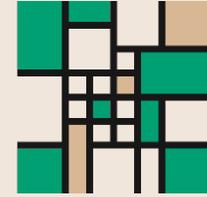


Health Impacts Survey – Rockton Chemtool Fire



W C H D

Winnebago County Health Department

Serving Our Whole Community

Date: September 1, 2021

Presentation To: Representatives From The Village of Rockton Community and Local Response Agencies



Outline

1. Background of Chemtool Fire
2. Environmental Impacts
3. Health Impacts Survey
4. Pet and Livestock Survey
5. Summary



Winnebago County

Health Department

Partners

Partners - Federal

- Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry (ATSDR)
 - Mark D. Johnson, MSPH, PhD, DABT
 - Jasmine Nakayama, PhD, RN – Epidemic Intelligence Service Officer
 - Maureen Orr, MS, BS – Epidemiologist
 - Lance R. Owen, PhD – Geospatial Research, Analysis, and Services Program (GRASP)
 - Krishna Surasi, MD, MPH – Epidemic Intelligence Service Officer
- Centers for Disease Control and Prevention/One Health Office
 - Ann Carpenter, DVM, MPH
 - Amanda Liew, MPH
 - Kate Varela, DVM, MPH, DACVPM
 - Natalie Wendling, DVM, MPH, DACVPM



Partners – State and Local

- Illinois Department of Public Health
 - Sarah L. Patrick, MPH, PhD – Acting State Epidemiologist
 - Stacey Hoferka, MPH, MSIS – Epidemiologist
 - Brian Koch, MS – Environmental Toxicologist
 - Megan Bowers – Public Health Educator, Environmental Health
 - Connie Austin, DVM, MPH, PhD, DACVPM – Public Health Veterinarian
- Winnebago County Health Department
 - Abby Kitler, MPH – Epidemiologist
 - Peter Lopatin, MBA – Director, Data and Quality
 - Sandra Martell RN, DNP – Public Health Administrator





Background

Chemtool Production Facility

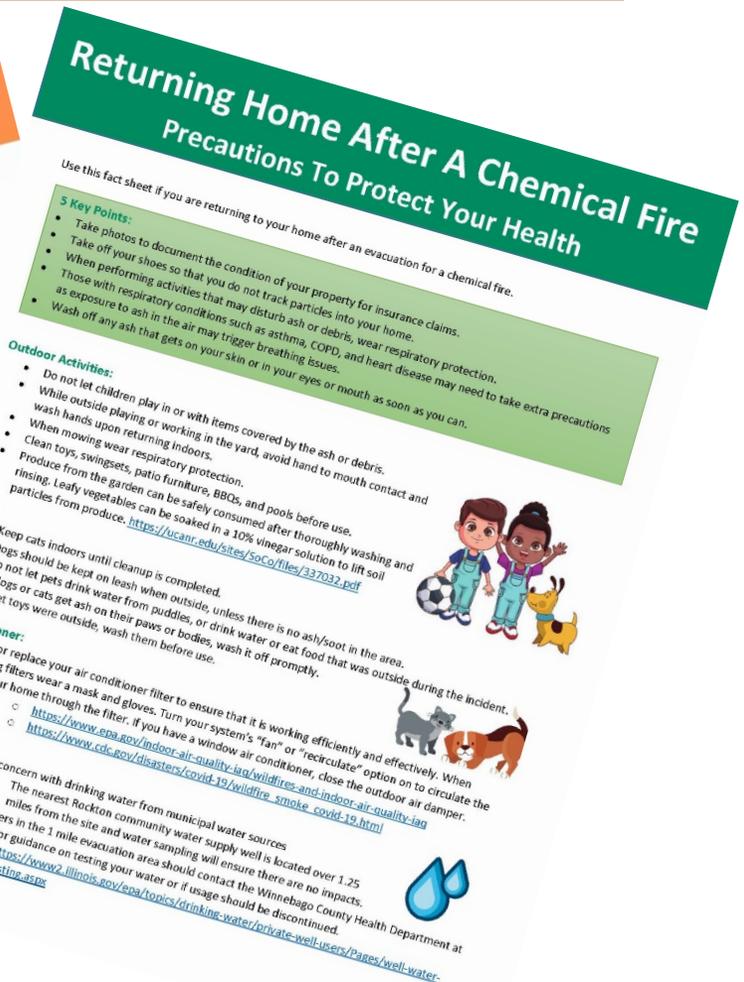
- Fluid, lubricant, and grease manufacturer
- Owned by Lubrizol
- Located in Rockton, Illinois
- Former Superfund Site - Beloit Corporation
 - 20 Acre Site
 - Clean-up completed in 2017



Image courtesy WREX: <https://wrex.com/2021/06/14/4-alarm-fire-breaks-out-at-chemtool-manufacturing-plant-in-rockton/>

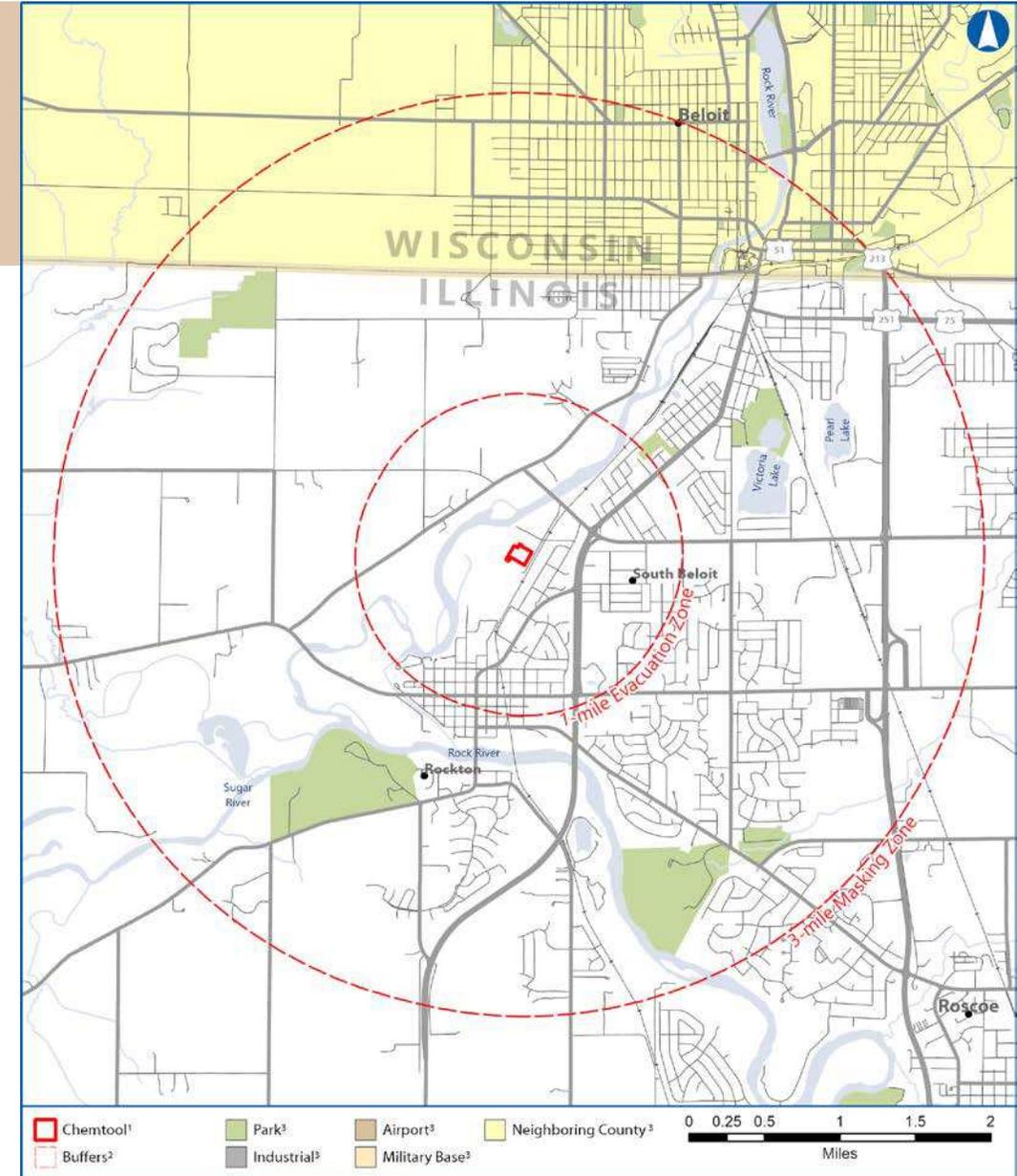
Timeline of Incident Response

- Monday, June 14, 2021
 - 6:50 am – Fire Alarm activated
 - 8:35 am – 1 mile evacuation zone order
 - 10:00 am – 3 mile masking zone recommended
- Wednesday, June 16, 2021
 - 1:00 pm – 3 mile masking zone recommendation lifted
- Friday, June 18, 2021
 - 10:00 am – 1 mile evacuation zone order lifted

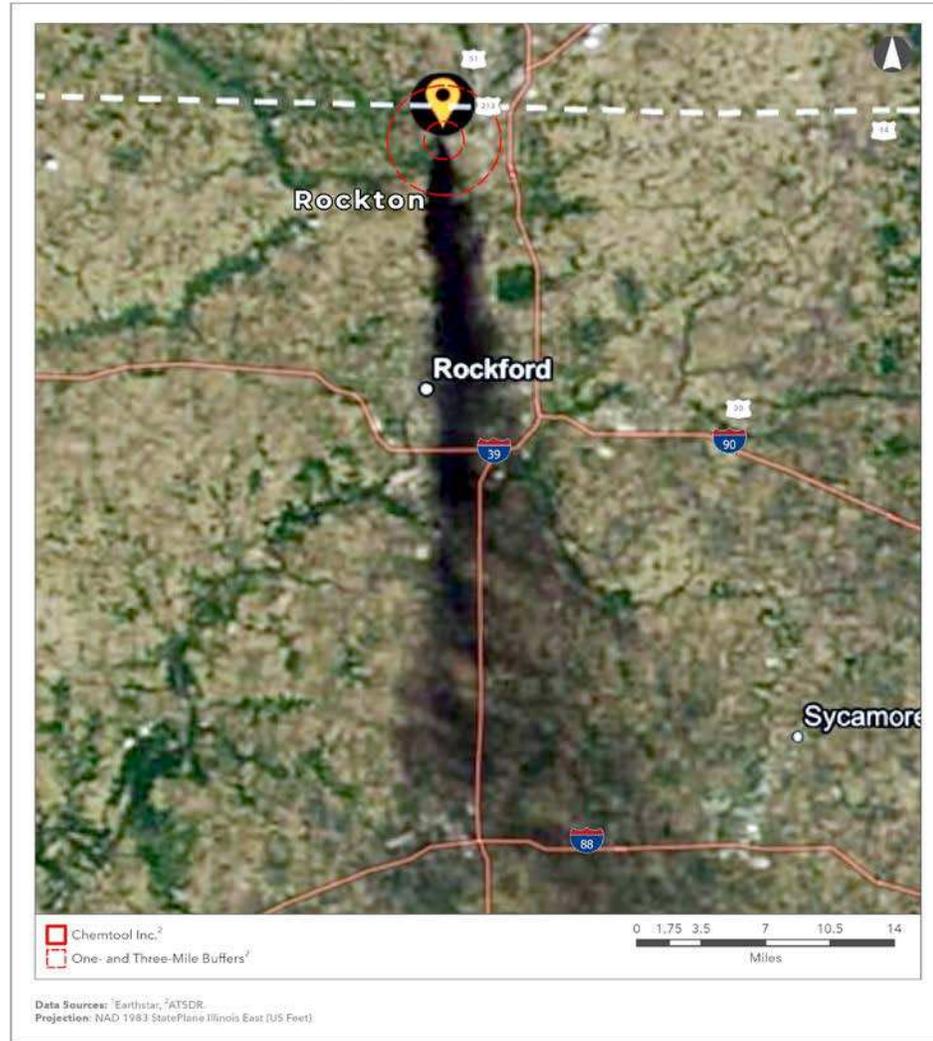


Incident Response

- 1-mile Evacuation Order
 - *Rockton Fire Department*
 - *Winnebago County Health Department*
- 3-mile Masking Advisory
 - *Winnebago County Health Department*
- Environmental Sampling
 - Uncertainty about which chemicals to test for
 - Multiple response agencies
 - US Environmental Protection Agency (US EPA)
 - Illinois Environmental Protection Agency (IEPA)
 - Illinois Civil Support Team (CST)
 - Chemtool Contractor Center for Toxicology and Environmental Health (CTEH)



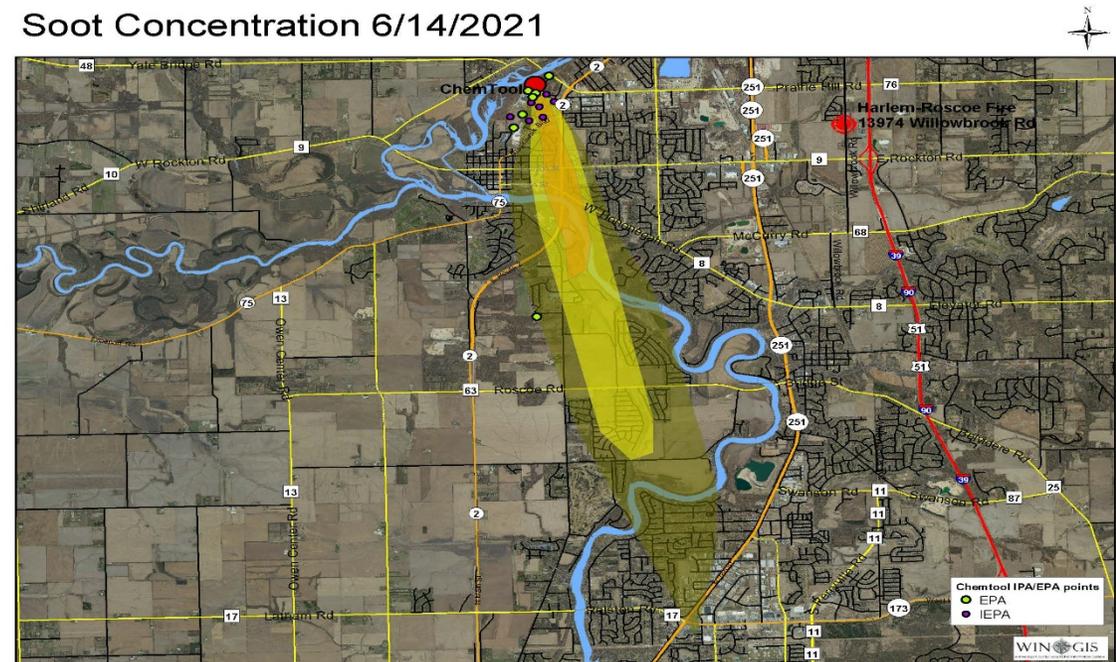
Environmental Impacts



Plume Images

Plume indicated a predominate **southeast** directional flow.

Soot Concentration 6/14/2021



Source: NOAA National Environmental Satellite Data and Information Service

Environmental Impact Assessment - Public

- Illinois EPA lead agency supported by:
 - US EPA Superfund Emergency Response
 - Illinois Civil Support Team (part of Illinois National Guard)
- Conducted multi-media environmental sampling
 - Air
 - Land/soil
 - Water
- Results posted on agency websites
 - Illinois EPA <https://www2.illinois.gov/epa/topics/community-relations/sites/Chemtool/Pages/default.aspx>
 - US EPA https://response.epa.gov/site/site_profile.aspx?site_id=15241



Environmental Impact Assessment - Private

- Chemtool Contractors

- Air Monitoring

- CTEH – Center for Toxicology and Environmental Health

- <https://www.cteh.com/>

- Debris pick-up and disposal

- Clean Harbors

- <https://www.cleanharbors.com/>

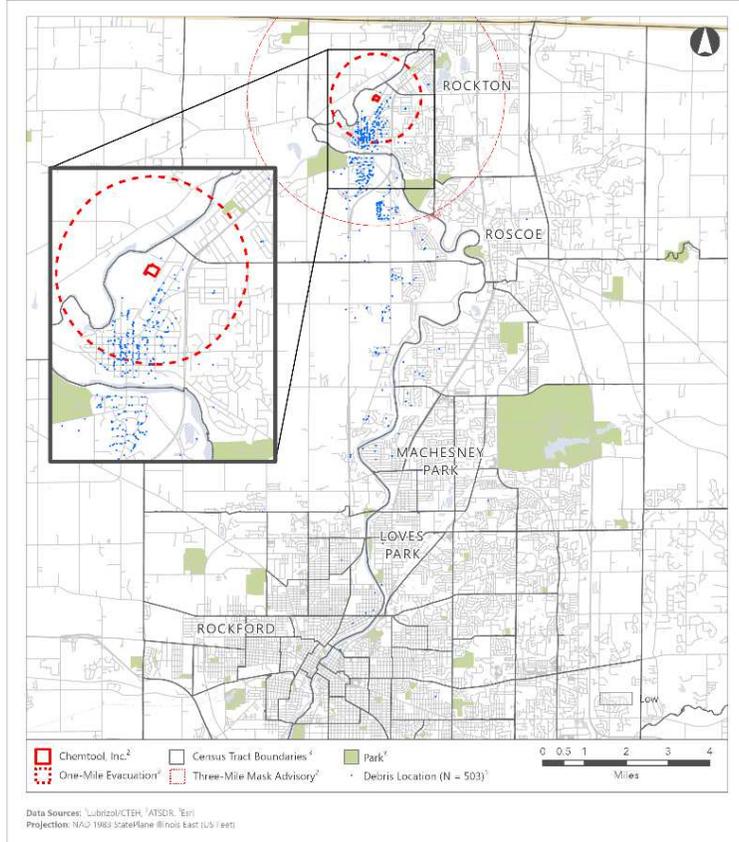


Locations of Reported Fire Debris

Chemtool Incorporated Fire
Rockton, Winnebago County Illinois

Sample Locations¹
DEBRIS FIELD

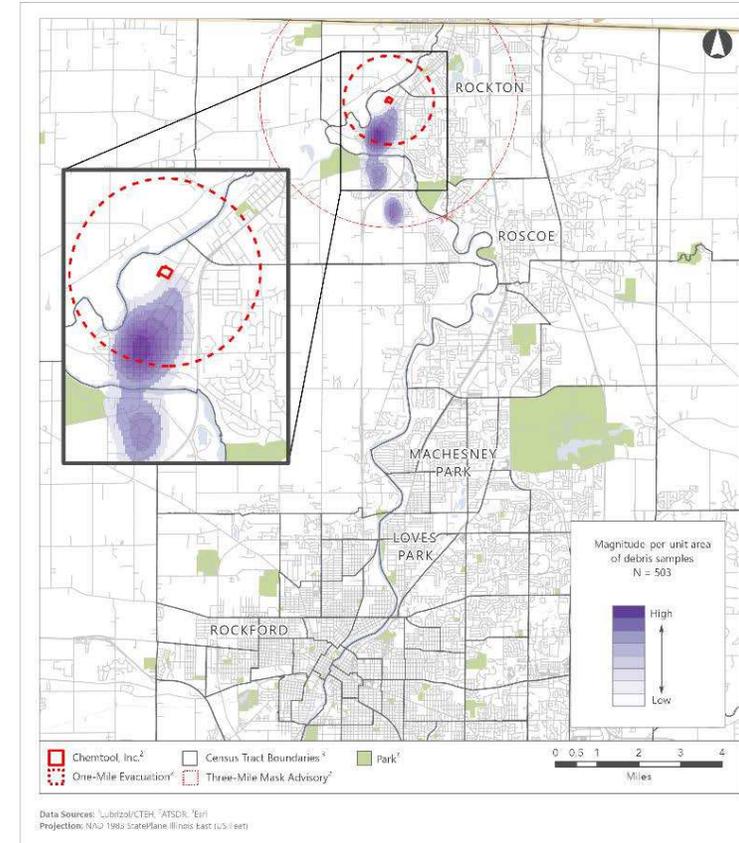
DEBRIS LOCATIONS | Samples Collected from June 17-24, 2021



Location of individual properties with Fire Debris; found up to 15 miles from Chemtool facility

Chemtool Incorporated Fire
Rockton, Winnebago County Illinois

Sample Locations¹
DEBRIS FIELD
KERNEL DENSITY | Samples Collected from June 17-24, 2021

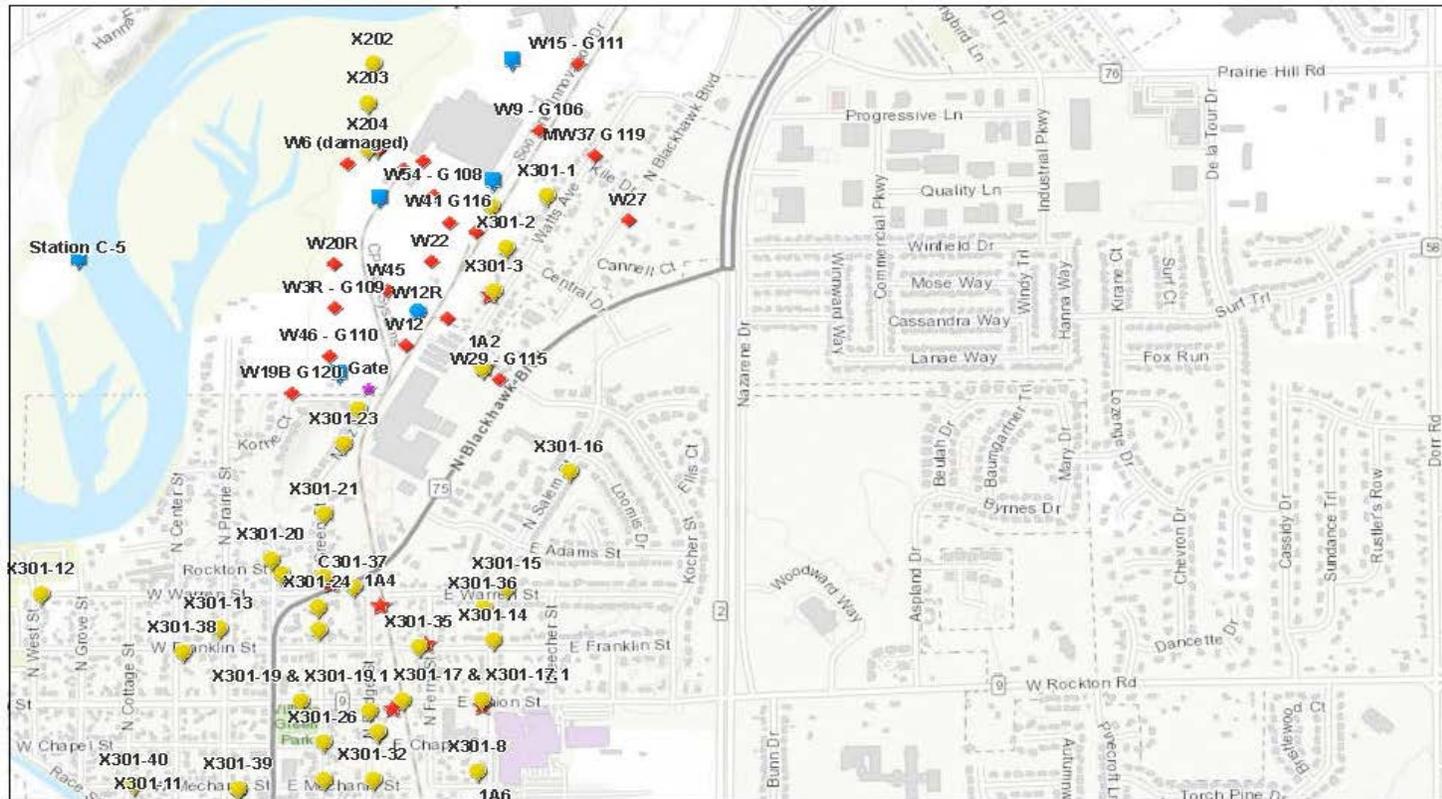


Density plot showing where most of the Fire Debris was found

Source: Chemtool contractors

Water and Soil Sampling Locations – Illinois EPA

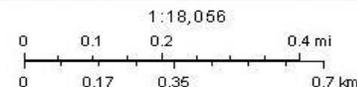
Chemtool Investigation - Illinois EPA



Soil sampling = 35 sites
Water sampling = 23 sites

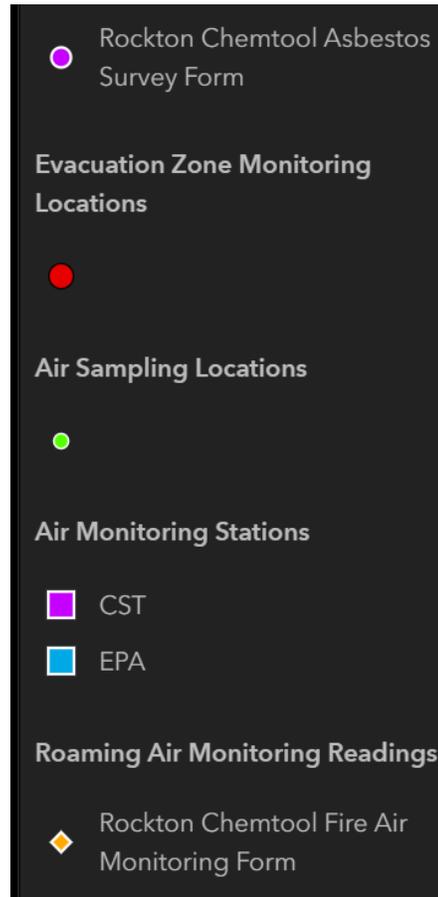
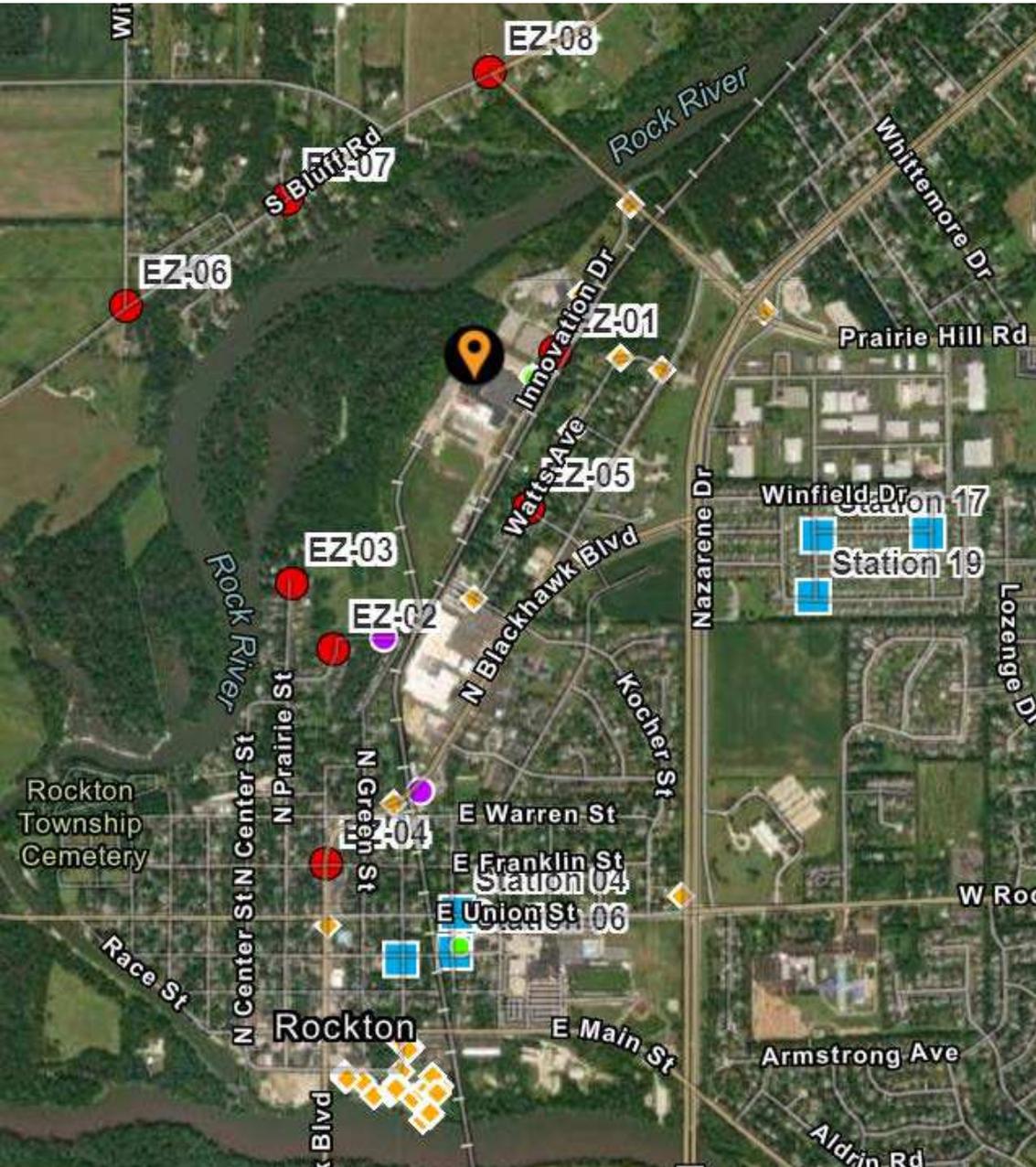
7/14/2021, 4:23:49 PM

- BOL Sample Locations
- Water Sample
 - Soil Sample
 - ◆ Monitoring Well
 - ★ Other Point
 - ★ US Army Sample Locations
 - BOW Sample Locations



Esri, Canada, Esri, HERE, Garmin, INCREMENT P, USGS, METINASA, EPA, USDA, Esri, HERE, ITC

Air Monitoring Locations



Winnebago County

Health Department

Environmental Monitoring Data

Chemical	Air					Dust (wipes)	Debris	Soil (0-1" grabs)	Surface Water
	Real time monitoring			8 hr SUMMA	Particle filters				
	Dust Tracker	SPM	AreaRAE						
Particulate matter	X								
-PM10	X								
-PM2.5	X								
VOCs			X	X					X-IEPA
Hydrogen cyanide (HCN)		X							
Sulfur dioxide (SO ₂)		X							
Hydrogen sulfide (H ₂ S)		X							
Benzene			X-CTEH						X-IEPA
PFAS									X-IEPA
Metals					X	X-IEPA	X-IEPA	X-IEPA	X-IEPA
SVOCs				X		X-IEPA	X-IEPA	X-IEPA	X-IEPA
PAHs									X-IEPA
Asbestos					X				

Data collected by USEPA, IEPA/Civil Support Team, CTEH

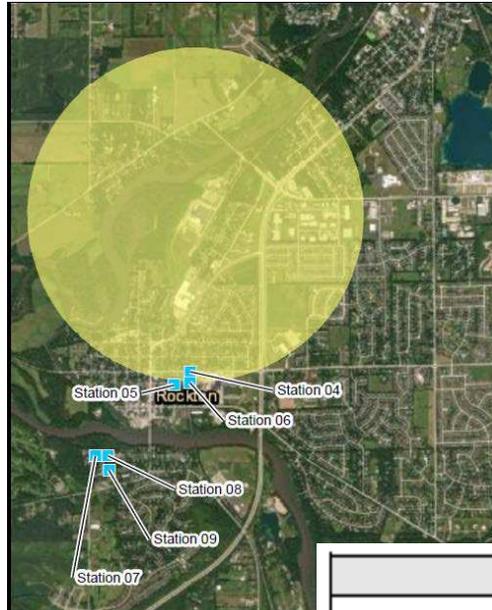
Monitoring Results



Monday, June 14 (1:10 pm) to Tuesday, June 15 (5:50 pm)

Station 2: Chemtool Facility						
Instrument	Analyte	Chemtool Public Health Screening Level ¹	Public Health Screening Level Exceeded?	Number of 1-Hour Periods	1-Hour Period Concentration Range	Average of All 1-Hour Periods
DustTrak 203	PM _{2.5} (mg/m ³)	0.025 mg/m ³	Yes (8)	17	0.01 to 0.08	0.03
	PM ₁₀ (mg/m ³)	0.05 mg/m ³	Yes (5)	17	0.01 to 0.09	0.03
AreaRae 1 (S/N: W01A00000642)	VOC (ppm)	1 ppm	No	27	0.0 to 0.2	0.1
	CO (ppm)	--	No	27	0.0 to 0.2	0.0
	O ₂ (%)	--	No	27	20.0 to 20.2	20.1
	H ₂ S (ppm)	0.1 mg/m ³	No	27	0.0 to 0.1	0.0
	LEL (%)	--	No	27	0.0 to 0.0	0.0

Monitoring Results



Legend

- EPA Air Monitoring Station
- 1 Mile Evacuation Radius

Note: Monitoring station locations subject to change based on weather and operational objectives.

Source: Esri 2020

Contract No.: 18-46-0019-00000 100 HOUR No.: 100 10/10/2018 11:00 AM

Tuesday, June 15 (5:10 pm) to Wednesday, June 16 (5:03 pm)

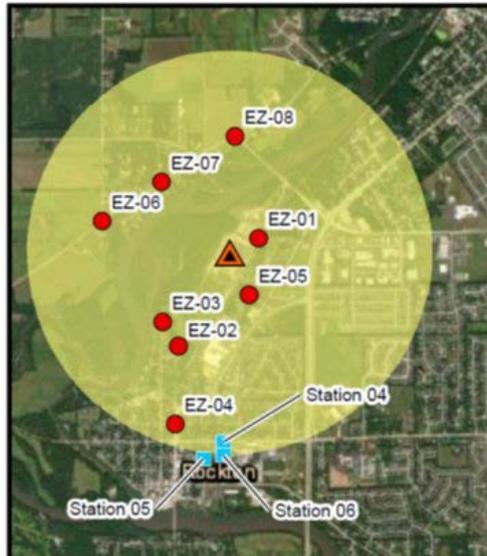
Station 6: Corner of Union and Ferry (NET1-D)						
Instrument	Analyte	Chemtool Public Health Screening Level ¹	Public Health Screening Level Exceeded?	Number of 1-Hour Periods	1-Hour Period Concentration Range	Average of All 1-Hour Periods
DustTrak 212	PM _{2.5} (mg/m ³)	0.025 mg/m ³	Yes (2)	7	0.00 to 0.09	0.03
	PM ₁₀ (mg/m ³)	0.05 mg/m ³	Yes (2)	7	0.00 to 0.09	0.03



Winnebago County

Health Department

Monitoring Results



Thursday, June 17 (3:00 am) to Friday, June 18, (1:53 am)

Legend

- EPA Air Monitoring Station
- 1 Mile Evacuation Radius

Note: Monitoring station locations subject to change based on weather and operational objectives.

Source: Esri 2020
Contract No. 88-HQ-0219-00001 T01702/01 No. 160

Station EZ-08: 1001-1199 Prairie Hill Rd					
Instrument	Analyte	Chemtool Public Health Screening Level ¹	Public Health Screening Level Exceeded?	Number of Measurements	Concentration Range
MultiRAE Pro	H ₂ S (ppm)	0.1 ppm	No	14	0.0 to 0.0
	HCN	1 ppm	No	14	0.0 to 0.0
	VOC (ppm)	1 ppm	No	14	0.0 to 0.0
Handheld DustTrak	PM _{2.5} (mg/m ³)	0.025 mg/m ³	Yes	4	0.007 to 0.075
	PM ₁₀ (mg/m ³)	0.05 mg/m ³	Yes	4	0.008 to 0.085
SPM Flex	SO ₂ (ppb)	0.2 ppm	No	14	0.0 to 0.0

Health Impacts of Particulate Matter

- Significant association between particulate matter (PM)
 - Cardiovascular – arrhythmias, heart attacks
 - Pulmonary/respiratory – asthma, bronchitis
 - Restricted activity days – lost work or school
 - Increased emergency department visits
- PM size matters
 - Smaller/fine (PM 2.5) → greatest risk since they can go deep
 - Larger/course (PM 10 – 2.5) → irritant to eyes, nose, and throat



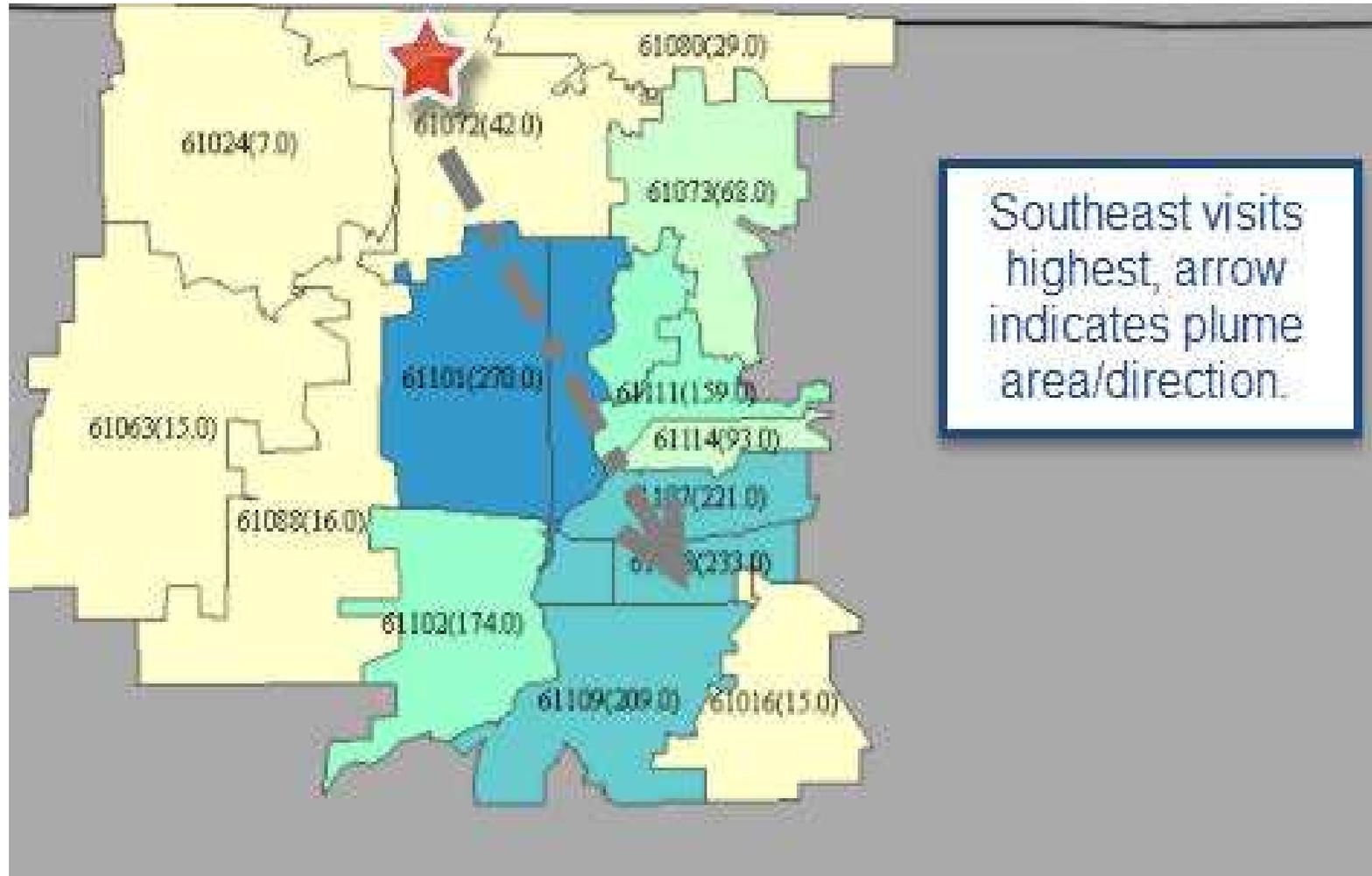
Health Impacts

Collaboration – Federal, State, and Local

- WCHD (local)
 - Requested support from IDPH (state)
 - Understand potential health impacts typically associated with chemical fires
 - Assess health impacts of the incident
 - Identify correlations between environmental impacts and health impacts
- IDPH (state)
 - Requested technical assistance from CDC/ATSDR to support WCHD
- CDC/ASTDR (federal)
 - Worked with WCHD and IDPH to initiate Epi-Aid support
 - Adapted Assessment of Chemical Exposures (ACE) investigation to evaluate health impacts
 - Working to analyze results of Health Impact Assessment



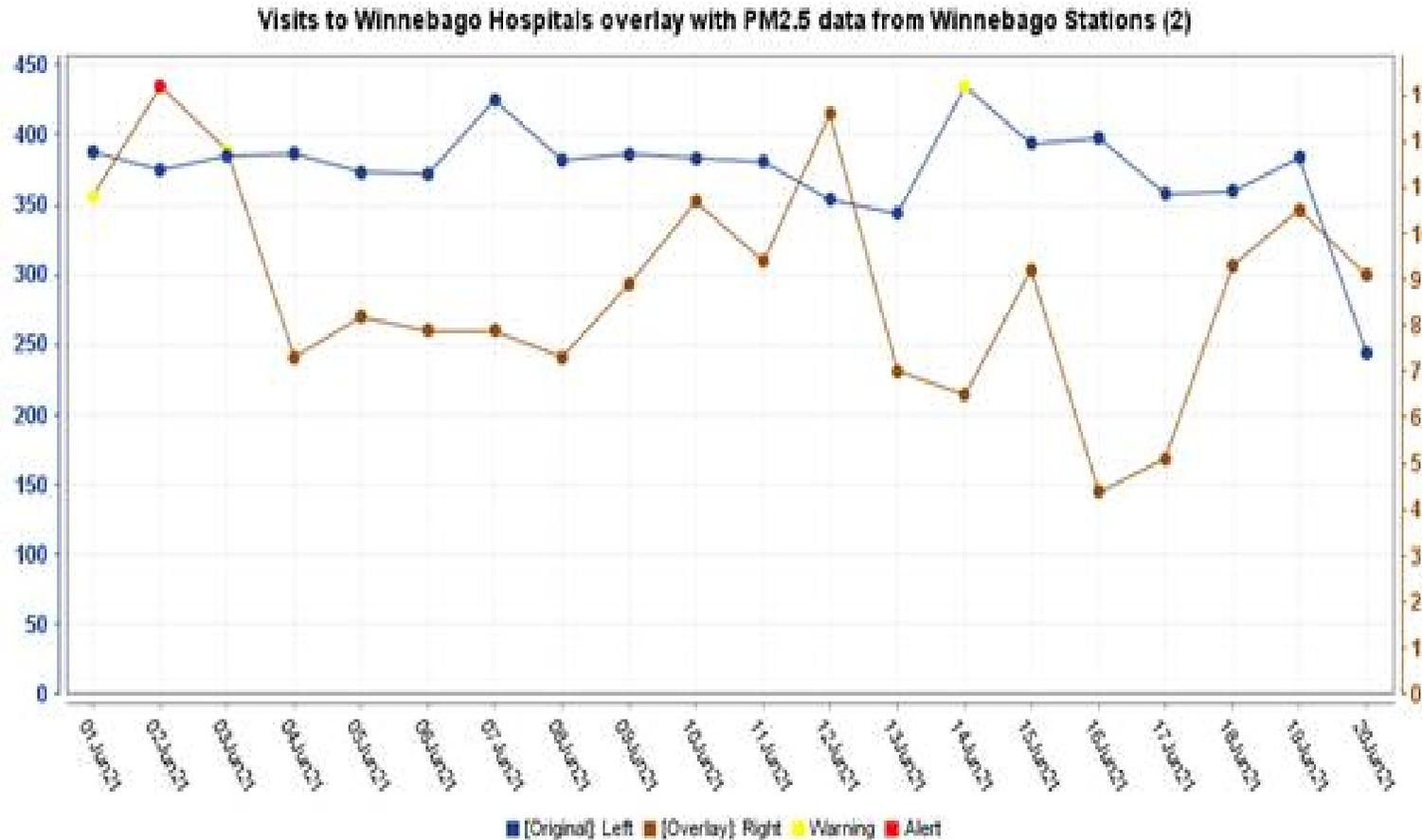
Initial Health Impacts – Hospital Visits



Southeast visits highest, arrow indicates plume area/direction.

- Map of visits during the 7 days post incident.
- Areas with largest number of visits – southeast of Chemtool

Initial Health Impacts – ESSENCE Data

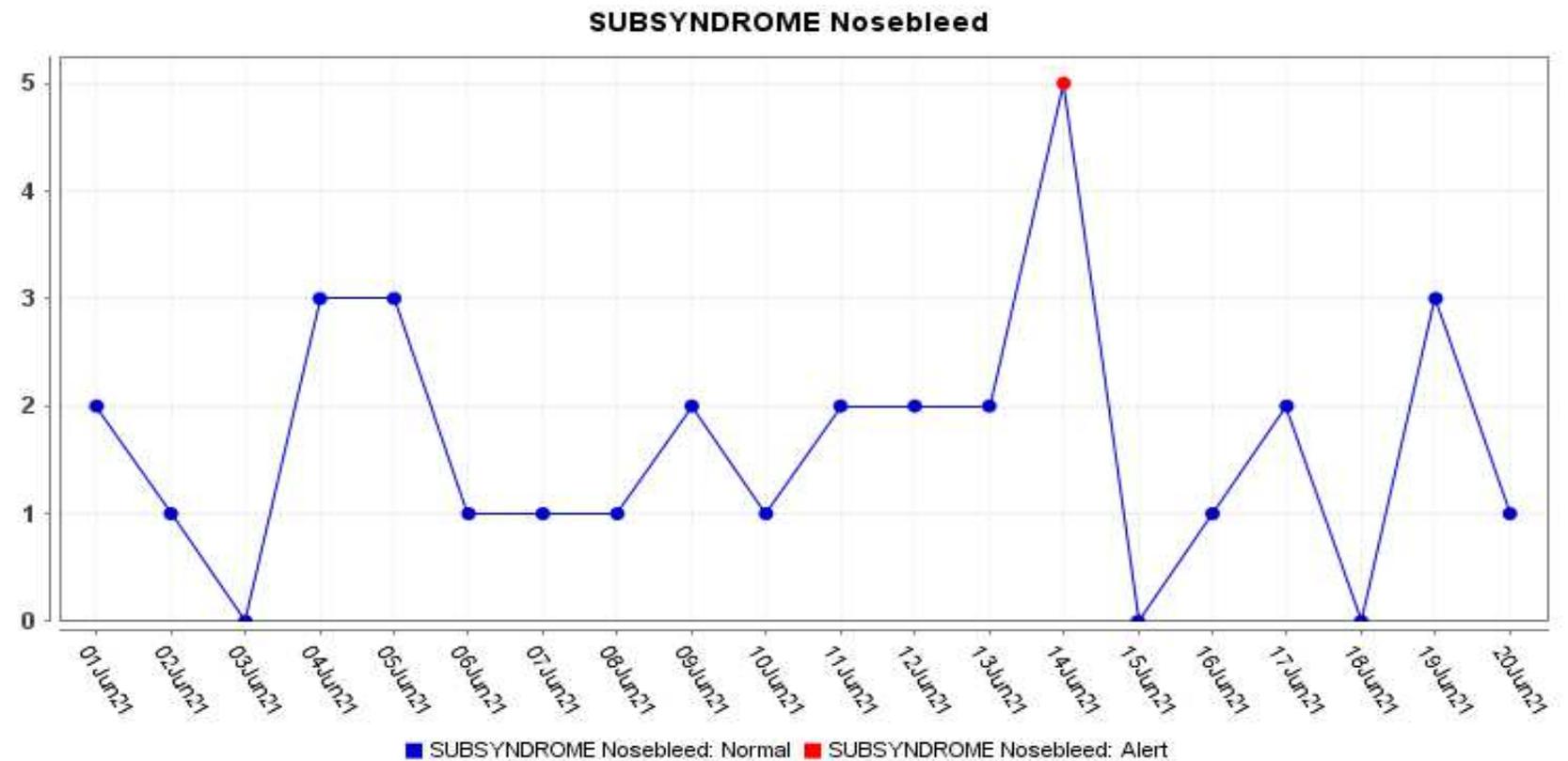


- Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE)
 - Gathers electronic data from hospital emergency department (ED) visits – chief complaints
- Overall ED visits peaked on June 14, 2021 (15% over baseline but declined within 24 hours)

Initial Health Impacts – ESSENCE Data

- **Increase in alerts**

- Nosebleeds
- Weakness
- Suicide

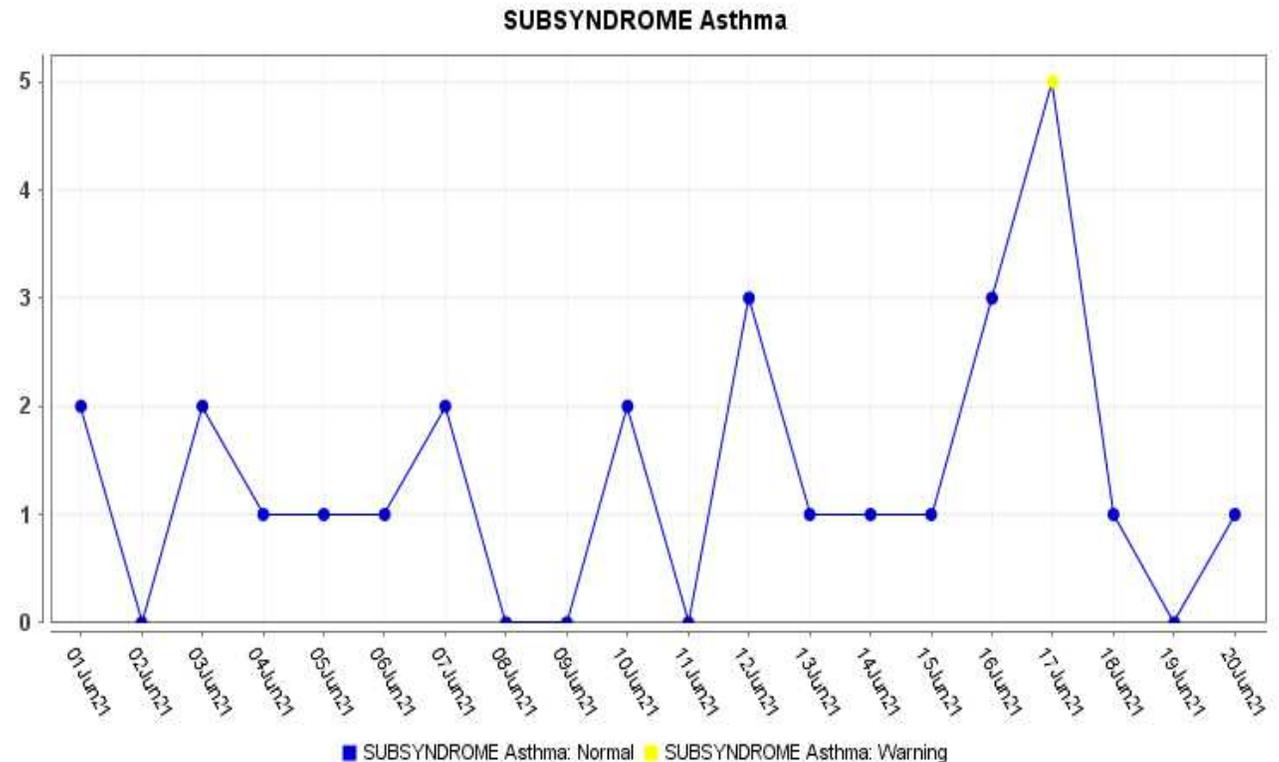


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Health Department

Initial Health Impacts - ESSENCE Data

- **No increases in alerts:**
 - Altered Mental Status
 - Asthma
 - GI Bleeding
 - Rash
 - Burns
 - Disaster Related Mental Health

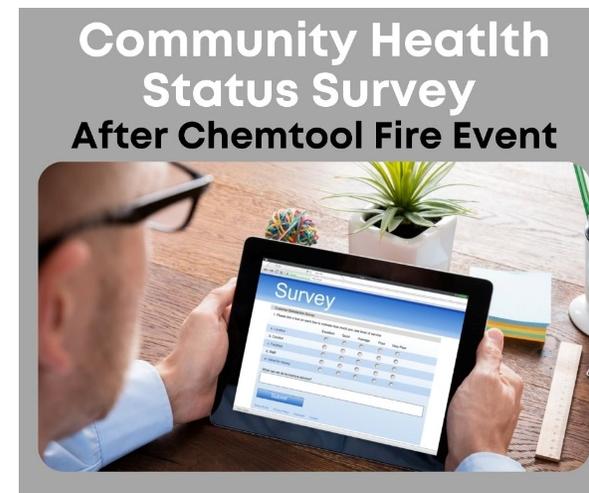


Winnebago County

Health Department

Methods

- Adaptation of ASTDR Assessment of Chemical Exposures toolkit (ACES)
- Self-Administered
 - Promoted via press conferences, social media, news outlets, websites – Village of Rockton, Winnebago County Health Department, WCHD hotline
 - Emailed to approx. 45,000 individuals in 11 zip codes who had previously registered for COVID-19 vaccinations through Qualtrics software
 - WCHD hotline for Chemtool incident assisted in completion of surveys for individuals without technology access



Methods

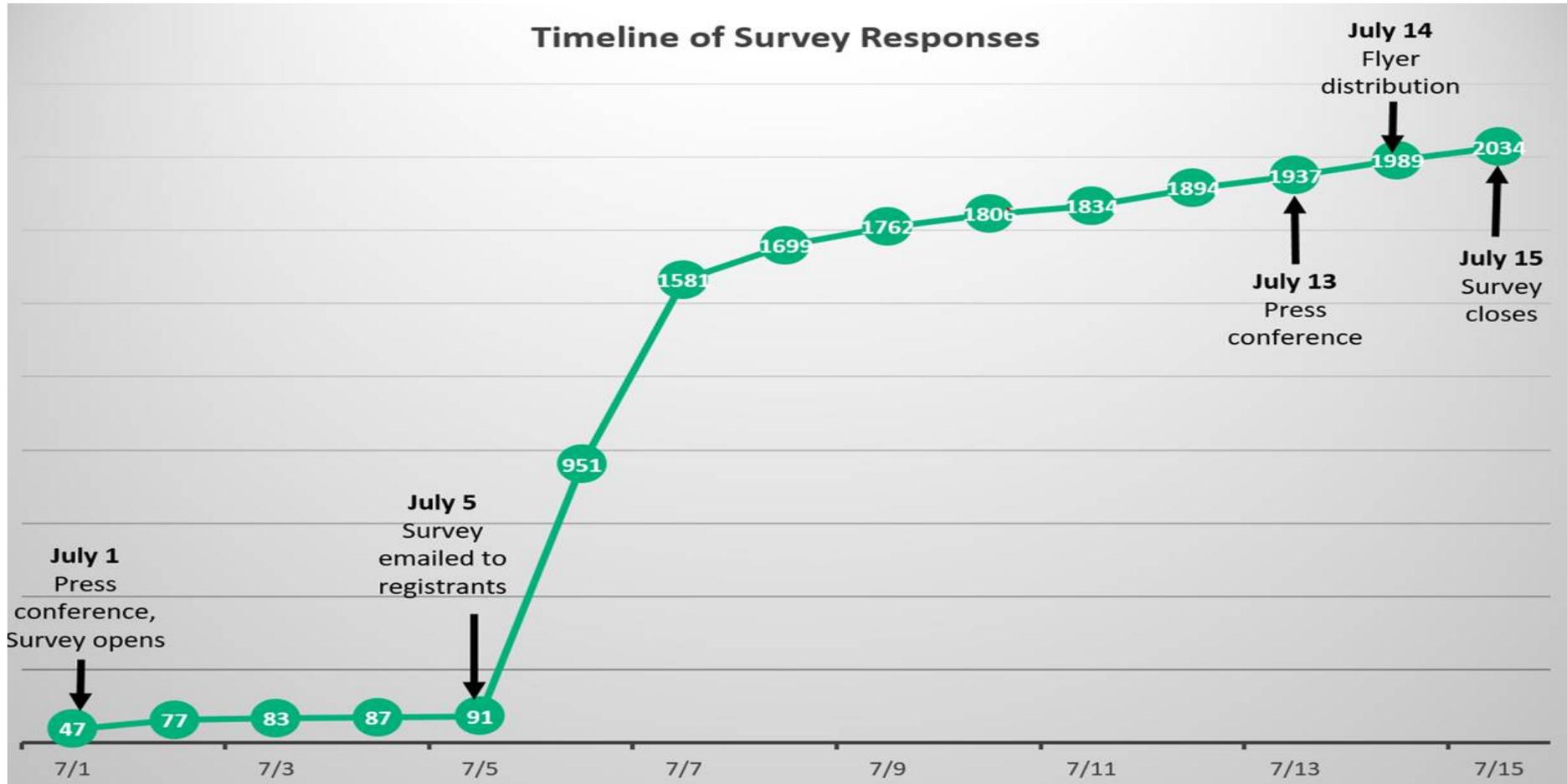
- Community Field Work by CDC/ASTDR

- Interviews with:

- Community Leaders
 - Residents
 - Community Agencies



Timeline of Survey Responses



Winnebago County

Health Department

Elements of Health Impact Survey

- Demographic characteristics
- Location during event timeframe
- Exposure to materials (smoke, debris, dust)
- Symptoms (new or worse within 2 weeks after event)
- Use of healthcare services including self-care
- Exposure of pets and livestock
 - Follow-up survey regarding health of pets and livestock
- Separate survey for first responders

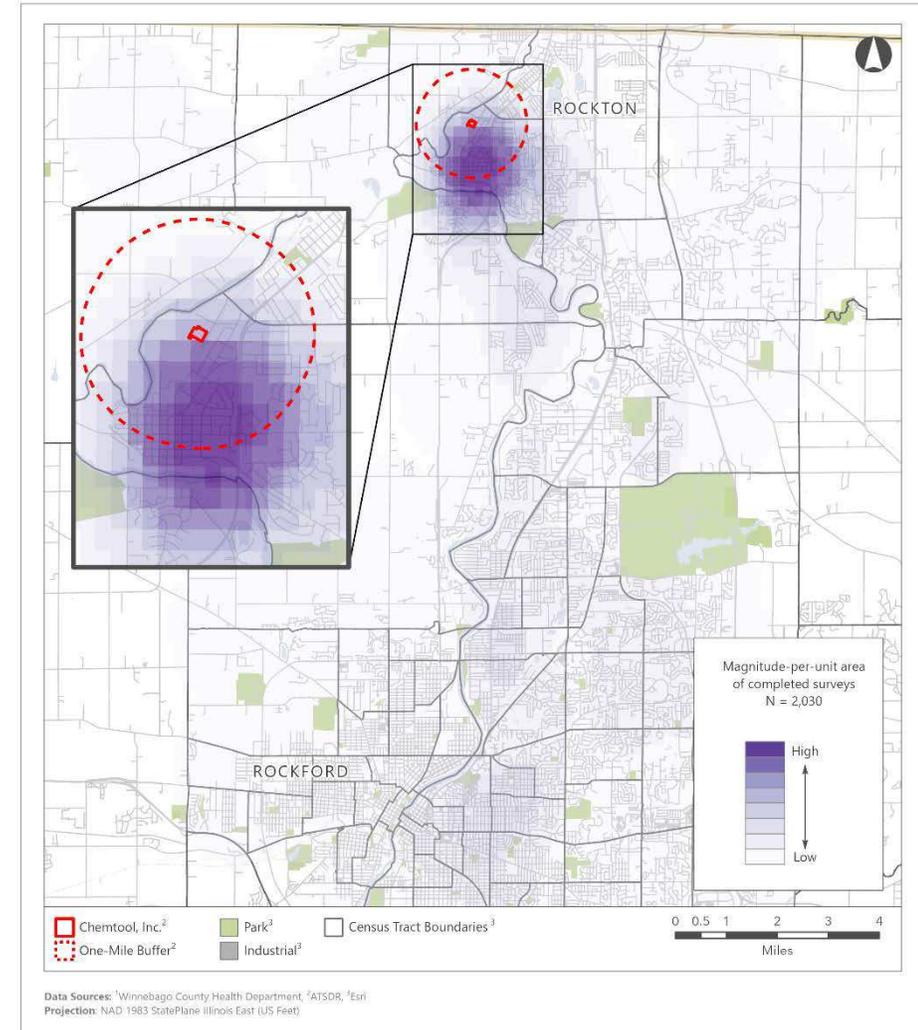


Completed Surveys

- Highest percentage of survey respondents came from the 1-mile evacuation zone of the Chemtool facility
 - Greatest concentration was **southeast**
 - Second area of concentration was **southeast of City of Rockford**

Chemtool Incorporated Fire Rockton, Winnebago County Illinois

Survey Responses¹
COMPLETED SURVEYS
KERNEL DENSITY | Data as of July 16, 2021



CDC ATSDR

Centers for Disease Control and Prevention
Agency for Toxic Substances
and Disease Registry

GRASP

Geospatial Research, Analysis and
Services Program

PRJ ID 06105 | AUTHOR Lance Owen

FINAL - FOR PUBLIC RELEASE

8/26/2021



winnebago County

Health Department

Demographics

	No Symptom Reported (N=1114)	Symptom(s) Reported (N=919)	Overall (N=2033)
Age			
Mean (SD)	50.9 (15.7)	48.7 (14.7)	49.9 (15.3)
Median [Min, Max]	53.0 [0, 93.0]	49.0 [12.0, 94.0]	51.0 [0, 94.0]
Missing	4 (0.4%)	2 (0.2%)	6 (0.3%)
Race			
American Indian or Alaska Native	2 (0.2%)	6 (0.7%)	8 (0.4%)
Asian	31 (2.8%)	9 (1.0%)	40 (2.0%)
Black or African American	25 (2.2%)	40 (4.4%)	65 (3.2%)
Multiracial	15 (1.3%)	12 (1.3%)	27 (1.3%)
Other	21 (1.9%)	22 (2.4%)	43 (2.1%)
Prefer not to answer	48 (4.3%)	46 (5.0%)	94 (4.6%)
White	972 (87.3%)	784 (85.3%)	1756 (86.4%)
Hispanic or Latino			
No	1069 (96.0%)	861 (93.7%)	1930 (94.9%)
Yes	45 (4.0%)	58 (6.3%)	103 (5.1%)
Gender			
Female	664 (59.6%)	615 (66.9%)	1279 (62.9%)
Male	436 (39.1%)	278 (30.3%)	714 (35.1%)
Other	1 (0.1%)	5 (0.5%)	6 (0.3%)
Prefer not to answer	12 (1.1%)	16 (1.7%)	28 (1.4%)
Transgender	1 (0.1%)	5 (0.5%)	6 (0.3%)

Survey respondents - Overall

- Average age = 50 years
- Age range = less than 1 year – 94 years
- 86% White
- 3% Black/African American
- 5% Hispanic/Latino
- 63% Female
- **45% reported symptoms**



Winnebago County

Health Department

Exposures

	No Symptom Reported (N=1114)	Symptom(s) reported (N=919)	Overall (N=2033)
Exposed to any material			
Yes	506 (45.4%)	731 (79.5%)	1237 (60.8%)
No	608 (54.6%)	188 (20.5%)	796 (39.2%)
Exposed to smoke			
Yes	347 (31.1%)	629 (68.4%)	976 (48.0%)
No	767 (68.9%)	290 (31.6%)	1057 (52.0%)
Exposed to dust			
Yes	130 (11.7%)	375 (40.8%)	505 (24.8%)
No	984 (88.3%)	544 (59.2%)	1528 (75.2%)
Exposed to debris			
Yes	283 (25.4%)	414 (45.0%)	697 (34.3%)
No	831 (74.6%)	505 (55.0%)	1336 (65.7%)
Exposed to material other than smoke, dust, debris			
Yes	12 (1.1%)	40 (4.4%)	52 (2.6%)
No	1102 (98.9%)	879 (95.6%)	1981 (97.4%)
Unsure if exposed to any material			
Yes	183 (16.4%)	178 (19.4%)	361 (17.8%)
No	931 (83.6%)	741 (80.6%)	1672 (82.2%)
Not exposed to any material			
Yes	459 (41.2%)	63 (6.9%)	522 (25.7%)
No	655 (58.8%)	856 (93.1%)	1511 (74.3%)

Individuals who reported symptoms

- **80%** reported an exposure to **any material**
- **68%** reported an exposure to **smoke**
- **41%** reported an exposure to **dust**
- **45%** reported an exposure to **debris**

Individuals who reported no symptoms

- **45%** reported an exposure to **any material**
- **31%** reported an exposure to **smoke**
- **12%** reported an exposure to **dust**
- **25%** reported an exposure to **debris**

Individuals with symptoms were more likely to report exposures.



Winnebago County

Health Department

Odor

	No Symptom Reported (N=1114)	Symptom(s) Reported (N=919)	Overall (N=2033)
Smelled an odor			
No	572 (51.3%)	150 (16.3%)	722 (35.5%)
Unsure	152 (13.6%)	101 (11.0%)	253 (12.4%)
Yes	390 (35.0%)	668 (72.7%)	1058 (52.0%)

Majority of individuals reporting symptoms also indicated smelling a **moderately strong odor**

	No Symptom Reported (N=1114)	Symptom(s) Reported (N=919)	Overall (N=2033)
Strength of odor			
Very Light	82 (7.4%)	38 (4.1%)	120 (5.9%)
Light	161 (14.5%)	165 (18.0%)	326 (16.0%)
Moderate	113 (10.1%)	257 (28.0%)	370 (18.2%)
Strong	27 (2.4%)	150 (16.3%)	177 (8.7%)
Very Strong	7 (0.6%)	58 (6.3%)	65 (3.2%)
Missing	724 (65.0%)	251 (27.3%)	975 (48.0%)

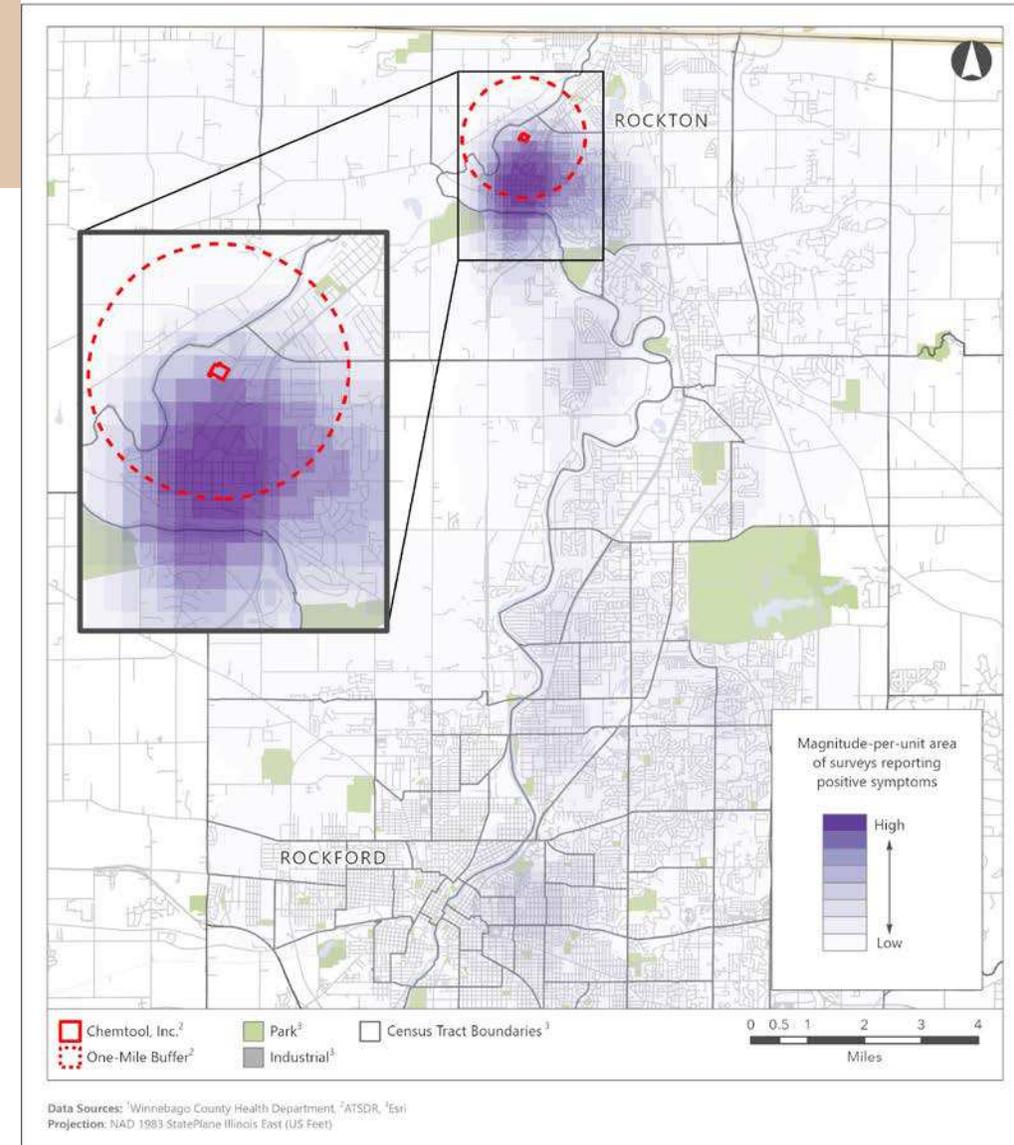


Reporting Any Symptom

- Highest percentage of survey respondents with any symptom came from the 1-mile evacuation zone of the Chemtool facility
- Greatest concentration was **south**.

Chemtool Incorporated Fire Rockton, Winnebago County Illinois

Survey Responses
ANY SYMPTOM
KERNEL DENSITY | Data as of July 16, 2021

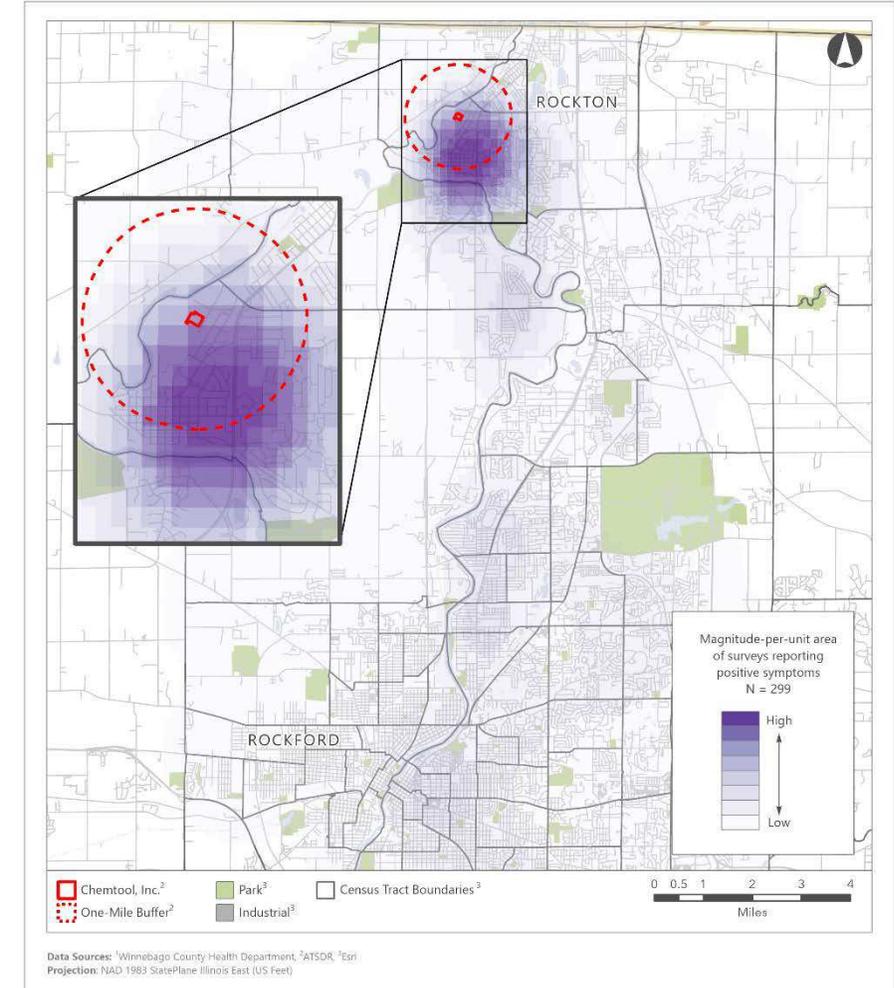


Cardiopulmonary Symptoms

- Individuals reporting symptoms
 - Top 5
 - Coughing - 68%
 - Difficulty breathing/feeling out of breath - 46%
 - Asthma - 35%
 - Chest tightness - 21%
 - Burning in lungs - 13%

Chemtool Incorporated Fire
Rockton, Winnebago County Illinois

Survey Responses¹
CARDIOPULMONARY SYMPTOMS
KERNEL DENSITY | Data as of July 16, 2021



CDC ATSDR

Centers for Disease Control and Prevention
Agency for Toxic Substances
and Disease Registry

GRASP

Geospatial Research, Analysis and
Services Program

PRJ ID: 06105 | AUTHOR: Lance Owen

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8/19/2021



Winnebago County

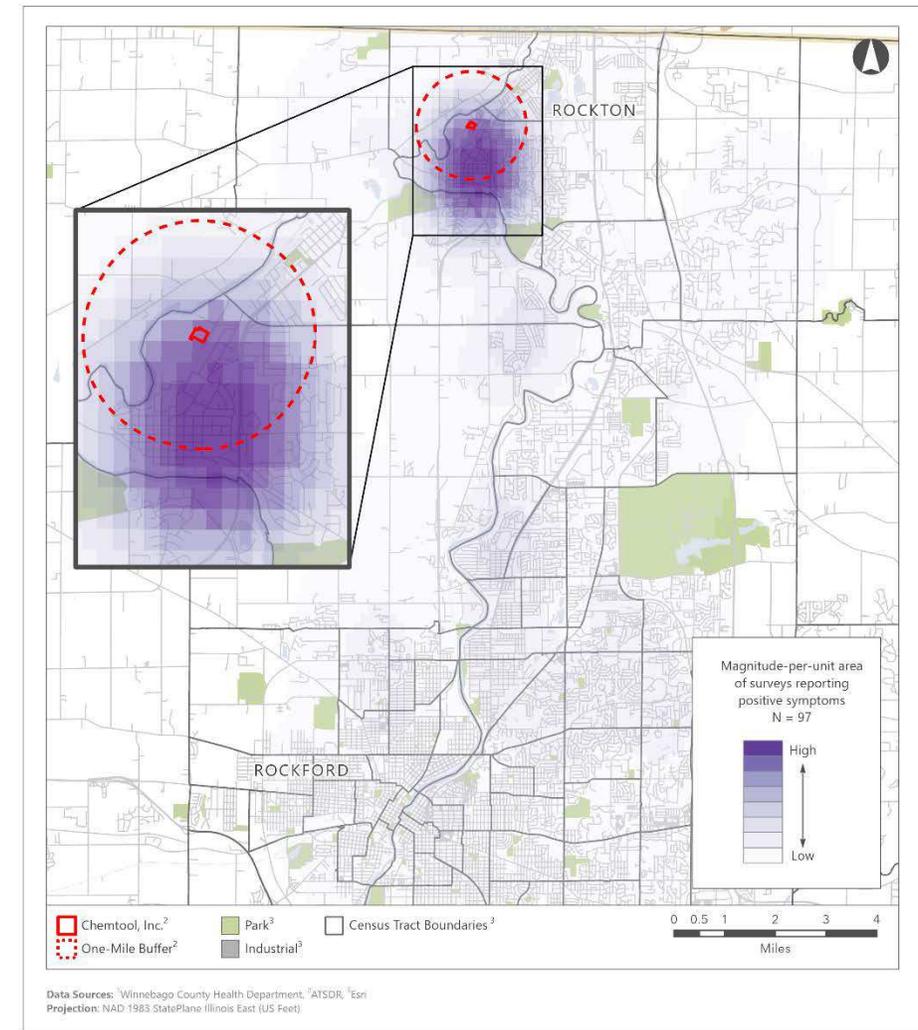
Health Department

Skin Symptoms

- 11% of individuals with symptoms reported **skin symptoms**
 - 30% - irritation, pain, burning
 - 29% - rash
 - 60% - dry or itchy
 - 15% - sweating
 - 10% - hives

Chemtool Incorporated Fire Rockton, Winnebago County Illinois

Survey Responses¹
SKIN SYMPTOMS
KERNEL DENSITY | Data as of July 16, 2021



Centers for Disease Control and Prevention
Agency for Toxic Substances
and Disease Registry



Geospatial Research, Analysis and
Services Program

PRJ ID 06105 | AUTHOR Lance Owen

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8/19/2021



Winnebago County

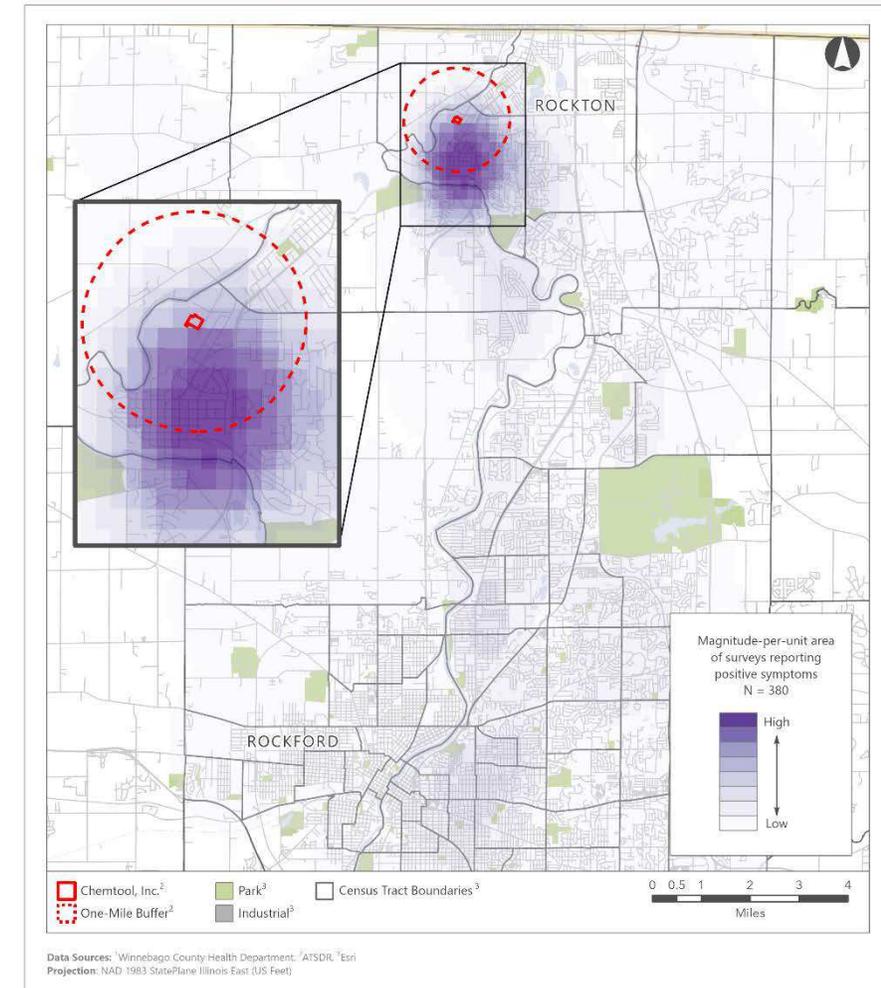
Health Department

Eye Symptoms

- 42% reported eye symptoms
 - 74% - irritation/pain/burning in eyes
 - 52% - increased watering/tearing
 - 17% - blurred, double vision
 - 0.5% - bleeding in eyes

Chemtool Incorporated Fire Rockton, Winnebago County Illinois

Survey Responses¹
EYE SYMPTOMS
KERNEL DENSITY | Data as of July 16, 2021



CDC
ATSDR

Centers for Disease Control and Prevention
Agency for Toxic Substances
and Disease Registry

GRASP

Geospatial Research, Analysis and
Services Program

PRJ ID 06105 | AUTHOR Lance Owen

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Winnebago County

Health Department

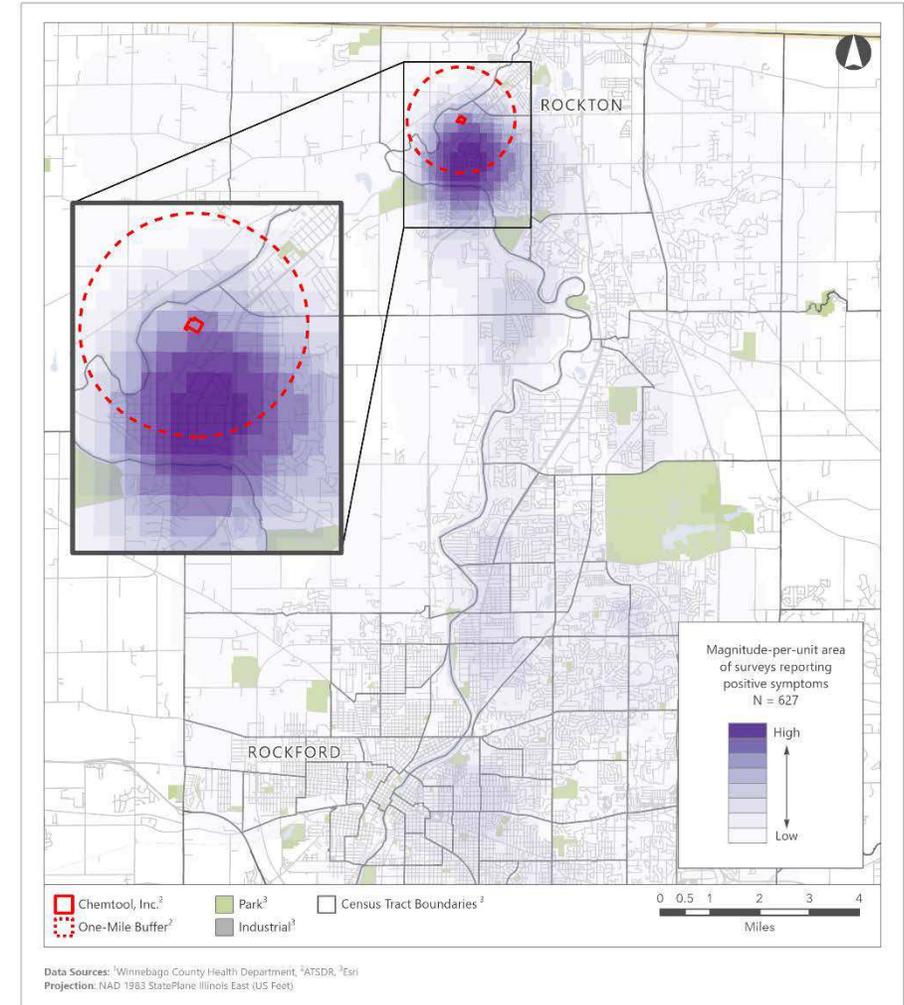
Ear, Nose, and Throat Symptoms

- 70 % with symptoms reported ENT
 - 60% - stuffy nose/sinus congestion
 - 42% - burning in nose or throat
 - 49% - increased congestion/phlegm
 - 39% - runny nose
 - 31% - hoarseness

Only 4% reported symptom of nose bleed

Chemtool Incorporated Fire
Rockton, Winnebago County Illinois

Survey Responses¹
EAR/NOSE/THROAT SYMPTOMS
KERNEL DENSITY | Data as of July 16, 2021



ATSDR

Centers for Disease Control and Prevention
Agency for Toxic Substances
and Disease Registry

GRASP

Geospatial Research, Analysis and
Services Program

PRJ ID: 06105 | AUTHOR: Lance Owen

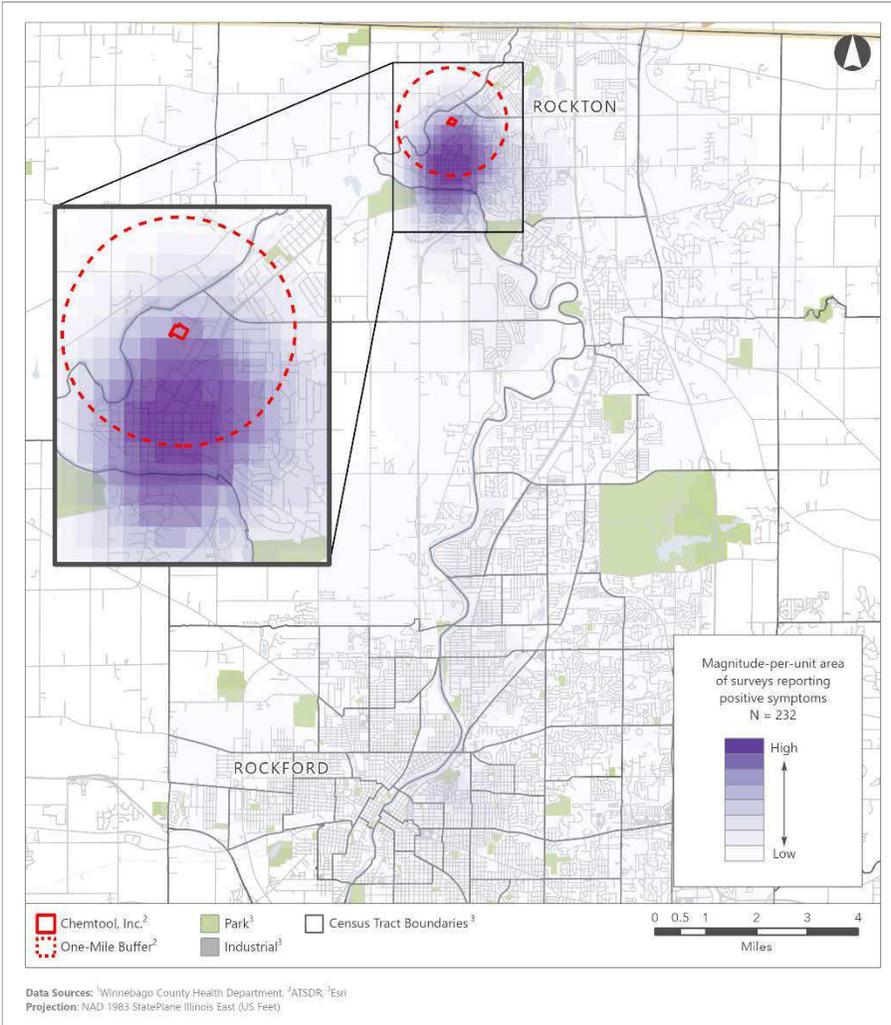
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8/19/2021



winnebago County

Health Department



Mental Health Symptoms

- 28% with symptoms reported mental health symptoms
 - 88% - anxiety
 - 54% - tension or nervousness
 - 42% - difficulty sleeping
 - 34% - agitation/irritability
 - 27% - feeling hopeless or helpless



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Neurological Symptoms

- 52% of those reporting symptoms had neurological symptoms
 - 94% - headache
 - 38% - dizziness or lightheadedness
 - 1% - loss of consciousness/fainting



Winnebago County

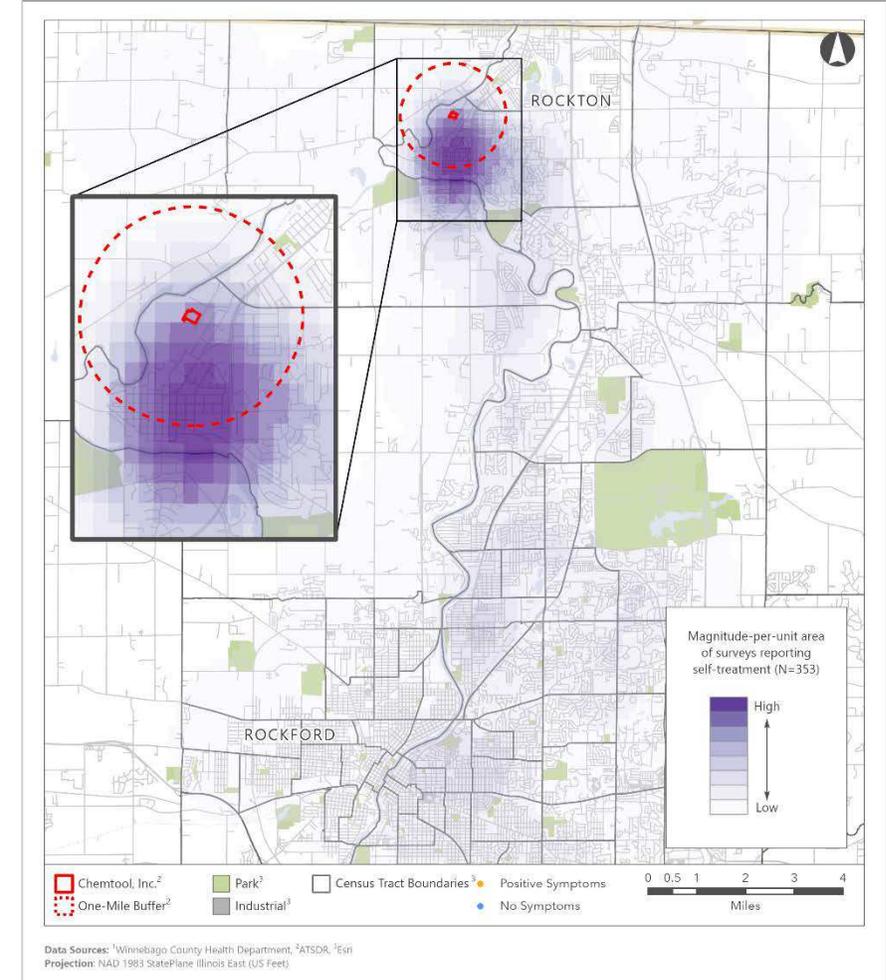
Health Department

Healthcare Use

- Majority of individuals indicated no healthcare was needed (76%)
- Of those who used healthcare
 - **17% self-treated**
 - 3% were seen in ED, urgent care, or outpatient clinic
 - 2% were seen via phone/video (telehealth)
 - 0.2% were hospitalized

Chemtool Incorporated Fire Rockton, Winnebago County, Illinois

Survey Responses¹
HEALTHCARE USE | SELF-TREATMENT
KERNEL DENSITY | Data as of July 16, 2021



CDC

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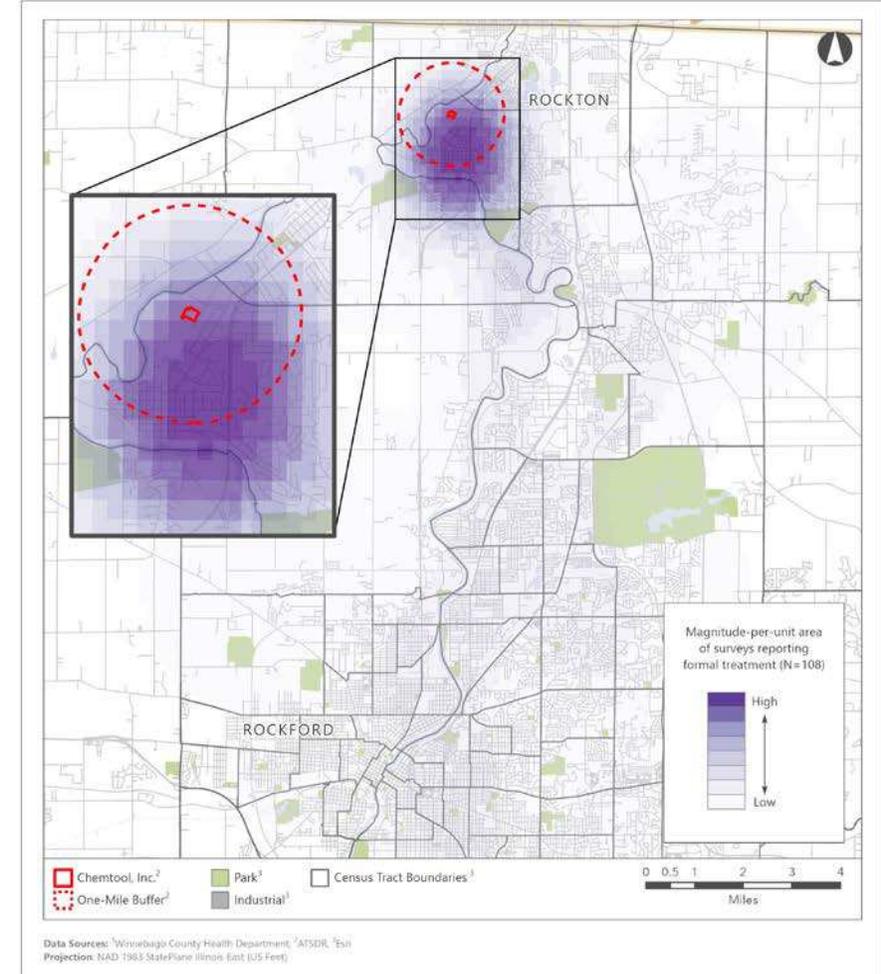
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Chemtool Incorporated Fire
Rockton, Winnebago County, Illinois

Survey Responses¹
HEALTHCARE USE | FORMAL TREATMENT
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Health Department

First Responder Survey

- Total = 31 Respondents
 - 30% law enforcement
 - 5% other
 - 65% firefighters
 - 14 departments and agencies

Approximately 350 first responders were part of the response

- Personal Protective Equipment (PPE)
 - 18 - wore standard fire protection gear
 - 4 - did not wear any listed PPE
(Note: May not have had to wear PPE depending on role)
 - 6 - did not answer
- Exposure
 - 5% reported **not being exposed** to any material
- Odor
 - 24 smelled an odor, 3 unsure if they smelled an odor, 1 did not



First Responder Results

- 43% of first responders reported any symptoms
 - **Eyes:** Irritation/pain/burning in eyes, Blurred or double vision
 - **Ears, Nose, Throat:** Increased congestion or phlegm (mucus), Odor on breath, Stuffy nose/sinus congestion, Runny nose, Burning nose or throat, Hoarseness, Tickling sensation in throat
 - **Nervous system:** Headache, Dizziness or lightheadedness
 - **Respiratory:** Asthma, Difficulty breathing/feeling out-of-breath, Wheezing in chest, Coughing



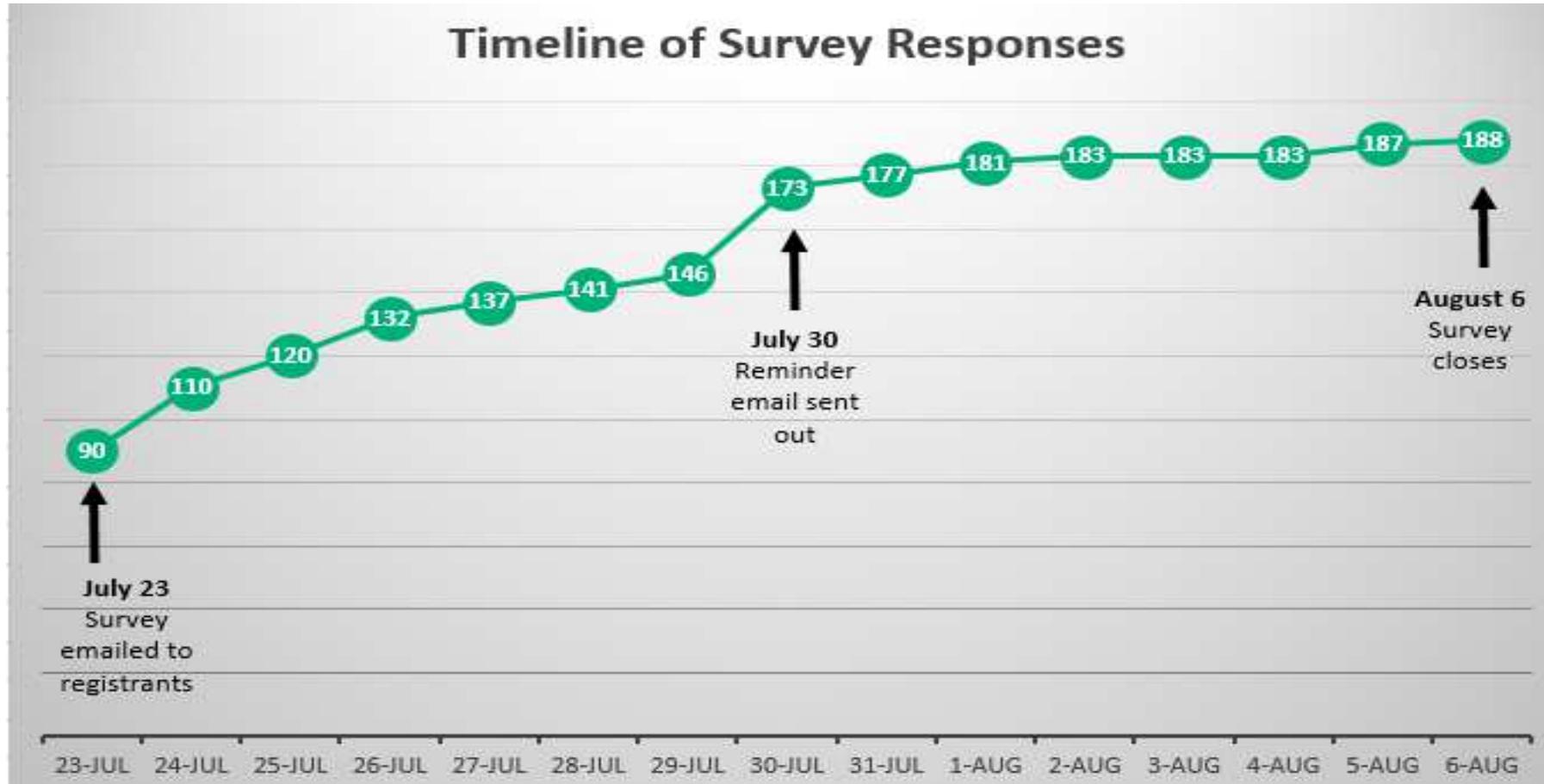
Field Work Findings - Wisconsin

- Wisconsin Division of Health Services
 - Queried ESSENCE using same criteria as Illinois Department of Public Health
 - Emergency department visits related to the Chemtool fire from June 14 - July 1, 2021
- 17 unique query results
 - Individuals visited the emergency department from June 15 - 24
 - 6 entries having direct reference to the Chemtool fire within the chief complaint columns
 - None admitted to hospital



Pet and Livestock Survey

Timeline Survey Responses – Pet & Livestock Survey



Initial email sent to **453** Health Impact Survey respondents who indicated that they had pets and/or livestock.

188 (41.5%) respondents completed surveys representing **734** animals.

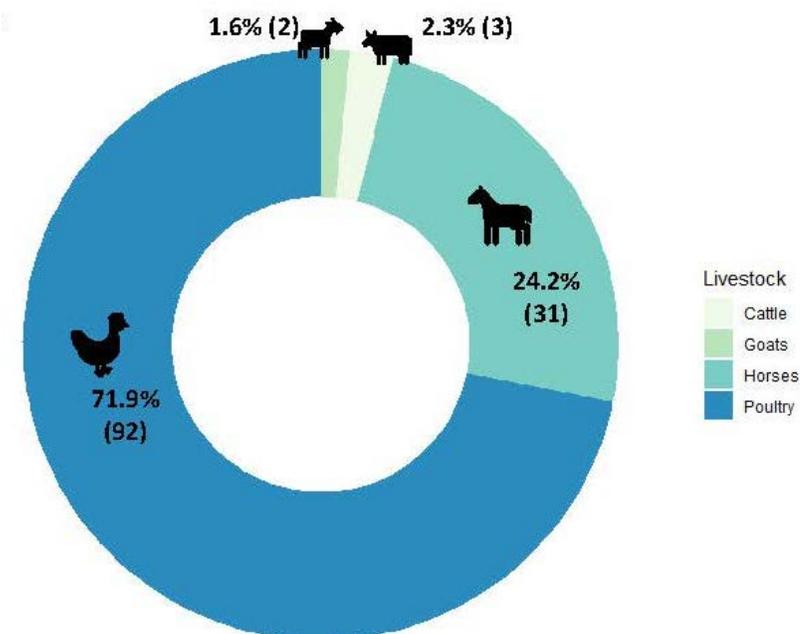
Clinical Signs – Pets and Livestock

- Clinical signs were reported by 30% of respondents for 4 species
 - 2 pet
 - 2 livestock
- Animals with *one or more clinical signs* were reported by
 - 50% of horse owners 
 - 14% of poultry owners 
 - 25% of dog owners 
 - 20% of cat owners 



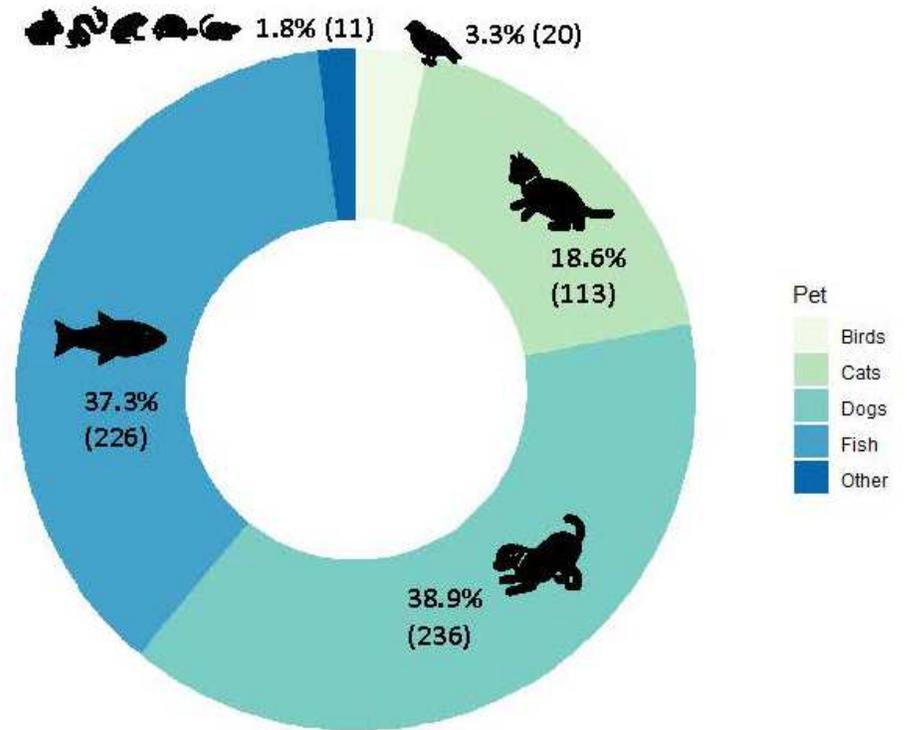
Livestock Results

- 4.3% respondents reported 128 livestock
- Breakdown by species:
 - 71.9% - poultry consisting of chickens, ducks, and turkeys
 - 24.2% - horses
 - 2.3% - cattle
 - 1.6% - goats
 - Other - honeybee hives
- 15.6% of livestock were evacuated
 - 100% - chickens
 - 1 chicken reported to die after evacuation
- No livestock were reported missing



Pet Results

- 100% of respondents reported 606 pets
- Breakdown by species:
 - 38.9% - dogs
 - 37.3% - fish
 - 18.6% - cats
 - 3.3% - birds
 - 1.8% - other rats, reptiles, frogs, and rabbits
- 14% of animals were evacuated
 - 83% - dogs
 - 1 dog died after evacuation
 - 17% - cats
- 1 cat reported missing (not evacuated)
- 12 fish reported dead



Animal Evacuation Results

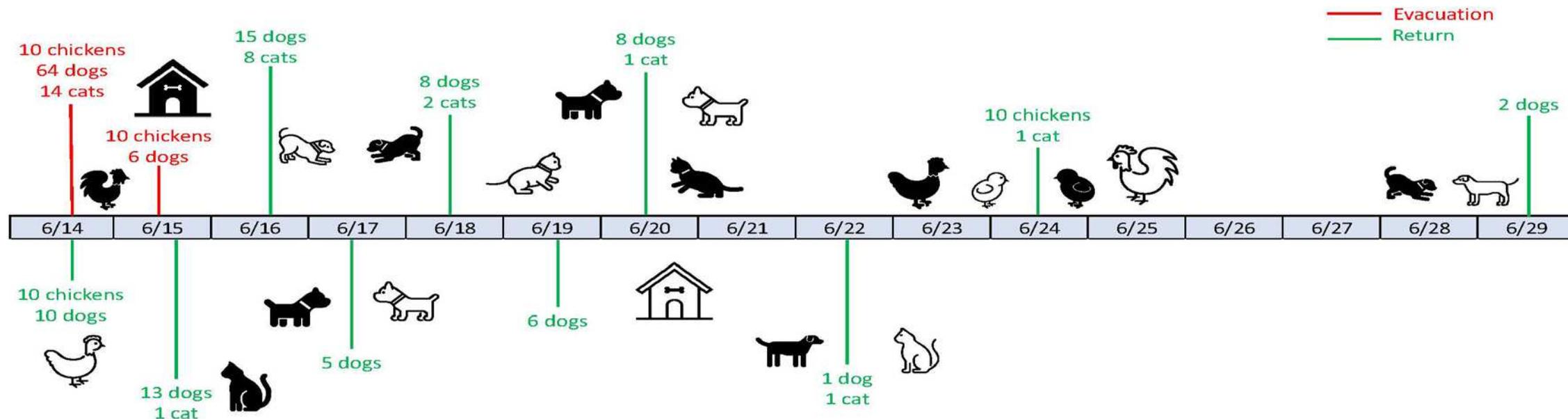
- Animals were evacuated on two days:
 - June 14 (n=88)
 - June 15 (n=16)
- Evacuated animals included:
 - 20 chickens
 - 70 dogs
 - 14 cats
- Evacuated animals returned home between June 14 - June 29.

	Mean (days)	Median	Range
Chickens	6.5	6.5	3-10
Dogs	2.7	2	0-15
Cats	4.1	2	1-10
Overall	3.1	2	0-15



Evacuation Timeline

Timeline of Evacuation and Return by Species



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Clinical Signs - Livestock

Horses

- Eye discharge (n=6)
- Nose discharge (n=6)
- Lethargy (n=5)
- Labored breathing (n=4)
- Coughing (n=4)
- Scratching at eyes (n=4)
- Sneezing (n=1)

1 horse received veterinary exam



Poultry

- Labored breathing (n=10)
- Lethargy (n=10)
- Inappetence (n=10)
- Diarrhea (n=8)

1 chicken died



Winnebago County

Health Department

Clinical Signs – Dogs

- Sneezing (n=33)
- Lethargy (n=31)
- Diarrhea (n=29)
- Eye discharge (n=23)
- Coughing (n=21)
- Vomiting (n=21)
- Inappetence (n=19)
- Scratching at eyes (n=18)
- Labored Breathing (n=15)
- Nose discharge (n=9)
- Burned skin/foot pads (n=6)
- Other signs (n=14)
 - Eye and skin irritations (hot spots, rash, itching, dry red eyes)
 - Interaction with debris and compounds from fire
 - Paw injury - tar debris stuck to paws, licking ash off paws
- 1 dog was euthanized after evacuation, clinical signs included:
 - Cough
 - Sneeze
 - Difficulty breathing
 - Eye discharge

Note: no medical history was provided so cannot directly attribute to fire
- 5 dogs received veterinary care (2% of total)
 - 2 treated for respiratory infection



Clinical signs – Cats

- Sneezing (n=13)
 - Lethargy (n=12)
 - Inappetence (n=10)
 - Diarrhea (n=7)
 - Labored Breathing (n=5)
 - Eye discharge (n=5)
 - Coughing (n=4)
 - Vomiting (n=4)
 - Scratching at eyes (n=4)
 - Nose discharge (n=2)
- 1 cat received veterinary care (less than 1%)



Summary

Health Impacts – Preliminary

- Large response sample with concentration from the one (1) mile evacuation zone.
- One (1) mile evacuation zone mitigated potential health impacts.
- Reported health impacts
 - Consistent with the environmental impacts
 - Most commonly reported symptoms: eye, respiratory
 - Consistent with timeframe of exposure
 - Most did not require healthcare
 - Those that required healthcare self-treated
 - Consistent with exposure (smoke, dust, debris)



Pet and Livestock Impacts - Preliminary

- Over 40% response rate from pet and livestock owners
- Clinical signs were reported by 30% of respondents for 4 species
 - 2 pet
 - 2 livestock
- Reported pet and livestock impacts
 - Consistent with environmental impacts and mirrored those in people affected by the fire
 - Most commonly reported - respiratory, eye, lethargy
 - Additional reported – diarrhea, inappetence (lack of appetite)
 - Consistent with timeframe of exposure
 - Most did not require veterinary care
 - Consistent with exposure (smoke, dust, debris)



Next Steps

- Further statistical analysis
 - Health Impacts
 - Pet and Livestock Impacts



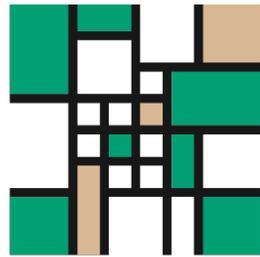
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Health Department



Thank You!

To the community members who participated in the surveys and provided information, you are helping advance the understanding of the impact of chemical fires on communities.



W C H D

Winnebago County Health Department



Serving Our Whole Community

Dr. Sandra Martell
Public Health Administrator
815-720-4200

www.wchd.org



@WinnCoHealth



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