, Extracted 2025. University of Kentucky

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Section 1 *Current* Applicable PFAS Statutes & Regulation



KDEP Regulating PFAS Under *Existing* Laws & Regulations

- **CERCLA Federal Superfund**
 - National Priority List (NPL)
 - Remedial Removal Authority
 - Emergency Authority
- **KRS 224.1-400 State Superfund**
 - Hazardous Substance, **Pollutant**, & **Contaminants** (HSPCs)
 - 224.1-400 (18)
 - 224.1-400 (21)
- **KRS 224.1-530**
 - Screening levels relating to remediation
 - *Regional Screening Level Guidance* Document – How to Use RSLs and SSLs
- **KAR 100:030 (2004)**
 - Remediation Requirements
 - Kentucky Risk Assessment Guidance (Rev. 2024)
 - Federal Risk Assessment Guidance
 - Kentucky Guidance for Ambient Background Assessment (2004)
 - Kentucky Guidance Groundwater Assessment Screening (2004, Rev. Slated 2025)

CERCLA Superfund

- *Hazardous Substances – Formerly Listed!*
- NPL: *State request & sign off*
 - Listing Process
 - ❖ Hazardous Ranking Score (HRS) >28
 - ❖ CERCLA Process: Preliminary Assessment / Site Inspection
 - ❖ HRS Score adjustments
 - ❖ Remedial Actions?
 - ❖ Agency Review, Recommendation, & Approval
 - ❖ Governor’s Review, Approval, & Signature.
- Remedial Removal Authority: *State request & sign off*
 - Short-Term Actions less than a few months approaching a year
 - De Minimis > 1.0×10^{-5}
- Declared Emergency Authority: *State request & sign off*
 - Short-Term Actions less than few weeks/months
 - De Minimis > 1.0×10^{-6}

KDEP Regulating PFAS KRS 224.1-400 “State Superfund”

- KRS 224.1-400: *Reportable quantities and release notification requirements for hazardous substances, **pollutants**, or **contaminants**...*(HSPCs)
- *Hazardous Substances* formerly listed **plus**,
- *Pollutants & Contaminants* not formerly listed – **anything!**
 - Kentucky **State Superfund**.
 - Broader umbrella than CERCLA.
 - **Not just** “*hazardous substances*” (CERCLA).
 - Can & does apply to **any pollutant or contaminant**.
- Kentucky can & has applied its state superfund authority to PFAS **before** the **CERCLA designation** as a listed hazardous waste.

Who?

KRS 224.1-400 (18)

- (18) **Any person possessing or controlling** a hazardous substance, pollutant, or contaminant which is released to the environment, or **any person who caused** a release to the environment of a hazardous substance, pollutant, or contaminant, **shall characterize** the extent of the release as necessary to determine the effect of the release on the environment, and **shall take** actions necessary to **correct** the effect of the release on the environment....
 - Includes both the “person” who **caused**, &
 - Didn’t cause but **possesses or controls** (even after the fact)

What?

KRS 224.1-400

Pollutant or Contaminant

- “Pollutant or Contaminant” **shall include, but not be limited to, any element, substance, compound, or mixture, including disease-causing agents**, which after release into the environment and upon exposure, ingestion, inhalation, or **assimilation into any organism**, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring; except that the term “pollutant or contaminant” **shall not include petroleum**, including crude oil or any fraction thereof which is **not otherwise specifically listed** or designated **as a hazardous substance** under this section and shall not include natural gas, liquified natural gas, or synthetic gas of pipeline quality (or mixtures of natural gas and such synthetic gas);
- **Petroleum** is captured under KRS 1.405 (state superfund for petroleum non-UST).

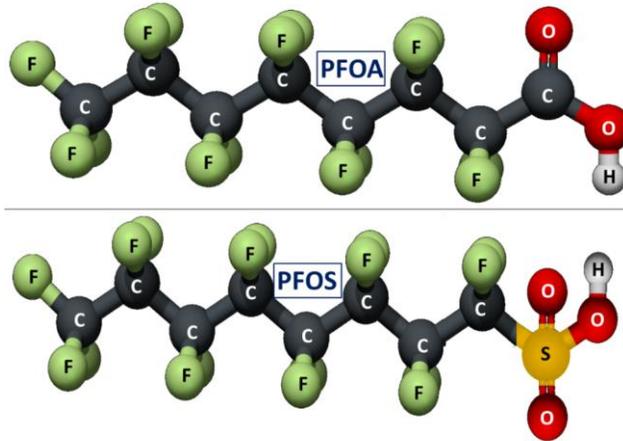
Actions? KRS 224.1-400 (21)

- A person required to take action under subsection (18) of this section who **does not restore the environment** through removal of the hazardous substance, pollutant, or contaminant in accordance with subsection (18)(c) of this section **shall demonstrate** to the cabinet that **the remedy is protective of human health, safety, and the environment**, by considering the following factors:

Actions? KRS 224.1-400 (21) Cont.

- (a) The characteristics of the substance, pollutant, or contaminant, including its **toxicity, persistence, environmental fate and transport dynamics, bioaccumulation, biomagnification, and potential for synergistic interaction [i.e. additivity]** and with specific reference to the environment into which the substance, pollutant, or contaminant has been released;
- (b) The **hydrogeologic** characteristics of the facility and the surrounding area;
- (c) The proximity, quality, and **current and future uses of surface water and groundwater**; **[SB 89 redefining “waters of the Commonwealth” does not affect this in the least!]**
- (d) The potential **effects of residual contamination** of potentially impacted **surface water and groundwater**;
- (e) The **chronic and acute** health effects and **environmental consequences** to terrestrial and aquatic life of exposure to the hazardous substance, pollutant, or contaminant through direct and indirect pathways;
- (f) **An exposure assessment**; and
- (g) **All other available information.**

Section 2
PFAS
Specific
Regulatory
& Technical
Issues



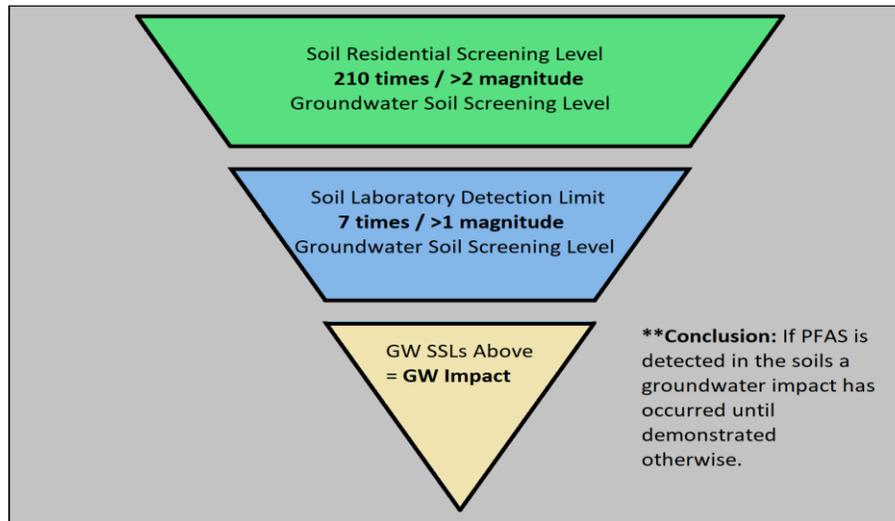
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PFAS Levels Investigatory & Remediation

- Applicable Soil Levels
 - Regional Screening Levels (RSLs)
 - ❖ Residential Land Use
 - ❖ Industrial/Commercial Land Use
 - Soil Screening Levels
 - ❖ Applicable to MCLs
 - ❖ Applicable to Risk Levels
 - Maximum Contaminant Levels (MCLs)
 - Tap Water Risk Levels (TWLs)

PFAS Drivers

(1) Soil & Groundwater



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PFAS Drivers

Soil & Groundwater

Implications: RSLs, SSLs, & Lab DLs

- Groundwater Soil Screening Levels (SSLs) are analytical soil levels **above which one can expect groundwater to be impacted without sampling groundwater.**
- Groundwater SSLs are **magnitudes lower** than the soil Regional Screening Levels (RSLs), and
- The present laboratory detection limit (DL) for PFAS soil analysis is **below the RSLs and above the SSLs**
- Additionally, because PFAS **does not absorb** to aquifer/soil particles, **nor biodegrade.**
- **If PFAS is detected in soil**, even though below an RSL, groundwater must be assumed to **have been impacted unless otherwise demonstrated.**
- One would either need to demonstrate that
 - A site-specific SSL would indicate different.
 - However, given the magnitudes there is **no** SSL factor that would compensate enough. Or,
 - The likely path, will always require the groundwater to be sampled.

PFAS Drivers (2) Additivity Effects

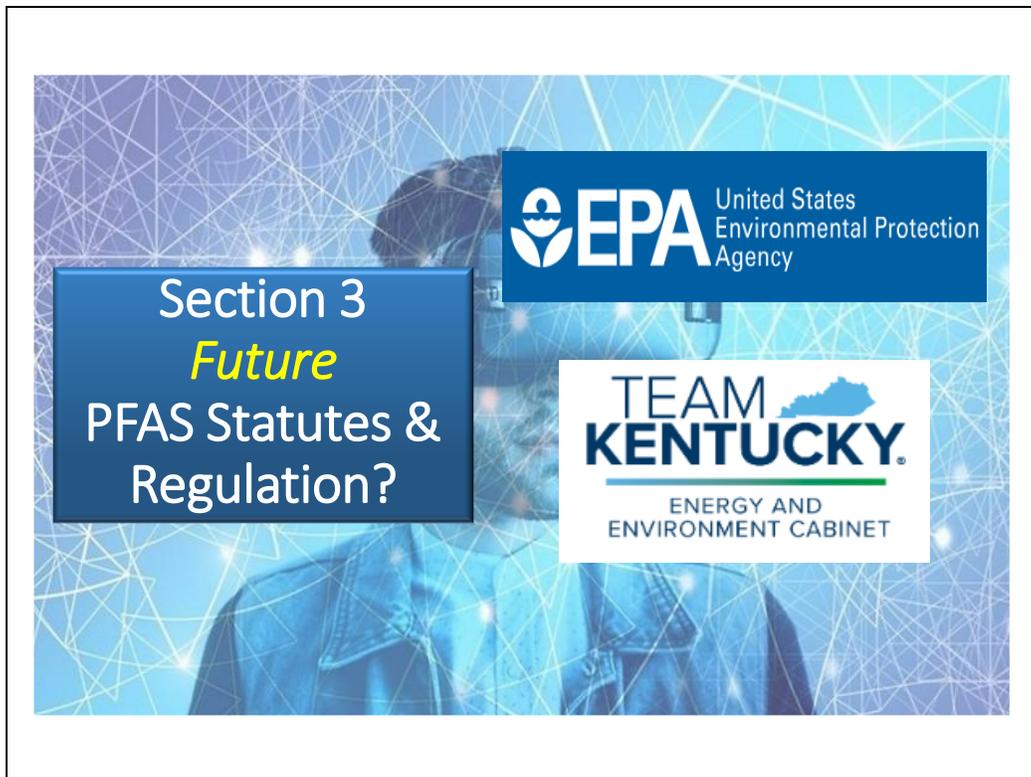
- Additivity:
 - Additivity relates to synergistic effects of multiple contaminants.
 - E.g., smoking vs. asbestos vs. smoking + asbestos.
 - PFAS always occurs in a release as multiple species of contaminant PFAS.
 - Transformation guarantees this!
 - Additive sum of $<1/10^{\text{th}}$ the Residential RSL pre-screening will be required.
- Relevant statutes and regulations:
 - KRS 224.1-400 (21)
 - KRS 224.1-530
 - ❖ Screening levels relating to remediation
 - ❖ Regional Screening Level Guidance Document – How to Use RSLs and SSLs
 - KAR 100:030 (2004)
 - ❖ Sections 7, 8, 9, & 10
 - ❖ Kentucky Risk Assessment Guidance
 - Additivity will always have to be assessed in analysis for PFAS, a simple one-to-one comparison to RSLs will not be adequate.



PFAS Drivers *Implications: Additivity Effects*

- PFAS always occurs in nature as multiple species or constituents of concern.
- PFAS transformation guarantees this.
- A simple one-to-one comparison to RSLs will not be adequate to protect human health & the environment (as with most contaminant releases).
- Additivity will always have to be assessed in analysis for PFAS to account for the potential synergistic effects of multiple PFAS contaminants.
- Thus, the additive sum of $<1/10^{\text{th}}$ the Residential RSL pre-screening will be required from the beginning of investigation and sampling.





KDEP Regulating PFAS Near Future Related Regulations

- KDEP *Draft* Modernization & Groundwater Regulations **KAR 100:001, 030, 035 (2025)**.
- Expands from **one (1)** to **three (3)** regulations, but **more efficient & addresses existing challenges**.
- Helps **all contaminants** but will be **key for PFAS**.
- Achieves a **regulatory end-point** in finality, quickly & efficiently.

➤ **KAR 100:030**

- ❖ **Expands** background to include **“ambient background,”** not only **“naturally occurring background.”**
- ❖ **Better & increased** technical & statistical **options** for demonstrating **natural & ambient background**.

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KDEP Regulating PFAS Near Future Related Regulations

- KDEP *Draft* Modernization & Groundwater Regulations Cont....
 - **KAR 100:035 Groundwater Remediation**
 - ❖ **Increased reliance** on the use of the **Conceptual Site Model (CSM)**.
 - ❖ **Includes Mass Discharge** in the assessment of risk concerning groundwater and **not only concentrations**.
 - ❖ **Takes into consideration plume status** demonstration: Migrating, Mobile, Residual.
 - ❖ **Adds possible options** for management in place **without long-term groundwater monitoring**.
 - ❖ **New Low Risk Groundwater Environmental Recovery Site Designation**.

KDEP Regulating PFAS Assessing the Future

- PFAS Pilot Program Project (P⁴)
 - **NOTE:** Preliminary & Deliberative
 - Study & Assessment of PFAS Data & of PFAS's Impacts & Issues Concerning the Commonwealth of Kentucky.
 - **Facts Bearing on the Problem.**
 - ❖ Magnitude and Scope of the Per & Polyfluoroalkyl Substance Impacts to Kentucky
 - ❖ Estimates of Groundwater and Surface Water Natural Resource Assets
 - ❖ Risk Conditions Site Ranking and Risk Scoring
 - ❖ Remedial Time & Cost-to-Complete Universe Estimates

KDEP Regulating PFAS Assessing the Future

- PFAS Pilot Program Project (P⁴) Cont.
 - **Findings & Conclusions**
 - ❖ Present Remedial Structures Insufficiencies
 - ❖ Present Funding Insufficiencies
 - ❖ Statutes & Regulations Necessary

KDEP Regulating PFAS Assessing the Future

- PFAS Pilot Program Project (P⁴) Cont.
 - **Recommendations**
 - ❖ KDEP Resource Requirements
 - ❖ Groundwater & Surface Water Extraction Rates
 - ❖ Potential Revenue Fees
 - ❖ Potential Distribution of Revenue Fees



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Consultant II
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Department for
Environmental Protection

March 21, 2025

**THANK YOU
QUESTIONS?**



I. WHAT IS THE PUBLIC SERVICE COMMISSION?

A. The Public Service Commission

1. Independent regulatory agency.
2. Three-member Commission.

Appointed by the Governor and subject to Senate confirmation. [KRS 278.050](#), [KRS 278.060](#).

3. Quasi-judicial function.

“The PSC acts as a quasi-judicial agency utilizing its authority to conduct hearings, render findings of fact and conclusions of law, and utilizing its expertise in the area and to the merits of rates and service issues.”
Simpson County Water Dist. v. City of Franklin, 872 S.W.2d 460, 465 (Ky. 1994).
[Emphasis added]

4. Has exclusive jurisdiction over the rates and service provided by jurisdictional utilities. [KRS 278.040](#).
5. A utility is a person who owns, operates, controls, or manages facilities used in the conveyance to or for the public for compensation. [KRS 278.010\(3\)](#).
 - a. Does not regulate municipal utilities except for gas pipeline safety.
 - b. Does not regulate electric cooperatives served by TVA, municipal utilities, and sanitation districts.
6. [Senate Bill 8](#): Introduced in the 2025 General Assembly; would restructure the composition of the PSC and add qualifications for commissioners.
 - a. Increases the number of commissioners from three to five. Amends [KRS 278.050-.070](#).
 - b. Three would be appointed by the Governor.
 - i. One of whom shall be a licensed attorney who has actively practiced law in the Commonwealth for at least seven years;
 - ii. Two of whom shall have education or training, and five years of actual experience, in one or more of the following fields:

- a) Economics;
 - b) Engineering;
 - c) Accounting;
 - d) Finance;
 - e) Utility regulation;
 - f) Pipeline or utility infrastructure safety;
 - g) Business management; or
 - h) Environmental management.
- c. Two members appointed by the Auditor of Public Accounts.
- i. One of whom shall have at least five years of actual experience as a consumer advocate; and
 - ii. One of whom shall have the same qualifications as above.
- d. No two members of the commission shall have the same occupation or profession, and no more than three commissioners shall be of the same political party.
- e. The commissioners shall elect one of the commissioners to act as the commission's chair. The chair shall be the chief executive officer of the commission.
- f. The commission may, in its sole discretion, identify and determine the compensation for categories of its professional employees at the amounts it deems necessary to recruit and retain employees who have the experience, expertise, and education required to perform their job responsibilities with the commission.

B. Rates and Services

1. Every utility may demand, collect and receive “***fair, just and reasonable***” rates for the services rendered or to be rendered by it to any person. Every utility shall furnish “***adequate, efficient and reasonable service,***” and may establish rules governing the conduct of its business and the conditions under which it shall be required to render service. [KRS 278.030\(1\) & \(2\)](#). [Emphasis added]

Note: The absence of the Oxford comma is in the statute.

2. Water and sewer utilities.
 - a. Investor-owned, water districts, and water associations.
 - b. Wholesale water sold by a municipality.
3. Natural gas distribution systems and intrastate pipelines.

Rates for gas utilities and farm taps, enforce federal safety standards for gas utilities and municipalities.
4. Electric utilities.
 - a. Investor owned.
 - b. Electric cooperatives formed under [KRS Chapter 279](#). Big Rivers, East Kentucky Power, and their respective distribution member cooperatives.
5. Telecommunications, but very lightly regulated.

C. Other Jurisdictional Items

1. Reviews applications to expand or construct systems (think power plants) ([KRS 278.020](#)).
2. Reviews applications to enter into financing for more than two years ([KRS 278.300](#)).
3. Every three years, reviews electric utility plans on how they plan to meet customers' demand.
4. Reviews utility mergers, sales, and acquisitions ([KRS 278.020](#)).
5. Training for Water District Commissioners, [KRS 74.020](#).
6. Pole attachments to utility poles.
 - a. In 1983 Kentucky "reverse preempted" the Federal Communications Commission and asserted jurisdiction over pole attachments to utility poles. [47 U.S.C. §224](#). *Kentucky CATV Ass'n v. Volz*, 675 S.W.2d 393 (Ky. App. 1983).
 - b. In 2021 the General Assembly directed the Commission to promulgate pole attachments regulations. [House Bill 320](#).
 - c. Resulting in [807 KAR 5:015](#).

- d. Pole attachments have become increasingly important, particularly broadband attachments in unserved and underserved areas.
- e. Millions of dollars of federal and state funds have been dedicated to Kentucky for broadband deployment in these areas. (Broadband Equity, Access, and Deployment Program and the Rural Digital Opportunity Fund).
- f. In 2024 the General Assembly directed the Commission to promulgate emergency regulations and that the “new or amended emergency regulations are tailored to advance the buildout of broadband service to unserved or underserved areas.” [Senate Joint Resolution 175](#).

D. Kentucky State Board on Electric Generation and Transmission Siting

- 1. Created in 2002 with few changes since. [KRS 278.700-.718](#).
- 2. Reviews applications and grants certificates, if approved, for the construction of electric generating facilities (*i.e.*, merchant generators) greater than 10 MW and transmission lines from entities not regulated by the PSC.
- 3. Siting board members.
 - a. Three members of the PSC.
 - b. Secretary of the Energy and Environment Cabinet or a designee/proxy.
 - c. Secretary of the Cabinet for Economic Development or a designee/proxy.
 - d. Two local members, with one appointed by the Governor to serve for a specific case (Ordinarily judge/executive or chair of planning & zoning is one member (statutory members)).
- 4. Every application since 2020 has been for a solar generation, over 50...
 Except for an application to build a natural gas reciprocating internal combustion engine. Currently pending.

II. ENERGY ISSUES

A. Generation Retirement

- 1. [Senate Bill 4](#): In 2023 the General Assembly enacted Senate Bill 4. [KRS 278.262](#) & [KRS 278.264](#).

- a. Provides PSC authority to approve or disapprove fossil-fuel fired generation retirements.
 - b. Previously, all retirement decisions for any asset was at utility's discretion; PSC only had authority over resulting financial implications, e.g. whether the utility could recover any "stranded costs" from ratepayers.
 - c. Sets forth a standard and process for retiring a fossil-fuel fired generator.
 - d. The replacement generation must have "the same or higher capacity value and net capability, unless the utility can demonstrate that such capacity value and net capability is not necessary to provide reliable service."
 - e. Statute provides a rebuttable presumption against retirement. To retire, a utility must show:
 - i. Retirement is more economic than keeping the unit online;
 - ii. Retiring generator will be replaced with adequate generation; and
 - iii. Retirement is not a result of federal incentives.
 - f. First case under new law was processed in 2023 – Case No. 2022-00402.
 - g. PSC processed the first case, permitting two power plants to retire, denying request to retire two others, approving the building of a new natural gas power plant and denying permission to build a second.
2. The Energy Planning and Inventory Commission (EPIC). [Senate Bill 349](#), 2024 General Assembly. [KRS 164.2807](#).
- a. The General Assembly formed EPIC to, *inter alia*, develop a comprehensive energy policy for Kentucky. EPIC is attached to the University of Kentucky's Center for Applied Energy Research.
 - b. [SB 349](#) requires that:

A utility proposing to retire any existing coal, oil, or natural gas-fired power plant, or unit within such plant, shall give notice to the commission's executive committee, in the form and manner as the executive committee may require, at least one hundred eighty (180) days prior to submitting the

retirement application to the Public Service Commission. [Emphasis added]

- c. Relevant to the PSC, [KRS 164.2807\(7\)\(a\)](#) provides that, **“no utility shall retire any existing coal, oil, or natural gas-fired electric generating plant, or any unit within the plant, prior to submitting notice to the commission and receiving the findings from the executive committee...”** [Emphasis added]
- d. [KRS 164.2807\(7\)](#) provides that the executive committee or EPIC’s Executive Director shall, within 135 days of receiving the application for retirement, issue a final report containing written findings and recommendations regarding the proposed retirement. This report “shall be submitted” to the Commission.
- e. [KRS 164.2807\(7\)\(h\)](#) requires that the final report be included in any retirement application to the Commission and requires that any order entered pursuant to [KRS 278.264](#) **“shall contain specific written findings of fact or conclusions of law addressing whether the executive committee’s findings and recommendations were considered by the Public Service Commission.”** [Emphasis added]
- f. [KRS 164.2807\(8\)](#) provides that the executive committee, or EPIC’s executive director, may intervene in any case or proceeding before the Commission.
- g. EPIC ceases to exist on December 31, 2035.

B. Securitization

- 1. [Senate Bill 192](#): In 2023 the General Assembly enacted [Senate Bill 192](#). [KRS 278.670 through 278.696](#). Statutes set forth a scheme for a utility to seek, and PSC approve, securitization of outstanding costs.
- 2. Securitization is the process of financing cash flows from a specific asset or pool of assets, and issuing claims on these assets, through the issuance of asset-backed securities.
 - a. More simply, securitization is a process set out by a state statute that can permit customers of a utility to effectively buy an asset from a utility using money provided by bonds financed by lenders.
 - b. Effectively, since the utility earns an equity and debt return on their own investments, replacing that investment with only debt capital reduces the financing costs of that asset.
 - c. The bonds used to “buy out” the utility are sometimes referred to as “ratepayer-backed bonds” because they are financed on the premise

that a utility's customers, pursuant to a statute, have guaranteed the repayment of the bond according to predetermined schedules.

3. Some costs are nonrecurring, one-time, extreme, or are otherwise not ordinary property that makes utility financing of those costs expensive for customers and unnecessarily burdensome for a utility.
 - a. Debt costs less than equity capital.
 - b. Although the principal amount is the same, the reduction in the interest rate, coupled with the time value of money, can lead to significant customer "savings" compared to the *status quo*.
4. Utilities make investments in assets for the public benefit; they are not financing entities. Having them hold investments and receive a return on paper assets may not be the best use of their limited capital. Securitization allows the utility to get out of investing in a paper asset, and put that capital to use, likely to invest in the assets to replace whatever the regulatory asset is related to (like the replacement generator in the scenario).
5. Reduce the costs to customers of decisions or outcomes beyond most any stakeholder's control.
6. About half of states have legislation on the books allowing securitization. Costs that can be recovered:
 - a. Retired generation;
 - b. Extreme fuel costs (winter storm Uri);
 - c. Wildfire costs; or
 - d. Extreme storm damage, such as hurricanes.
7. Debt is not backed by full faith and credit of the state – it is the obligation of the captive ratepayers.
8. Securitization "works" only because of the low-cost debt financing that replaces the combo debt and equity financing provided by the utility.
9. First request was filed in 2023 and was approved in early 2024.
 - a. Utility and PSC are in the process of seeing through the transaction with the goal of the utility marketing the bonds and finalizing the sale(s) in 2024 – Case No. 2023-00159.
 - b. Based on conditions existing at the time of the approval order, savings are expected to be nearly \$75M on a present value basis.

C. Nuclear Issues

1. Kentucky Nuclear Energy Development Authority (KNEDA).
 - a. [Senate Bill 198](#), 2024 General Assembly, created new sections of [KRS Chapter 164. KRS 164.2802-2807](#).
 - b. KNEDA is attached to the UK Center for Applied Energy Research for administrative purposes and is to serve as the “trusted state government agency on nuclear energy issues and development.”
 - c. Will also support and facilitate the development of the nuclear energy ecosystem in Kentucky.
 - d. The purpose of the KNEDA is:
 - i. To assist interested communities in understanding nuclear energy opportunities;
 - ii. Provide information to the public on the history of nuclear tech in Kentucky and current and future nuclear tech;
 - iii. Develop the capacity for nuclear development in Kentucky including providing info to educational institutions about job opportunities and seeking out existing and new grants;
 - iv. Seek clarity from stakeholders about financial support for early site permitting, obtaining a CPCN, and recovery of construction work in progress;
 - v. Work with communities to educate them about nuclear related activities as well as the transition from fossil-fuels;
 - vi. Strengthen engagement with the federal Nuclear Regulatory Commission by, *inter alia*, reviewing current safety and security practices, promoting the streamlining of permitting efforts, and supporting the siting of nuclear storage facilities by use of consent-based siting;
 - vii. Build the capacity to engage and convene a consortium of stakeholders interested in nuclear energy;
 - viii. Engage with federal and private entities to develop and deploy technologies to reprocess and recycle spent nuclear fuel; and
 - ix. Maintain awareness of events that could accelerate the development of nuclear energy in Kentucky.

- x. [SB 198](#) creates another section of [KRS Chapter 164](#) that requires the Authority to develop criteria to govern the award a “nuclear ready community designation.” Such communities may apply to the authority for such designations.
2. [Senate Joint Resolution 140](#), 2024 General Assembly.
- a. [Senate Joint Resolution 140](#) directs the Commission to make **“all staffing, organizational, and administrative preparations necessary to be ready to discharge its regulatory duties relating to applications for the siting and construction of nuclear energy facilities in the Commonwealth.”** [Emphasis added]
 - b. [SJR 140](#) directs the Commission to:
 - i. Conduct surveys of nuclear regulatory staff in other states;
 - ii. Contract with experts in nuclear regulatory matters;
 - iii. Provide for training of existing staff on nuclear siting and construction issues;
 - iv. Amend Commission regulations to require electric utilities to consider the costs of all generation resources, including nuclear; and
 - v. Review any existing Commission regulations to see if any impede the Commission from regulating nuclear generation or obstruct the development of the “nuclear ecosystem” in Kentucky.
 - c. The Commission has created an internal workgroup to fulfill the directions of [SJR 140](#).
- D. Future Issues?
- 1. Load growth.
 - 2. Generation retirement.
 - 3. Power price fluctuations.