Tonight's Agenda

5:30	Public Availability Session Individual tables for participating agencies to dialogue with citizens
6:30	Reconfigure for public meeting / break
7:00	Public meeting: Introductions
7:05	Opening Dialogue
7:10	BCP Facility: Air permits and air compliance (MDNR)
7:15	MDHSS cancer inquiry results (MDHSS)
7:25	Questions for MDNR / MDHSS
7:35	OSHA inspection of BCP Facility (OSHA)
7:45	Questions for OSHA
7:55	Ethylene Oxide (EtO) in Verona (EPA) • Background on EtO • EtO in Verona • EPA's EtO Air Monitoring Program
8:20	Syntex Facility Superfund Site Update: 5-Year Review, 1,4-Dioxane update (EPA)
8:30	EPA 112(r): Accidental Release Prevention / Risk Management Plan inspection of BCP Facility (EPA)
8:40	Questions for EPA
8:55	Wrap up / Closing remarks

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Verona Public Meeting

Stephen Hall
Director, Air Pollution Control Program
Verona Public Meeting /Availability Session
October 26, 2022

Operating Permit

BCP operates under a Part 70 Operating Permit

- ➢ Permit identifies emission limits and compliance methods for air emission processes
- ➢ BCP is a minor source for ethylene oxide (BCP voluntary limited emissions)
- ❑ Permit is publicly available: https://dnr.mo.gov/air/business-industry/permits/issued-pending

MISSOURI DEPARTMENT OF NATURAL RESOURCES

Recently Issued Construction Permit

The Air Pollution Control Program issued a construction permit to BCP on September 2, 2022

- Minor source permit to expand the choline chloride crystals operation
- The process does not emit ethylene oxide nor increase ethylene oxide from existing processes
- Permit establishes emissions limits for particulate matter and requires control devices (dust collector and wet scrubber)

- Permits are publicly available: https://dnr.mo.gov/air/business-industry/permits/issued-pending

MISSOURI DEPARTMENT OF NATURAL RESOURCES

BCP Verona Compliance

- In compliance with permitted emission limits
- Federally Reportable Violations (FRVs) of BCP's Part 70

Permit to Operate No. OP2019-025

➢October 2020 Semi-Annual Monitoring (SAM) report submitted 19 days beyond the due date of October 1st (resolved)

➢July 2021- Late Emissions Inventory Questionnaire fee payment (resolved)

- BCP reported the April 8, 2022 ethylene oxide leak on the SAM report due October 1, 2022. EPA will handle any Enforcement actions related to this leak under 112(r)
- Annual Compliance Certification for 2022 is due April 1, 2023

MISSOURI DEPARTMENT OF NATURAL RESOURCES

Odor Concerns

- The Air Pollution Control Program regulates odors by rule 10 CSR 10-6.165, "Restriction of Emission of Odors"
- The Department's Southwest Regional Office team investigates odor complaints and refers violations to the Air Pollution Control Program
- Investigating odor concerns at BCP
- The Air Program is working with ISONOVA TECHNOLOGIES LLC, 18184 Highway P, Verona, MO 65769 to address odor violations

➢Abatement Order issued September 12, 2022 requiring 9 corrective actions of ISONOVA to mitigate odor violations

MISSOURI DEPARTMENT OF NATURAL RESOURCES

Contact Information

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Find us on the web at https://dnr.mo.gov/air

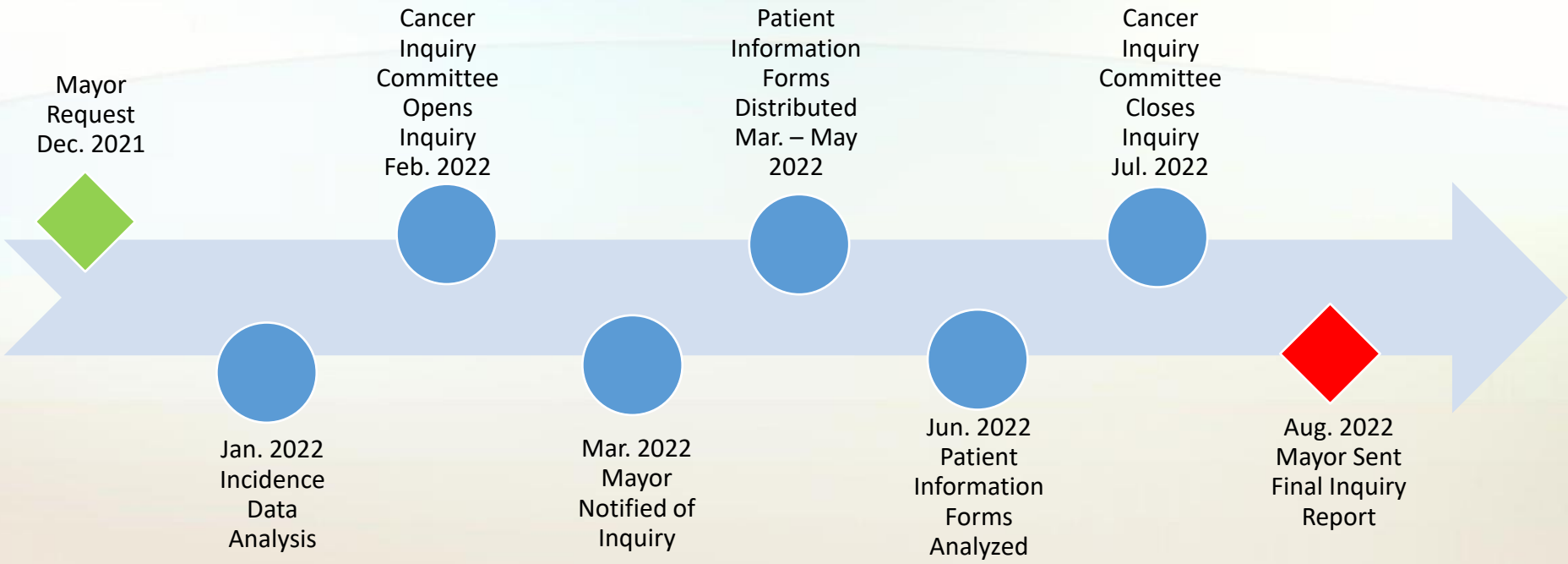
MISSOURI DEPARTMENT OF NATURAL RESOURCES

MISSOURI DEPARTMENT OF HEALTH & SENIOR SERVICES

Cancer Inquiry Results - Verona, Missouri

Venkata PS Garikapaty, PhD, MPH
Office of Epidemiology

Timeline of Cancer Inquiry



Incidence Data Analysis – Assessment

		Source of reference rates							
		Remainder of Lawrence county				Remainder of state			
SSRW** (Site)	Observed counts	Expected counts	SIR	SIR CI, lower bound	SIR CI, upper bound	Expected counts	SIR	SIR CI, lower bound	SIR CI, upper bound
Non-Hodgkin Lymphoma	17	7.4	2.29	1.33	3.67	8.4	2.03	1.18	3.25
Leukemia	8	5.7	1.39	0.60	2.74	5.9	1.36	0.59	2.69
Hodgkin Lymphoma	†	0.7	‡	<1.0‡	>1.0‡	1.0	‡	<1.0‡	>1.0‡
Female Breast	21	26.8	0.78	0.48	1.20	28.5	0.74	0.46	1.13
Stomach	†	3.1	‡	<1.0‡	>1.0‡	2.3	‡	<1.0‡	>1.0‡

Standardize Incidence Ratio (SIR) - The SIR is generally calculated to provide an estimate of the likelihood that an excess of cases exists in the population of concern (the study population) compared to the general or reference population. The SIR is a ratio of the number of observed cases to the number of expected cases.

Age distribution of NHL cases, 1999-2018

Average:	62.05882353
Min:	38
Q1	49
Q2 (Med)	64
Q3	73
Max:	89

The Missouri Cancer Inquiry Committee voted to initiate a Level 1 cancer inquiry after reviewing the analysis of data.

Patient Information Forms (PIFs) distributed in the community

Case Definition

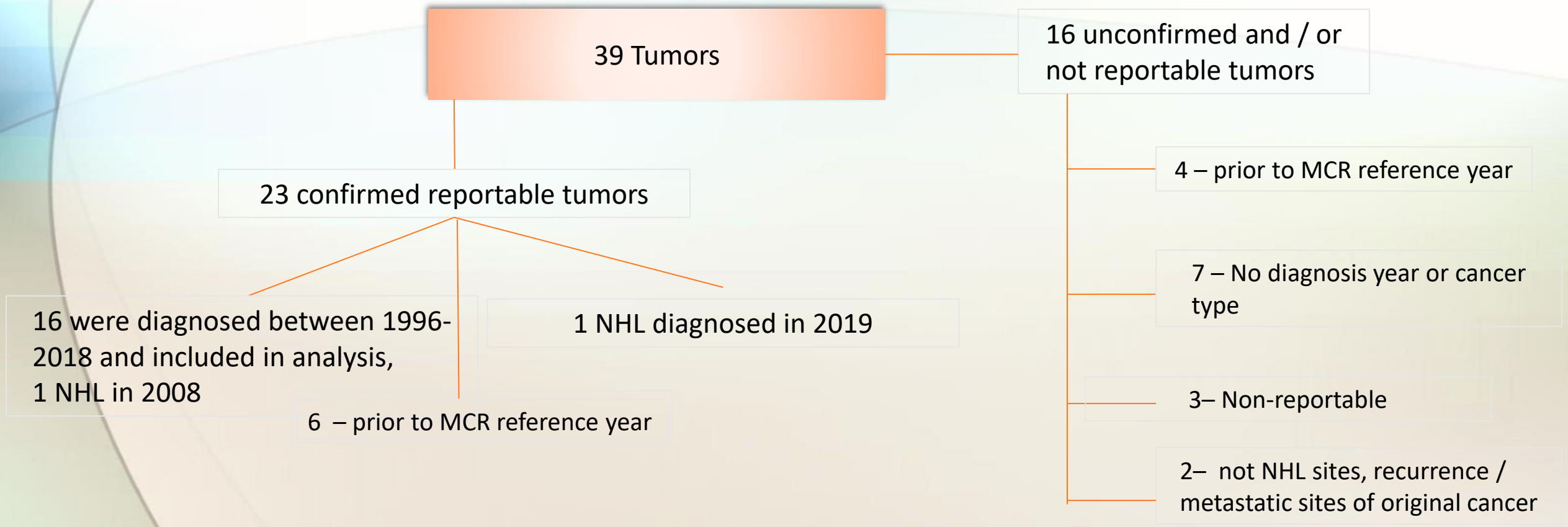
- Resident in and around Verona at diagnosis
  - ZIP Code 65769 and within Lawrence county
- Diagnosed with non-Hodgkin lymphoma between 1999 to 2018
- Missouri Cancer Registry (MCR) confirmation
  - Non-Hodgkin Lymphoma

Level 1 Cancer Inquiry: Patient Information Forms (PIFs), Mar- May 2022

Total tumors via PIFs:	**39**		
Directly given:	28		
Additionally listed:	11		
(note: only 24 PIFS, but 4 reported multiple tumors for the respondent to give a total of 28 directly responded tumors)			

- 24 PIFs received by DHSS
- 4 forms had multiple and/or metastatic or recurrence tumors
- Forms included names of 11 additional individuals who were also checked with the cancer registry database

RESULTS


39 Tumors
16 unconfirmed and / or not reportable tumors
4 – prior to MCR reference year
7 – No diagnosis year or cancer type
3– Non-reportable
2– not NHL sites, recurrence / metastatic sites of original cancer
23 confirmed reportable tumors
16 were diagnosed between 1996-2018 and included in analysis, 1 NHL in 2008
6 – prior to MCR reference year
1 NHL diagnosed in 2019

Summary

- **Non-Hodgkin Lymphoma** has a statistically significantly higher number of cases than expected (compared to remainder of Lawrence: observed SIR is 2.29, compared to remainder of state: observed SIR is 2.03)
- **Leukemia** and **Hodgkin Lymphoma** did not differ statistically significantly from their expected counts (the 95% CIs of the SIRs contained 1.0)
- PIFs did not identify any additional tumors not included in the initial analysis
- Did not proceed to a Level 2 Inquiry –
  - Several different types of cancer among individuals submitting PIFs
  - Majority of the cases did not meet case definition
  - Relatively small number PIFs and confirmed cancer cases limiting analysis
  - Lack of information or ability on residents exposure to Eto over the years
- Final Report sent to Mayor in August 2022

Questions/Discussion for Missouri Agencies

OSHA®

Occupational Safety and Health Administration

Occupational Safety and Health Administration

OSHA Personnel Regional Office

- Ryan Hodge- Deputy Regional Administrator
- Kevin Crain- Assistant Regional Administrator Whistleblower Protection Programs
- Kristina Carignan- Regional Supervisory Investigator Whistleblower Protection Programs
- Adriana Delfin- Safety and Health Manager Enforcement Programs

OSHA® Occupational Safety and Health Administration

Regional Office Contact Information

2300 Main Street Suite 10030

Kansas City, MO 64108

Phone number: 816-283-8745

OSHA Occupational Safety and Health Administration

OSHA Personnel Kansas City Area Office

- Karena Lorek- Area Director
- Kimberly Robinson-Assistant Area Director
- Christina Gibbs- Compliance Officer

OSHA Occupational Safety and Health Administration

Area Office Contact Information

2300 Main Street Suite 10071

Kansas City, MO 64108

Phone number: 816-483-9531

OSHA Occupational Safety and Health Administration

www.osha.gov

800-321-OSHA (6742)

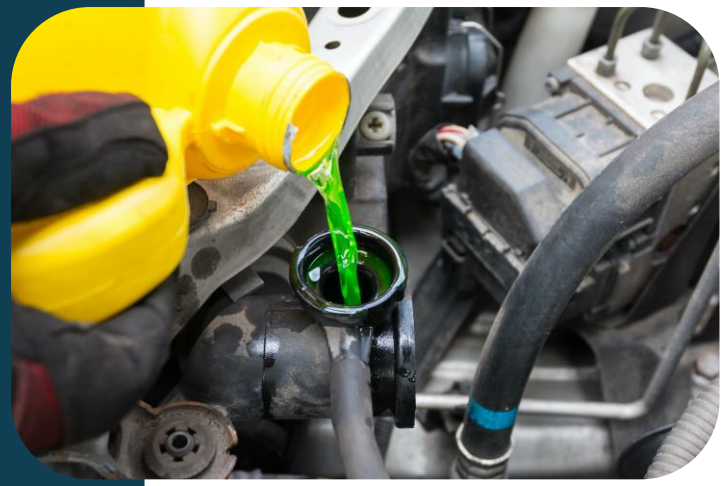
OSHA® Occupational Safety and Health Administration

Questions/Discussion for OSHA

What is Ethylene Oxide?

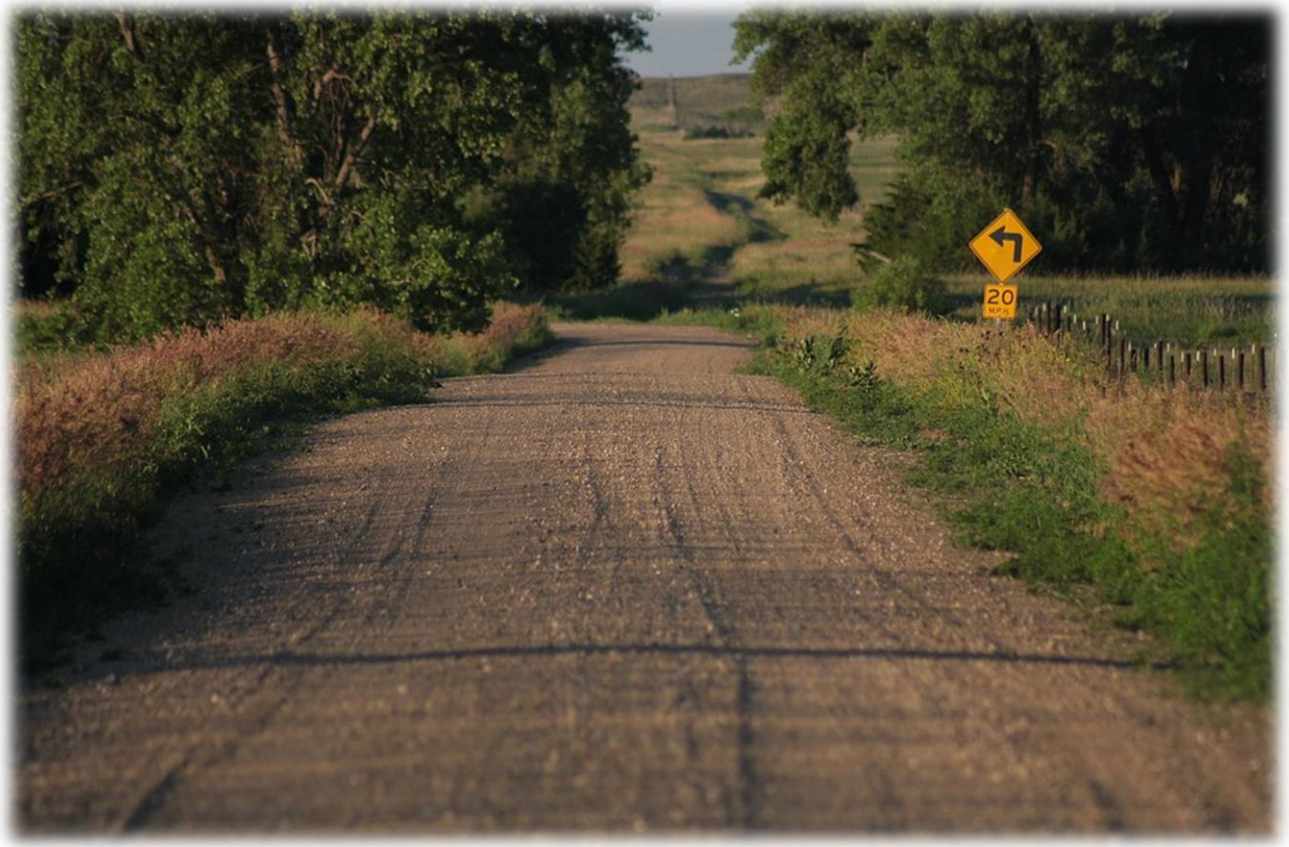
EtO Uses

- Makes Other Products
- Sterilizes



Over your lifetime

Breathing in EtO over many years can cause breast cancer and lymph cancer.



Special Considerations about Risk

Workers may be exposed at higher levels.

Children and babies may be at higher risk.

This risk assessment and the rule it supports are focused on community risk, not worker risk.

Where EtO comes from at the facility

There are two types of EtO emissions from facilities:

Controlled Emissions	Fugitive Emissions

In this community, the majority of the risk is being caused by fugitive emissions.

Reducing EtO coming out of the facility is the best way to reduce risk.

How long are people exposed?

- EPA takes a protective approach when we consider timelines of exposure.
- We calculate risk as though an individual would breathe the air containing EtO 24 hours a day, every day, for 70 years.

December 2016
EPA conducts review of toxicity values for health effects resulting from chronic exposure to chemicals and revises risk of ethylene oxide.

Leak and Detection Program (BCP)
Program to characterize/fix equipment leaks.

2019 Public Engagement
1) meeting with public officials
2) public availability session at high school

2021 Public Availability Session

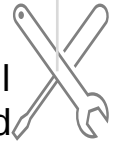
Fall 2022 Community Monitoring
Deployment of EtO measurement in Verona projected to begin

2016 2018 2019 2020 2021 2022

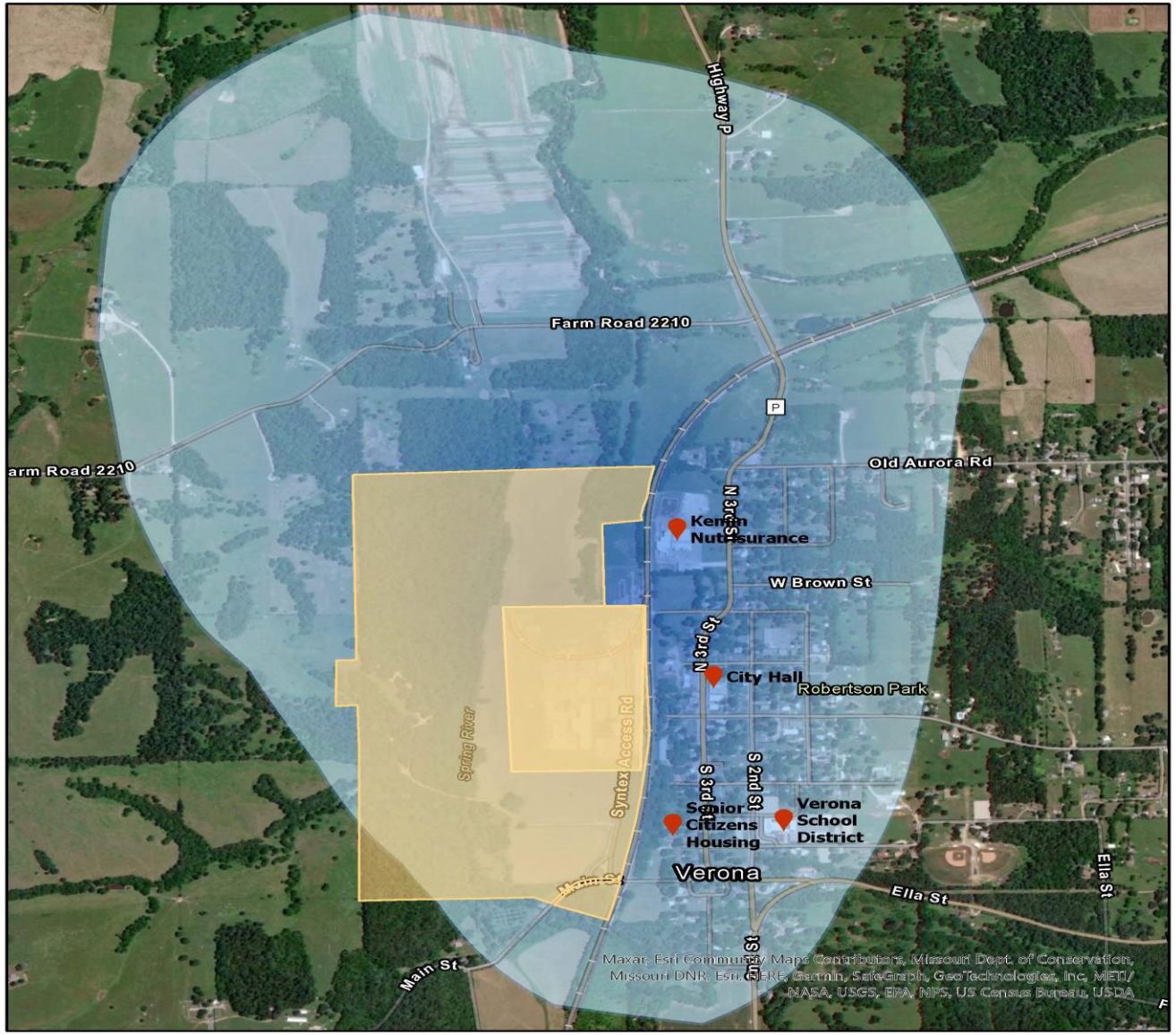
August 2018:
EPA releases air toxics assessment using revised ethylene oxide risk value

November 2018:
EPA R7 staff and MoDNR engage BCP to discuss EPA's air toxics analysis and BCP Ethylene Oxide emissions

August-September 2022 Stack Test (BCP)
Planning, Pretest and Full Test conducted



Verona, MO Lifetime Cancer Risk Modeling



EPA United States Environmental Protection Agency

Landmarks

BCP Facility

Syntex Superfund Site

Lifetime Cancer Risk (in a million)

100 520

Miles

0 0.07 0.15

Work in Progress

- The facility has taken measures to reduce EtO emissions.
- EPA is monitoring EtO in your community to inform our understanding of risk, using computer models.

EPA's Ethylene Oxide Air Monitoring Program

Mike Davis
Physical Scientist
EPA Region 7
Office of the Regional Administrator
Office of Intergovernmental Affairs
913-551-5042
davis.michael@epa.gov

Air Monitoring Study Design

Partnership with EPA Region 7 & EPA Office of Research and Development

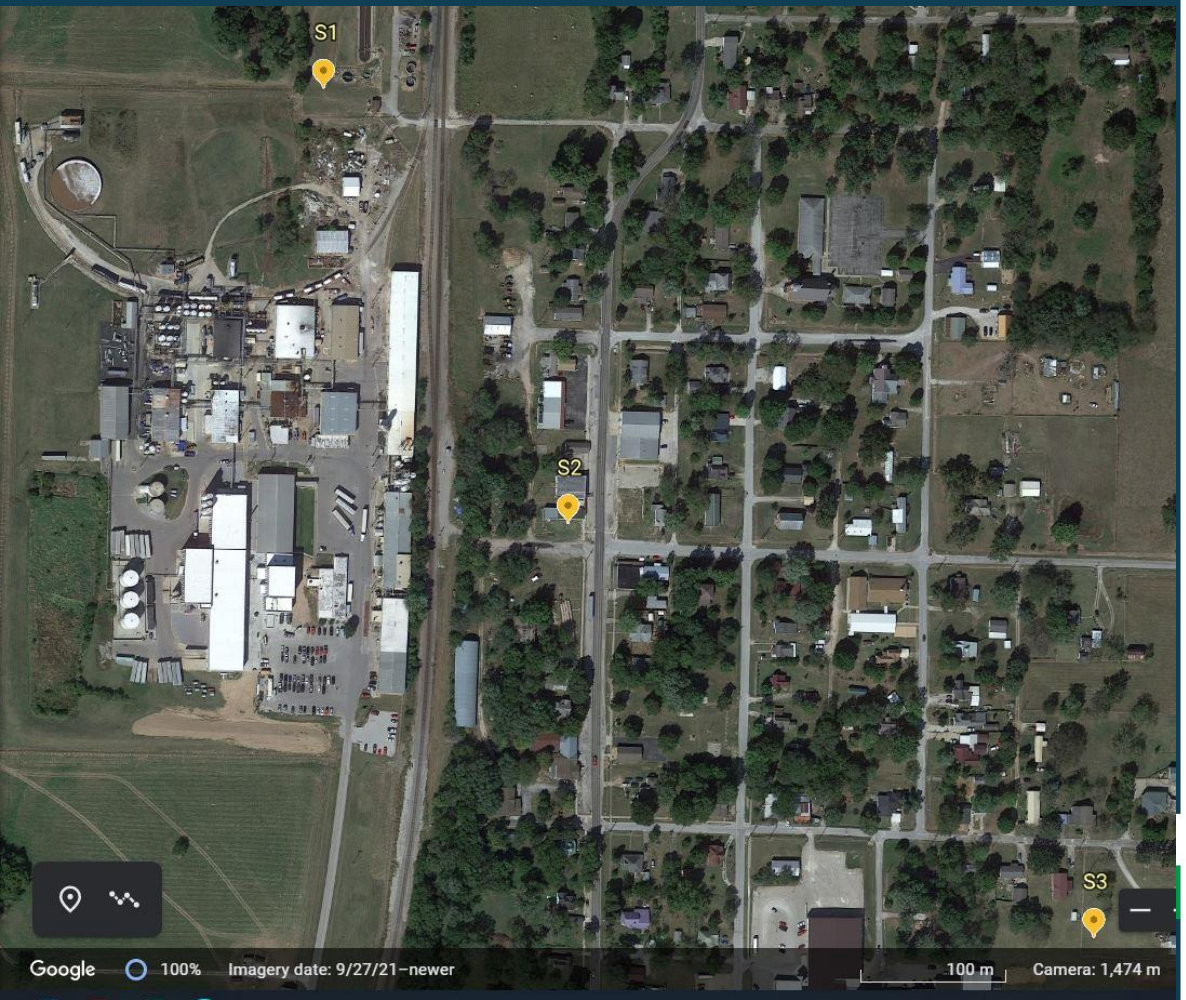
Features:

- Innovative research grade technology to collect EtO concentrations
- Mobile / stationary monitoring using vehicle mounted instruments
- 3-fixed sampling sites: 24-hour canister samples
- Sampling started October 5 and will continue for three months through the end of 2022

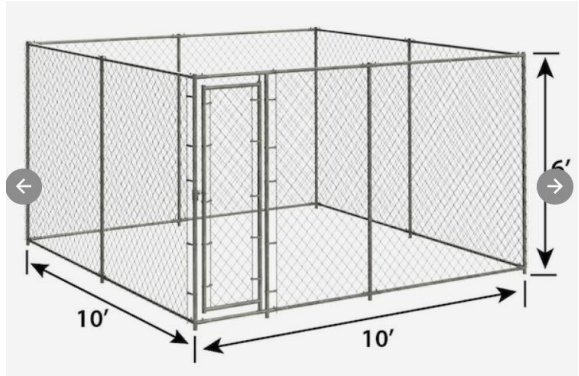
Air Monitoring Study Objectives

- Collect EtO concentration data where people live, work, and go to school.
- Use best available technologies and laboratory analysis methods.
- Evaluate new monitoring methods for EtO under actual field conditions.
- Assure data quality and validity for scientific integrity in decision making.
- Collect environmental monitoring data to inform modeling inputs and potential emission sources.
- Communicate monitoring data transparently to the public.

24-Hour Canister Sampling



- 6L canisters
- 24-Hour Sampling
- Automatic Timers
- ~ 1 in 3 Day Interval
- Contract Lab Analysis
- EtO Analysis Only
  - (MDL <50pptv)
- Weekly Changeouts
- QC Samples
  - 1 Co-located Sample / week
    - Rotated between 3 sites
  - 1 Trip Blank / week
  - 1 Lab Intercomparison / week



Site 1: Verona Waste-Water Treatment Plant

- Meteorological Measurements
- Continuous
  - 3D Anemometer
  - 2D Anemometer
  - Temp/Humidity
  - Real-time Telemetry
- Solar Powered
- Canister Samples

Site 2, 3rd & Washington

Canister
Samples Only

Site 3, Verona R-7 School District

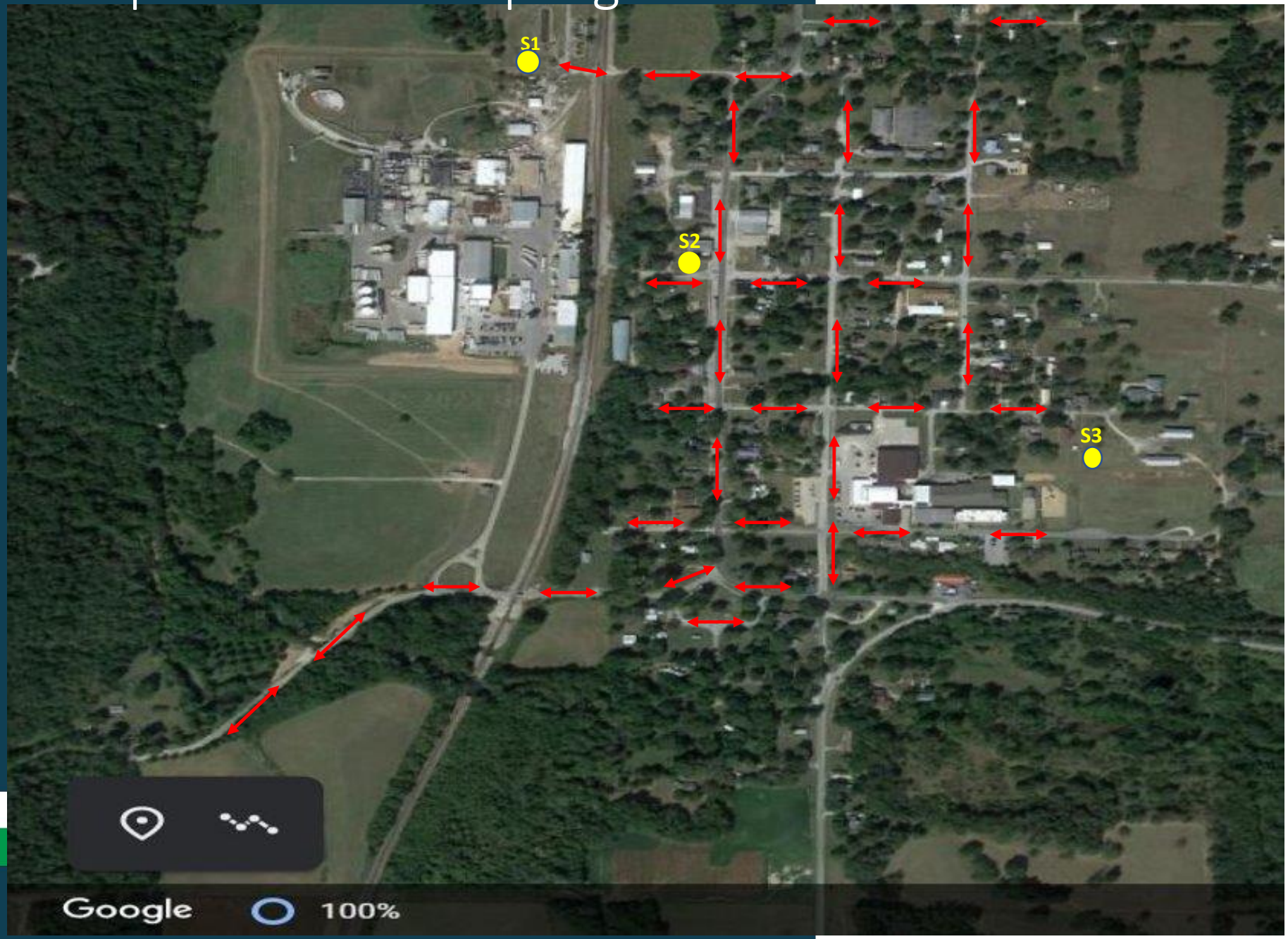
Canister Samples Only

Mobile Air Sampling Measurement Research

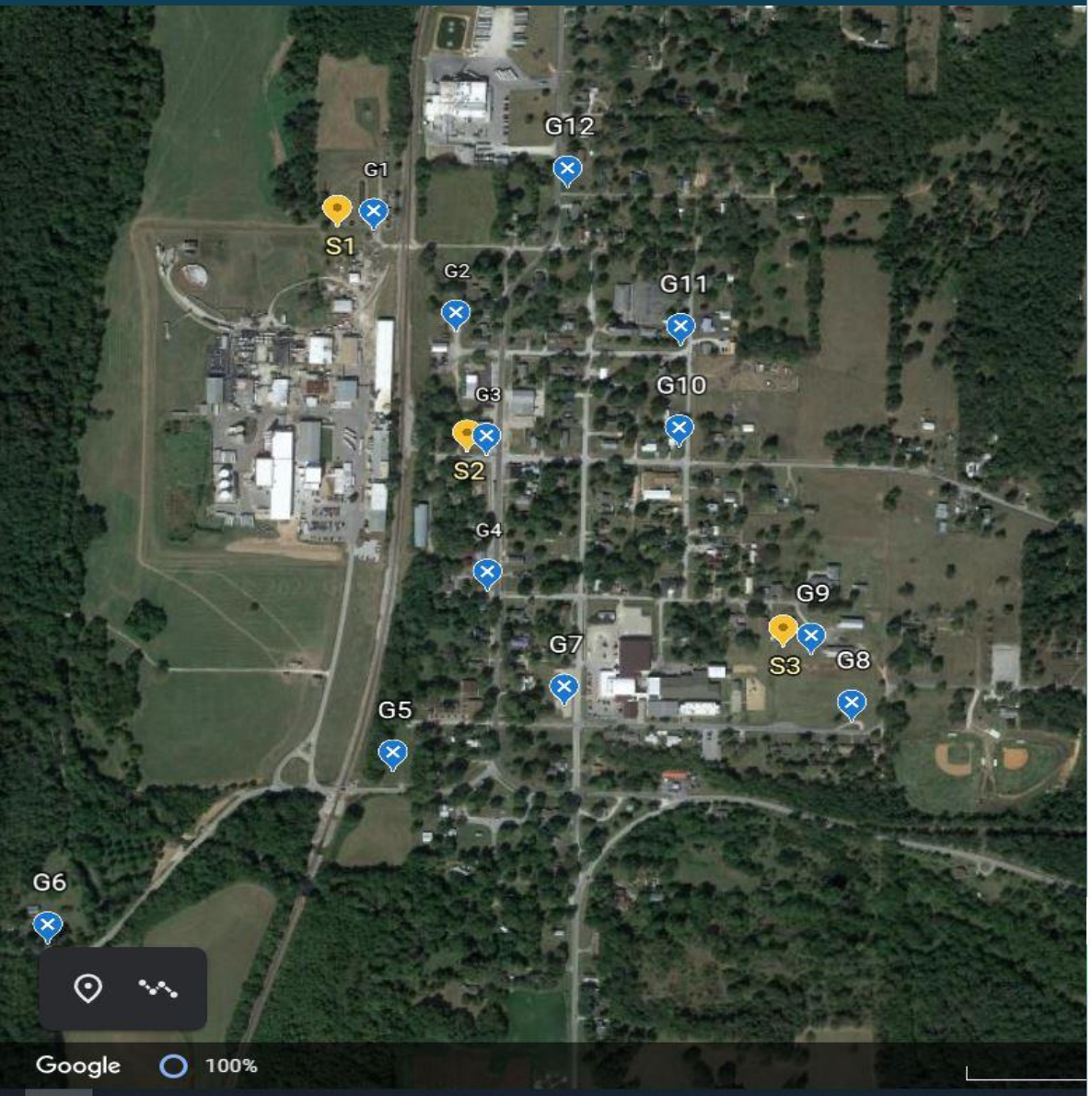
Geospatial Measurement of Air Pollution (GMAP): ORD Technology

- Time- Location Aligned Measurements every second
- AirMar200WX
  - GPS
  - Wind Speed/Direction
- Picarro G2920 Spectrometer
  - EtO (MDL <2.0 ppbv)
  - CH4
  - CO2
- Daily QC Checks
- GoalZero Yeti Power Supply
- Two-Person Operation
- Laptop Data Acquisition

Example Mobile Sampling Routes



Example Vehicle Based Stationary Sampling



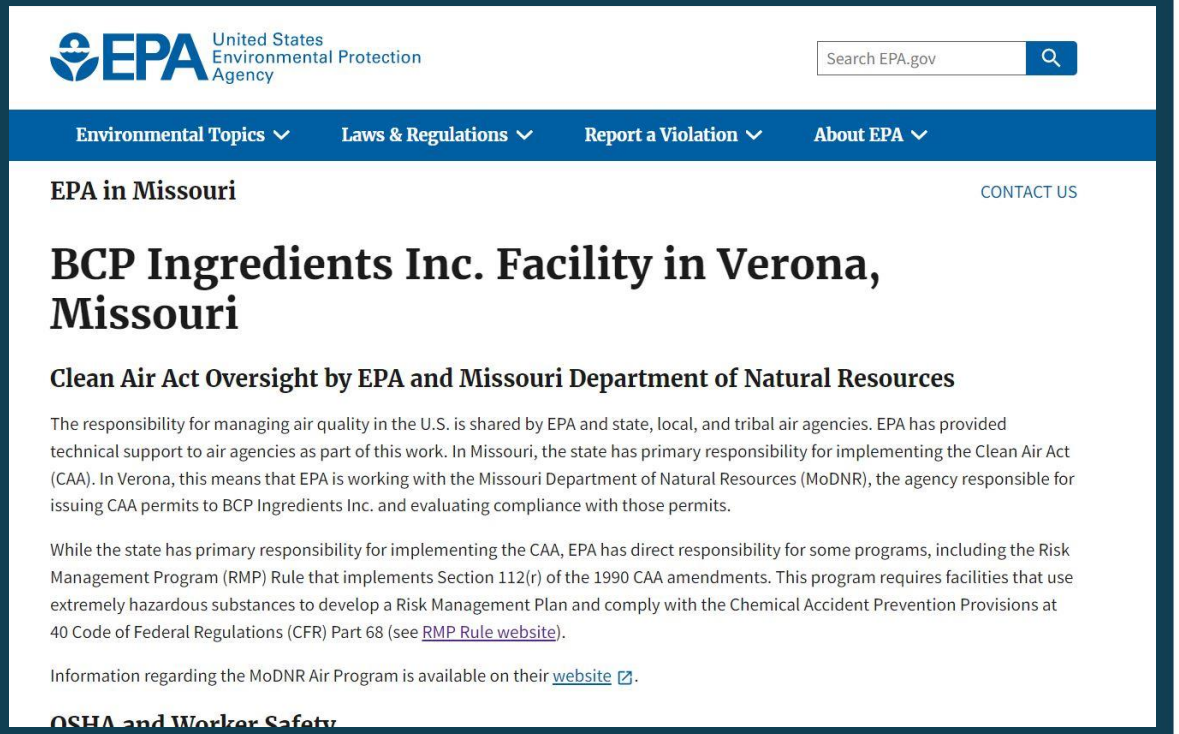
- Stationary Measurements based on mobile observations
- Car Engine Off
- 3D Sonic Anemometer
- Picarro G2920 (MDL <2.0 ppbv)
- ~15 minutes
- Cannister Grab Sample Quality Assurance

From air canister sample collection to data generation: Typically, 45 days

Field Sample Lifecycle

- Sample collected in the field
- Sample returned to EPA lab / shipped to contractor lab
- Sample scheduled and batched for analysis
- Sample analyzed as part of a lab batch
- Batch level lab QA/QC data review
- Individual sample QA/QC data review
- Data certified / reported by lab
- Data received / validated by user
- Data generated for posting to web
- GMAP data summarized in final report

Data Communication



EPA Web Page

- https://www.epa.gov/mo/bcp-ingredients-inc-facility-verona-missouri
- Single location for EPA information
- Air monitoring content currently being developed
- State program management
- OSHA and worker safety
- EPA Actions
  - Ethylene Oxide
  - Risk Management Program Inspection
  - Syntex Facility Superfund Site

Syntex Facility Superfund Site

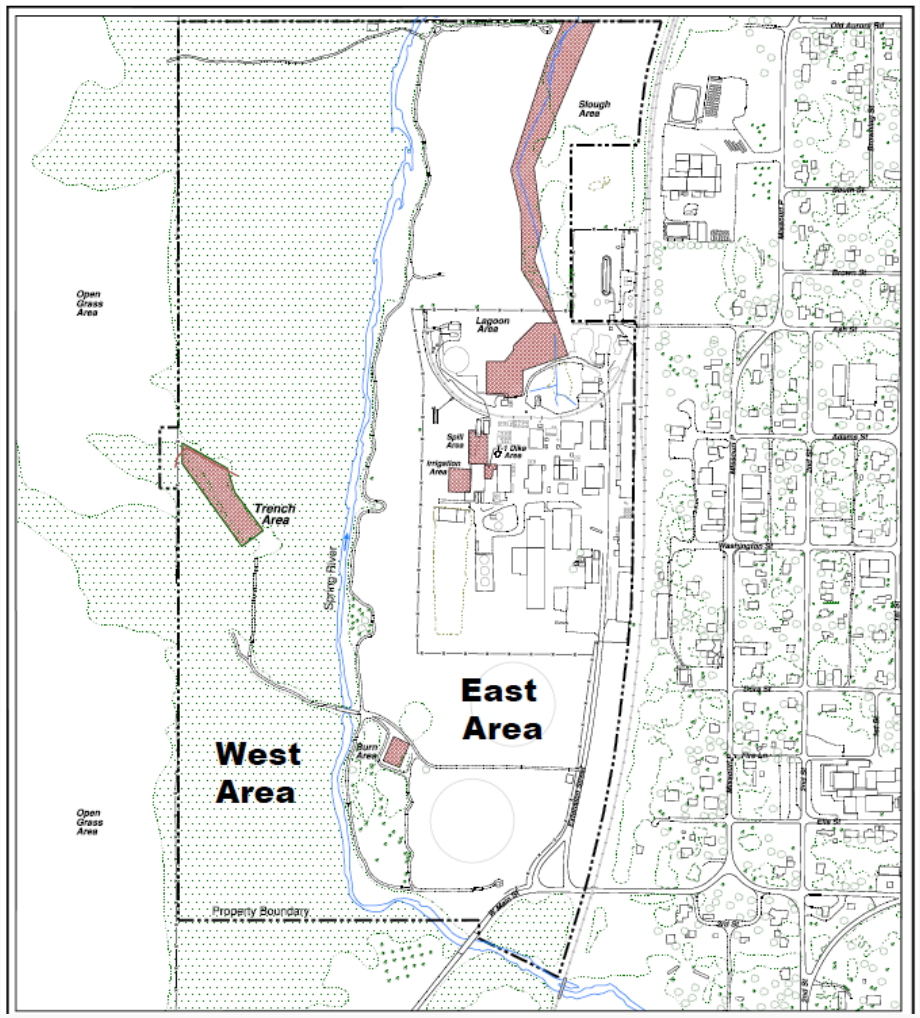
October 26, 2022

Brian Zurbuchen, Ph.D., *RPM*

U.S. Environmental Protection Agency, Region 7

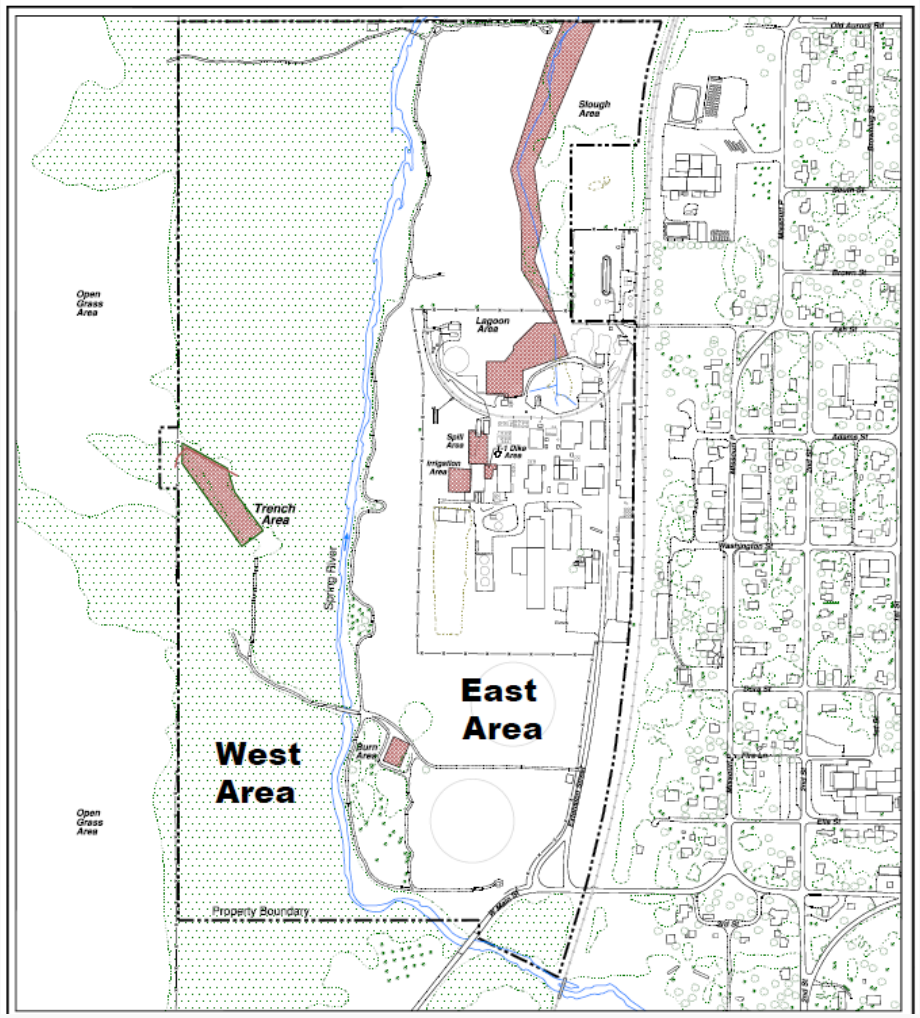
Iowa, Kansas, Missouri, Nebraska and Nine Tribal Nations

Site Background



- 80 acres in uplands / 100 acres in 100-year floodplain
- 1960's Hoffman-Taff
- Dioxin contamination
  - 1968-1969 – Hoffman-Taff produces 2,4,5-T
  - 1970-1972 – NEPACCO produces hexachlorophene

Site Background



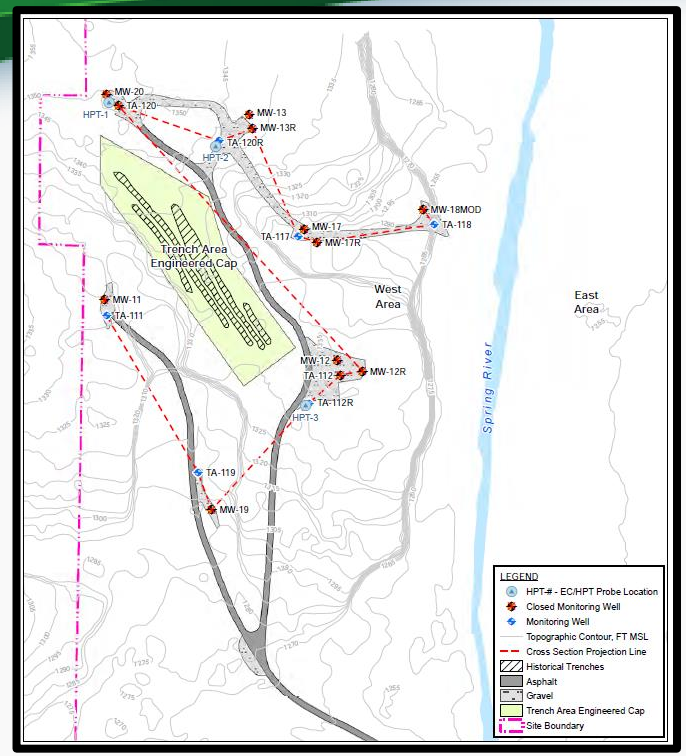
- 1983 – Added to National Priorities List
- Operable Unit 1 – Soils and Equipment
  - Dioxin (2,3,7,8-tetrachlorodibenzo-p-dioxin or TCDD)
  - 1988 Record of Decision – excavate/incinerate dioxin-contaminated soils
  - Flood berm (added to remedy during design)
  - 1998 Remedial Action completed
- Operable Unit 2 – Groundwater
  - Several VOCs and metals present
  - 1993 ROD – No remedial action; 2 years of groundwater and surface water monitoring; human health risk assessment
- Orders – 1982, 1983, 1997, 2016

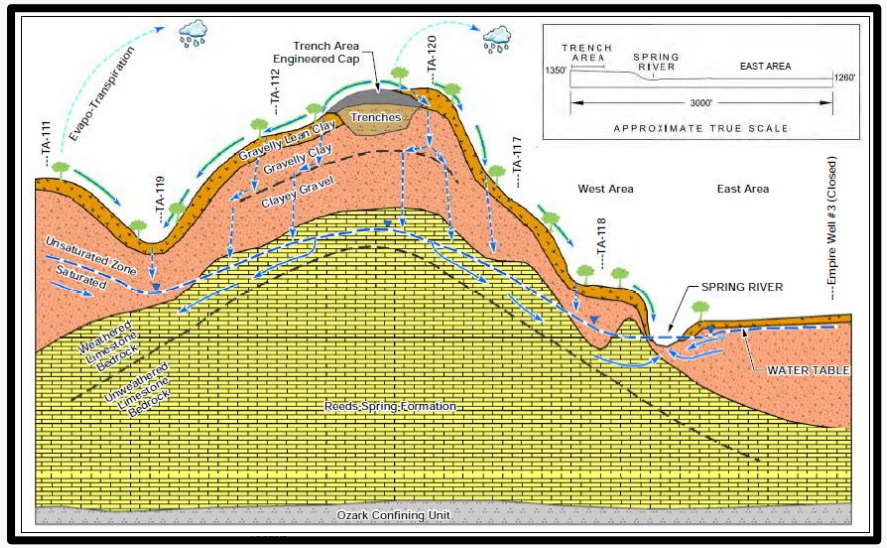
Sixth Five-Year Review

- Five-Year Reviews
  - Periodic evaluation of remedy protectiveness
  - Led/performed by EPA; includes team of EPA subject matter experts; reviewed by State
  - Includes data from Syntex investigations and assessments pursuant to 2016 Order
- FYR completed Sept. 26, 2022
- Key Issues from 2012/2017 Five-Year Reviews have been resolved
- Conclusions of the Sixth Five-Year Review
  - Remedial actions were completed consistent with selected remedies.
  - Caps and/or vegetative covers are well-maintained.
- Protectiveness Determinations (for the remedies)
  - OU 1 Soils and Equipment – Short-term Protective
  - OU 2 Groundwater – Protective
- Recommendations –
  - Reassess flood berm; Develop Operation and Maintenance Plan; Decommission monitoring well; Perform maintenance to prevent ponding in Lagoon Area

Trench Area

- 1.3-acre area in West Area
- Manufacturing wastes dumped in 5 trenches ‘66 – ‘71
- Remedy selected in 1988 – cap, groundwater monitoring, risk assessment
- Remedy constructed 1988-1990
- 2012 / 2017 Five-Year Reviews questioned protectiveness
- 2016 Order with Syntex – additional investigations/assessments
- Results – Trench Area remedy remains protective
- Land-use controls in place in April 2022

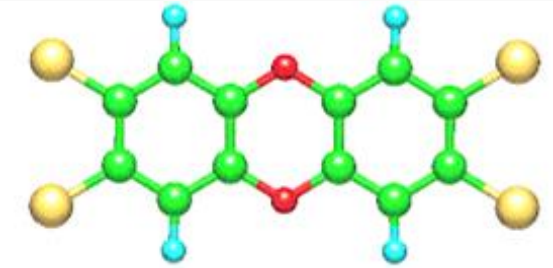




Contaminants of Concern

Dioxins

- Group of chemical compounds
- Persistent Organic Pollutant (PoP)
- Uses: None



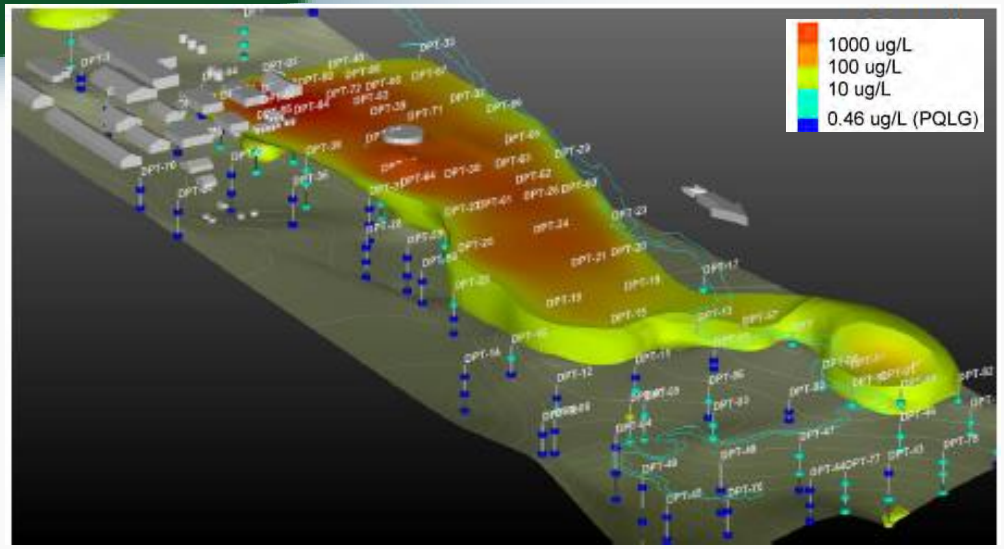
Dioxin – 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)

1,4-Dioxane, $C_4H_8O_2$

- Uses: Stabilizer for chlorinated solvents; Purifying agent in pharmaceutical manufacturing
- Mixes with water, highly mobile

- Likely human carcinogen

1,4-Dioxane



- Detected during recent site investigations
- Response to 1,4-dioxane detections
  - EPA requested information from BCP
  - EPA engaged with Syntex
    - Extend and expand groundwater sampling program;
    - Conduct high-resolution groundwater sampling and geotechnical investigation.
  - EPA engaged with community and sampled > 90 domestic wells.
  - EPA investigated BCP facility wastewater.
  - BCP conducted independent sampling of facility wastewater.
  - EPA evaluated BCP wastewater disposal practices. BCP's fertilizer exemption was a potential issue.
  - EPA notified BCP of potential liability in GNL Sept. 2020.
  - EPA negotiating Order with BCP and Syntex.
- Operable Unit 3 – Source Area Soils and Groundwater - 1,4-dioxane

EPA Clean Air Act Section 112(r)

October 26, 2022

Dave Hensley; Section Chief
Chemical Accident Prevention Section
Air Branch, Enforcement & Compliance Assurance Division

U.S. Environmental Protection Agency, Region 7
Iowa, Kansas, Missouri, Nebraska and Nine Tribal Nations

EPA Clean Air Act Section 112 (r)

Accidental Release Prevention / Risk Management Plan

- About Clean Air Act Section 112(r)
- Inspection findings
  - Release of ethylene oxide occurred during rail car offload process in April 2022
  - EPA inspection in June 2022 identified 16 CAA 112(r) Risk Management Program findings
- Enforcement status
  - Negotiated an Administrative Compliance Order on Consent to address noncompliance
  - Information gathering
- Enforcement Case

Questions/Discussion for EPA

Thank You