PERRIN CONFERENCES

NATIONAL ASBESTOS LITIGATION CONFERENCE

Charleston, SC | September 16-17, 2025

Causes of Mesothelioma and Lung Cancer Cases

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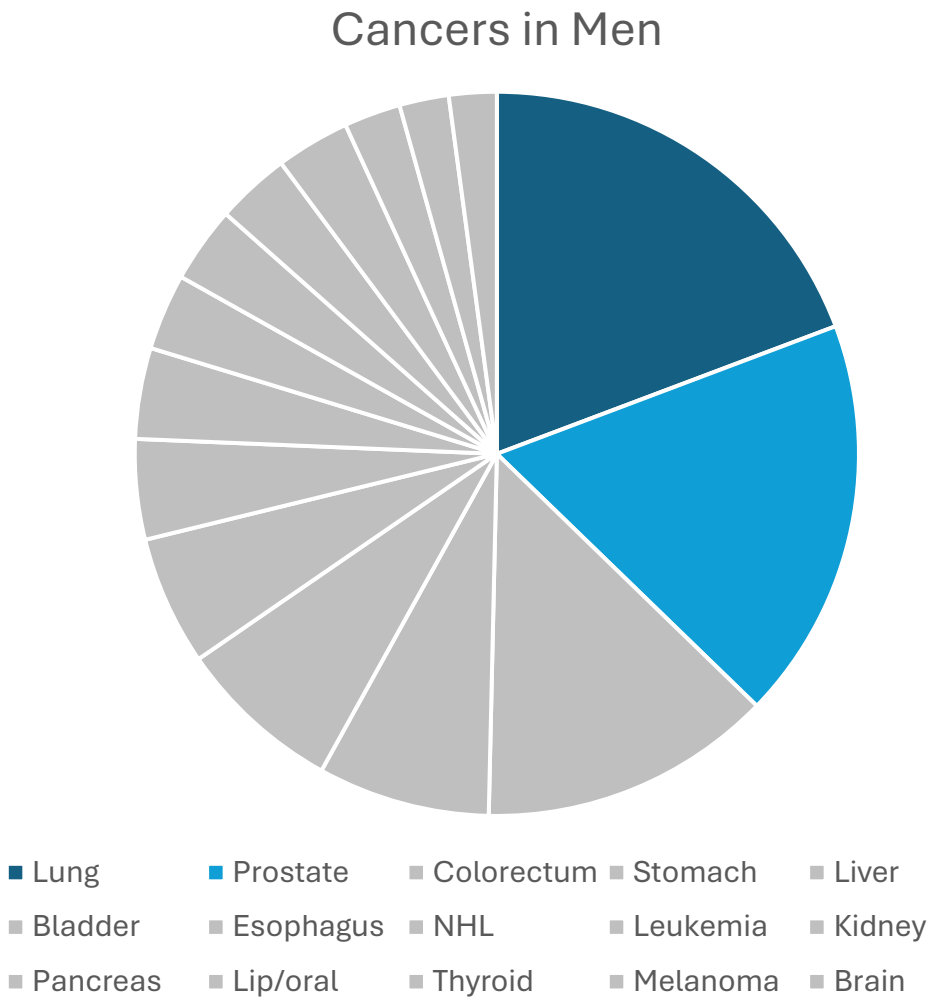
Considerations for Future Lung Cancer Claims

The top two diagnosed cancers for men are lung and prostate



Data from World Health Organization International Agency for Research on Cancer, https://gco.iarc.who.int/today/en

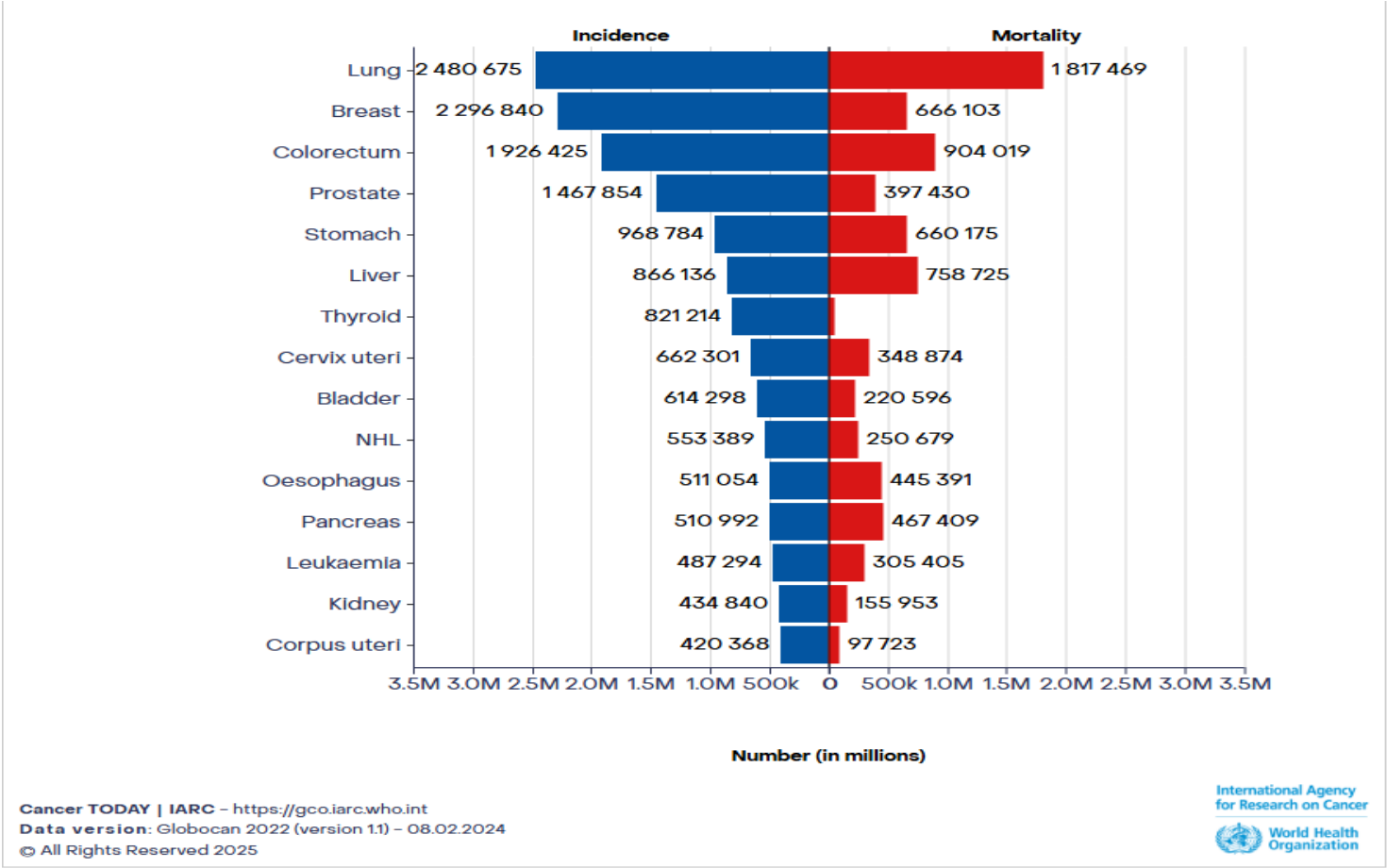
Considerations for Future Lung Cancer Claims

Trends in Smoking and Vaping in Relation to Lung Cancer Causation

Pulmonary Metastases from the Prostate Mimicking Primary Lung Cancers

Considerations for Future Lung Cancer Claims

Lung cancer remains the leading cause of cancer death worldwide (WHO – International Agency for Research on Cancer)



Considerations for Future Lung Cancer Claims

Smokers are 15-30x more likely to develop lung cancer than non-smokers and cigarette smoking is still linked to 80-90% of lung cancer deaths. Lung Cancer Risk Factors | Lung Cancer | CDC

Does Vaping Cause Lung Cancer?

Considerations for Future Lung Cancer Claims

E-cigarettes/Vaping Usage Rates

- The CDC reported last fall that youth e-cigarette use (grades 6-12) had dropped to the lowest level in a decade; down from a peak in 2019
  - **In 2024, 1.63 million middle and high school students reported having used e-cigarettes within the past 30 days.** National Youth Tobacco Survey 2024.

- **Usage rates increased for adults from 4.5% in 2019 to 6.5% in 2023**. Vahratian, A, et al., "Electronic Cigarette Use Among Adults in the United States 2019-2013," NCHS Data Brief, No. 524, Jan. 2025. https://www.cdc.gov/nchs/databriefs/db524.pdf

Considerations for Future Lung Cancer Claims

Does Vaping Alone Cause Lung Cancer?

- **Maybe, maybe not**

  Potentially carcinogenic compounds associated with vaping

- Formaldehyde
- Acrolein
- VOCs
- Toxic Metals (nickel, cobalt, chromium, lead, manganese, arsenic) Aherrera, A, et al., "Metal Concentrations in E-Cigarette Aerosol Samples: A Comparison by Device Type and Flavor.," *Environmental Health Perspectives,* 131(12) December 2023.

"substantial evidence that e-cigarette exposure is associated with biomarkers reflective of cancer disease risk. However, the overall evidence on cancer risk is still limited and should be investigated by future research." Kundo, et al., "Evidence update on the cancer risk of vaping e-cigarettes: A systematic review," *Tob. Induc. Dis.* 2025:23(January):6.

Considerations for Future Lung Cancer Claims

Vaping + Smoking

- Vaping combined with smoking led to a **4x higher** risk of developing lung cancer vs. only smokers

- “[V]aping in combination with cigarette smoking accelerates the rate of developing lung cancer compared to smoking alone.”

Journal of Oncology Research and Therapy
Bittoni MA, et al. Oncol Res Ther 9: 10229.
www.doi.org/10.29011/2574-710X.10229
www.gavinpublishers.com
OPEN ACCESS
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Research Article

Vaping, Smoking and Lung Cancer Risk

Bittoni MA, Carbone DP, Harris RE*

Colleges of Medicine & Public Health, and the Comprehensive Cancer Center, The Ohio State University, Columbus, Ohio

***Corresponding author:** Harris RE, Colleges of Medicine & Public Health, and the Comprehensive Cancer Center, The Ohio State University, Columbus, Ohio. Email: Harris.44@osu.edu

Citation: Bittoni MA, Carbone DP, Harris RE (2024) Vaping, Smoking and Lung Cancer Risk. J Oncol Res Ther 9: 10229. DOI: 10.29011/2574-710X.10229.

Received Date: 19 June, 2024; **Accepted Date:** 01 July, 2024; **Published Date:** 04 July, 2024

Abstract

Nicotine exposure through the use of electronic delivery systems (vaping) has been found to elevate the risk of certain conditions of the lungs, e.g., vaping associated lung injury, EVALI). However, the potential impact of vaping on lung cancer risk remains unexplored. We, therefore, examined the association of vaping and cigarette smoking with lung cancer risk in a case control study conducted in central Ohio. The study design compared 4,975 individuals with recently diagnosed pathologically confirmed carcinoma of the lung to 27,294 controls without cancer that were group matched at a 5:1 ratio to the cases by age, gender, race and location of residence. Odds ratios (OR) adjusted for gender, age and race revealed a fourfold higher risk of lung cancer among individuals who vaped in combination with chronic smoking (OR=58.9, 95% CI=47.3-70.5) versus individuals who only smoked cigarettes (OR=13.9, 95% CI=12.7-15.3, P<0.001). Further adjustment for prevalent comorbidities, chronic obstructive pulmonary disease and coronary artery disease, reduced the magnitude of the OR, but the risk for vaping and smoking (OR=38.7, 95% CI =31.5-47.6) remained fourfold higher than for smoking alone (OR=9.6, 95% CI= 8.7-10.6, P<0.001). This finding was consistent for men and women, with adjustment for pack-years of smoking, and for the main histological cell types of lung cancer. Our results suggest that the addition of vaping to smoking accelerates the risk of developing lung cancer.

Considerations for Future Lung Cancer Claims

Could vaping create a new generation of smokers?

- Varying quantities of nicotine in vaping products
- Flavors/additives make vapes more appealing to youth

Considerations for Future Lung Cancer Claims

Could vaping create a new generation of smokers?

A 2023 literature review found:

- 20% of e-cigarette users transition to cigarette use
- Nicotine dependence was higher in e-cigarette users vs. conventional smokers

Matthews, J., et al., "A cloud of addiction: how vaping has created a new generation of addicts," *British Journal of General Practice* 2023;73 (suppl 1)

Considerations for Future Lung Cancer Claims

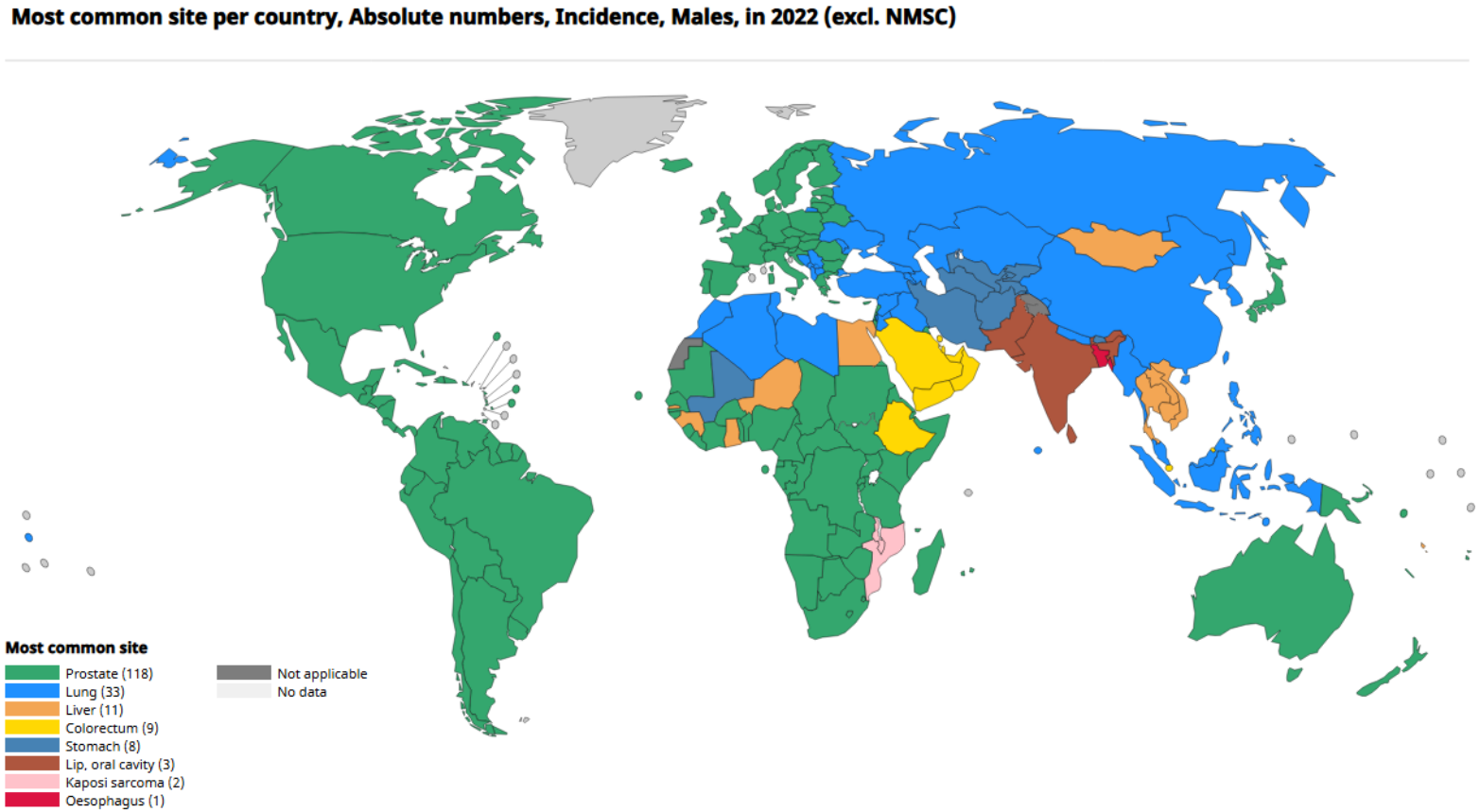
Metastatic Cancers that can Mimic Primary Lung Cancers

- **Colon**
- **Breast**
- **Pancreas**
- **Ovary**

What about prostate cancer?

Considerations for Future Lung Cancer Claims

In 118 of 185 countries, prostate cancer has a higher incidence rate than lung cancer among men

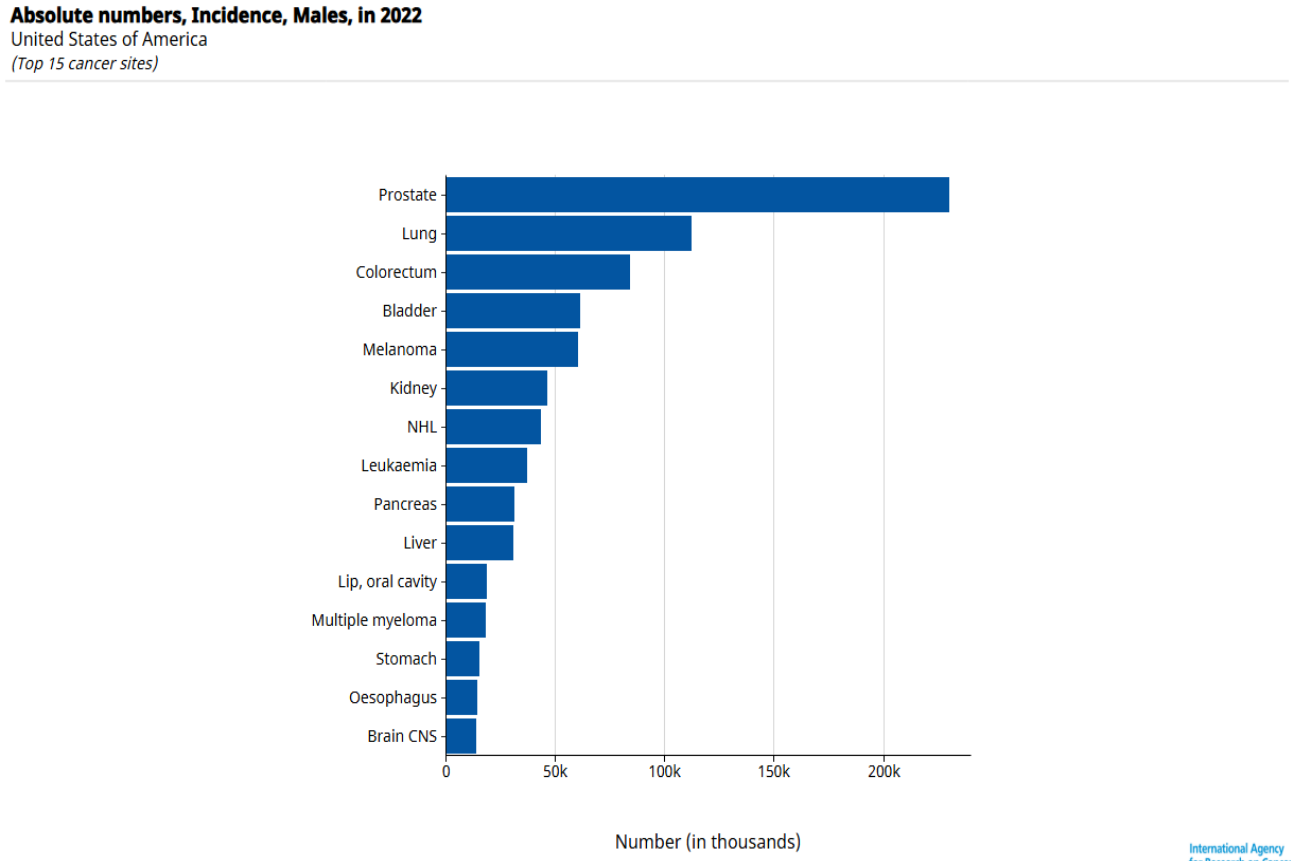


Cancer TODAY | IARC
https://gco.iarc.who.int/today
Data version: Globocan 2022 (version 1.1) - 08.02.2024

International Agency for Research on Cancer
World Health Organization

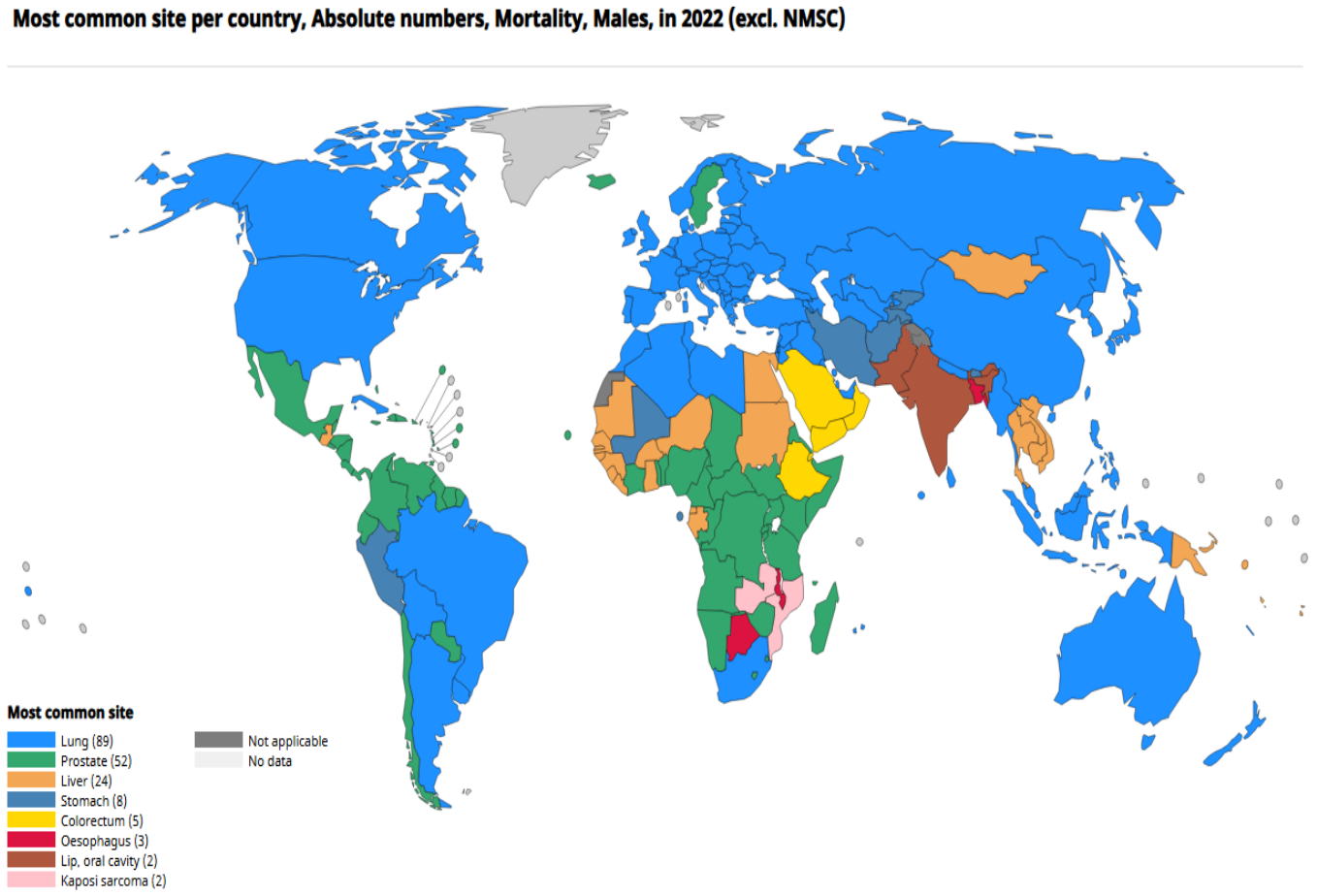
Considerations for Future Lung Cancer Claims

In the United States, prostate cancer occurs with nearly twice the incidence rate of lung cancer among men



Considerations for Future Lung Cancer Claims

Mortality rates, however, are lower for prostate cancer overall



Cancer TODAY | IARC
https://gco.iarc.who.int/today
Data version: Globocan 2022 (version 1.1) - 08.02.2024

International Agency for Research on Cancer
World Health Organization

Considerations for Future Lung Cancer Claims

Lung metastasis identified as the second most prevalent site for extranodal metastasis in PCa (46%) behind bone metastasis (90%).

Increasing occurrence over time

- Increased longevity = more time to manifest
- Better/earlier detection of lung metastases

Mahmoud, AM, et al., “Prostate Cancer Lung Metastasis: Clinical Insights and Therapeutic Strategies.” *Cancers*, *16*(11), 2080 (2024). https://doi.org/10.3390/cancers16112080

Considerations for Future Lung Cancer Claims

Shared Characteristics with Primary Lung Cancers

- Mostly adenocarcinomas, but also:
  - Neuroendocrine carcinomas (small and large cell)
  - Squamous cell
  - Sarcoma

- Varying Presentation
  - Single or multiple masses
  - Following bone metastases or as solitary lesion

Considerations for Future Lung Cancer Claims

Shared Characteristics with Primary Lung Cancers

Small cell prostate cancer of the lung "clinically behaves like small cell carcinoma of the lung" and "resembles small cell carcinoma of the lung" morphologically.

Demirtas A, et al. "Small Cell Prostate Carcinoma: A Case Report and Review of the Literature," *Case Reports in Urology*, vol. 2013.

Prostate adenocarcinomas can also mimic primary lung cancers.

Anton, RC, et al., "Metastatic Carcinoma of the Prostate Mimicking Primary Carcinoid Tumor of the Lung and Mediastinum," *Pathol. Res. Pract.* 194:753-758 (1998).

Considerations for Future Lung Cancer Claims

Diagnostic Issues

PSMA-PET alone may not distinguish between metastasis and primary lung cancer

Damjanovic, et al. “Ga-PSMA-PET/CT for the Evaluation of Pulmonary Metastases and Opacities in Patients with Prostate Cancer,” *Cancer Imaging*, 2018 May 16;18(1):20

Androgen deprivation therapy may alter PSMA expression

Afshar-Oromieh A, et al. “Impact of long-term androgen deprivation therapy on PSMA ligand PET/CT in patients with castration-sensitive prostate cancer.” *Eur J Nucl Med Mol Imaging* (2018) 45:2045-2054.

Misdiagnosis based on immunohistochemistry can occur

Marak C., Guddati AK, Ashraf A, et al. “Prostate adenocarcinoma with atypical immunohistochemistry presenting with a Cheerio sign.” *AIM Clinical Cases,* 2022:1:e220508.

Allyson B. Bertin

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SCOTT KELLER CASE – SDNY

2025 US Dist LEXIS 44043 [SDNY Mar. 11, 2025, No. 23-CV-1528-LTS]

Alternate Causation – Radon

PERRIN NATIONAL ASBESTOS LITIGATION CONFERENCE

Dennis E. Vega

Co-Managing Partner - NY

Foley & Mansfield, PLLP

September 16, 2025

Scott Keller v. ExxonMobil Oil Corp. - SDNY

- **Case Facts – 73-year-old Living Non-Smoking LC**

•Only One Defendant Sued.

•ExxonMobil Merchant Mariner for ~10 years.

•Jones Act Case so no Workers' Comp Bar.

•Plaintiff Denied Asbestos Exposure Pre & Post ExxonMobil Employment.

•CHECK MATE?

We All Know the Number One Cause of Lung Cancer in Smokers . . .

Tobacco!

What is the Number One Cause of Lung Cancer in Non-Smokers?

• • •

What is the Number One Cause of Lung Cancer in Non-Smokers?

RADON!!!

Source:

1. U.S. Environmental Protection Agency (U.S. EPA),

2. Centers for Disease Control and Prevention (CDC),

3. American Lung Association (2024).

RADON = LUNG CANCER

"[A]ll major health organizations (like the Centers for Disease Control, the American Lung Association and the American Medical Association) agree with estimates that radon causes thousands of preventable lung cancer deaths every year."

Source:

1. EPA "A Citizen's Guide to Radon" (2016), p. 13.

What is Your Radon Cross?

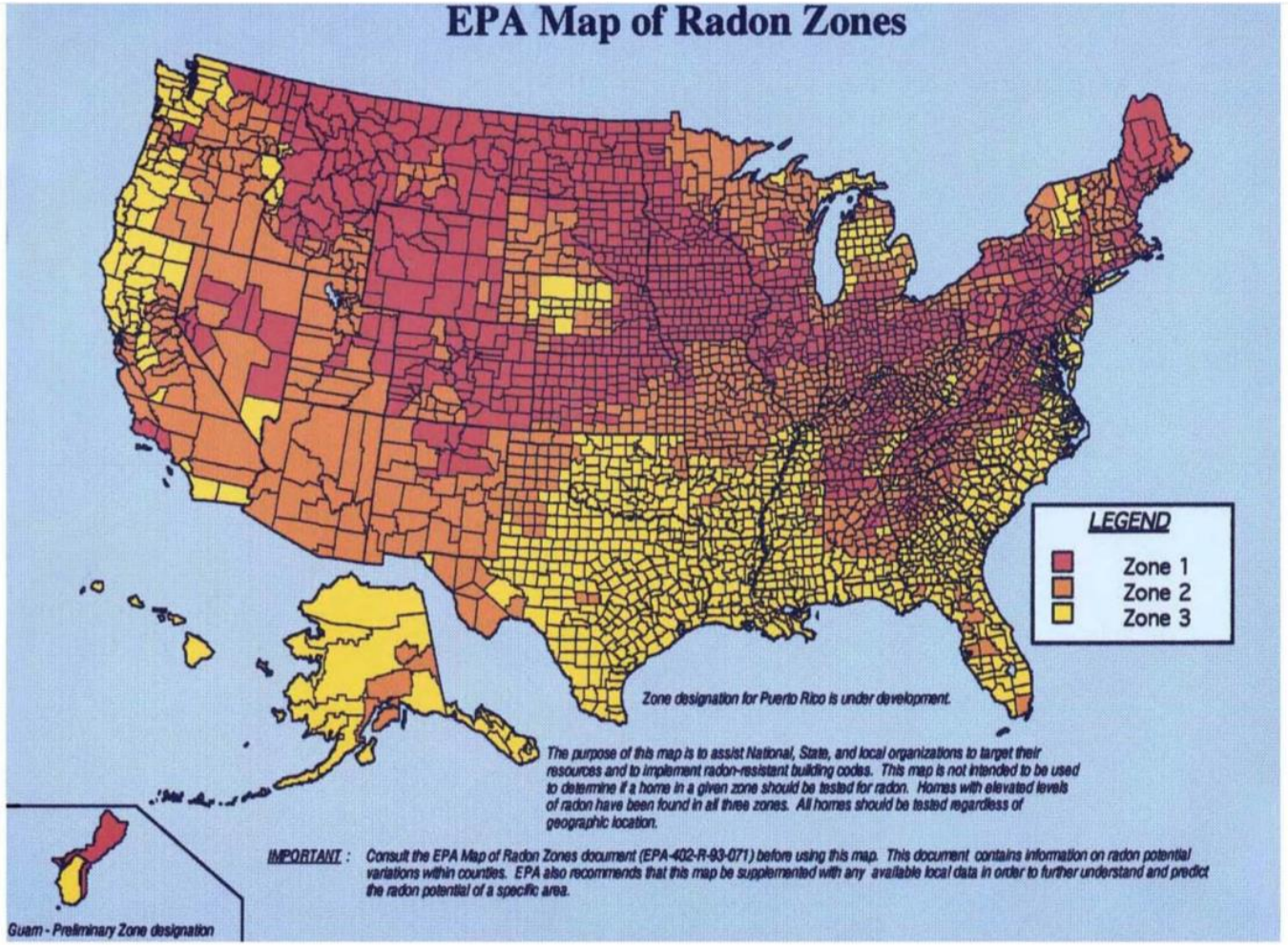
- **It Better Be More Than:**
  - **"Did you ever test your home for radon?"**
  - **Common Oversights:**
    - **Smoking LC with a 500-page transcript, but only 2 pages devoted to smoking.**
    - **Non-smoking LC with a 500-page transcript, but only 1-2 questions about radon.**

How Do You Prove Up the Radon Defense?

- **Radon exposure in residential settings has been an area of concern for the EPA and CDC for many years.**

- **The potential for elevated indoor radon levels varies by local geology and local conditions.**

- **The EPA created a useful map indicating risks by zone in the U. S.**



pCi/L = Picocuries per liter

- 4 pCi/L or more
- Between 2 and 4 pCi/L
- Below 2 pCi/L

What do the colors mean?

	Zone 1 (red zones)	Highest potential; average indoor radon levels may be greater than 4 pCi/L (picocuries per liter)
	Zone 2 (orange zones)	Moderate potential; average indoor radon levels may be between 2 and 4 pCi/L
	Zone 3 (yellow zones)	Low potential; average indoor radon levels may be less than 2 pCi/L

ILLINOIS - EPA Map of Radon Zones

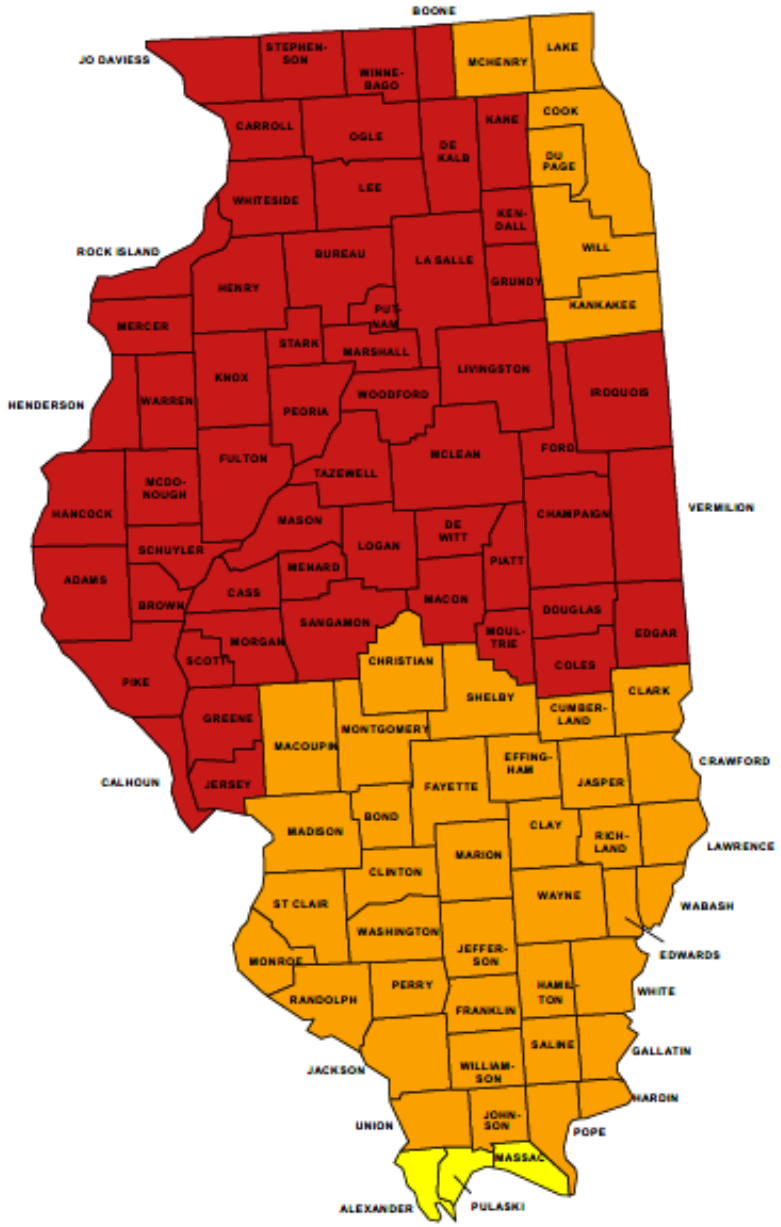
http://www.epa.gov/radon/zonemap.html

The purpose of this map is to assist National, State and local organizations to target their resources and to implement radon-resistant building codes.

This map is not intended to determine if a home in a given zone should be tested for radon. Homes with elevated levels of radon have been found in all three zones.

All homes should be tested, regardless of zone designation.

5,590 Homes Sampled



IMPORTANT: Consult the publication entitled "Preliminary Geologic Radon Potential Assessment of Illinois" (USGS Open-file Report 93-292-E) before using this map. http://energy.cr.usgs.gov/radon/grpinfo.html This document contains information on radon potential variations within counties. EPA also recommends that this map be supplemented with any available local data in order to further understand and predict the radon potential of a specific area.

Zone 1 Zone 2 Zone 3

MISSOURI - EPA Map of Radon Zones

http://www.epa.gov/radon/zonemap.html

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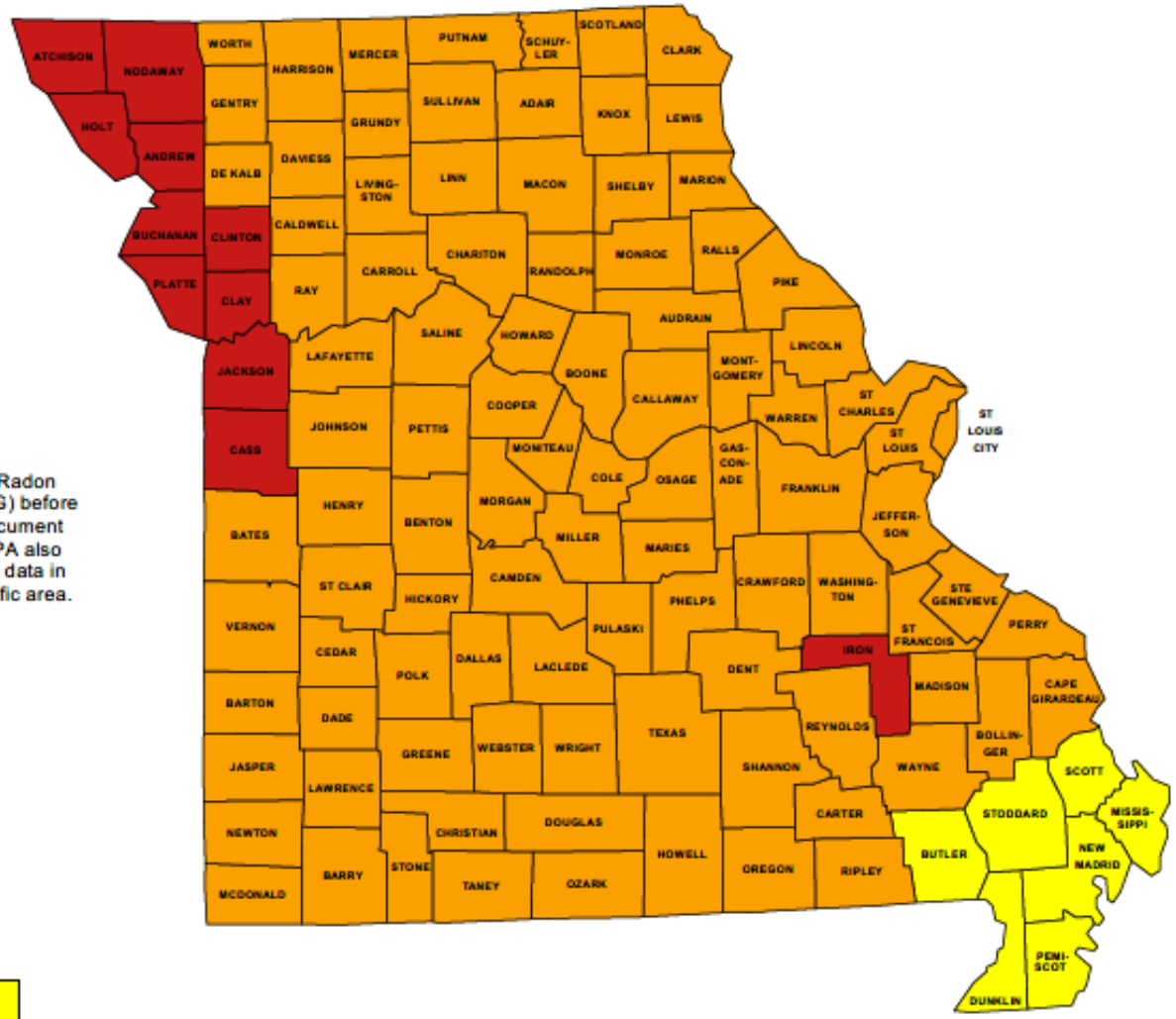
1,751 Homes Sampled



IMPORTANT: Consult the publication entitled "Preliminary Geologic Radon Potential Assessment of Missouri" (USGS Open-file Report 93-292-G) before using this map. http://energy.cr.usgs.gov/radon/grpinfo.html This document contains information on radon potential variations within counties. EPA also recommends that this map be supplemented with any available local data in order to further understand and predict the radon potential of a specific area.

Zone 1 Zone 2 Zone 3

NEW YORK - EPA Map of Radon Zones

http://www.epa.gov/radon/zonemap.html

The purpose of this map is to assist National, State and local organizations to target their resources and to implement radon-resistant building codes.

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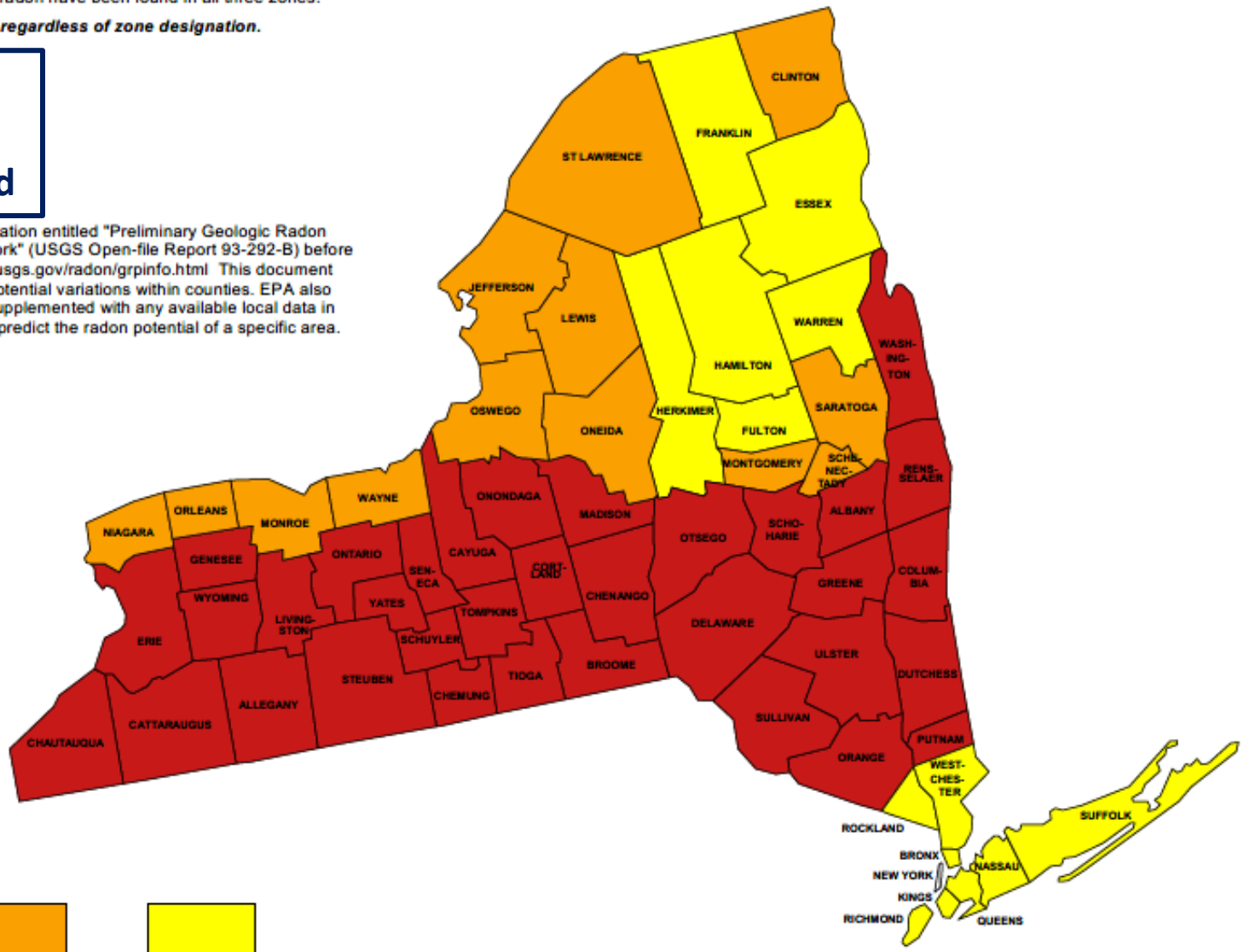
All homes should be tested, regardless of zone designation.

39,070 Homes Sampled

IMPORTANT: Consult the publication entitled "Preliminary Geologic Radon Potential Assessment of New York" (USGS Open-file Report 93-292-B) before using this map. http://energy.cr.usgs.gov/radon/grpinfo.html This document contains information on radon potential variations within counties. EPA also recommends that this map be supplemented with any available local data in order to further understand and predict the radon potential of a specific area.



Zone 1 Zone 2 Zone 3

NEW JERSEY - EPA Map of Radon Zones

http://www.epa.gov/radon/zonemap.html

The purpose of this map is to assist National, State and local organizations to target their resources and to implement radon-resistant building codes.

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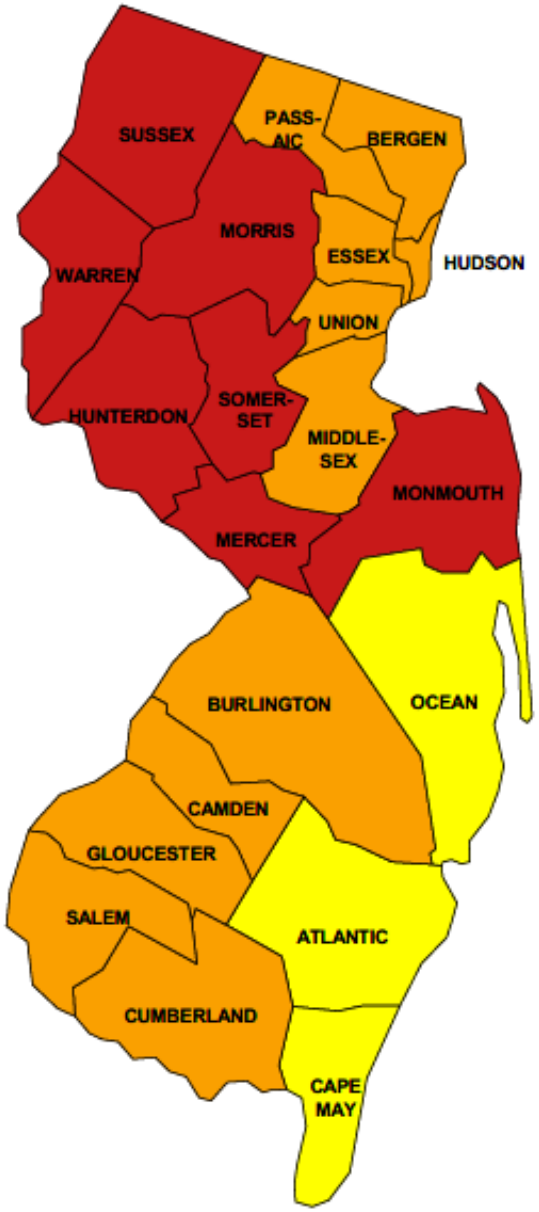
All homes should be tested, regardless of zone designation.

6,000+ Homes & Buildings Sampled



IMPORTANT: Consult the publication entitled "Preliminary Geologic Radon Potential Assessment of New Jersey" (USGS Open-file Report 93-292-B) before using this map. http://energy.cr.usgs.gov/radon/grpinfo.html This document contains information on radon potential variations within counties. EPA also recommends that this map be supplemented with any available local data in order to further understand and predict the radon potential of a specific area.

Zone 1 Zone 2 Zone 3

PENNSYLVANIA - EPA Map of Radon Zones

http://www.epa.gov/radon/zonemap.html

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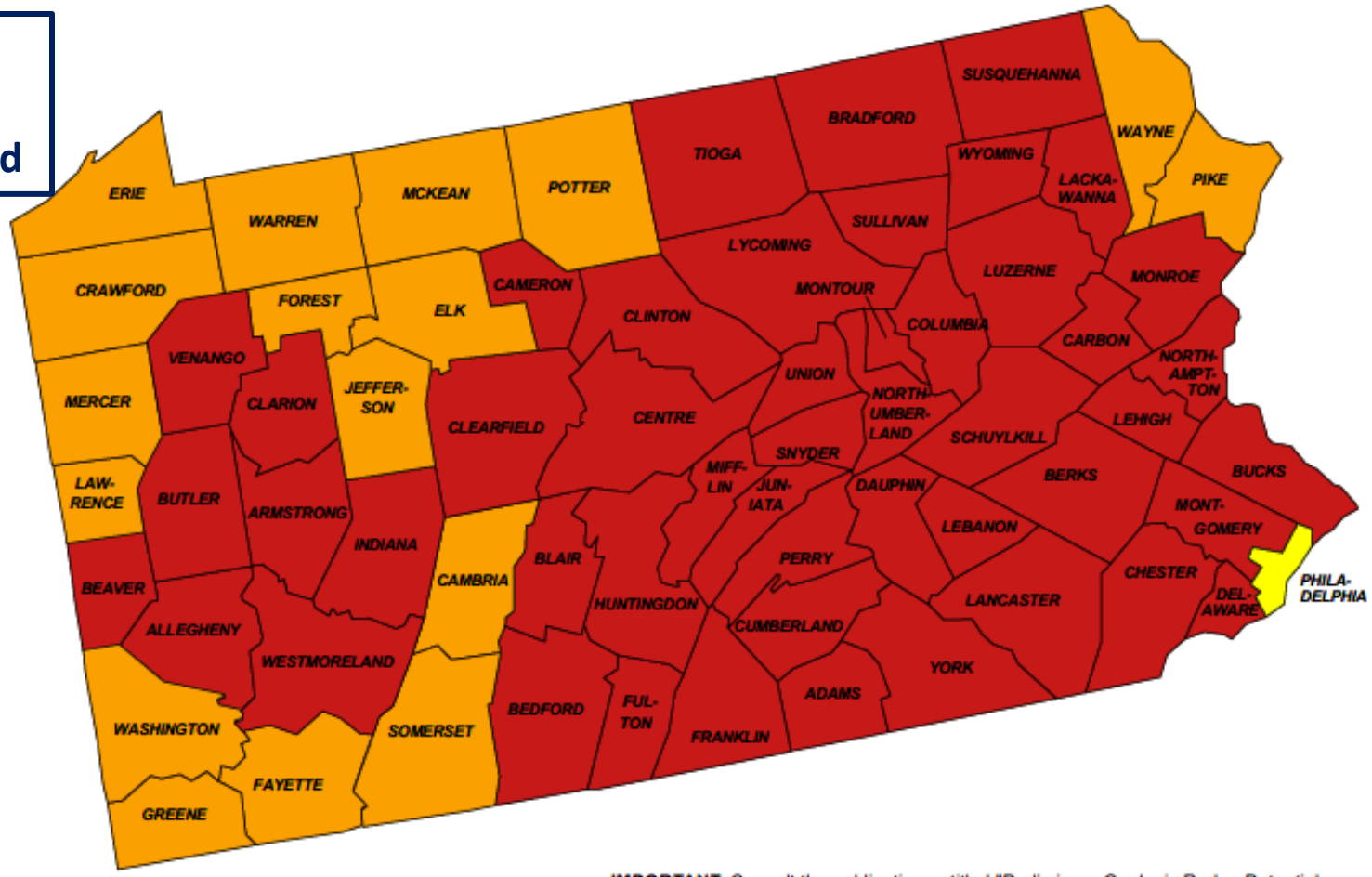
This map is not intended to determine if a home in a given zone should be tested for radon.

All homes should be tested, regardless of zone designation.

70,389 Homes Sampled



Zone 1 Zone 2 Zone 3

IMPORTANT: Consult the publication entitled "Preliminary Geologic Radon Potential Assessment of Pennsylvania" (USGS Open-file Report 93-292-C) before using this map. http://energy.cr.usgs.gov/radon/grpinfo.html This document contains information on radon potential variations within counties. EPA also recommends that this map be supplemented with any available local data in order to further understand and predict the radon potential of a specific area.

CALIFORNIA - EPA Map of Radon Zones

http://www.epa.gov/radon/zonemap.html

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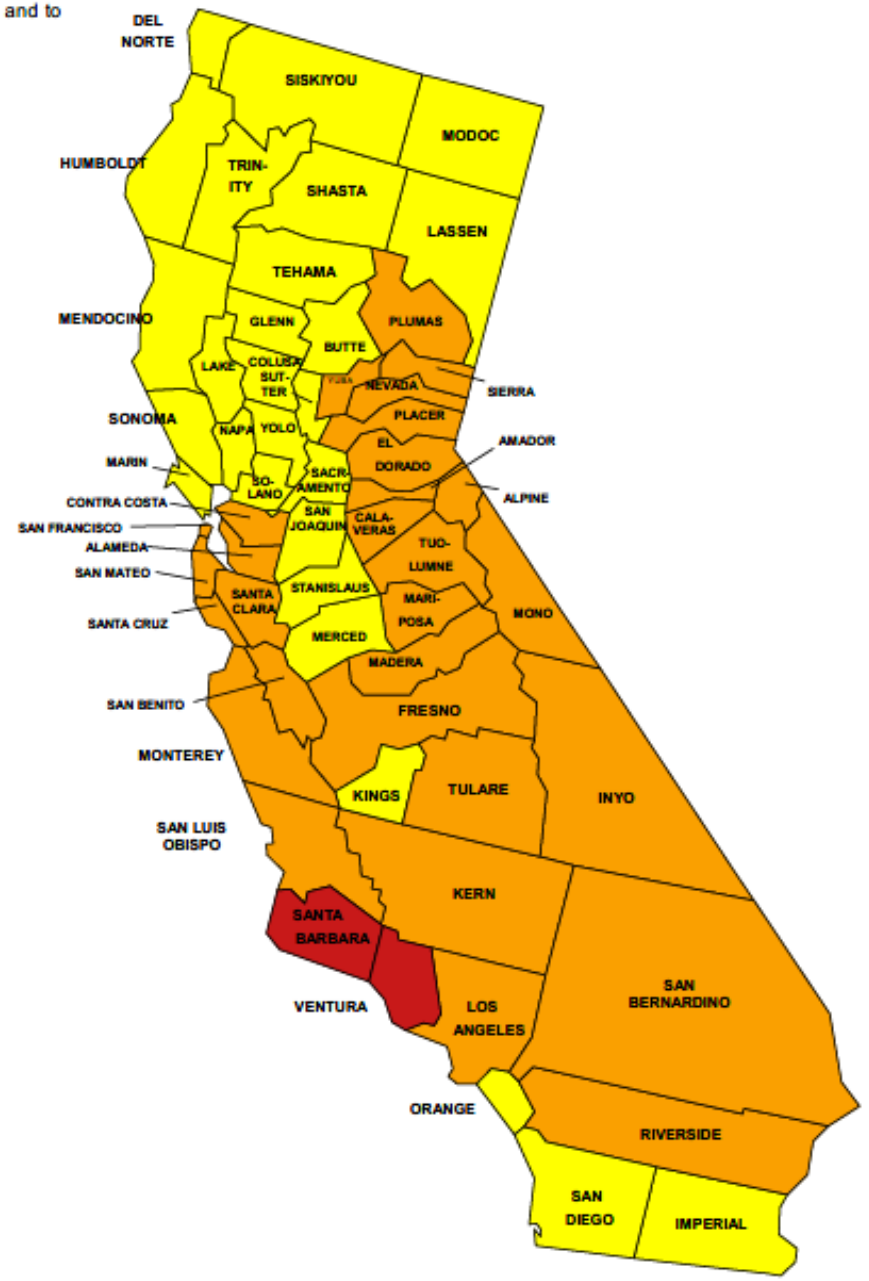
All homes should be tested, regardless of zone designation.

1,885 Homes Sampled

IMPORTANT: Consult the publication entitled "Preliminary Geologic Radon Potential Assessment of California" (USGS Open-file Report 93-292-I) before using this map. See http://energy.cr.usgs.gov/radon/grpinfo.html This document contains information on radon potential variations within counties. EPA also recommends that this map be supplemented with any available local data in order to further understand and predict the radon potential of a specific area.



Zone 1 Zone 2 Zone 3

SOUTH CAROLINA - EPA Map of Radon Zones

http://www.epa.gov/radon/zonemap.html

The purpose of this map is to assist National, State and local organizations to target their resources and to implement radon-resistant building codes.

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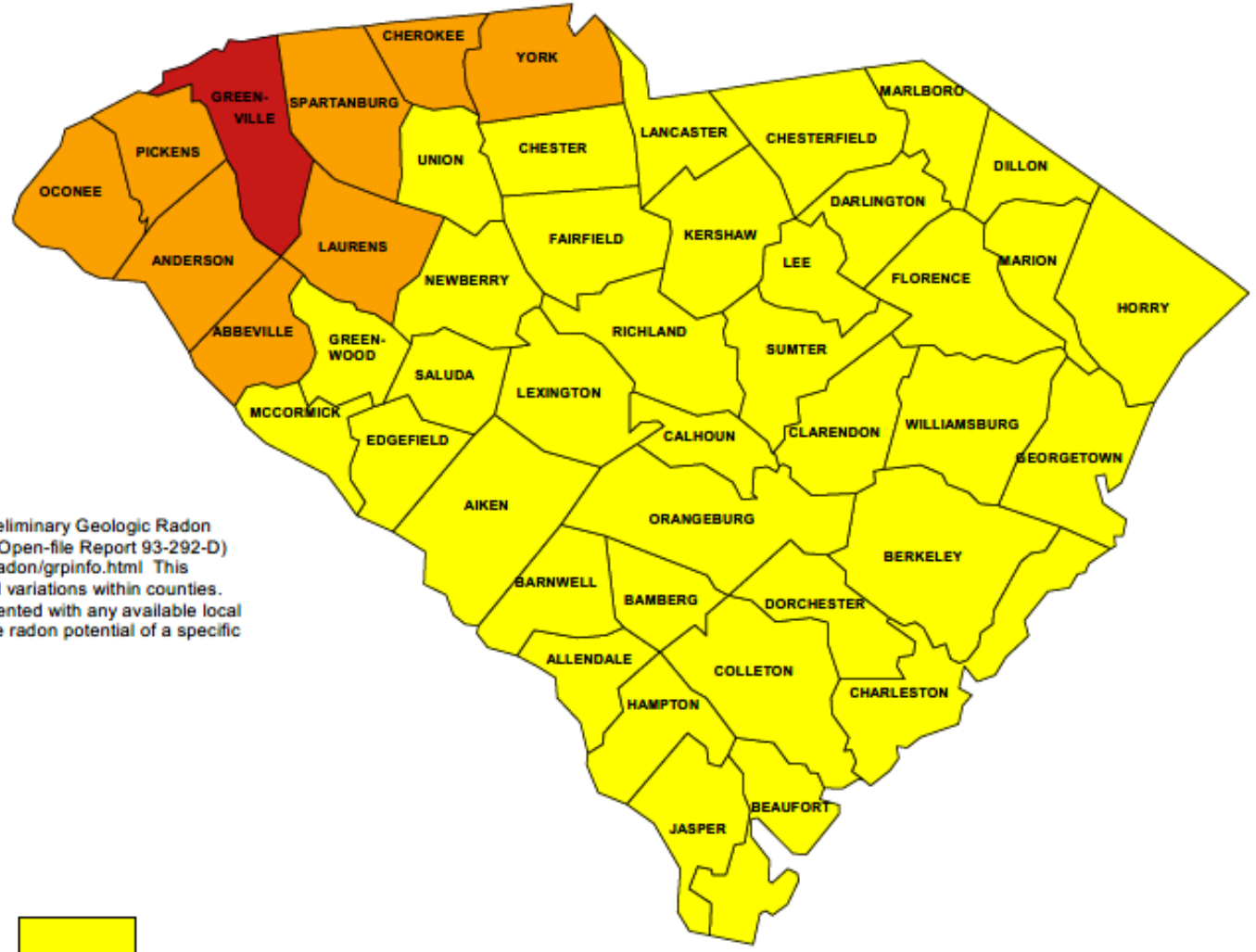
All homes should be tested, regardless of zone designation.

1,089 Homes Sampled



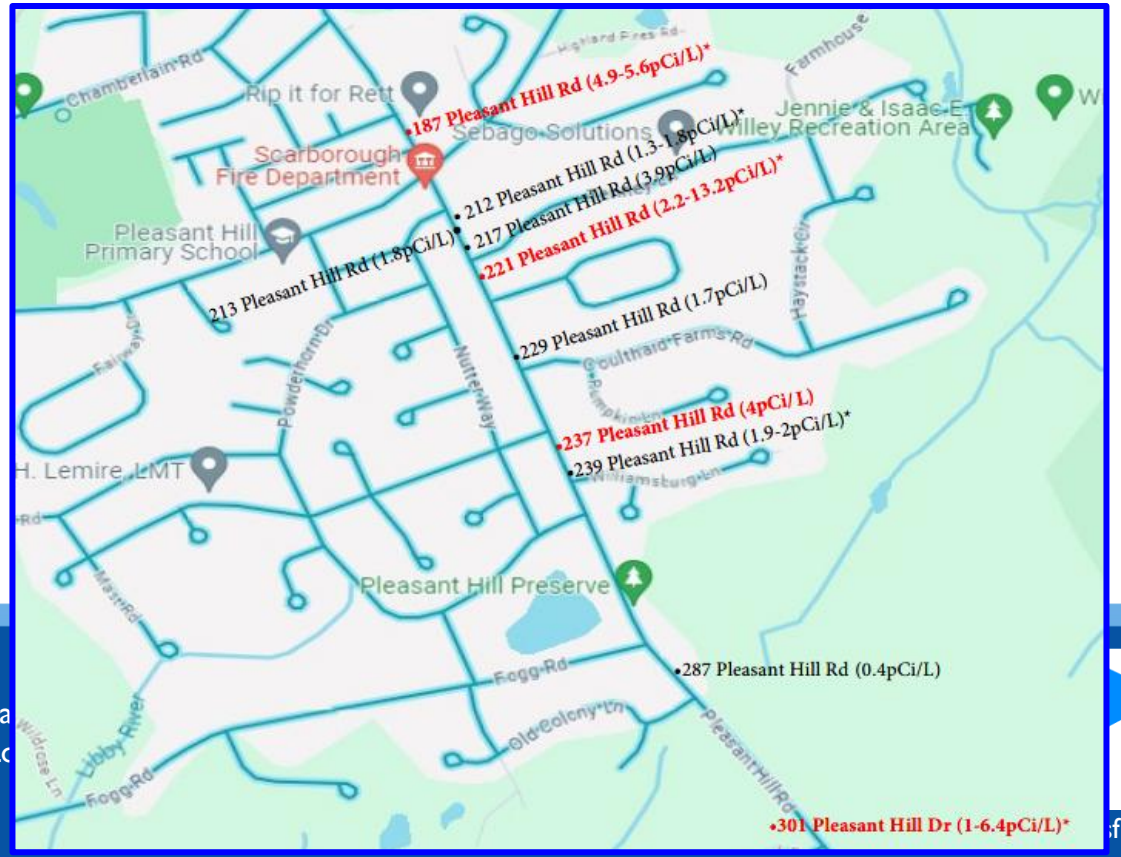
IMPORTANT: Consult the publication entitled "Preliminary Geologic Radon Potential Assessment of South Carolina" (USGS Open-file Report 93-292-D) before using this map. http://energy.cr.usgs.gov/radon/grpinfo.html This document contains information on radon potential variations within counties. EPA also recommends that this map be supplemented with any available local data in order to further understand and predict the radon potential of a specific area.

Zone 1 Zone 2 Zone 3

CONSULT STATE EPA DEPARTMENTS

- **Many States Provide Easy Access to Radon Test Results.**

- **Obtained 53 Radon Test Results from Homes Nearby Keller.**



Request to Permit Entry Upon Land

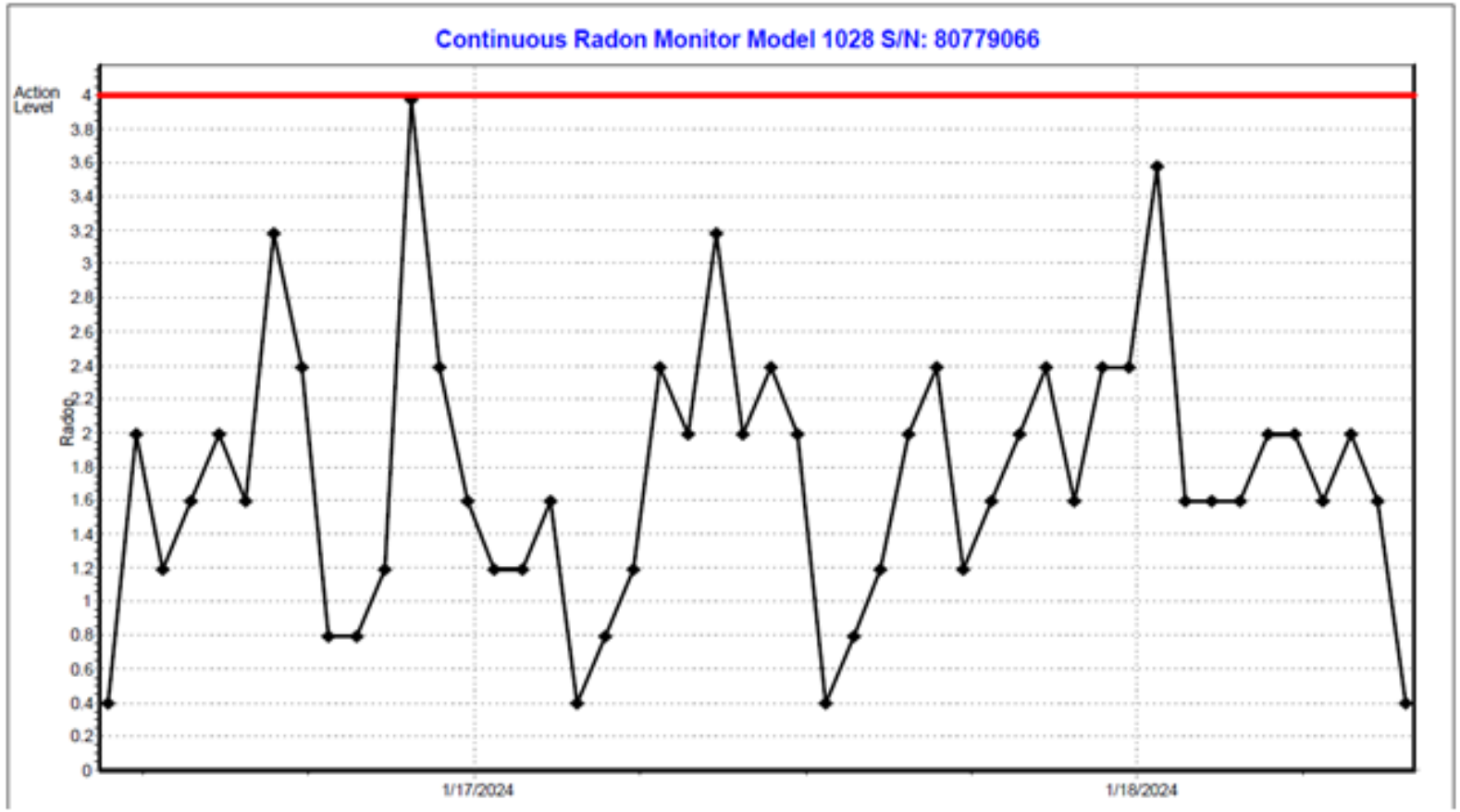
- **Federal Court: FRCP Rule 34(a)(2)**
- **New York: CPLR 3120(a)(1)(ii)**
- **New Jersey: N.J. Ct. R. 4:18-1(a)(2)**
- **Pennsylvania: R. Civ. Pro. 4009.31**

UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK

SCOTT K. KELLER,	§	**Case No.: 1:23-cv-1528**
Plaintiff	§	
vs.	§	
EXXONMOBIL OIL CORPORATION f/k/a MOBIL OIL CORPORATION.	§	**DEFENDANT EXXONMOBIL OIL CORPORATION'S REQUEST TO PERMIT ENTRY UPON PROPERTY**
Defendant.	§	

Test Plaintiff's Home for the Presence of Radon

Table 6. Summary of Hourly Radon Fluctuations at Plaintiff's Residence



MSJ & Motion to Preclude Dr. Kradin

Table 5. Chart of Plaintiff's Residences & EPA Radon Zones

Residential Address	Years (total time)	County	EPA Radon Zone	Total Years
1421 N Belmont, Wichita, KS	1951-1958 (7 yrs)	Sedgwick	**Zone 2: Orange 2-4 pCi/L**	**First 11 years of life in Orange Zone; "Consider fixing."**
No Address Supplied Manhattan Beach, CA	1958-1960 (2 yrs)	Los Angeles	**Zone 2: Orange 2-4 pCi/L**	
1425 Cross St., Ogden, UT	1960-1962 (2 yrs)	Weber	**Zone 2: Orange 2-4 pCi/L**	
Ivy Rd, Cape Elizabeth, ME	1962-1963 (1 yr)	Cumberland	**Zone 1: Red 4.0+ pCi/L**	**Last 62 years of life in Red Zone.**
Stephenson St., Cape Elizabeth, ME	1963-1965 (2 yrs)	Cumberland	**Zone 1: Red 4.0+ pCi/L**	
Pheasant Hill Rd., Cape Elizabeth, ME	1965-1974 (9 yrs)	Cumberland/ Hancock[15]	**Zone 1: Red 4.0+ pCi/L**	
3 Indian Rock Woods, Scarborough, ME	1974-1991 (17 yrs)	Cumberland	**Zone 1: Red 4.0+ pCi/L**	
1 Scabbard Rd., Scarborough, ME	1991-2024 (33 yrs)	Cumberland	**Zone 1: Red 4.0+ pCi/L**	

Pltf Expert's Dr. Kradin's Deposition – 2/22/2024

- Dr. Kradin admitted radon has a dose-response relationship with respect to lung cancer. (p. 68).

- Dr. Kradin wasn't aware that Plaintiff resided in EPA "Red Zones" the majority of his life. (pp. 68-69).

Kradin, MD, Richard, 2/22/2024, (Page 25:9 to 25:25)

25

BY MR. VEGA:

Q. What other substances or chemicals did you look at in order to arrive at your opinion that Mr. Keller's lung cancer was caused by asbestos and secondhand smoke?

MR. HERRICK: Object to the form.

THE WITNESS: **I didn't look at any other contributing factors.**

BY MR. VEGA:

Q. Were you asked to look at radon?

A. **I wasn't asked to look at radon.**

Plaintiff's Principal Arguments

- Plaintiff relied heavily on Torrejon v. Mobil, 2004 Louisiana case to establish causation in Jones Act cases is "featherweight."

- Plaintiff also relied heavily on Badamo v. Chevron, 2022 SDNY case again to argue "featherweight" causation.

Chief U.S.D.J. Laura Taylor Swain – SDNY

- "While an expert need not rule out every potential cause in order to satisfy Daubert, the expert's testimony must at least address ***obvious alternative causes and provide a reasonable explanation for dismissing specific alternate factors identified by the defendant.***" Keller, 2025 US Dist LEXIS 44043, at *22-23.

- "Even toxic tort claims brought under the Jones Act ***require expert testimony to establish causation where an injury – like lung cancer – has multiple etiologies***." Id.

Chief U.S.D.J. Laura Taylor Swain – SDNY

- "[T]he reliability of the expert testimony proffered by Plaintiff as to what toxin . . . caused Plaintiff's lung cancer is disputed . . . [and] Plaintiff has failed to carry his burden of demonstrating its admissibility." Keller, 2025 US Dist LEXIS 44043, *26.

- "Without admissible expert testimony, there is insufficient evidence in the record to support a finding that Plaintiff's lung cancer was specifically caused by exposure to asbestos. . ." Id.

- **Dr. Kradin was precluded & MSJ Granted.**

Dennis E. Vega – Foley & Mansfield, PLLP

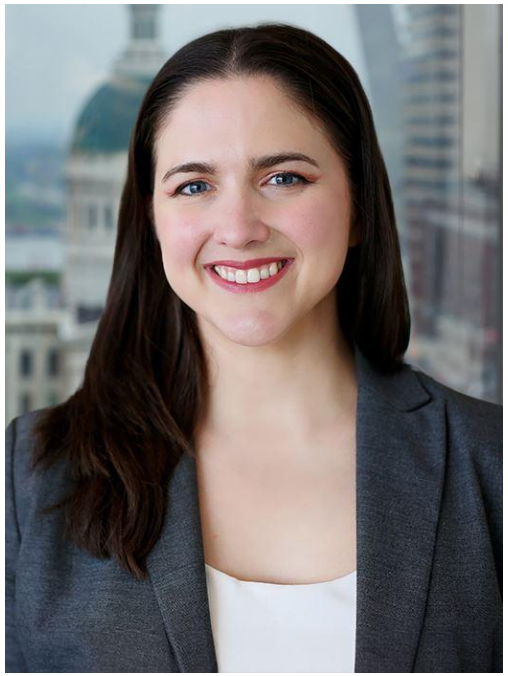
Admitted in NY, NJ & PA

Key Takeaway – we must do more than simply ask, "has your home ever been tested for radon?"

Questions?

dvega@foleymansfield.com
(646) 760-1315

Plaintiff's Perspective!



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If There Is One Thing I Want You To Take Away From This Panel…

ASBESTOS CAUSES CANCER

It Is Also Critical For You To Know…

ASBESTOS CAUSES CANCER

SAMPLE OF THE LITERATURE

Toxicological Profile for Asbestos. U.S. Department of Health and Human Services. Public Health Service. Agency for Toxic Substances and Disease Registry. Sept 2001.

American Thoracic Society. Diagnosis and initial management of nonmalignant diseases related to asbestos. Am J Respir Crit Care Med 2004;170:691-715.

IARC. Asbestos: Monograph on the Evaluation of Carcinogenic Risk to Man. Lyon: International Agency for Research on Cancer (1988) . IARC: Monograph on the Evaluation of Carcinogenic Risks to Humans (2012) ; l00C:219-309.

Helsinki Consensus Report. Asbestos, asbestosis and cancer: The Helsinki criteria for diagnosis and attribution. Scand J Work Environ Health 1997.

Helsinki Consensus Report. Asbestos, asbestosis and cancer: The Helsinki criteria for diagnosis and attribution. Scand J Work Environ Health 2014.

Henderson DW, Rodelsperger K, Woitowitz H-W, Leigh J . After Helsinki: a multidisciplinary review of the relationship between asbestos exposure and lung cancer, with emphasis on studies published during 1997-2004. Pathology 2004;36:517-550.

Welch et al., Asbestos exposure causes mesothelioma, but not this asbestos exposure: an amicus brief to the Michigan Supreme Courl. Int. J. Occup. Environ. Health. 13:318-327 (2007}.

American Conference of Governmental Industrial Hygienists. Asbestos: TLV® Chemical Substances 7th Edition, ACGIH, Report No. : Publication #7DOC-040 (2001).

National Toxicology Program. Report on Carcinogens, Eleventh Edition. U.S. Dept. of Health and Human Services, Public Health Service

A Factor You May Not Have Considered

Gender Bias

The Impact of Gender Bias on Diagnosis

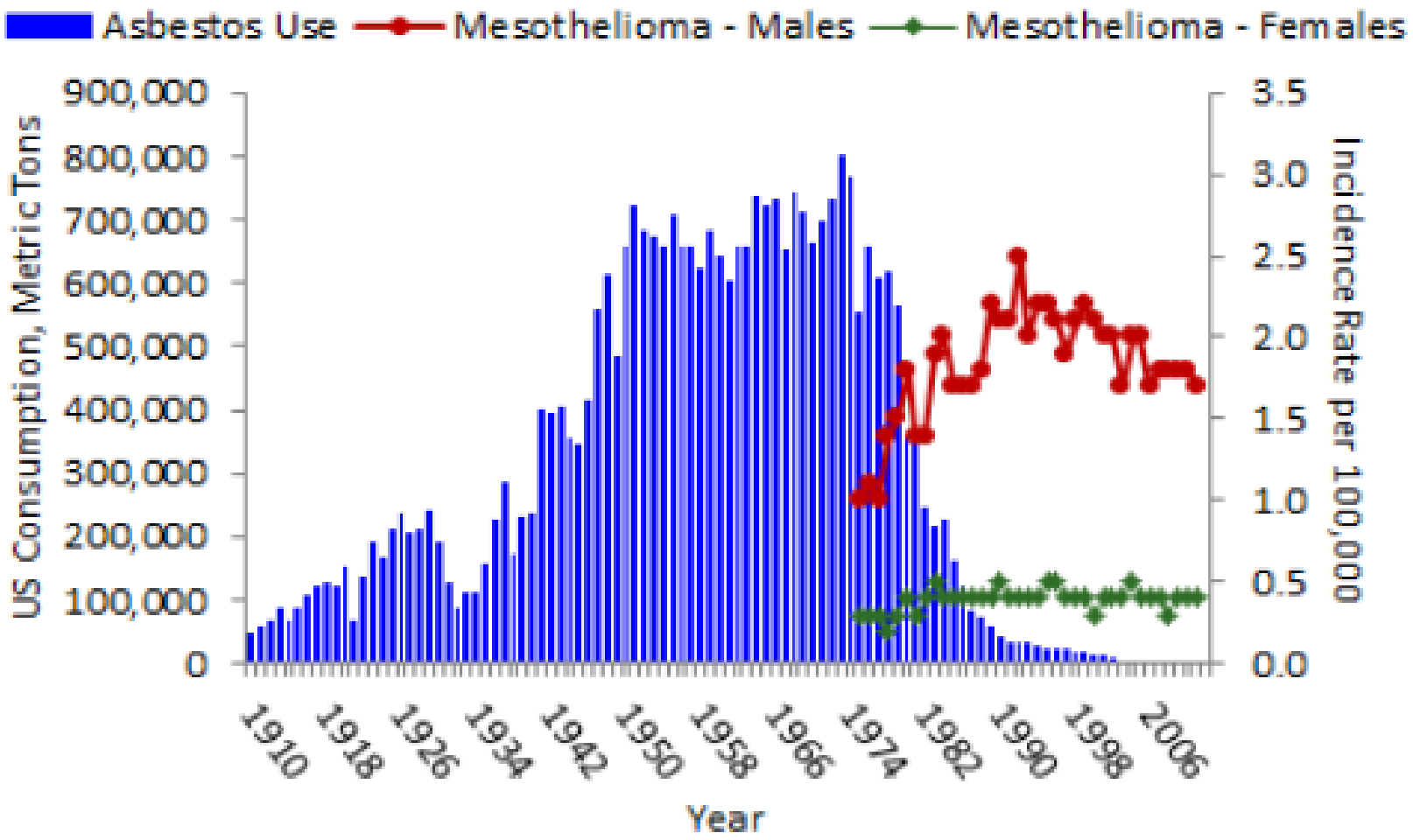
- Differential Diagnosis
- Requires doctor taking occupational history
- Trick: not everyone knows whether they were exposed to asbestos.
    - Remember: onion properties
    - Take home exposure is a real thing.

The Impact of Gender Bias on Diagnosis

Let’s talk about the typical mesothelioma patient.

- White
- Male
- Older (avg age in the United States is 72)
- History of being a tradesman

Gender Does Make a Difference

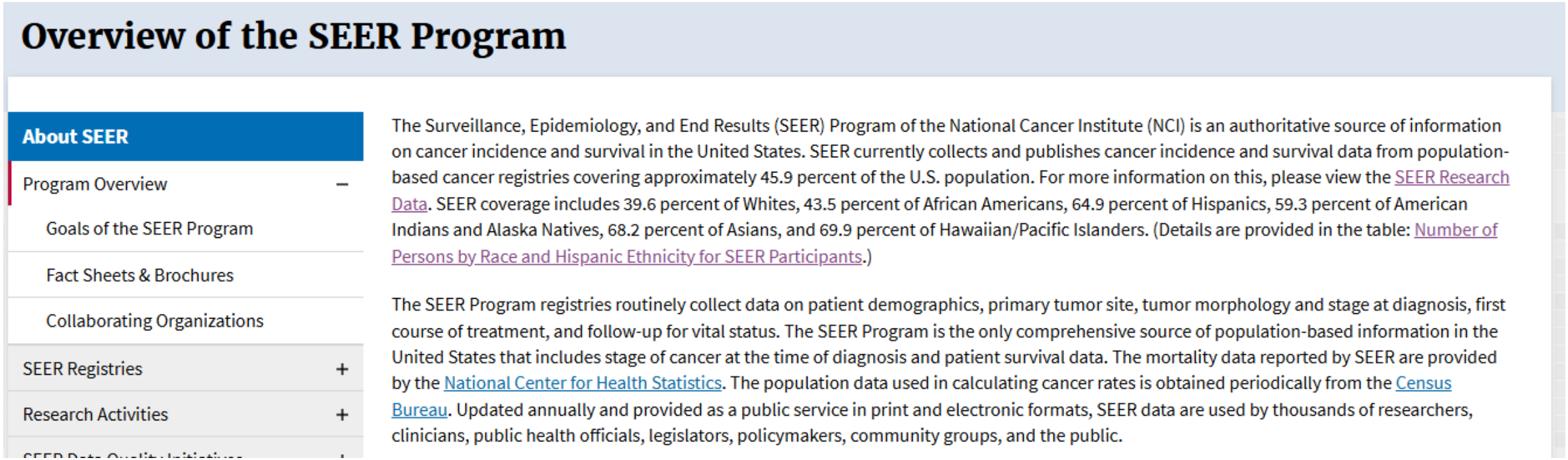


Source: National Cancer Institute (Surveillance Epidemiology and End Results Program) SEER Program

The Impact of Gender Bias on Diagnosis

Our statistics are only as good as our data.

The Data SEER Collects



Overview of the SEER Program

About SEER

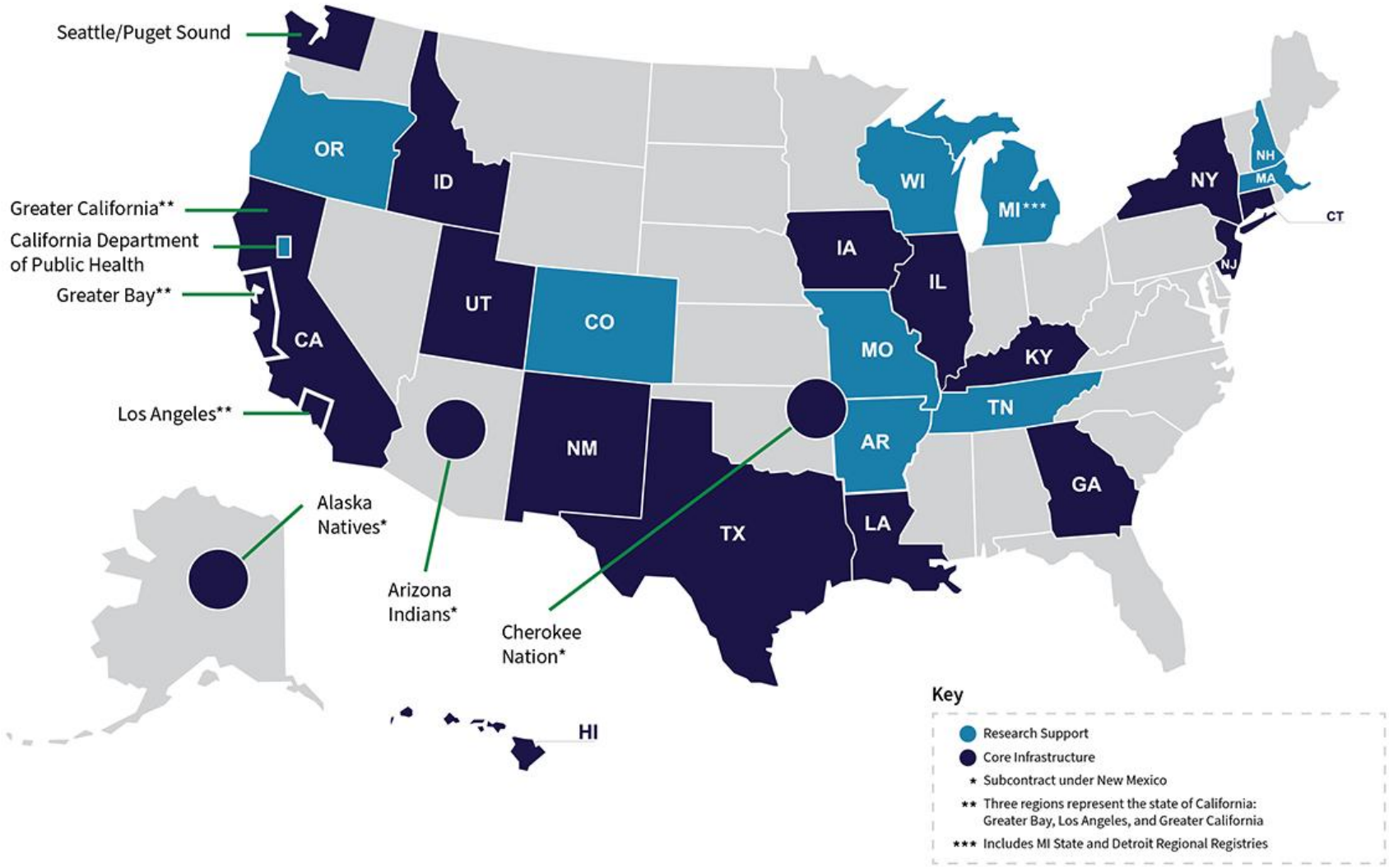
- Program Overview −
  - Goals of the SEER Program
  - Fact Sheets & Brochures
  - Collaborating Organizations
- SEER Registries +
- Research Activities +

The Surveillance, Epidemiology, and End Results (SEER) Program of the National Cancer Institute (NCI) is an authoritative source of information on cancer incidence and survival in the United States. SEER currently collects and publishes cancer incidence and survival data from population-based cancer registries covering approximately 45.9 percent of the U.S. population. For more information on this, please view the SEER Research Data. SEER coverage includes 39.6 percent of Whites, 43.5 percent of African Americans, 64.9 percent of Hispanics, 59.3 percent of American Indians and Alaska Natives, 68.2 percent of Asians, and 69.9 percent of Hawaiian/Pacific Islanders. (Details are provided in the table: Number of Persons by Race and Hispanic Ethnicity for SEER Participants.)

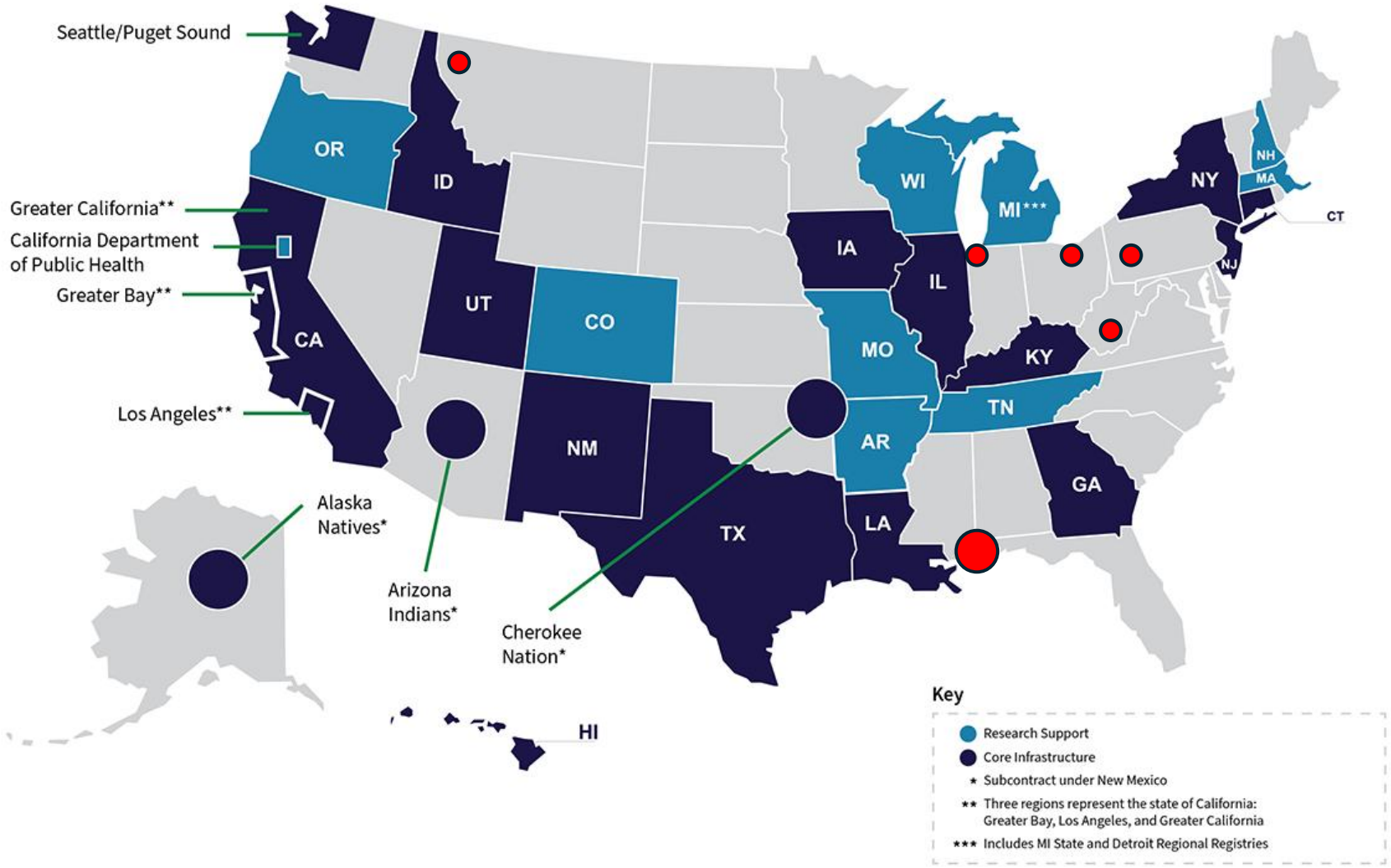
The SEER Program registries routinely collect data on patient demographics, primary tumor site, tumor morphology and stage at diagnosis, first course of treatment, and follow-up for vital status. The SEER Program is the only comprehensive source of population-based information in the United States that includes stage of cancer at the time of diagnosis and patient survival data. The mortality data reported by SEER are provided by the National Center for Health Statistics. The population data used in calculating cancer rates is obtained periodically from the Census Bureau. Updated annually and provided as a public service in print and electronic formats, SEER data are used by thousands of researchers, clinicians, public health officials, legislators, policymakers, community groups, and the public.

Notice anything missing?

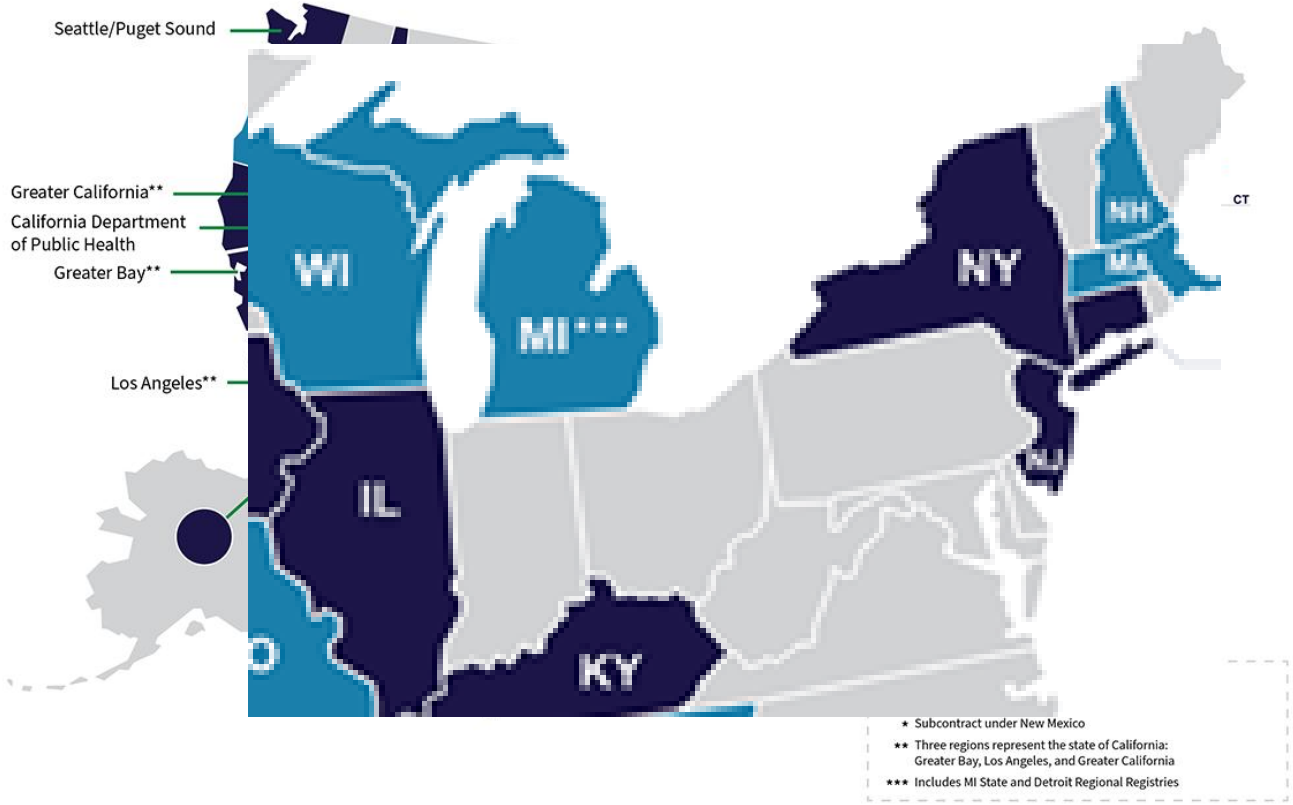
Where SEER Collects Data

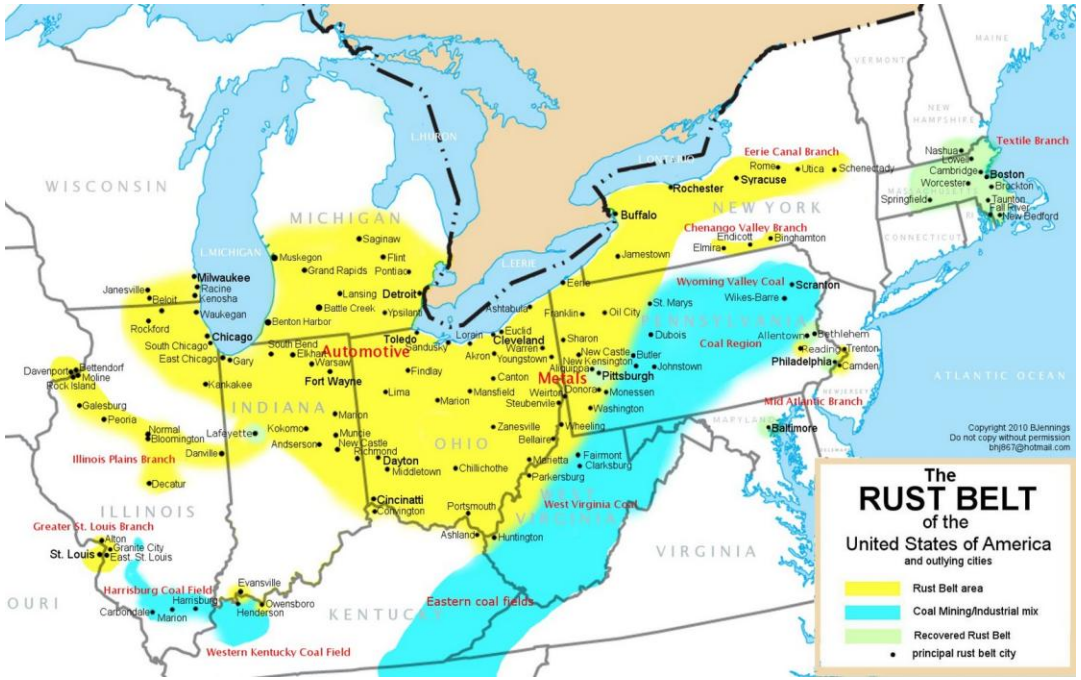


Where SEER Doesn't Collect Data

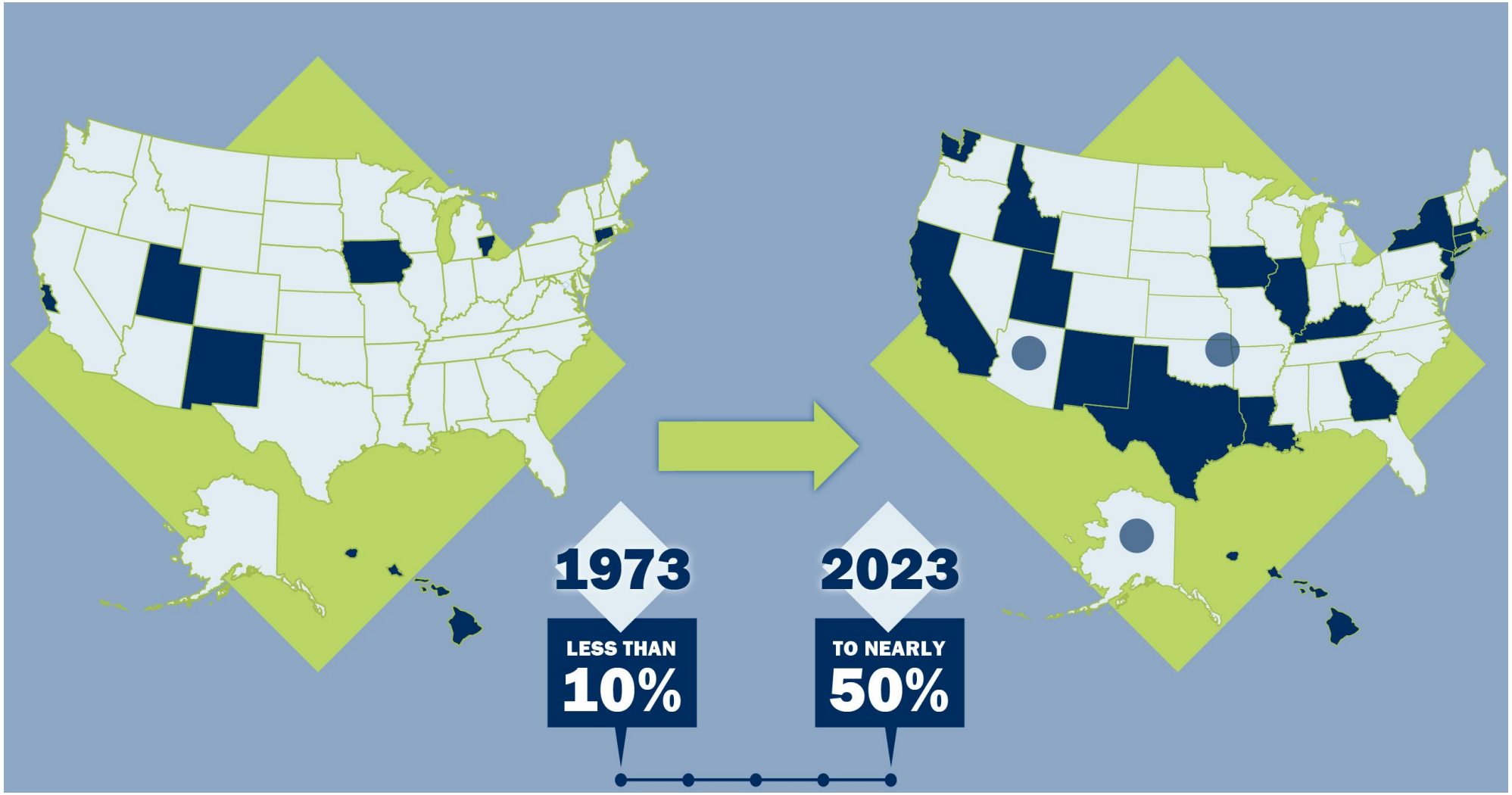


Where SEER Doesn’t Collect Data

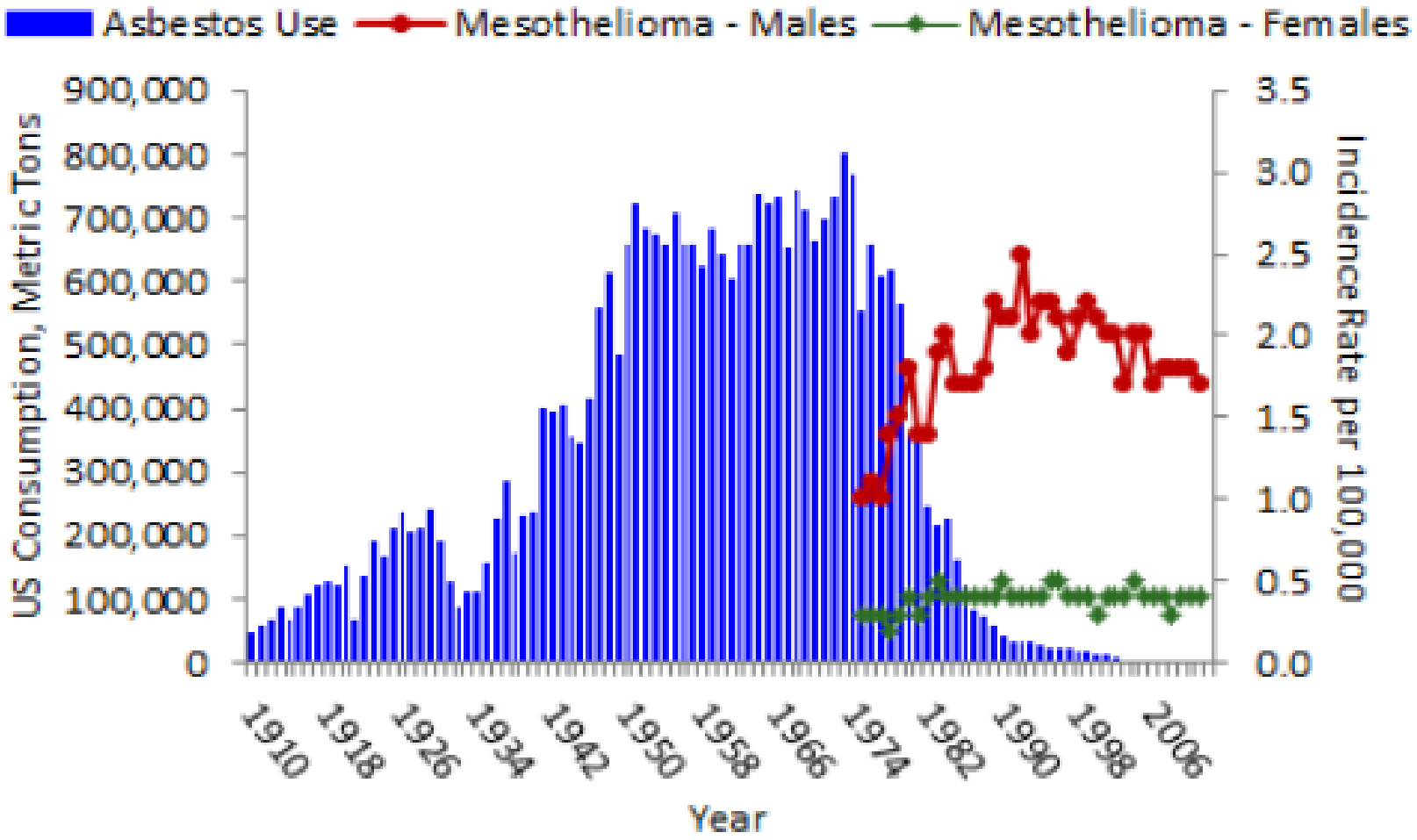




Sources Have Evolved Over Time

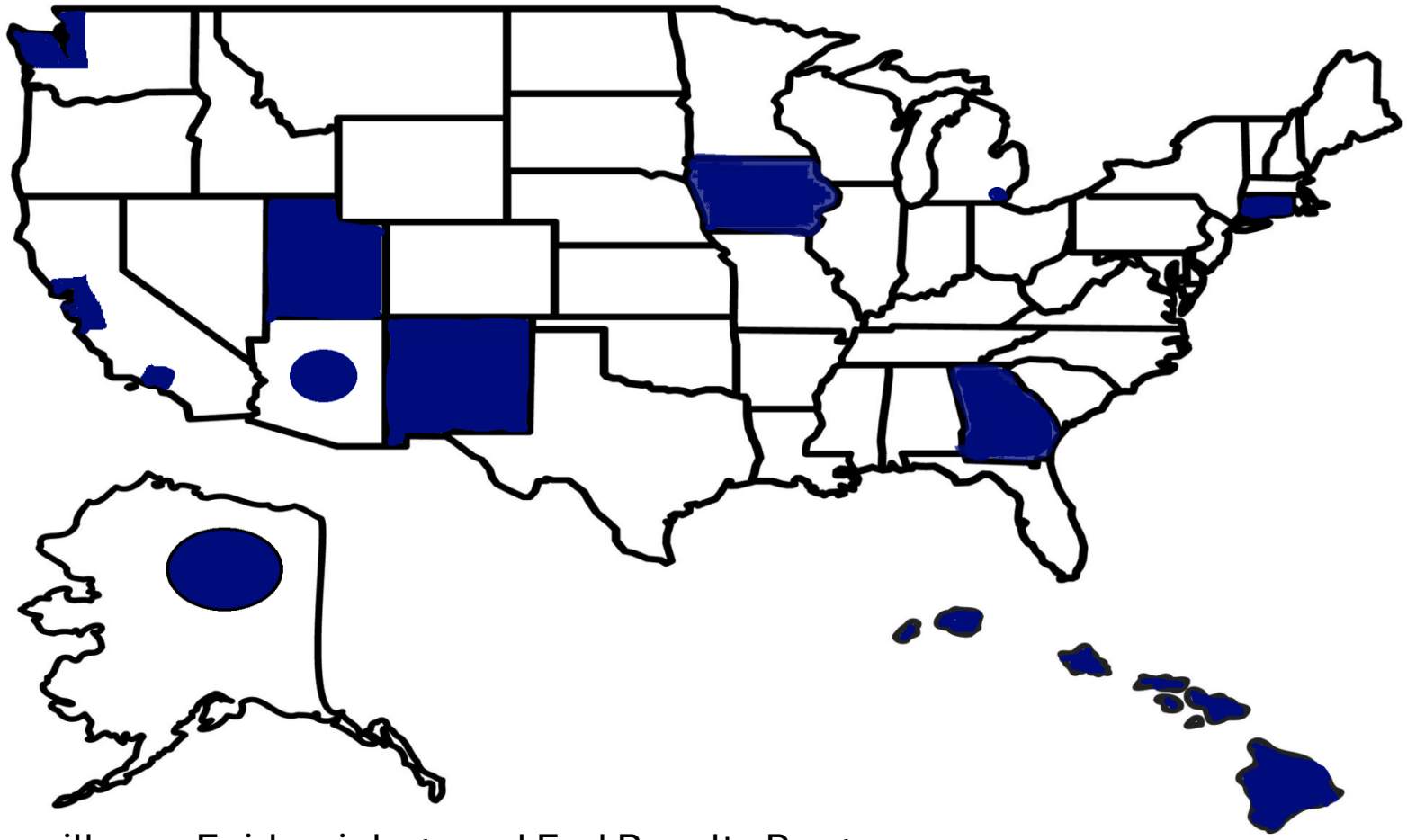


When Mesothelioma Incidence Rates Reach Their Peak in 1992…



Source: National Cancer Institute (Surveillance Epidemiology and End Results Program) SEER Program

This Is Where SEER is Getting Its Data:



Source: Surveillance Epidemiology and End Results Program

What Else Has Happened Since 1992?

- Discovery of mesothelin, a protein found on the surface of normal mesothelial cells which is significantly overexpressed in mesothelioma and lung cacner. “discovered in the early 90s [and] granted FDA approval in 2007 …not in general clinical use in 2017.”
  - **Mesothelioma and mesothelin—an underused diagnostic biomarker becoming a treatment target**

- “The first Biomarker Discovery Laboratory at NYU Langone Medical Center specifically devoted to MPM was funded in 2005, and this was facilitated through the EDRN Associate Membership Program in 2003–2004.”
  - **Mesothelioma Biomarkers: A Review Highlighting Contributions from the Early Detection Research Network.** *Cancer Epidemiol Biomarkers Prev* (2020) 29 (12): 2524–2540.

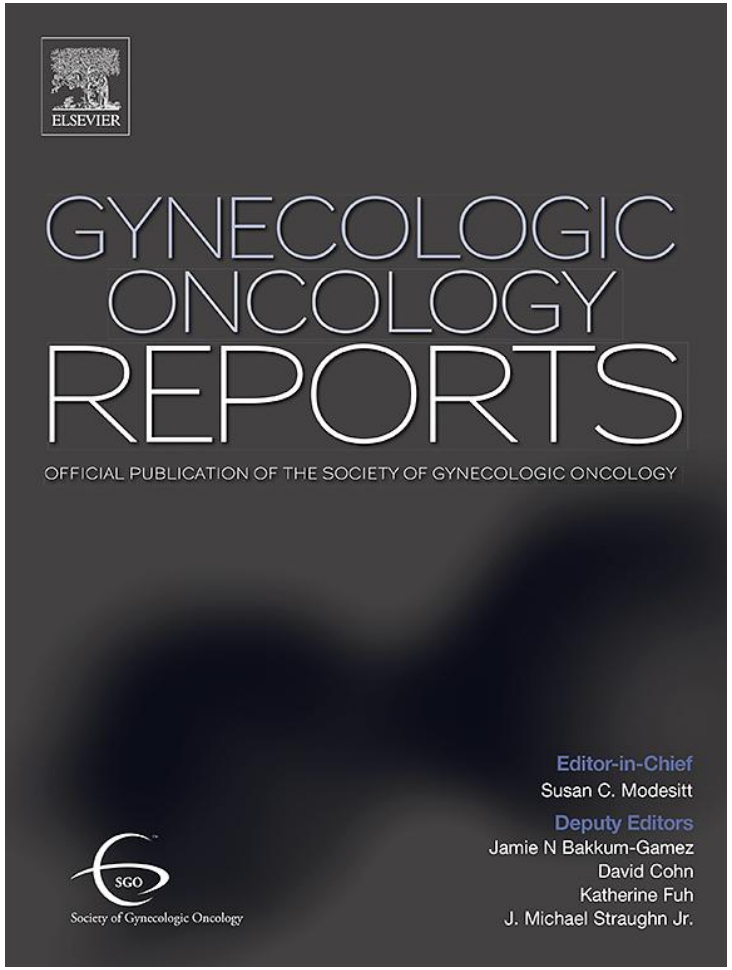
The Impact of Gender Bias on Diagnosis

Our statistics are only as good as our data.

The Impact of Gender Bias on Diagnosis

Medical groups throughout the world acknowledge there is a problem with the misdiagnosis of mesothelioma when it comes to women.

The Impact of Gender Bias on Diagnosis



Case report: This is a case of MPM that was initially misdiagnosed as ovarian cancer based on family history, imaging, and surgical findings. Tissue diagnosis preoperatively would have changed the planned procedure. Retrospectively, after the diagnosis of MPM, the patient was found to have had an indirect exposure to asbestos through her father.

A Case of Mesothelioma Masquerading Pre-Operatively As Ovarian Cancer and Brief Review of the Literature, Hancock et al, Gynecologic Oncology Reports, 2016

The Impact of Gender Bias on Diagnosis

with a gender ratio lower than for the pleural site. The diagnosis of peritoneal MM still suffers from poor sensitivity and specificity, and the misdiagnosis can be particularly high in women with abdominal neoplasms, when primary peritoneal serous carcinoma must be differentiated from ovarian serous carcinoma.[36] Recently an Italian population-based mortality

Italy, **The epidemiology of malignant mesothelioma in women**. Marinaccio, et al Occup Environ Med 2018

The Impact of Gender Bias on Diagnosis

See also:

- **Diffuse malignant peritoneal mesothelioma mimicking ovarian cancer**. Houssaini et al. Radiology Case Reports, Vol. 17, Issue 3, March 2022, 779-783
- **Primary Ovarian Mesothelioma: A Case Series with Electron Microscopy Examination and Review of the Literature**. Vimercati et al, Cancers 2021, 13, 2278
- **CT differentiation of diffuse malignant peritoneal mesothelioma and peritoneal carcinomatosis**. Liang et al, Journal of Gastroenterology and Hepatology, Dec 2015.
- **Selected miscellaneous ovarian lesions; small cell carcinomas, mesothelial lesions, mesenchymal, and mixed neoplasms, and non-neoplastic lesions.** Clement Mod Pathol 2005

The Impact of Gender Bias on Diagnosis

Even when a woman is properly diagnosed with mesothelioma, there remain many challenges in the justice system arising from gender-bias

The Impact of Gender Bias on Taking Legal Action

"I didn't want to come across as being greedy."

Source: Gender and the experiences of living with mesothelioma: a thematic analysis, European Journal of Oncology Nursing April 2021

The Impact of Gender Bias on Taking Legal Action

"The men's strong sense of financial obligation to family was often given as a motive for seeking compensation…In contrast, in most women's accounts, discussion about financial obligation to the family or sense of financial compensation entitlement was largely absent."

Source: Gender and the experiences of living with mesothelioma: a thematic analysis, European Journal of Oncology Nursing April 2021

The Impact of Gender Bias on Taking Legal Action

Research suggests that, as a general principle, women are less likely to seek compensation than men. This is true globally.

- Chamming, Clin, Brochard et al., Compensation of pleural mesothelioma in France: data from the French National Mesothelioma Surveillance Programme, Am. J. Ind. Med. 2013 Feb 56(2): 146-54
- Kirkham, Koehoorn et al., Surveillance of mesothelioma and workers' compensation in British Columbia, Canada. Occup. Environ. Med. 2011 Jan 68(1): 30-5
- Senek, Tod, Robertson. The gendered Experience of mesothelioma study (GEMS): findings from a survey data analysis. European Respiratory Journal 2020 56:1684
- Ejegi-Memeh S, Robertson S, Taylor B, Darlison L, Tod A. Gender and the experiences of living with mesothelioma: A thematic analysis. Eur J Oncol Nurs. 2021 Jun;52:101966. doi: 10.1016/j.ejon.2021.101966. Epub 2021 Apr 28. PMID: 33945895.

Final Thoughts:

- Asbestos Causes Cancer
- Asbestos Causes Cancer in women
- Underreporting and misdiagnoses are real, studied issues that we need to grapple with in this litigation
- With the NIH obligating almost **$8 Billion less** in research funding for 2026 and beyond (and other billions being cut from research funding in the United States), underreporting, misdiagnoses, and advanced medical understanding of these diseases will get worse.

Developing Evidence of Other Exposures

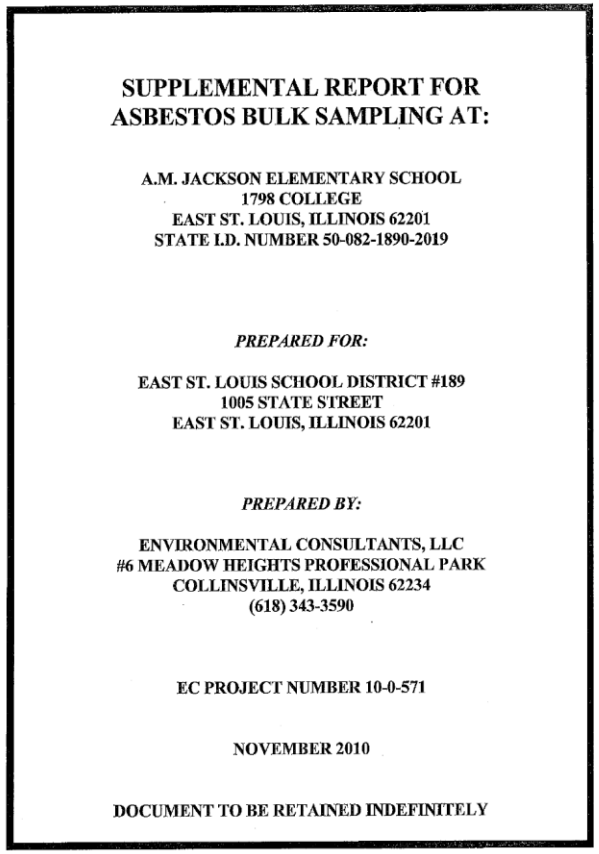
Developing Evidence of Other Exposures

More and more often we are seeing Plaintiffs with less direct knowledge of asbestos or other exposures and there is a need to develop evidence of other exposures that may exist.

Example: Plaintiff is a career teacher. Father (deceased) worked in maintenance at a now closed local foundry. Plaintiff has no additional information about his father's employment and cannot recall the names of any of his father's co-workers.

Developing Evidence of Other Asbestos Exposures

- FOIA Requests - School Exposures
  - Federal FOIA Requests
  - State like-FOIA Requests



SUPPLEMENTAL REPORT FOR ASBESTOS BULK SAMPLING AT:

A.M. JACKSON ELEMENTARY SCHOOL
1798 COLLEGE
EAST ST. LOUIS, ILLINOIS 62201
STATE I.D. NUMBER 50-082-1890-2019

PREPARED FOR:

EAST ST. LOUIS SCHOOL DISTRICT #189
1005 STATE STREET
EAST ST. LOUIS, ILLINOIS 62201

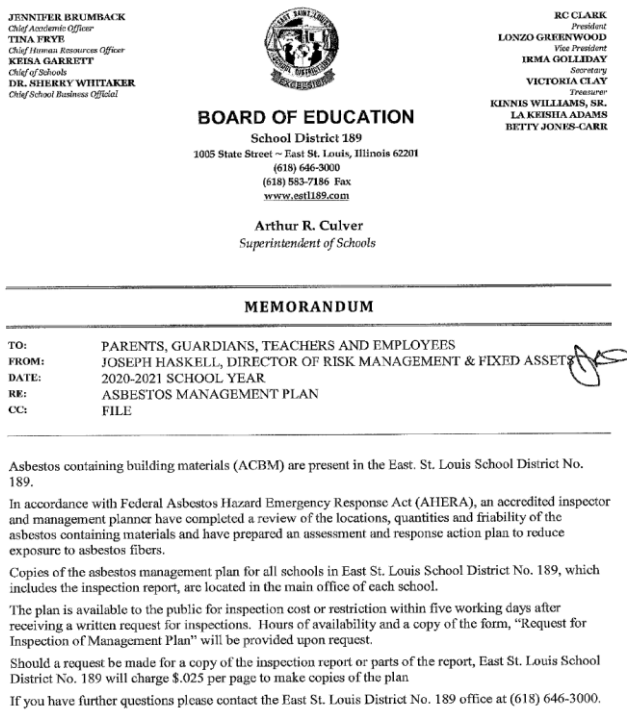
PREPARED BY:

ENVIRONMENTAL CONSULTANTS, LLC
#6 MEADOW HEIGHTS PROFESSIONAL PARK
COLLINSVILLE, ILLINOIS 62234
(618) 343-3590

EC PROJECT NUMBER 10-0-571

NOVEMBER 2010

DOCUMENT TO BE RETAINED INDEFINITELY



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TINA FRYE
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BOARD OF EDUCATION
School District 189
1005 State Street ~ East St. Louis, Illinois 62201
(618) 646-3000
(618) 583-7186 Fax
www.estl189.com

Arthur R. Culver
Superintendent of Schools

MEMORANDUM

TO: PARENTS, GUARDIANS, TEACHERS AND EMPLOYEES
FROM: JOSEPH HASKELL, DIRECTOR OF RISK MANAGEMENT & FIXED ASSETS
DATE: 2020-2021 SCHOOL YEAR
RE: ASBESTOS MANAGEMENT PLAN
CC: FILE

Asbestos containing building materials (ACBM) are present in the East. St. Louis School District No. 189.

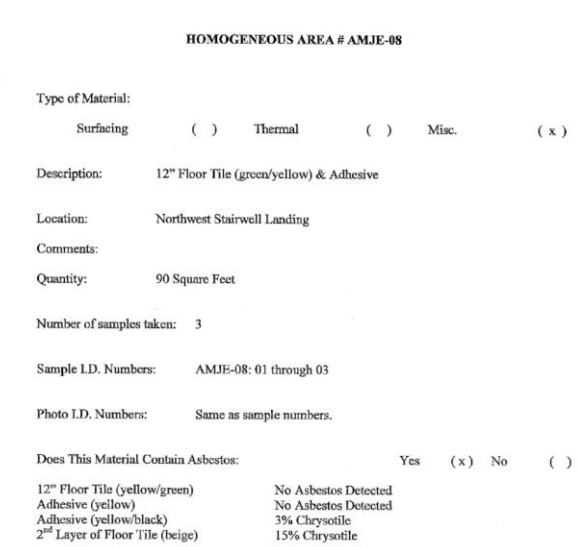
In accordance with Federal Asbestos Hazard Emergency Response Act (AHERA), an accredited inspector and management planner have completed a review of the locations, quantities and friability of the asbestos containing materials and have prepared an assessment and response action plan to reduce exposure to asbestos fibers.

Copies of the asbestos management plan for all schools in East St. Louis School District No. 189, which includes the inspection report, are located in the main office of each school.

The plan is available to the public for inspection cost or restriction within five working days after receiving a written request for inspections. Hours of availability and a copy of the form, "Request for Inspection of Management Plan" will be provided upon request.

Should a request be made for a copy of the inspection report or parts of the report, East St. Louis School District No. 189 will charge $.025 per page to make copies of the plan

If you have further questions please contact the East St. Louis District No. 189 office at (618) 646-3000.



HOMOGENEOUS AREA # AMJE-08

Type of Material:
Surfacing ( ) Thermal ( ) Misc. (x)

Description: 12" Floor Tile (green/yellow) & Adhesive

Location: Northwest Stairwell Landing

Comments:

Quantity: 90 Square Feet

Number of samples taken: 3

Sample I.D. Numbers: AMJE-08: 01 through 03

Photo I.D. Numbers: Same as sample numbers.

Does This Material Contain Asbestos: Yes (x) No ( )

12" Floor Tile (yellow/green)	No Asbestos Detected
Adhesive (yellow)	No Asbestos Detected
Adhesive (yellow/black)	3% Chrysotile
2nd Layer of Floor Tile (beige)	15% Chrysotile

Developing Evidence of Other Asbestos Exposures

- Google Searches
  - Newspaper articles or websites for work sites, abatement/remediation activity, contamination, lawsuits, libraries/local museums with relevant information.

[redacted] **Obituary**

P[redacted]

[redacted] left us [redacted] after a five year battle with cancer. During that time he learned he carried the BRCA2 gene that took the life of his son [redacted].

Born in Miami County Indiana to [redacted], [redacted] would be the third boy in a family of 6 boys and 1 girl on an Indiana farm. He attended school in Macy and Rochester then went to

SIU 'triad' coming down soon

BY CODELL RODRIGUEZ, THE SOUTHERN

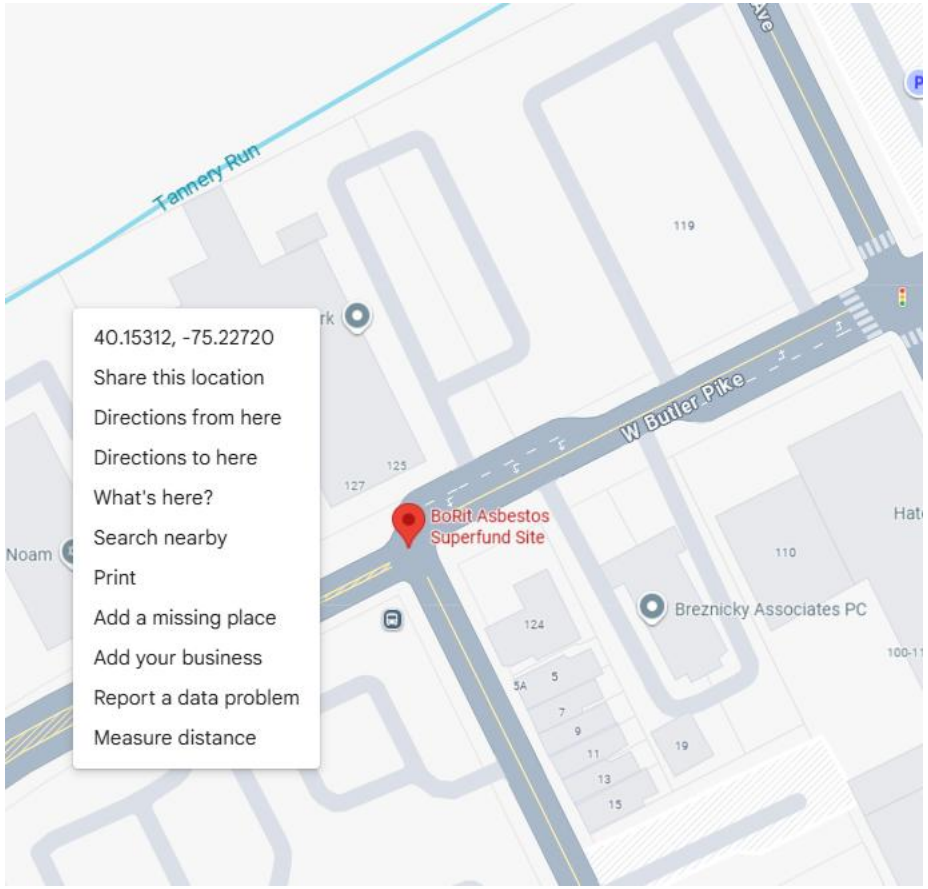
May 31, 2012

Stephen Rickerl / The Southern Boomer Hall is sits boarded up and asbestos warnings have been posted as the resi awaits demolition this summer.

Stephen Rickerl

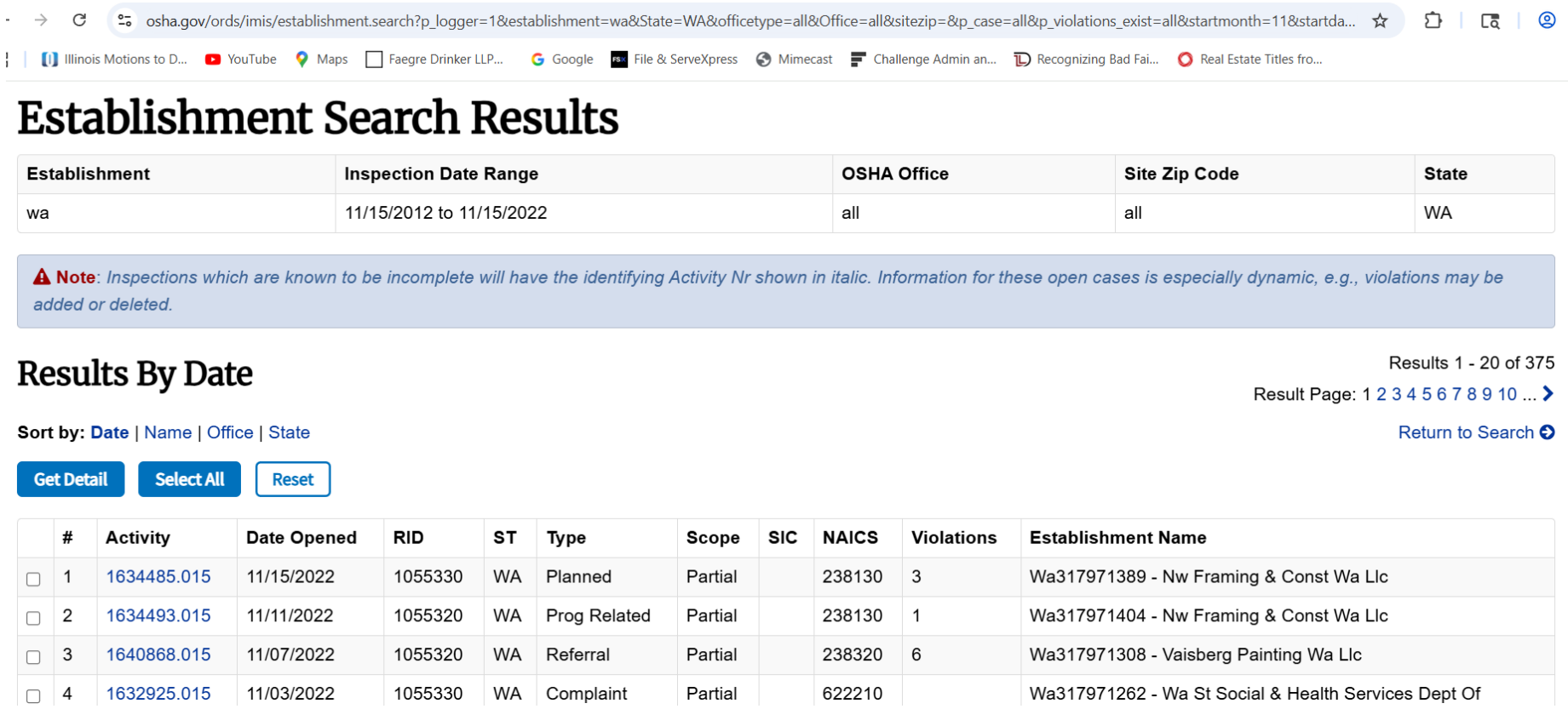
Developing Evidence of Other Asbestos Exposures

- Google Maps
  - Search Plaintiff home and work addresses looking for nearby industry



Developing Evidence of Other Asbestos Exposures

- OSHA Establishment Searches (OSHA.gov)
  - Search for facility violations



osha.gov/ords/imis/establishment.search?p_logger=1&establishment=wa&State=WA&officetype=all&Office=all&sitezip=&p_case=all&p_violations_exist=all&startmonth=11&startda...

Illinois Motions to D... YouTube Maps Faegre Drinker LLP... Google File & ServeXpress Mimecast Challenge Admin an... Recognizing Bad Fai... Real Estate Titles fro...

Establishment Search Results

Establishment	Inspection Date Range	OSHA Office	Site Zip Code	State
wa	11/15/2012 to 11/15/2022	all	all	WA

Note: *Inspections which are known to be incomplete will have the identifying Activity Nr shown in italic. Information for these open cases is especially dynamic, e.g., violations may be added or deleted.*

Results By Date

Results 1 - 20 of 375

Result Page: 1 2 3 4 5 6 7 8 9 10 ...

Return to Search

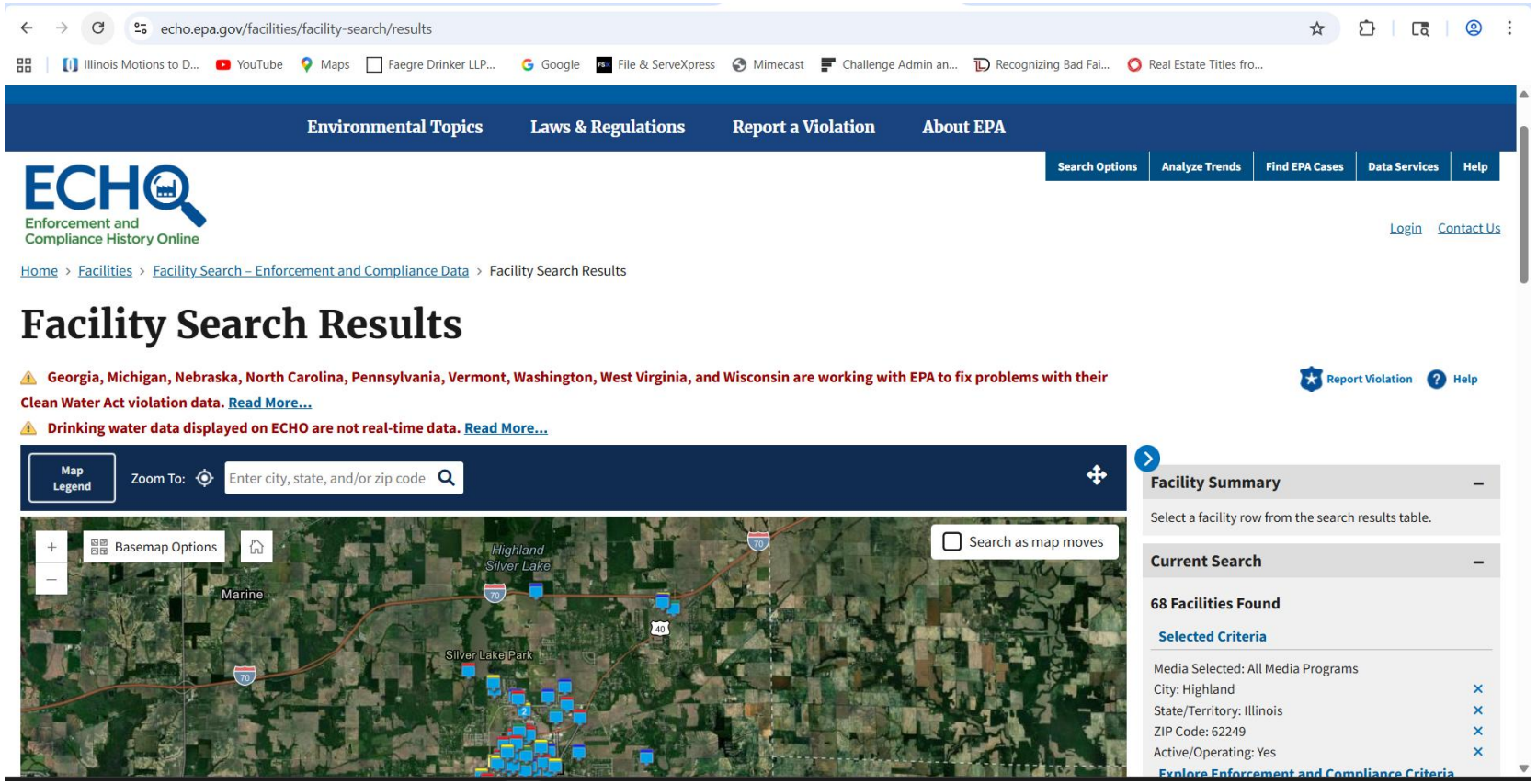
Sort by: Date | Name | Office | State

Get Detail | Select All | Reset

	#	Activity	Date Opened	RID	ST	Type	Scope	SIC	NAICS	Violations	Establishment Name
☐	1	1634485.015	11/15/2022	1055330	WA	Planned	Partial		238130	3	Wa317971389 - Nw Framing & Const Wa Llc
☐	2	1634493.015	11/11/2022	1055320	WA	Prog Related	Partial		238130	1	Wa317971404 - Nw Framing & Const Wa Llc
☐	3	1640868.015	11/07/2022	1055320	WA	Referral	Partial		238320	6	Wa317971308 - Vaisberg Painting Wa Llc
☐	4	1632925.015	11/03/2022	1055330	WA	Complaint	Partial		622210		Wa317971262 - Wa St Social & Health Services Dept Of

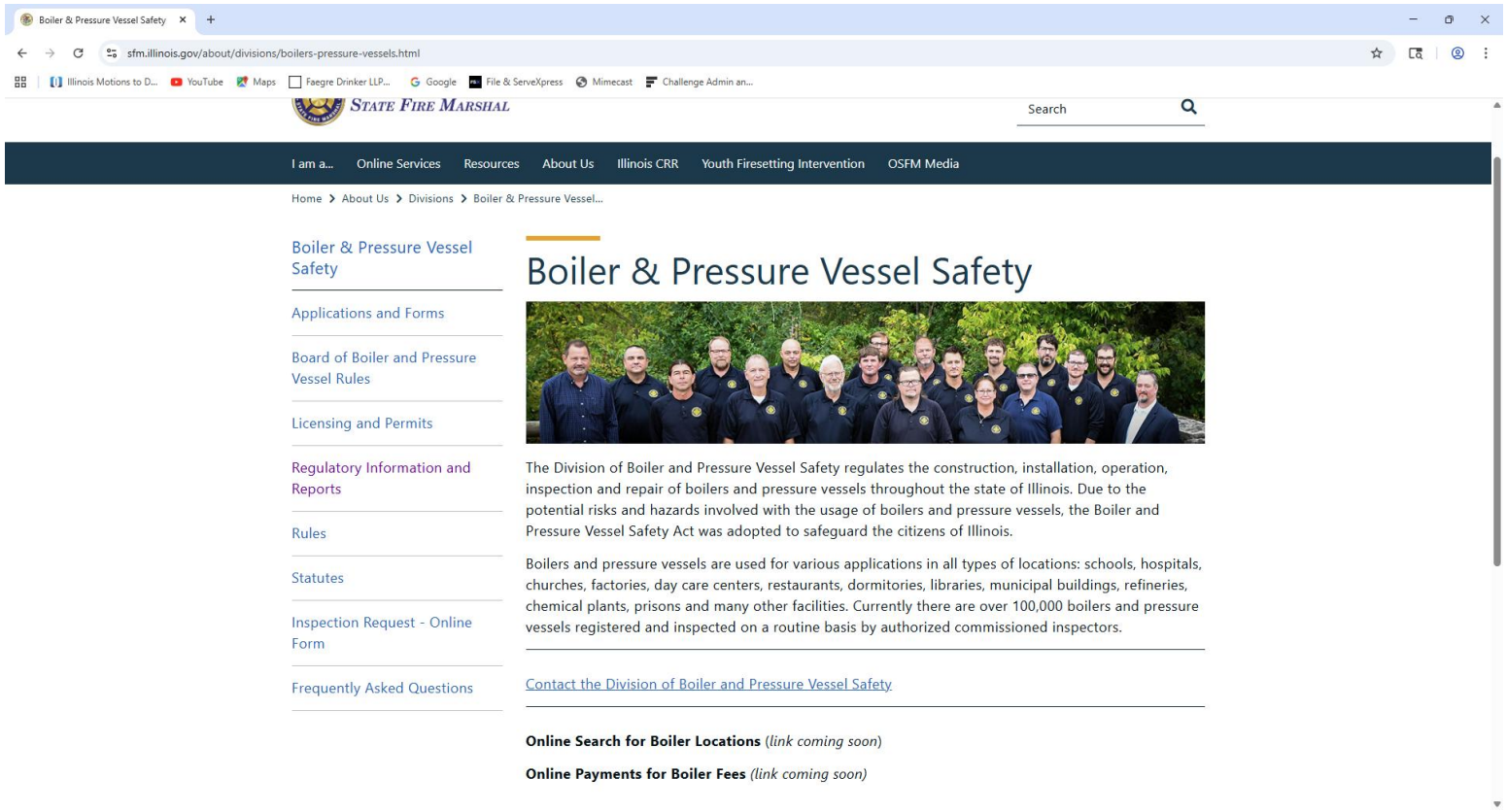
Developing Evidence of Other Asbestos Exposures

- EPA Enforcement and Compliance Search (EPA.gov)
  - Search for facility violations



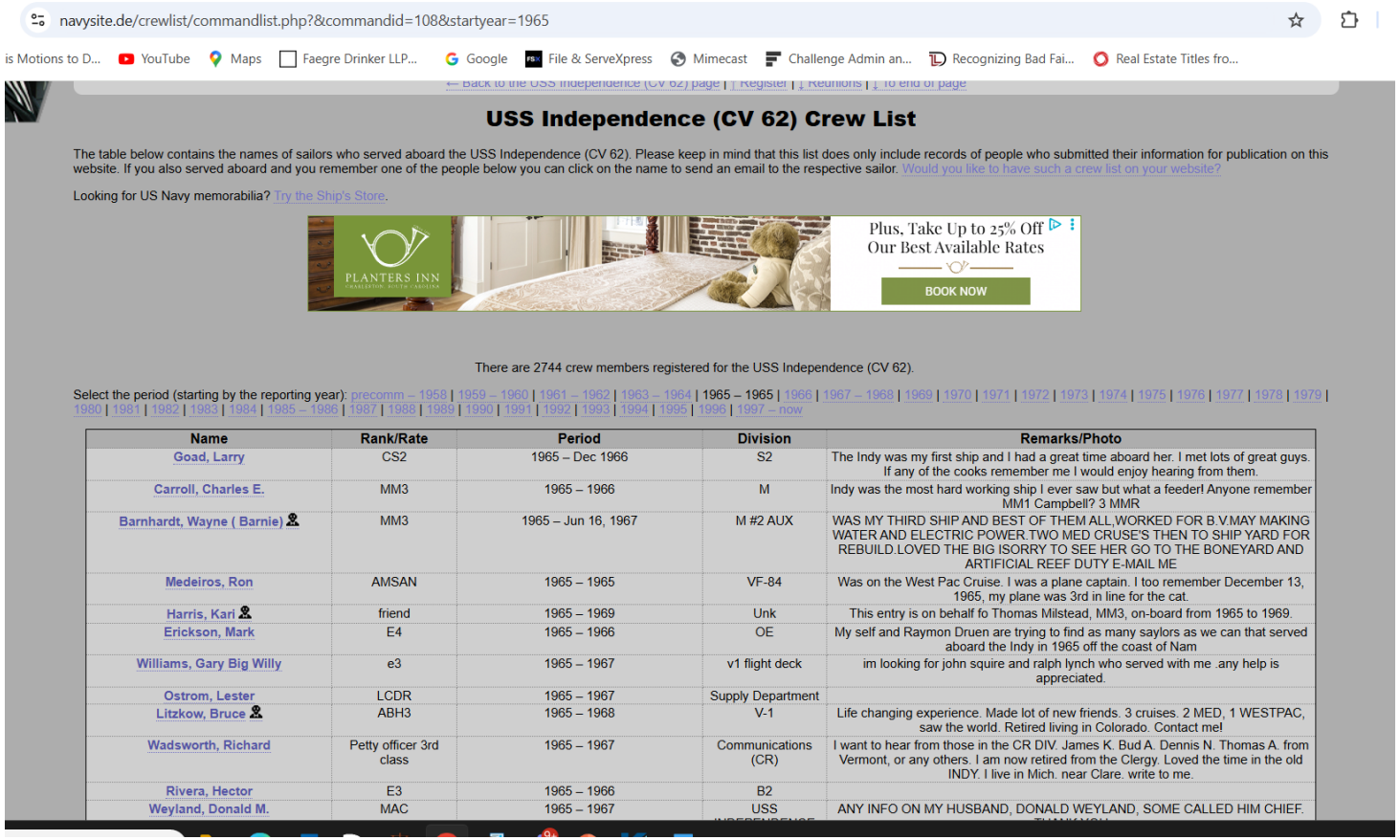
Developing Evidence of Other Asbestos Exposures

- State Boiler Registry Searches
  - May list boilers and vessels present in facilities



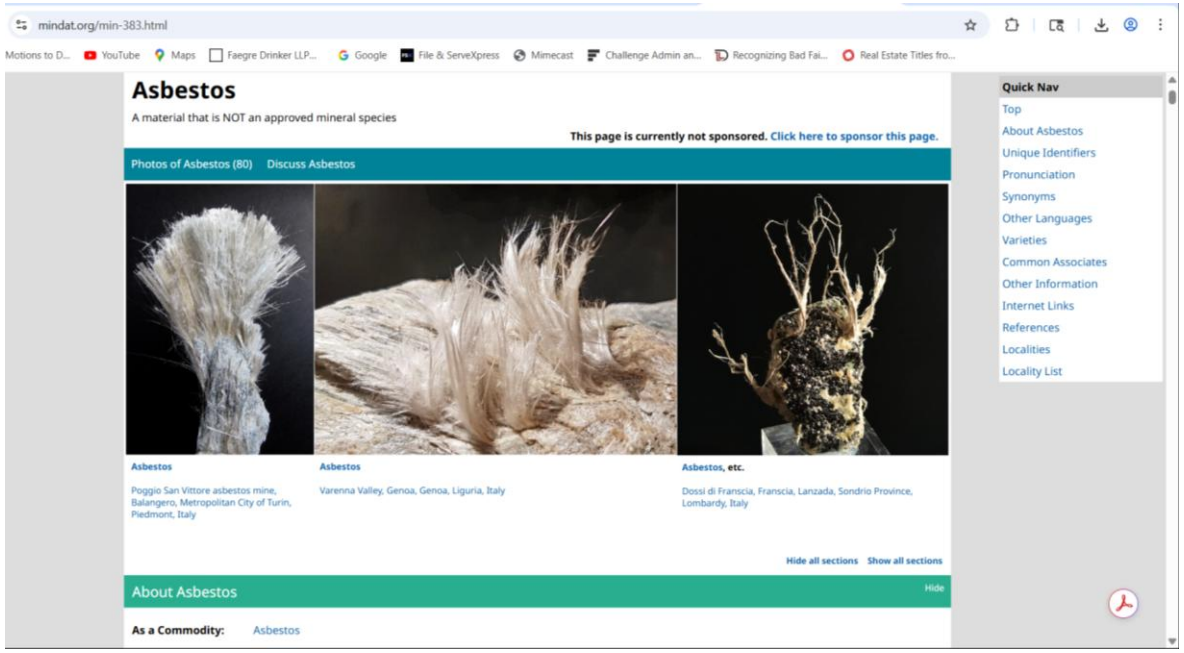
Developing Evidence of Other Asbestos Exposures

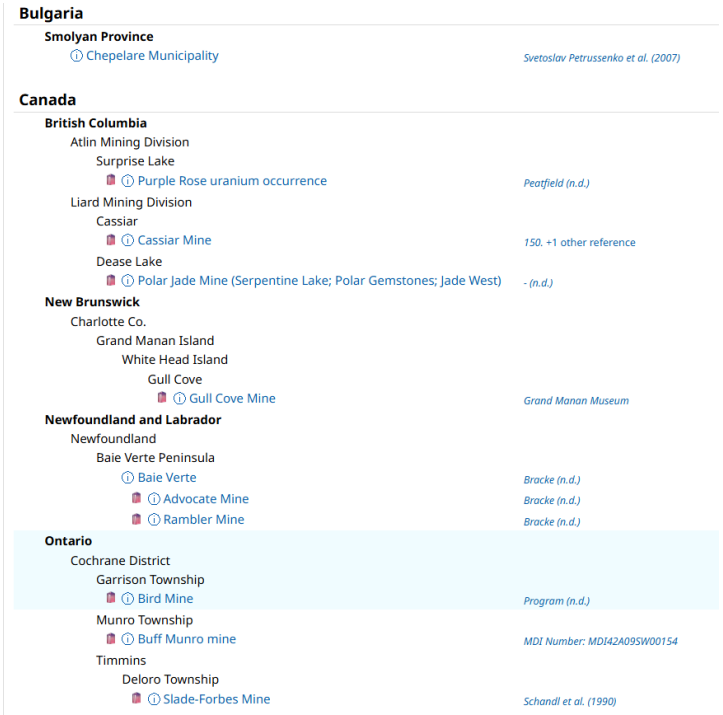
- Navy Personnel Web Pages
  - Look for potential witnesses present on certain vessels/certain time periods



Developing Evidence of Other Asbestos Exposures

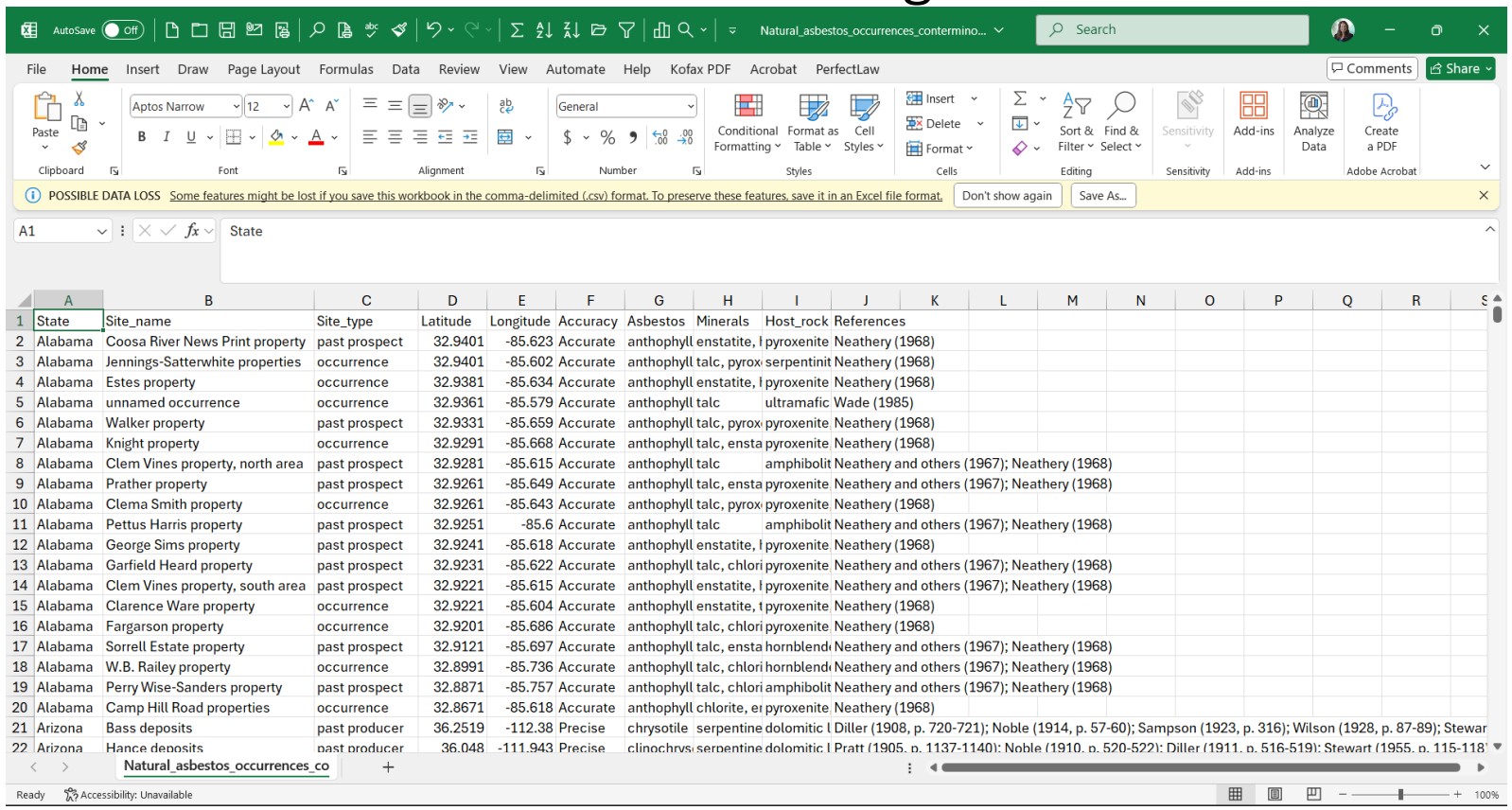
- MINDAT https://www.mindat.org/min-383.html
  - Look for locations of natural occurring asbestos, US and other countries





Developing Evidence of Other Asbestos Exposures

- USGS https://www.usgs.gov/data/reported-historic-asbestos-mines-historic-asbestos-prospects-and-other-natural-occurrences
  - Information on locations of natural occurring asbestos

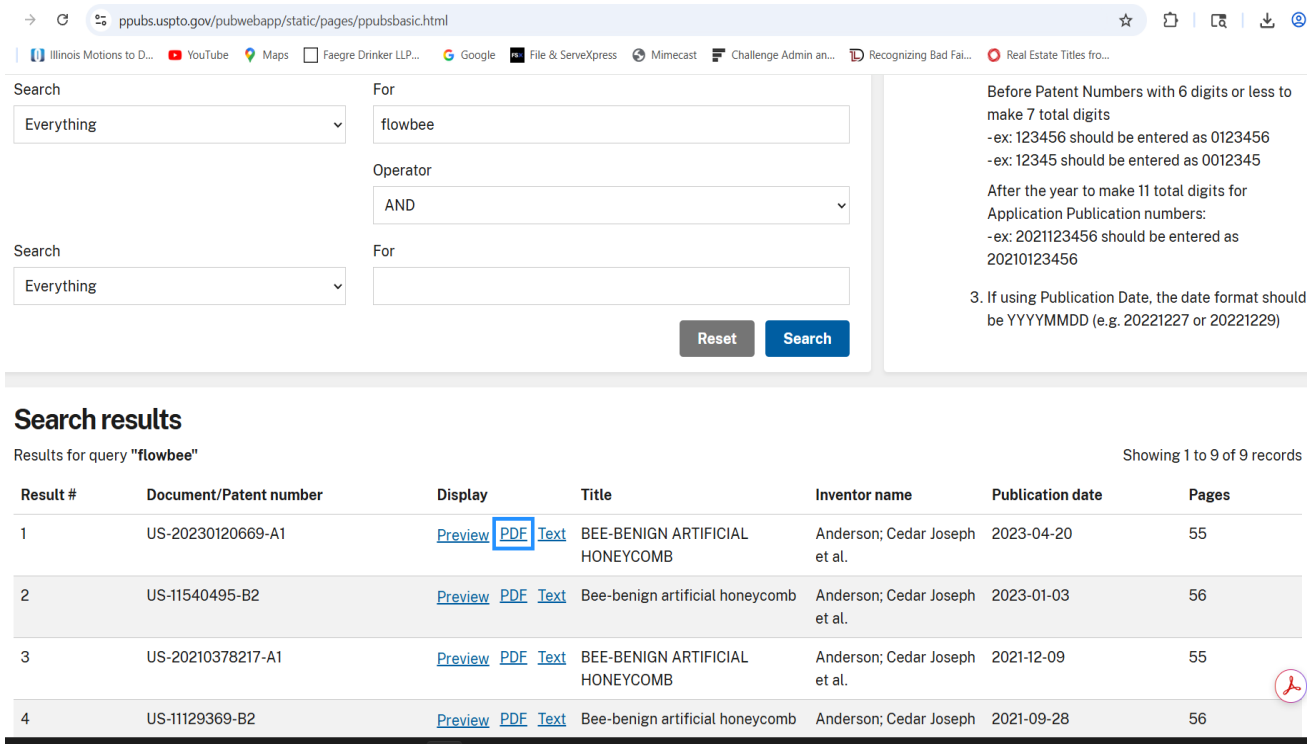


Natural_asbestos_occurrences_contermino...

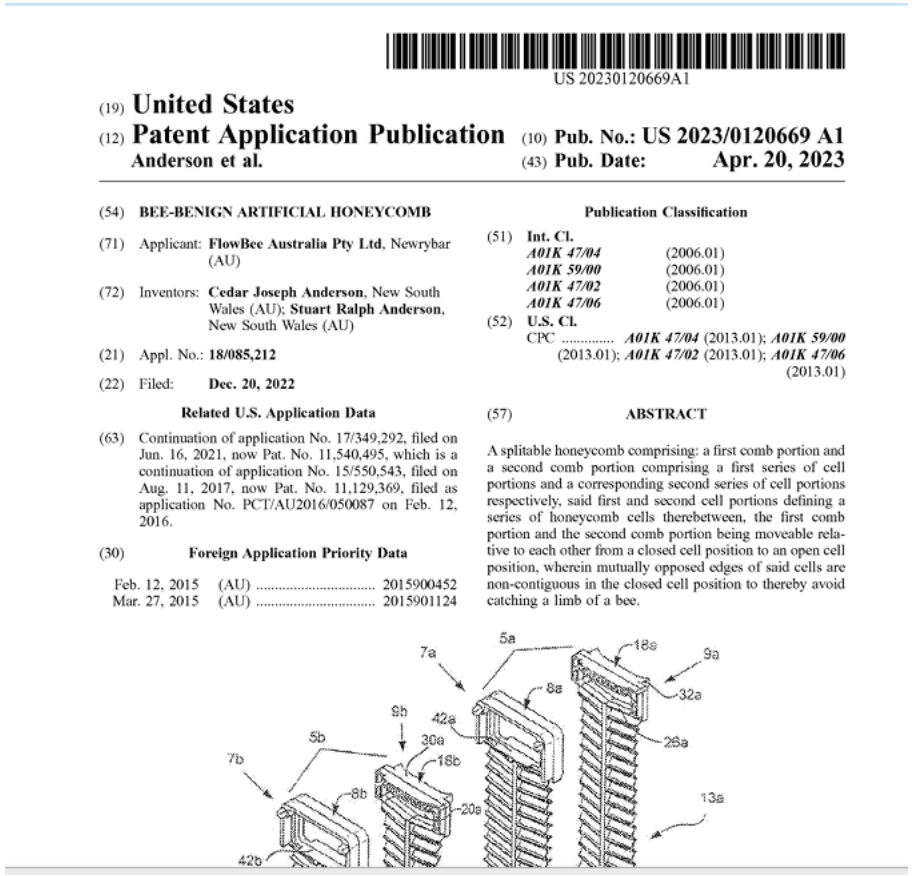
State	Site_name	Site_type	Latitude	Longitude	Accuracy	Asbestos	Minerals	Host_rock	References
Alabama	Coosa River News Print property	past prospect	32.9401	-85.623	Accurate	anthophyll	enstatite, l	pyroxenite	Neathery (1968)
Alabama	Jennings-Satterwhite properties	occurrence	32.9401	-85.602	Accurate	anthophyll	talc, pyrox	serpentinit	Neathery (1968)
Alabama	Estes property	occurrence	32.9381	-85.634	Accurate	anthophyll	enstatite, l	pyroxenite	Neathery (1968)
Alabama	unnamed occurrence	occurrence	32.9361	-85.579	Accurate	anthophyll	talc	ultramafic	Wade (1985)
Alabama	Walker property	past prospect	32.9331	-85.659	Accurate	anthophyll	talc, pyrox	pyroxenite	Neathery (1968)
Alabama	Knight property	occurrence	32.9291	-85.668	Accurate	anthophyll	talc, ensta	pyroxenite	Neathery (1968)
Alabama	Clem Vines property, north area	past prospect	32.9281	-85.615	Accurate	anthophyll	talc	amphibolit	Neathery and others (1967); Neathery (1968)
Alabama	Prather property	past prospect	32.9261	-85.649	Accurate	anthophyll	talc, ensta	pyroxenite	Neathery and others (1967); Neathery (1968)
Alabama	Clema Smith property	occurrence	32.9261	-85.643	Accurate	anthophyll	talc, pyrox	pyroxenite	Neathery (1968)
Alabama	Pettus Harris property	past prospect	32.9251	-85.6	Accurate	anthophyll	talc	amphibolit	Neathery and others (1967); Neathery (1968)
Alabama	George Sims property	past prospect	32.9241	-85.618	Accurate	anthophyll	enstatite, l	pyroxenite	Neathery (1968)
Alabama	Garfield Heard property	past prospect	32.9231	-85.622	Accurate	anthophyll	talc, chlori	pyroxenite	Neathery and others (1967); Neathery (1968)
Alabama	Clem Vines property, south area	past prospect	32.9221	-85.615	Accurate	anthophyll	enstatite, l	pyroxenite	Neathery and others (1967); Neathery (1968)
Alabama	Clarence Ware property	occurrence	32.9221	-85.604	Accurate	anthophyll	enstatite, t	pyroxenite	Neathery (1968)
Alabama	Fargarson property	occurrence	32.9201	-85.686	Accurate	anthophyll	talc, chlori	pyroxenite	Neathery (1968)
Alabama	Sorrell Estate property	past prospect	32.9121	-85.697	Accurate	anthophyll	talc, ensta	hornblend	Neathery and others (1967); Neathery (1968)
Alabama	W.B. Railey property	occurrence	32.8991	-85.736	Accurate	anthophyll	talc, chlori	hornblend	Neathery and others (1967); Neathery (1968)
Alabama	Perry Wise-Sanders property	past prospect	32.8871	-85.757	Accurate	anthophyll	talc, chlori	amphibolit	Neathery and others (1967); Neathery (1968)
Alabama	Camp Hill Road properties	occurrence	32.8671	-85.618	Accurate	anthophyll	chlorite, er	pyroxenite	Neathery (1968)
Arizona	Bass deposits	past producer	36.2519	-112.38	Precise	chrysotile	serpentine	dolomitic l	Diller (1908, p. 720-721); Noble (1914, p. 57-60); Sampson (1923, p. 316); Wilson (1928, p. 87-89); Stewar
Arizona	Hance deposits	past producer	36.048	-111.943	Precise	clinochrys	serpentine	dolomitic l	Pratt (1905, p. 1137-1140); Noble (1910, p. 520-522); Diller (1911, p. 516-519); Stewart (1955, p. 115-118

Developing Evidence of Other Asbestos Exposures

- US Patent Search https://ppubs.uspto.gov/pubwebapp/static/pages/ppubsbasic.html
  - Information on products/components



Result #	Document/Patent number	Display	Title	Inventor name	Publication date	Pages
1	US-20230120669-A1	Preview PDF Text	BEE-BENIGN ARTIFICIAL HONEYCOMB	Anderson; Cedar Joseph et al.	2023-04-20	55
2	US-11540495-B2	Preview PDF Text	Bee-benign artificial honeycomb	Anderson; Cedar Joseph et al.	2023-01-03	56
3	US-20210378217-A1	Preview PDF Text	BEE-BENIGN ARTIFICIAL HONEYCOMB	Anderson; Cedar Joseph et al.	2021-12-09	55
4	US-11129369-B2	Preview PDF Text	Bee-benign artificial honeycomb	Anderson; Cedar Joseph	2021-09-28	56


US 20230120669A1

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Anderson et al. (43) **Pub. Date: Apr. 20, 2023**

(54) **BEE-BENIGN ARTIFICIAL HONEYCOMB**

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(21) Appl. No.: **18/085,212**

(22) Filed: **Dec. 20, 2022**

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CPC ***A01K 47/04*** (2013.01); ***A01K 59/00*** (2013.01); ***A01K 47/02*** (2013.01); ***A01K 47/06*** (2013.01)

(57) **ABSTRACT**

A splitable honeycomb comprising: a first comb portion and a second comb portion comprising a first series of cell portions and a corresponding second series of cell portions respectively, said first and second cell portions defining a series of honeycomb cells therebetween, the first comb portion and the second comb portion being moveable relative to each other from a closed cell position to an open cell position, wherein mutually opposed edges of said cells are non-contiguous in the closed cell position to thereby avoid catching a limb of a bee.

- Full text of most patents issued from 1971 to present, and limited information for U.S. patents back to 1790 including patent number, date, and classification.

Developing Evidence of Other Asbestos Exposures

- Depositions Taken in Other Cases
  - Develop potential witnesses
  - Facility testimony
  - Work practices testimony
  - Product testimony

Developing Evidence of Other Exposures

- Radon
  - EPA Radon Map Zones https://www.epa.gov/radon/epa-map-radon-zones

Radon Zones Map

The U.S. Environmental Protection Agency (EPA) created this map to identify areas with the potential for elevated indoor radon levels. The EPA Map of Radon Zones helps national, state, and local organizations implement radon-resistant building codes. The map should not be used to determine if a home in a given zone should be tested for radon. Homes with elevated levels of radon have been found in all three zones. All homes should be tested for radon.

Visit EPA Map of Radon Zones for additional information. A text version also is available.