

WVDEP Community Meeting:

Ethylene Oxide in the Institute and South Charleston Areas

August 18, 2022



Introduction

WVDEP Division of Air Quality
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What has WVDEP done?

- August 2018 – EPA publicly released the National Air Toxics Assessment (NATA)
- NATA identified four census tracts in the Kanawha Valley for further investigation



What has WVDEP done?

- WVDEP requested the state Department of Health and Human Resources (DHHR) Bureau of Public Health (BPH) to review EtO associated cancer rates in the Kanawha Valley
 - DHHR compared Kanawha County vs. West Virginia using the WV Cancer Registry
 - No elevated levels of breast, lymphoma, or leukemia cancers found for Kanawha County as a whole
 - Kanawha County is not significantly higher than other counties in the state



What has WVDEP done?

- 2019: Requested the most recent and accurate emissions data and onsite weather data
- Visited the Institute and South Charleston facilities
- Updated the model with the more accurate emissions and weather data
 - The locations and level of risk changed as a result



What has WVDEP done?

- December 2019: Issued press release identifying the elevated risk factor of ethylene oxide
- Jan 2020: Formally requested EPA to prioritize the review of the federal regulation to which the facilities are subject



Facilities in the Kanawha Valley that emit EtO

- Institute
 - Union Carbide Corporation
 - Specialty Products US, LLC
- South Charleston
 - Union Carbide Corporation
 - Covestro LLC



What has WVDEP done?

- Public Outreach:
 - Met with Elected Officials and Higher Education Representatives on August 10, 2021
 - Had a Virtual Community Meeting on September 23, 2021
 - Established an EtO Website and Mailing List
 - Had a Community Open House on March 26, 2022 at the Dunbar Recreation Center in Dunbar
 - Attend monthly South Charleston and Western Kanawha Valley Community Advisory Panel (CAP) meetings
 - The WVDEP's Environmental Advocate provides updates on EtO through virtual town hall meetings

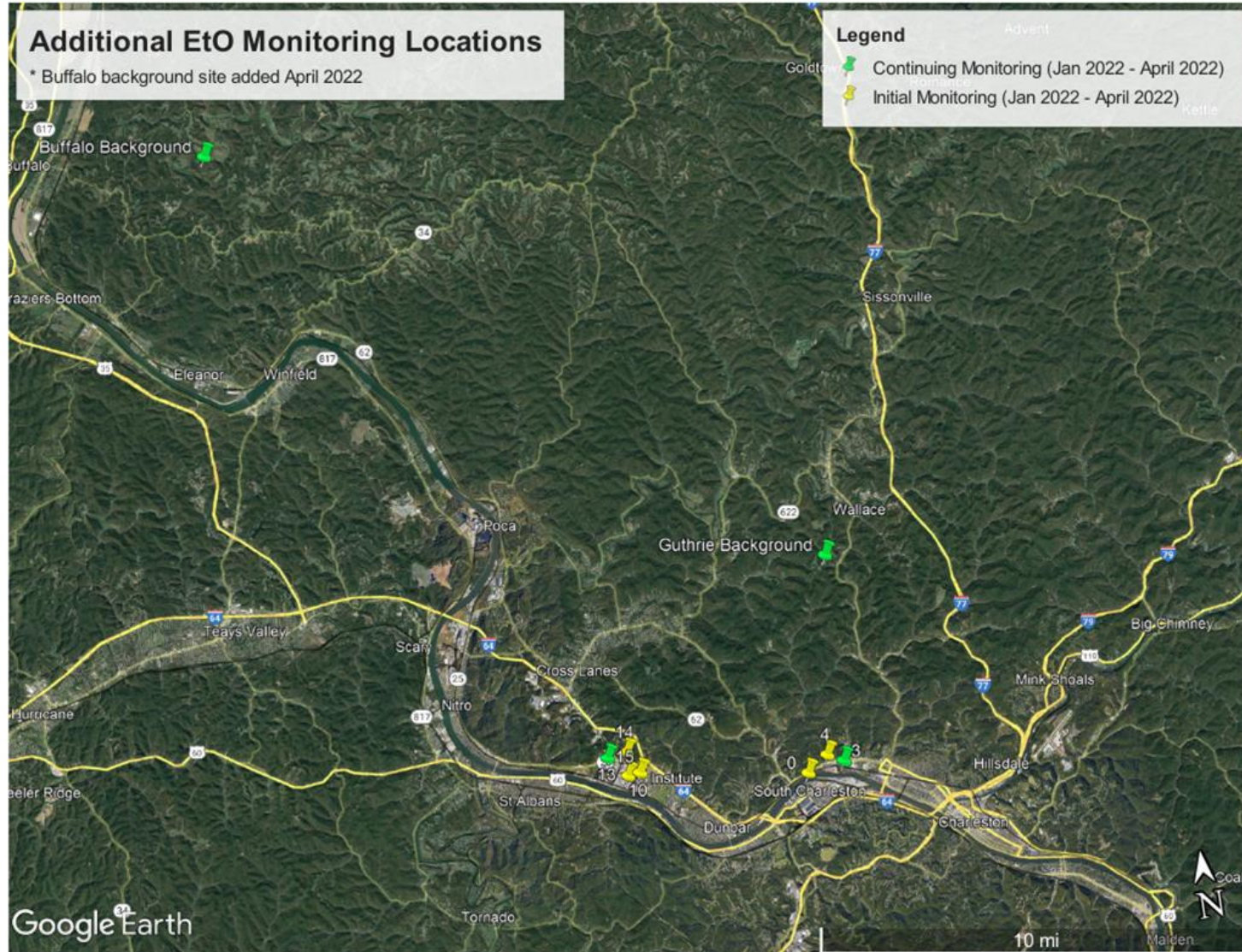


What has WVDEP done?

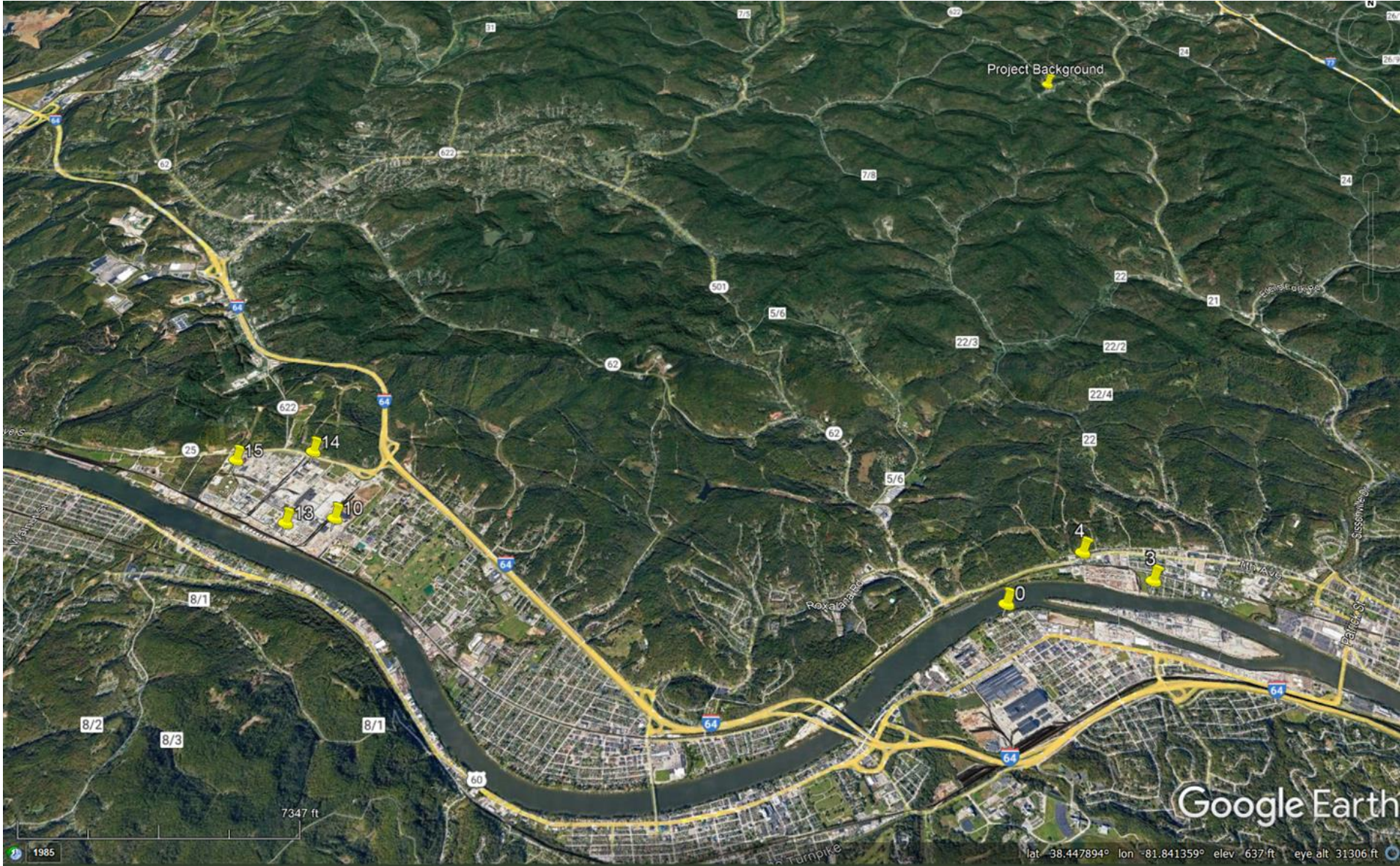
- Four (4) sets of short-term monitoring in both the South Charleston and Institute areas
- Worked with UCC to do an additional seven (7) sets of short-term fence-line and background monitoring
- Released the monitoring results after analyzed by the lab and Q/A'd by DAQ



What has WVDEP done?



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What has WVDEP done?

Ethylene Oxide Initial Monitoring Results

Sample Location	Jan. 25-26, 2022	Feb. 15-16, 2022	March 23-24, 2022	April 25-26, 2022***
	Results (ppbv)*	Results (ppbv)*	Results (ppbv)*	Results (ppbv)*
Guthrie Background **	0.0361	0.0884	0.0321	0.271
#0 South Charleston, WV	Nondetect	Not exposed	0.08	0.146
#3 North Charleston, WV	0.0165	0.0227	0.155	0.221
#4 North Charleston, WV	0.0121	0.088	0.0794	0.277
#10 Institute, WV	0.0821	0.0996	0.182	0.674
#13 Institute, WV	0.0375	0.204	0.0714 (co-located)	0.124
#14 Institute, WV	0.0376	0.0958	0.119	0.514
#15 Institute, WV	0.0505	1.3	0.447	0.183
#16 Buffalo, WV Background**	N/A	N/A	N/A	0.365

* Concentrations measured in parts per billion by volume (ppbv)

** Background site: This is an area with no known emitters of Ethylene Oxide

*** April 26-27, 2022 for #0 South Charleston, #3 North Charleston and #4 North Charleston

Method Detection Level (MDL) for the January through March sampling = 0.0261 ppb

Method Detection Level (MDL) for the June sampling = 0.048 ppb

MDL is the minimum concentration of a substance that can be measured and reported with 99% confidence that the concentration is greater than zero.



What has WVDEP done?

Ethylene Oxide Additional Monitoring Results

Sample Location	May 24-25, 2022	May 31-June 1, 2022	June 7-8, 2022	June 14-15, 2022	June 22-23, 2022
	Results (ppbv)*	Results (ppbv)*	Results (ppbv)*	Results (ppbv)*	Results (ppbv)*
Guthrie Background **	0.0733	0.296	0.636	0.95	0.817
#3 North Charleston, WV	0.184	0.257	0.762	2.48	0.979
#15 Institute, WV	1.23	1.93	0.571	1.76	1.65
#16 Buffalo, WV Background**	0.169	0.109	0.714	0.122	0.354

* Concentrations measured in parts per billion by volume (ppbv)

** Background site: This is an area with no known emitters of Ethylene Oxide

Method Detection Level (MDL) for the sampling = 0.048 ppb

MDL is the minimum concentration of a substance that can be measured and reported with 99% confidence that the concentration is greater than zero.



What has WVDEP done?

- Worked with the four EtO emitting facilities in Institute and South Charleston to provide written commitments to work practice standards greater than required by state and federal regulations
- These may include:
 - Repairing components with detected leaks at levels lower than what is considered a leak by applicable regulations
 - Increase monitoring frequency of potential leak points
 - Reducing the number of fugitive components by replacing them with welded connections



What has EPA done?

- Updated the NATA with a new air toxics risk screening tool - AirToxScreen
 - Will use more current emissions data
 - Screening using 2017 emissions data is available now, 2018 emissions data is due out by the end of 2022
 - Data from 2017 emissions indicates that all census tracts in West Virginia are under the 100 in 1 million cancer risk level

<https://www.epa.gov/AirToxScreen>

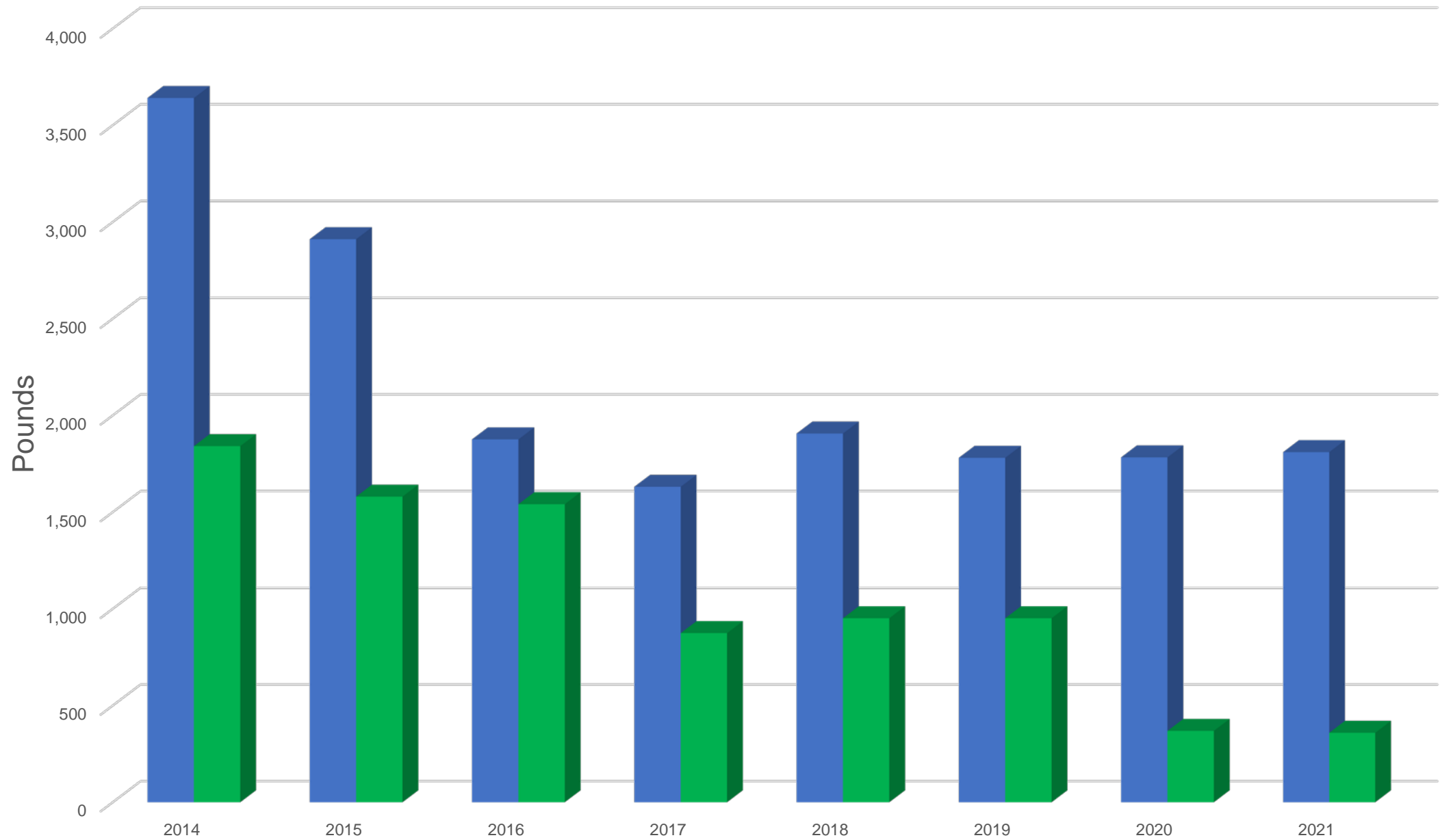


What has WVDHHR BPH done?

- Conducted updated cancer-mapping - released June 9, 2022
- Findings include:
 - Kanawha County does not rank in the top 10 for any of the EtO related cancers
 - There are no cancer clusters for EtO related cancers around the Institute and South Charleston areas



Total Ethylene Oxide Emissions in the Kanawha Valley



Source: WVDEP DAQ
SLEIS

■ Institute ■ South Charleston

8/18/2022
*2021 Covestro Estimated

What is WVDEP doing?

- Modeling actual EtO emissions
- Comparing air monitoring data with air modeling results



What is WVDEP doing?

- DAQ draft report 2-3 months after final sampling and modeling are completed
- DAQ sends draft report to EPA 3-4 months after sampling and modeling are completed
- EPA provides advice on analyses and comments on the draft report throughout development
- DAQ releases final report to public within 6 months after final monitoring data received from lab (December 2022)



Summary

- WVDEP has been working with EPA, the facilities, and DHHR to accurately identify the risks
- Questions remain regarding the revised EPA risk factor for EtO
- Questions remain regarding the background levels of EtO
- WVDEP is committed to continue working with EPA, the facilities, and DHHR to address the associated risks
- WVDEP is committed to continued dialogue with the community and holding additional meetings as new information becomes available



Additional Resources

- The WVDEP has a webpage dedicated to EtO:
<https://dep.wv.gov/daq/Air%20Toxics/EthyleneOxide/Pages/default.aspx>
- Additional questions for the WVDEP can be submitted via email to
DEP.Comments@wv.gov
- Media inquiries should be directed to Terry Fletcher, WVDEP Communications Director, at Terry.A.Fletcher@wv.gov

