

Welcome

MPART PFAS Regional Informational Webinar Jackson and Kalamazoo Region

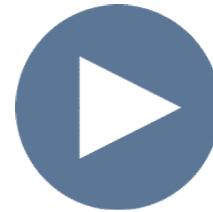
September 9, 2020

The Webinar will begin at 6:00 p.m.

Webinar Housekeeping



All lines are muted during the webinar.



We are recording this webinar

How to ask a question?



Submit your questions using the “**Q/A**” box in at the bottom of your screen.



Click the “hand” icon at the bottom of your screen.



Type *9 to raise your hand.

***9**

MPART PFAS Regional Informational Webinar

Jackson and Kalamazoo Region

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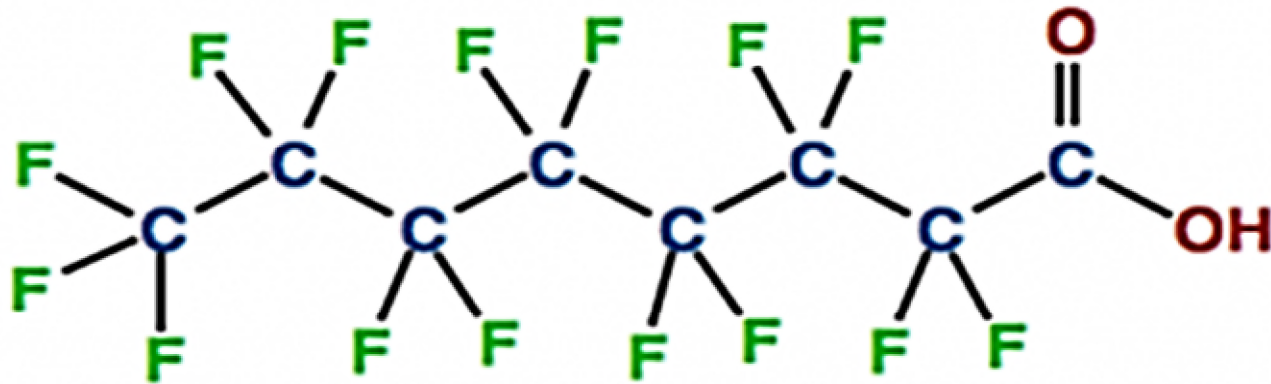
Steve Sliver, Executive Director
Michigan PFAS Action Response Team
(517) 290-2943
SliverS@Michigan.gov

Michigan PFAS Action Response Team (MPART)



- Executive Order 2019-03
- Unique Multi-Agency Approach
- Leads Coordination and Cooperation Among All Levels of Government
- Directs Implementation of State's Action Strategy

Per- and Polyfluoroalkyl Substances (PFAS)



PFOA - perfluorooctanoic acid

- **Strong Carbon-Fluorine Bonds**
- Surfactants
- Repel Water, Oil, Fat, and Grease
- Began Developing in 1940s
- 5,000 + Compounds Today

PFAS Uses



Aerospace



Apparel and Fabrics



Building and Construction



Chemicals and Pharmaceuticals



Electronics



Oil, Gas, and Energy



Industrial



Healthcare and Hospitals



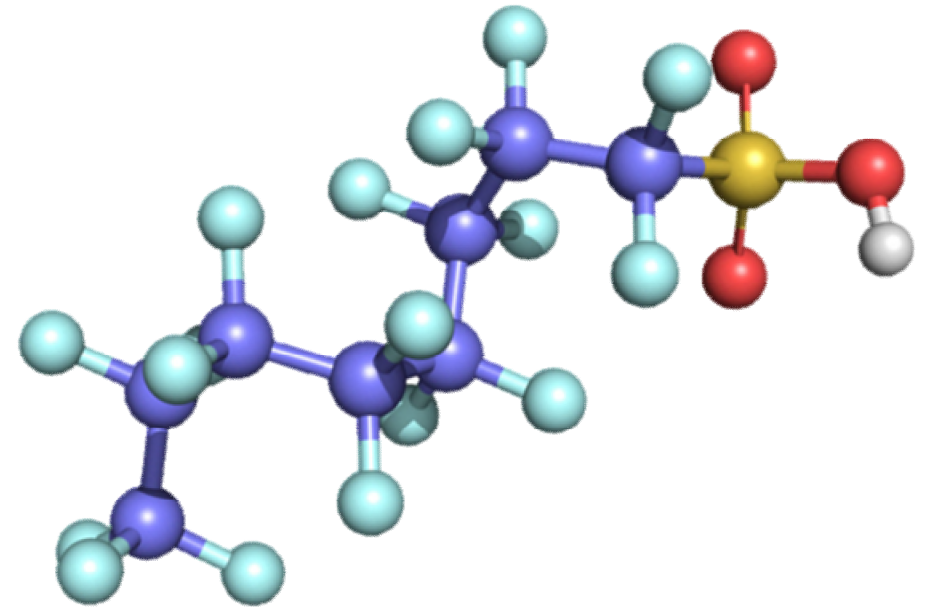
Aqueous Film Forming Foam

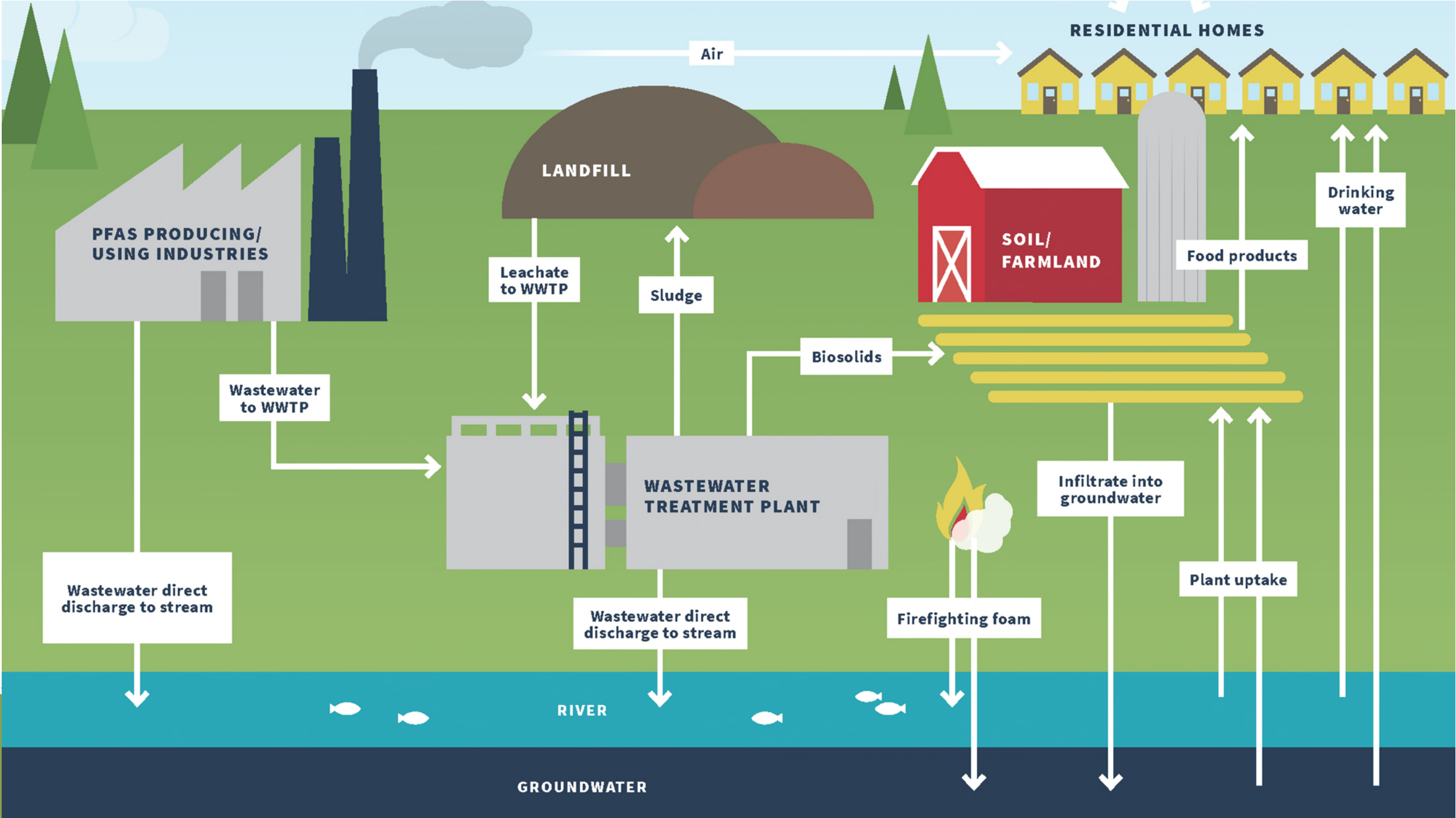


Food Packaging

Why the Concern?

- Widespread
- Don't Break Down Easily – Hard to Get Rid of
- Bioaccumulative – Build Up in Our Bodies
- Some PFAS May Affect Health
- Lack of Information
- Lack of National Regulations





RESIDENTIAL HOMES

Air

PFAS PRODUCING/
USING INDUSTRIES

LANDFILL

SOIL/
FARMLAND

Drinking
water

Leachate
to WWTP

Sludge

Food products

Wastewater
to WWTP

Biosolids

WASTEWATER
TREATMENT PLANT

Infiltrate into
groundwater

Wastewater direct
discharge to stream

Wastewater direct
discharge to stream

Firefighting foam

Plant uptake

RIVER

GROUNDWATER



Surface Water Investigations

- Survey of Surface Water and Fish
- Foam
- Wastewater



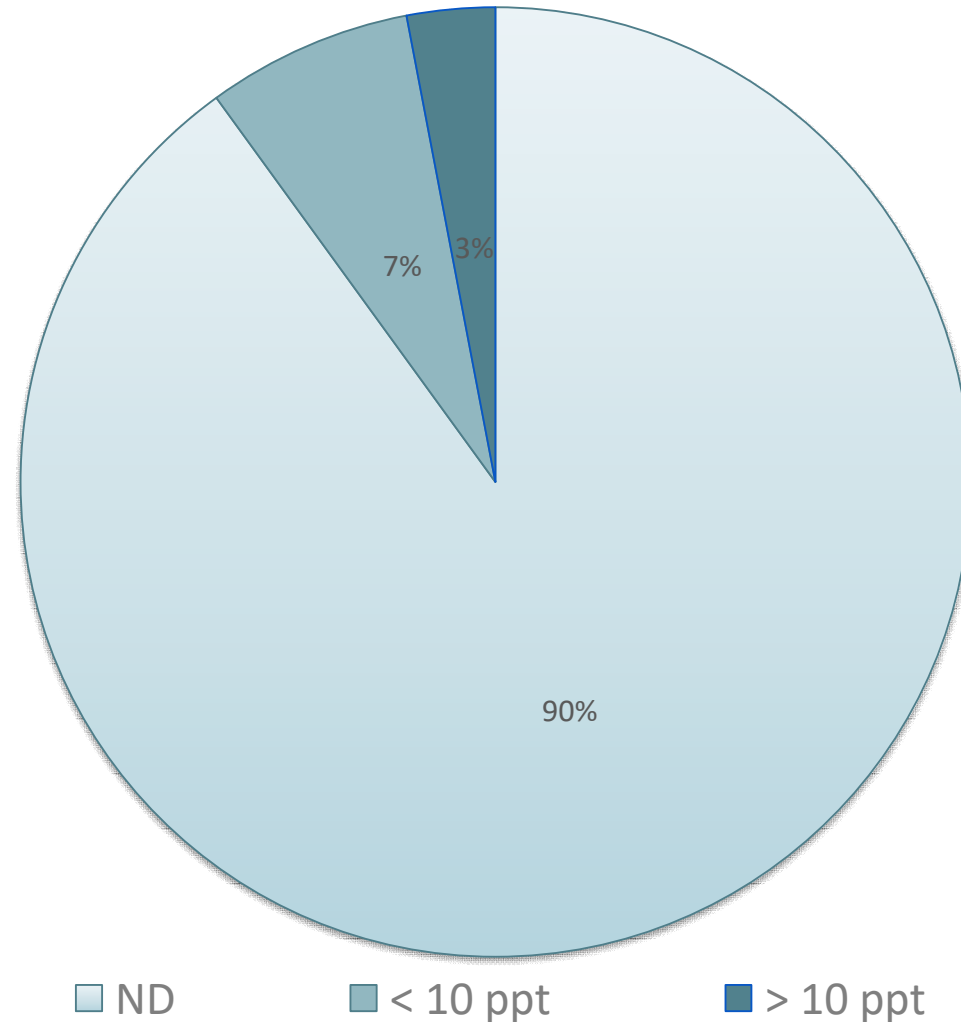
Public Water Supply Testing

- All Community Water Supplies (1,114)
- All Tribal Systems (17)
- All NTNCWS Schools and Day Cares (619)
- Additional Select Non-Community Water Supplies
- Monitoring
 - All 65 Surface Water Systems
 - 61 Systems > 10 ppt Total PFAS

Total PFAS in MI Public Water Supplies

EPA Method 537 Rev 1.1

NEtFOSA	NMeFOSAA	PFBS
PFDA	PFDoA	PFHpA
PFHxS	PFHxA	PFNA
PFOS	PFOA	PFTA
PFTTrDA	PFUnA	





Drinking Water Standards

- No Federal Standards to Adopt
- Science Advisory Panel Report, December 2018
 - **70 ppt standard for PFOA/PFAS too high**
 - **Other PFAS should be considered**
- Michigan's Two-Step Approach
 - **Science Advisory Workgroup provided health-based values**
 - **EGLE developed rules**

MI Drinking Water Standards Effective August 3, 2020 – 7 Compounds

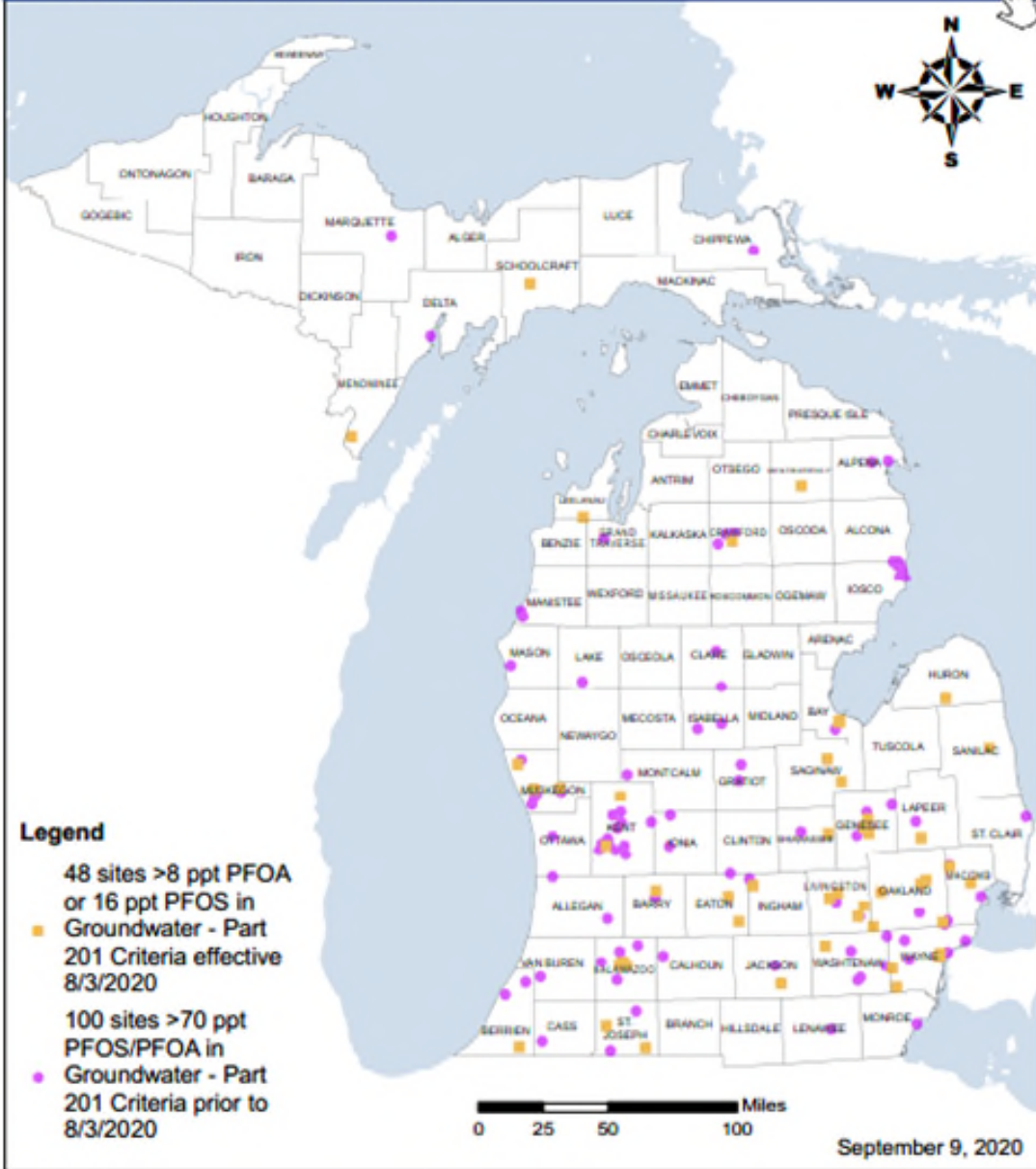
Compound	MCL	EPA Recommendation
PFNA	6 ppt	NA
PFOA	8 ppt	70 ppt combined
PFOS	16 ppt	
PFHxS	51 ppt	NA
GenX (HFPO-DA)	370 ppt	NA
PFBS	420 ppt	NA
PFHxA	400,000 ppt	NA

How We Define a MPART Site

- Groundwater Cleanup Standard Revised on August 3, 2020
 - From 70 ppt PFOS+PFOA Combined
 - To 16 ppt PFOS and/or 8 ppt PFOA
- Universe Changed from 99 MPART Sites to 138

Groundwater
Cleanup
Standards -
2 of the 7
Compounds

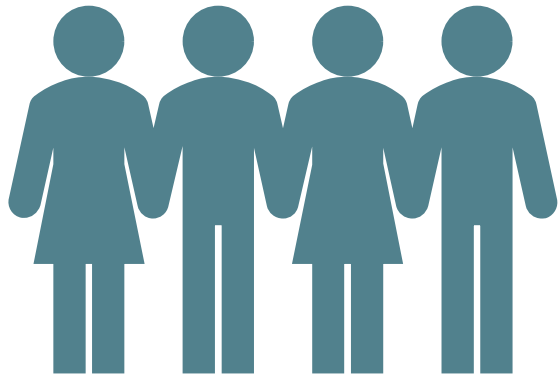
Compound	MCL
PFOA	8 ppt
PFOS	16 ppt



Sites Being Investigated

- Prioritized Investigations Based on Known or Suspected Sources, Potential for Exposure
- Protect Drinking Water Pathway
- Multiple Other Investigations Underway

Citizens Advisory Workgroup



- Residents From Impacted Communities
- Key Charges:
 - Recommend How to Engage and Empower Communities
 - Recommend How to Educate the General Public

PFAS and Health

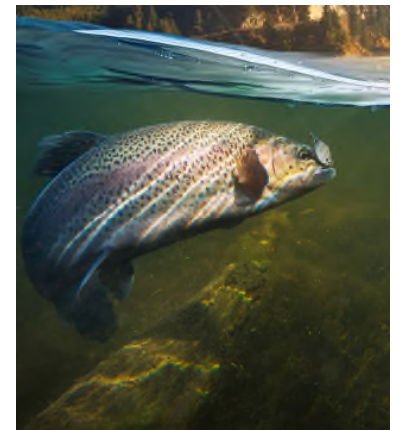
Sesha Kallakuri, Toxicologist
Michigan Department of Health and Human Services
517-331-2792
KallakuriS@Michigan.gov

The Role of MDHHS/Local Public Health

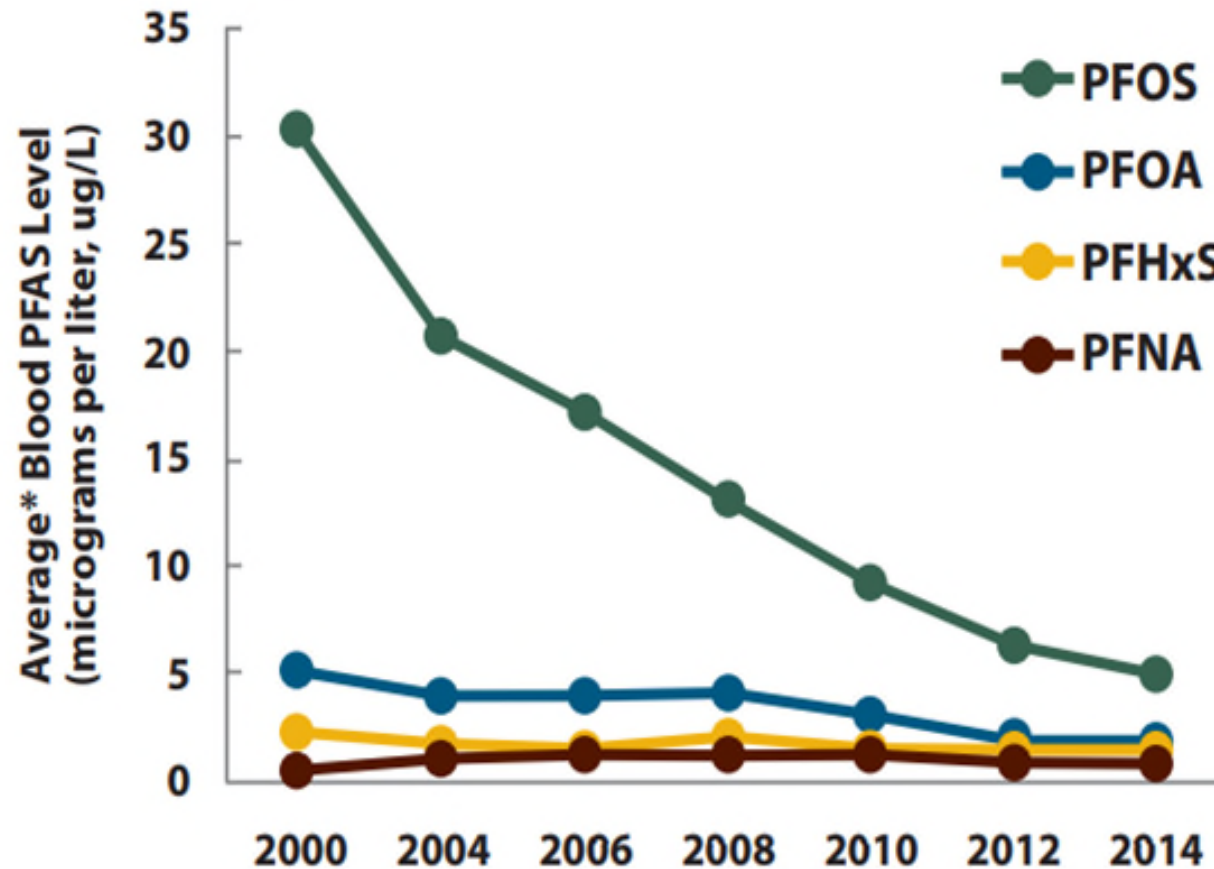
- Understand the health concerns facing your community
- Develop a plan to investigate and address health risks
 - EGLE leads the site investigation
 - MDHHS and the Local Health Department lead the public health planning and response
- Evaluate PFAS exposures to residents in the community
 - Recommend public health actions as needed

Exposure to PFAS Chemicals

- Drinking contaminated water
- Eating fish caught from water contaminated by PFAS
 - “Do Not Eat Fish” Advisories
- Incidental swallowing of contaminated soil or dust
- Eating food packaged in materials containing PFAS
- Using some consumer products
- PFAS absorption through skin is typically not a concern



Blood levels of the most common PFAS in people in the United States 2000-2014



* Average = geometric mean

Data Source: Centers for Disease Control and Prevention. Fourth Report on Human Exposure to Environmental Chemicals, Updated Tables, (January 2017).

Potential Associated Human Health Outcomes PFOA and/or PFOS

- Lowering a woman's chance of getting pregnant
- Increasing the chance of high blood pressure in pregnant women
- Increasing the chance of thyroid disease*
- Increasing cholesterol levels
- Changing immune response
- Increasing chance of cancer, especially kidney and testicular cancers

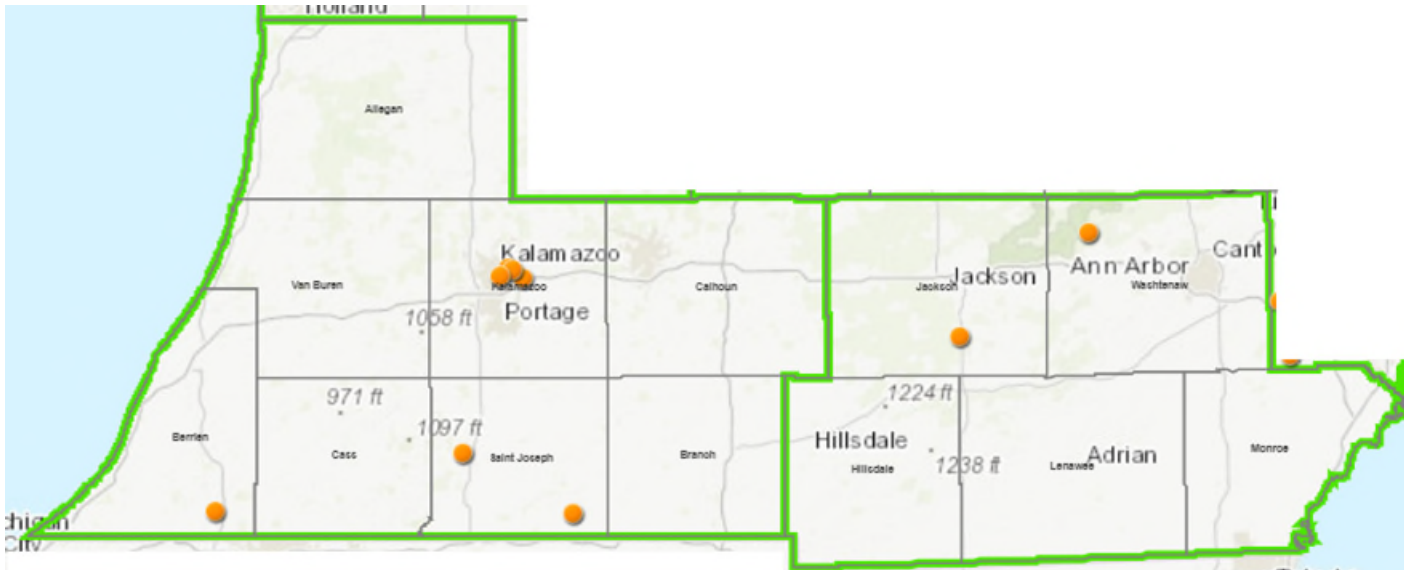
* PFOA only

Regional Site Investigations

Fred Sellers, District Supervisor
Kalamazoo District Office
Materials Management Division
269-569-1476

SellersF@Michigan.gov

Regional PFAS Contacts



- Amy Peterson,
Jackson District
Peterson1@michigan.gov
517-420-0083
- Fred Sellers,
Kalamazoo District
SellersF@Michigan.gov
269-569-1476

Jackson District

- Liberty Environmentalists Landfill
- Werkner Road Landfill

Kalamazoo District

- Aero-Motive Company
- Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site, Allied Paper Landfill (OU1)
- Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site, Willow Boulevard/A-Site Landfill (OU2)
- Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site, King Highway Landfill (OU3)
- Southeast Berrien County Landfill Authority
- Westside Recycling and Disposal Facility
- Sturgis City Landfill

Liberty Environmentalist Landfill, Jackson County

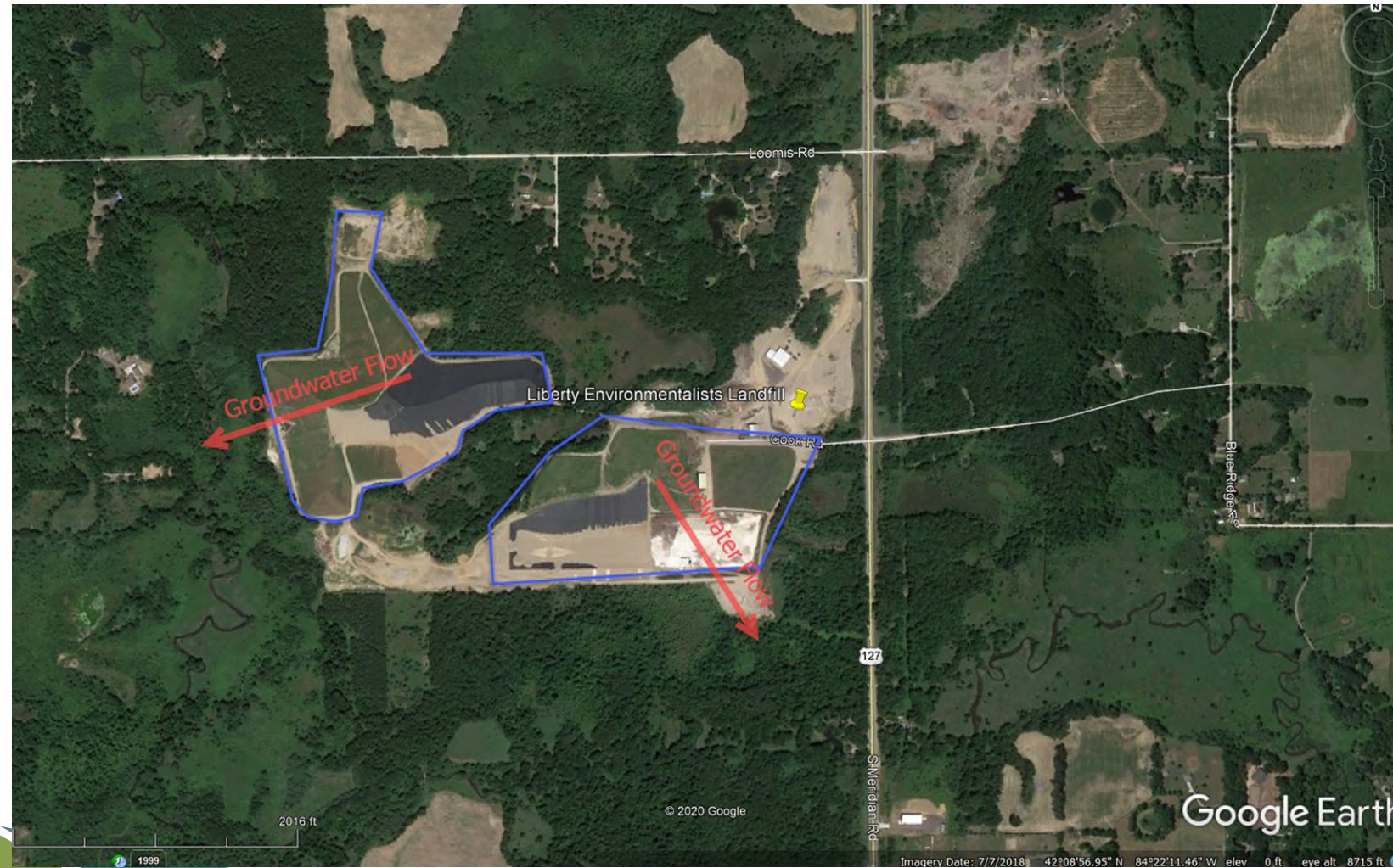
Brett Coulter,
Michigan Department of Environment, Great Lakes, and Energy
517-614-7714
CoulterB1@Michigan.gov

Liberty Environmentalists Landfill



- 7900 South Meridian Road, Clark Lake
- Active Construction and Demolition Waste Landfill

Liberty Environmentalists Landfill



- Groundwater flow – generally southwest
- Due to historical contamination in leachate, EGLE requested PFAS sampling in 2019
- July 2019 – five samples collected from on-site monitor wells

Liberty Environmentalists Landfill



- One monitoring well result exceeded the new Part 201 Criteria for PFOA (8 ppt)
 - MW-30 – 9.4 ppt PFOA
- Working with the Landfill to gather additional PFAS information for evaluation

Werkner Road Landfill, Washtenaw County

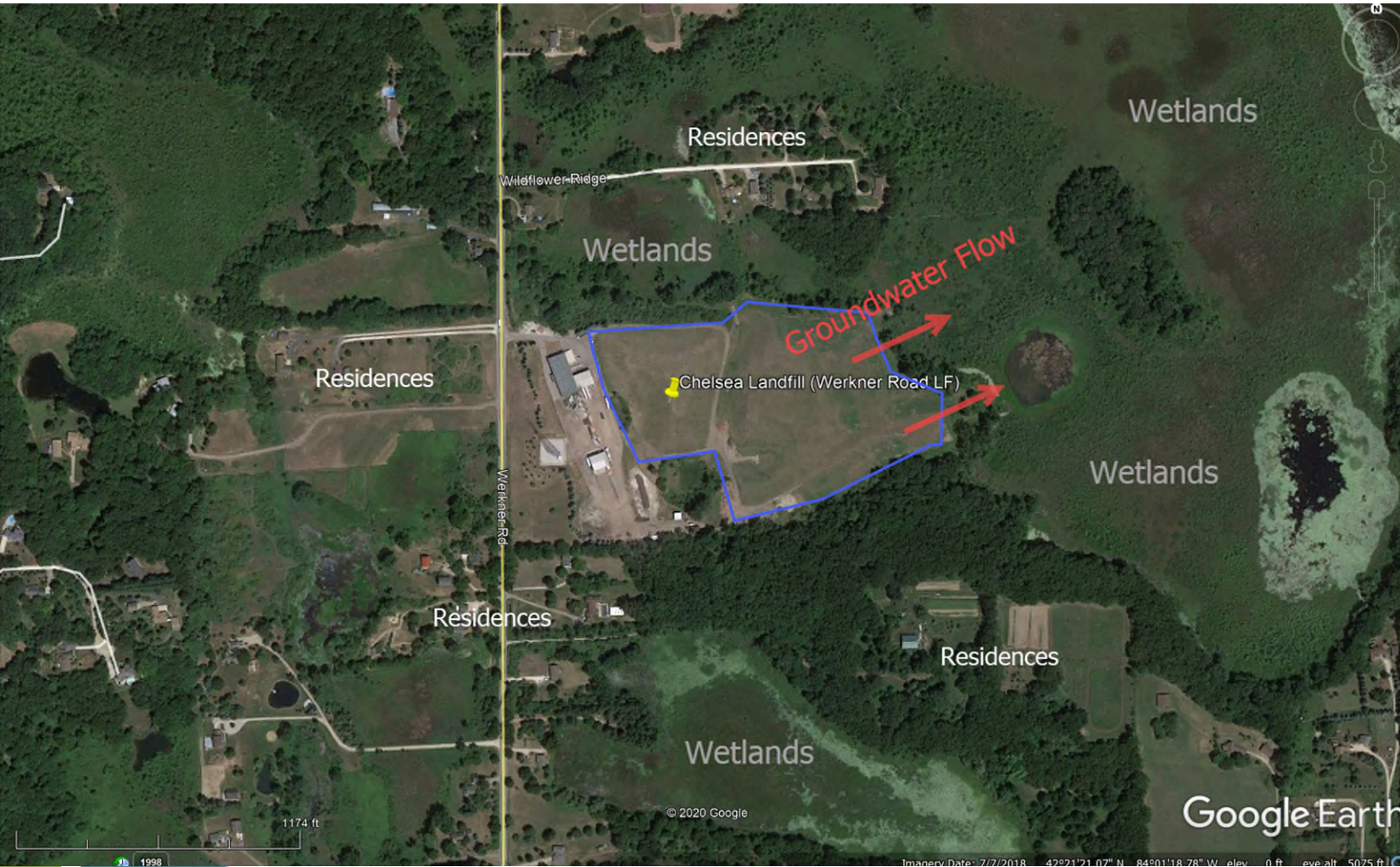
Brett Coulter,
Michigan Department of Environment, Great Lakes, and Energy
517-614-7714
CoulterB1@Michigan.gov

Werkner Road Landfill



- 8027 Werkner Road, Chelsea
- Closed Municipal Solid Waste Landfill

Werkner Road Landfill



- Groundwater flow – generally east to northeast
- Due to historical contamination in leachate, EGLE requested PFAS sampling in 2019
- June 2019 – six samples collected from on-site monitor wells

Werkner Road Landfill



- Two monitoring wells exceeded the new Part 201 Criteria for PFOA (8 ppt)
 - MW-2S - 54 ppt PFOA
 - MW-4(Dup) - 41 ppt PFOA
- Working with the City of Chelsea, State and local health departments to sample select residential wells for PFAS.

Aero-Motive Company, Kalamazoo County

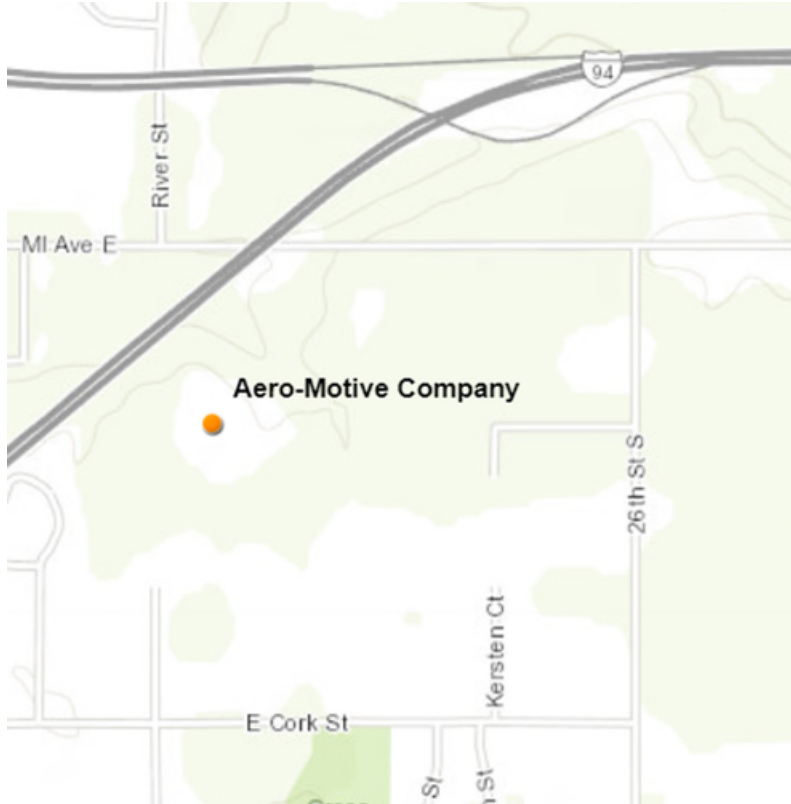
Erica Bays

Michigan Department of Environment, Great Lakes, and Energy

269-350-0080

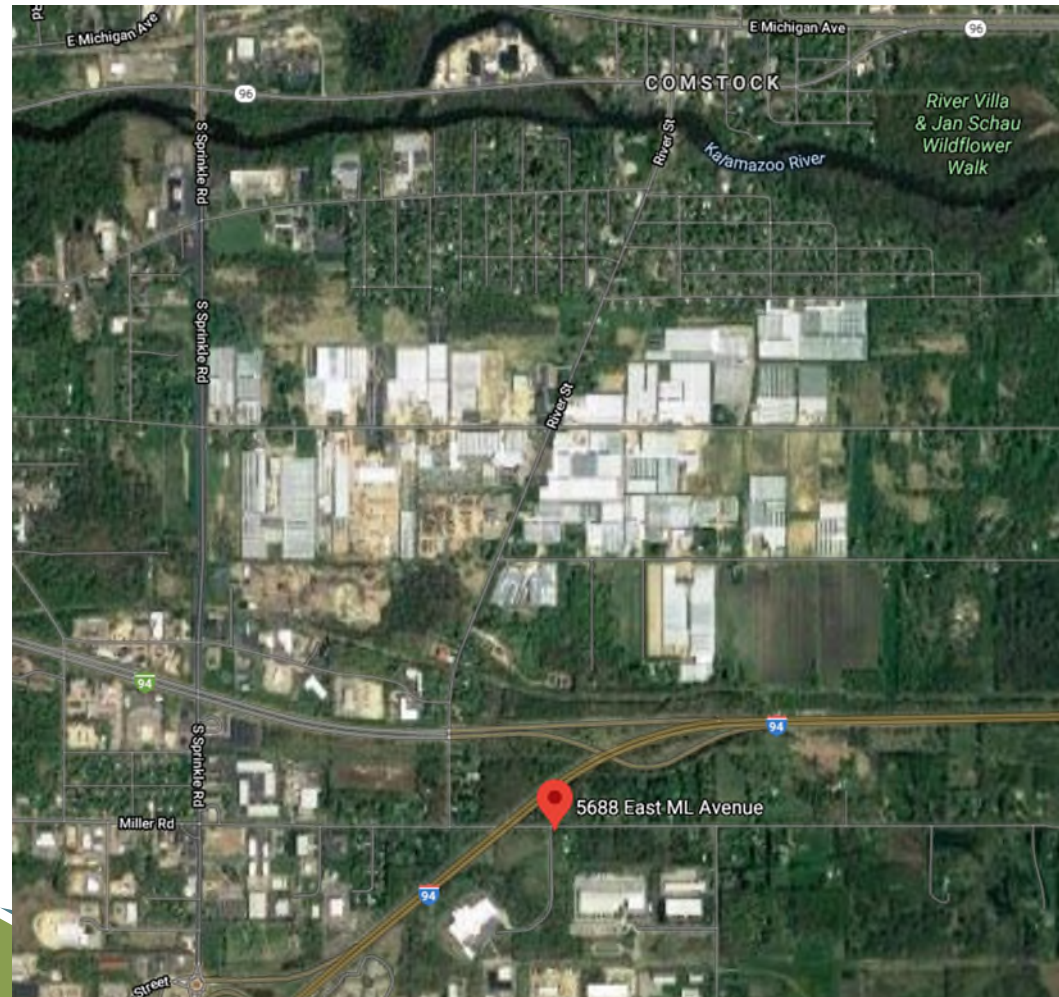
BaysE@Michigan.gov

Aero-Motive Company



- 5688 East ML Avenue, Kalamazoo
- Former cable and hose reel manufacturer

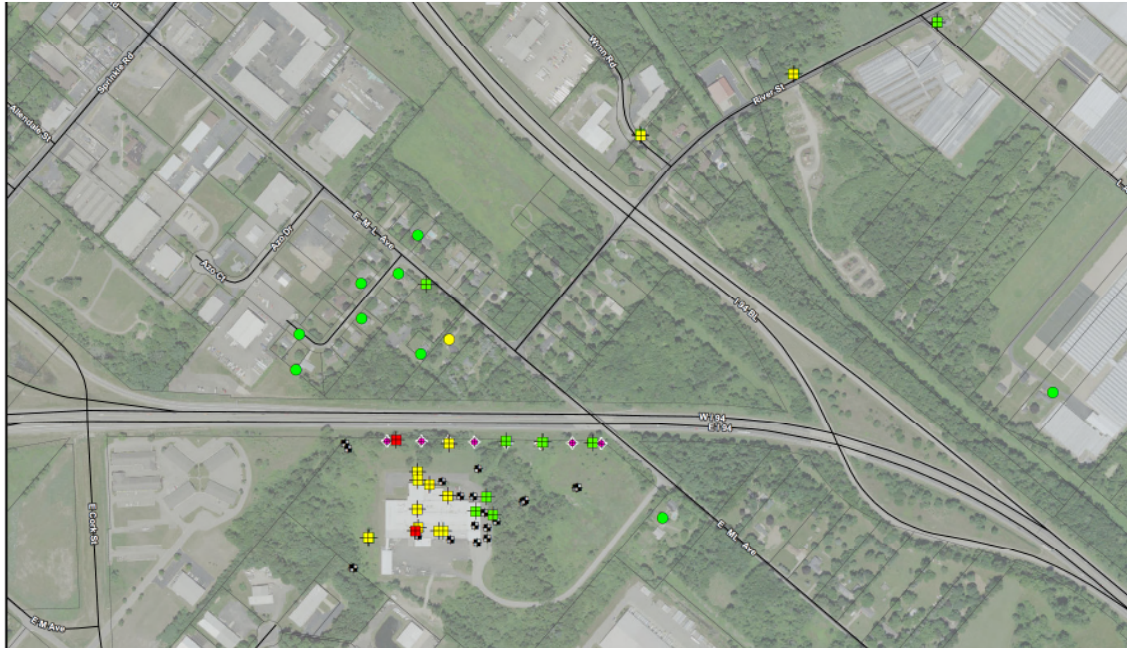
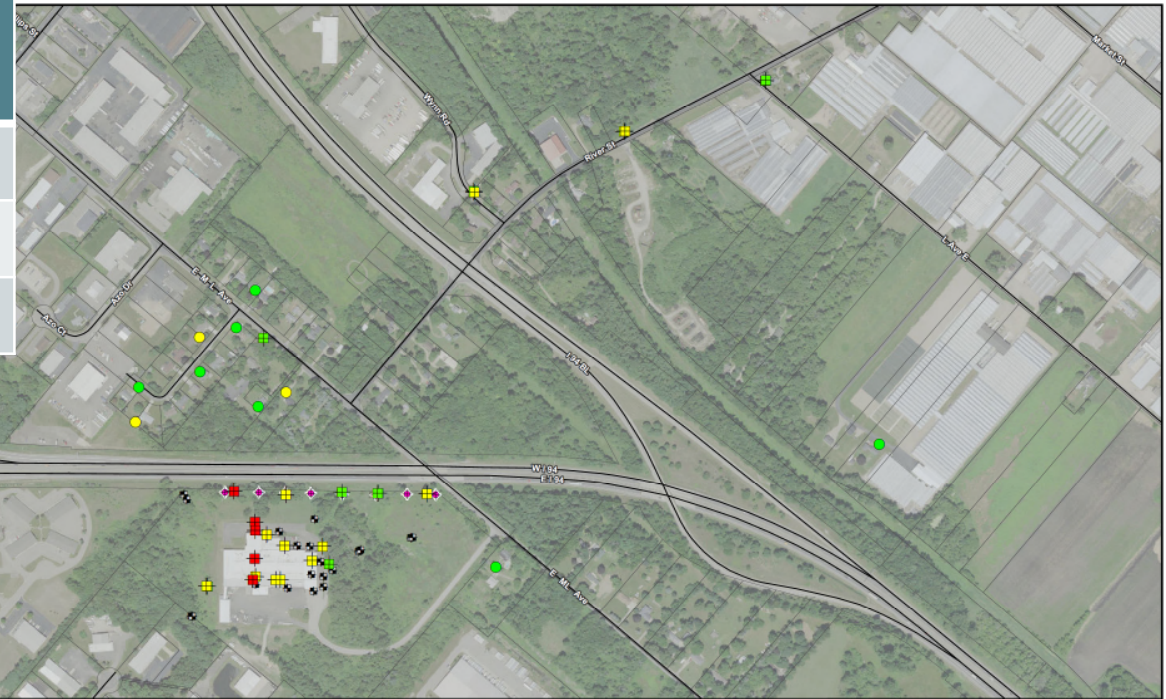
Aero-Motive Company



- Groundwater flow is to the north, toward the Kalamazoo River
- EGLE initiated PFAS sampling at existing onsite groundwater monitoring wells because of:
 - Historical operations and the potential use of PFAS containing products
 - Known historical on and offsite groundwater contamination, and
 - The presence of residential wells downgradient

Aero-Motive Company Kalamazoo County

PFAS Compound	Highest Concentration Detected (ppt)	MCL/Part 201 Criteria
PFOA	40.5	8/8
PFOS	26.6	16/16
PFHxS	77.4	51/NA



AECOM

Drawn: JS Date: 7/28/2020

Approved: Date: 7/28/2020

Project #: 60560354

Legend

Monitoring Well Samples	Residential Samples	Monitoring Well - Not Sampled
<ul style="list-style-type: none"> ■ Non-Detect ■ >0 - 8 ■ >8 	<ul style="list-style-type: none"> ● Non-Detect ● >0 - 8 ● >8 	<ul style="list-style-type: none"> Monitoring Well - Not Sampled ◆ Recovery Well

**AERO-MOTIVE
MONITORING WELL & RESIDENTIAL
SAMPLING RESULTS**

DRAFT

KALAMAZOO COUNTY, MI

AECOM

Drawn: JS Date: 7/28/2020

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Legend

Monitoring Well Samples	Residential Samples	Monitoring Well - Not Sampled
<ul style="list-style-type: none"> ■ Non-Detect ■ >0 - 16 ■ >16 	<ul style="list-style-type: none"> ● Non-Detect ● >0 - 16 ● >16 	<ul style="list-style-type: none"> Monitoring Well - Not Sampled ◆ Recovery Well

**AERO-MOTIVE
MONITORING WELL & RESIDENTIAL
SAMPLING RESULTS**

DRAFT

KALAMAZOO COUNTY, MI

Allied Paper Inc./Portage Creek/Kalamazoo River Superfund Site

OU1 (Allied Paper Landfill), OU2 (Willow Blvd. & A-Site
Landfill, OU3 King Highway Landfill),
Kalamazoo County

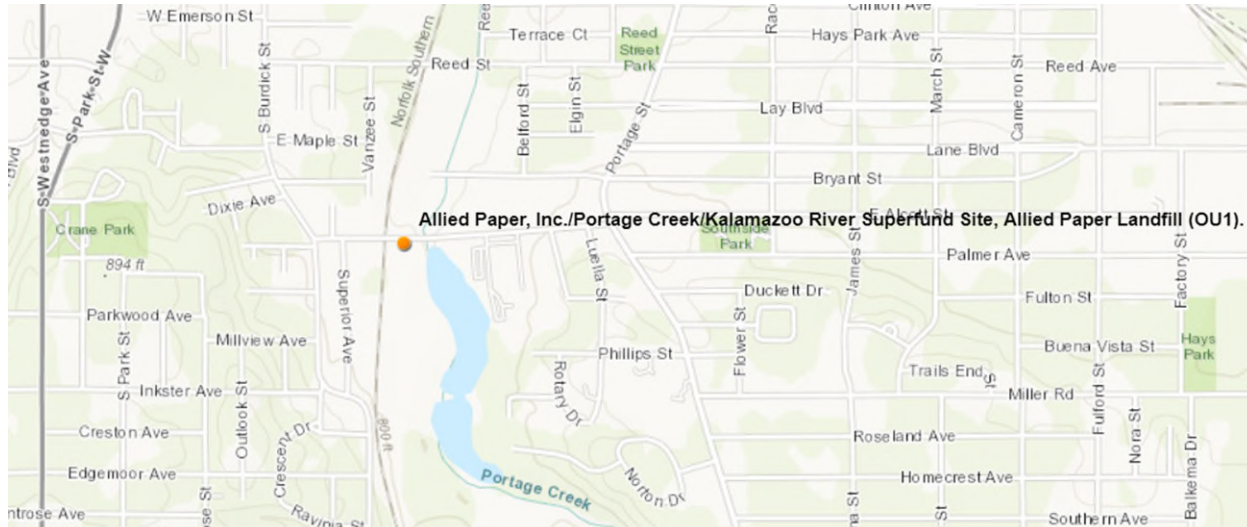
Daniel Peabody

Michigan Department of Environment, Great Lakes, and Energy

517-285-3924

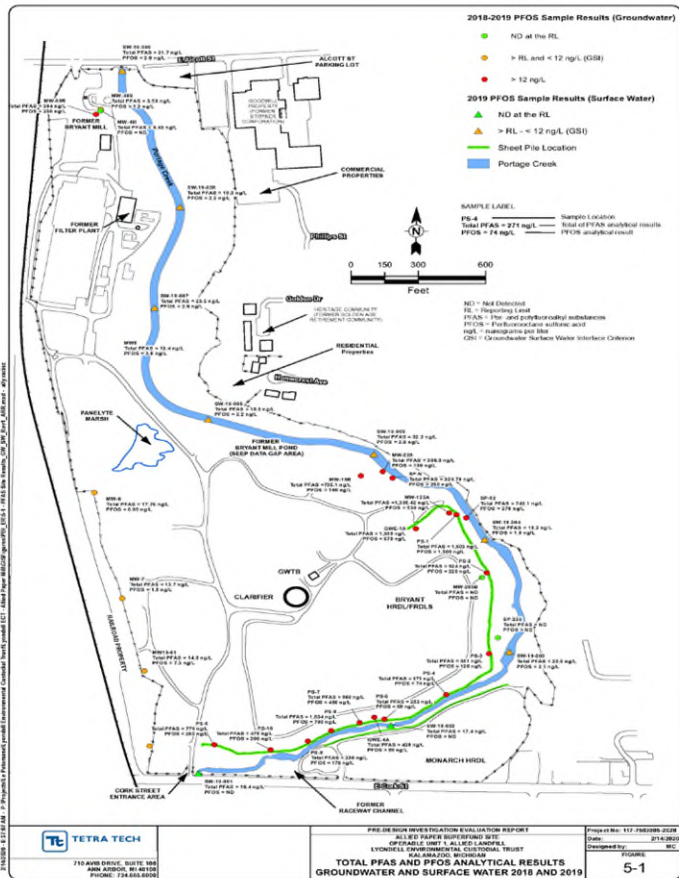
PeabodyD@michigan.gov

Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site, Allied Paper Landfill (OU1)



- EPA is the Regulatory Lead, State provides support, and Site is managed by bankruptcy trust (Trust)
- 268 East Alcott, Kalamazoo. 89-acres in size. “Paper making operations”.
- Shallow groundwater generally discharges toward Portage Creek. Deep groundwater flows to the north-northeast. Strong upward gradient.
- The nearest private well is 2.5-miles away. No residential well sampling is planned at this time.

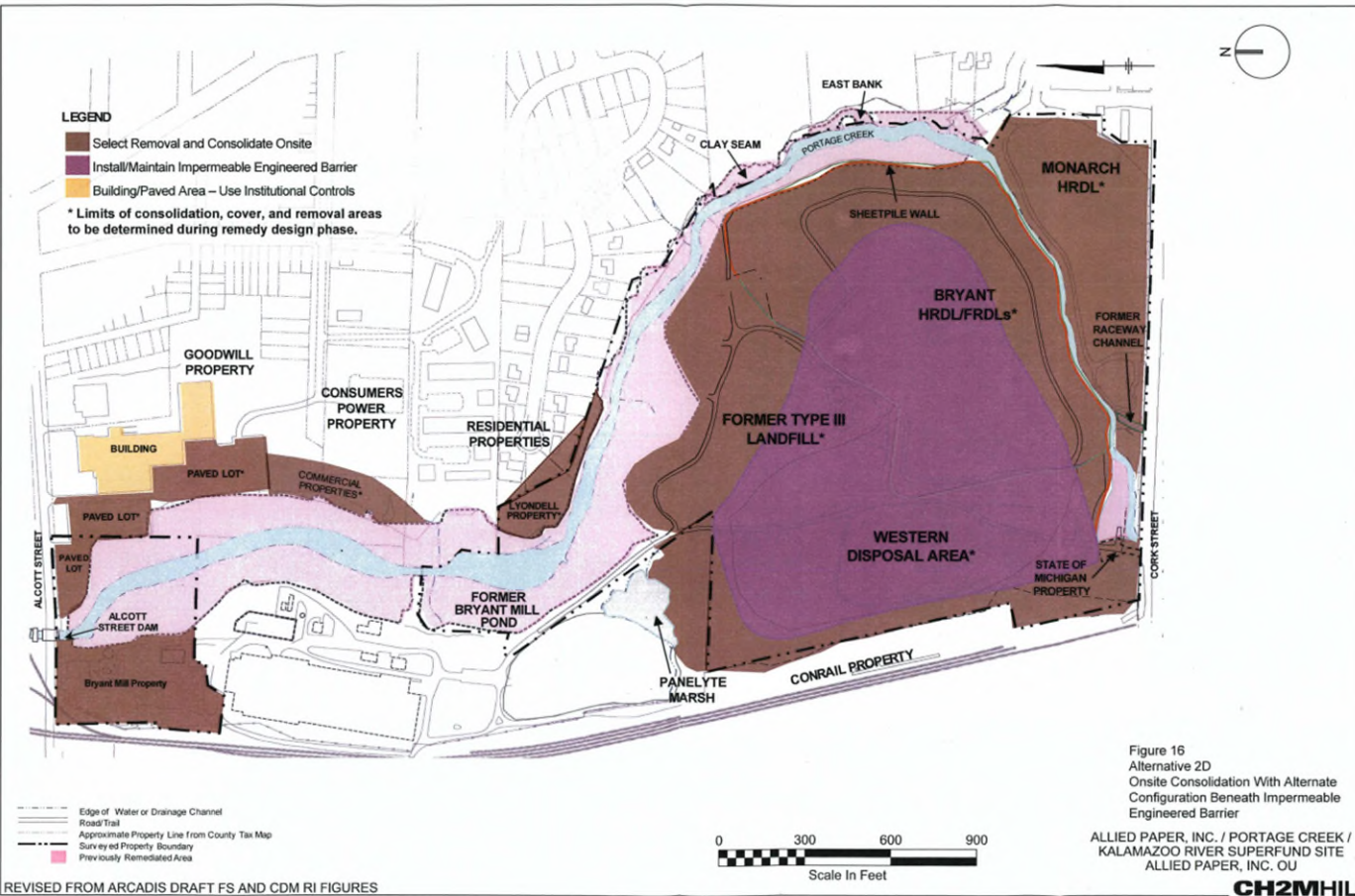
Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site, Allied Paper Landfill (OU1)



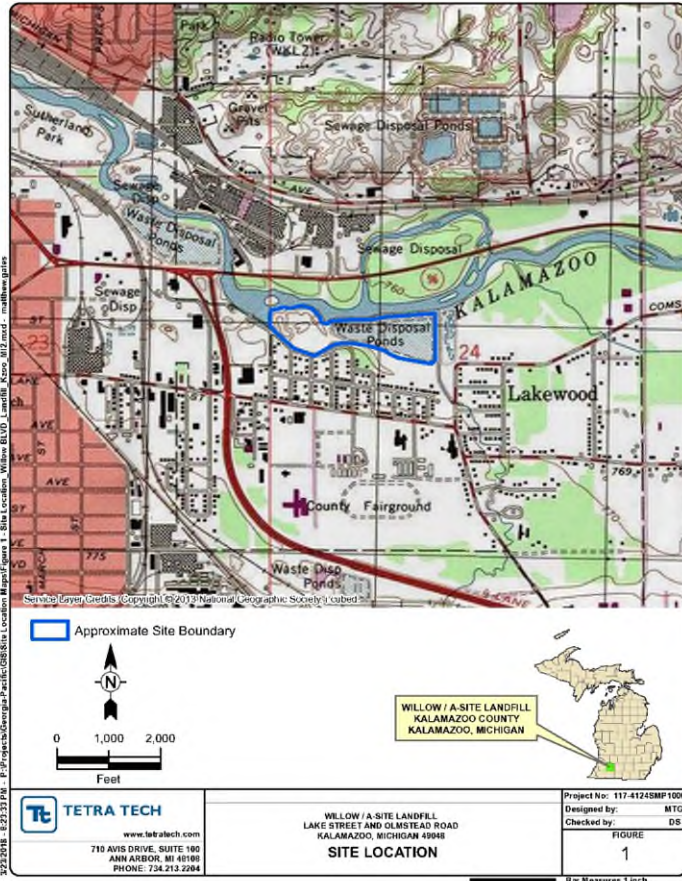
- The Trust first sampled groundwater extraction and sump system for PFAS in 2018.
- In 2019, extensive multi-media PFAS investigation completed.
- PFAS are present in soils (granular and “residuals”), groundwater and surface water.
- Highest concentrations observed were at sump PS-8.
 - Total PFAS = 1854 ppt
 - PFOA = 730 ppt
 - PFOS = 790 ppt

Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site, Allied Paper Landfill (OU1)

- Clean-up design is almost complete.
- Clean-up anticipated to begin in 2021.



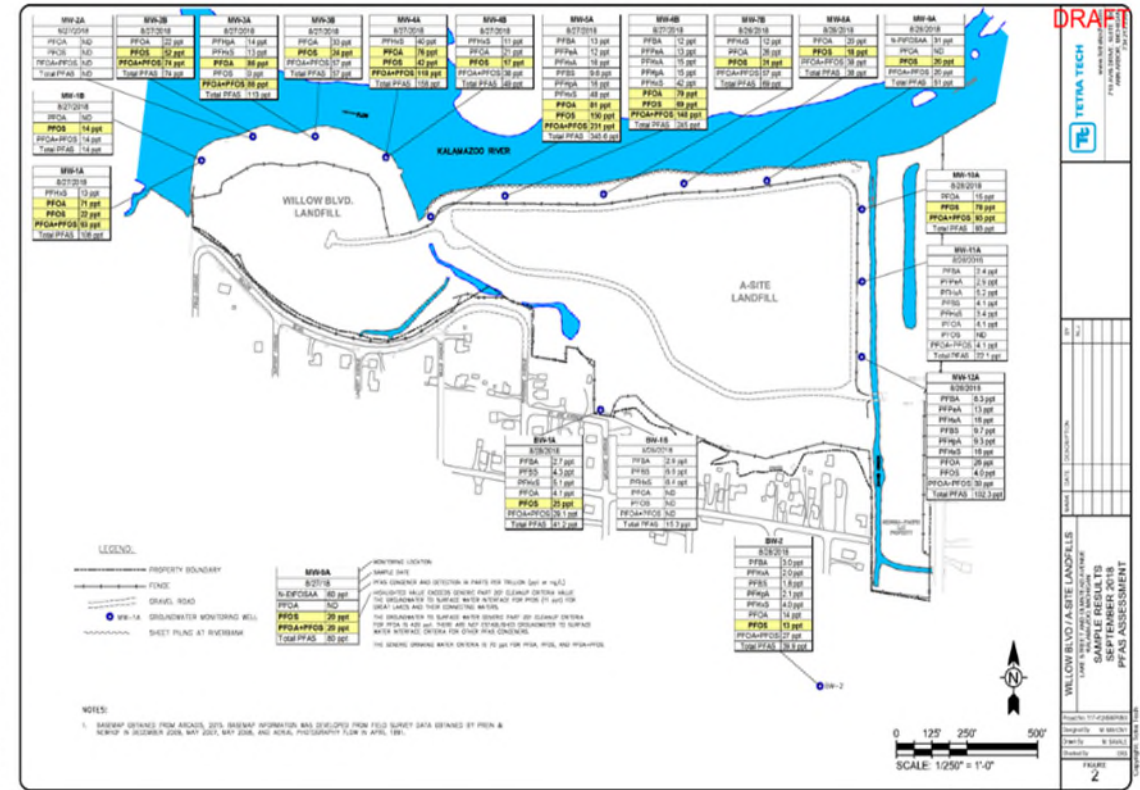
Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site, Willow Blvd & A-Site Landfill (OU2)



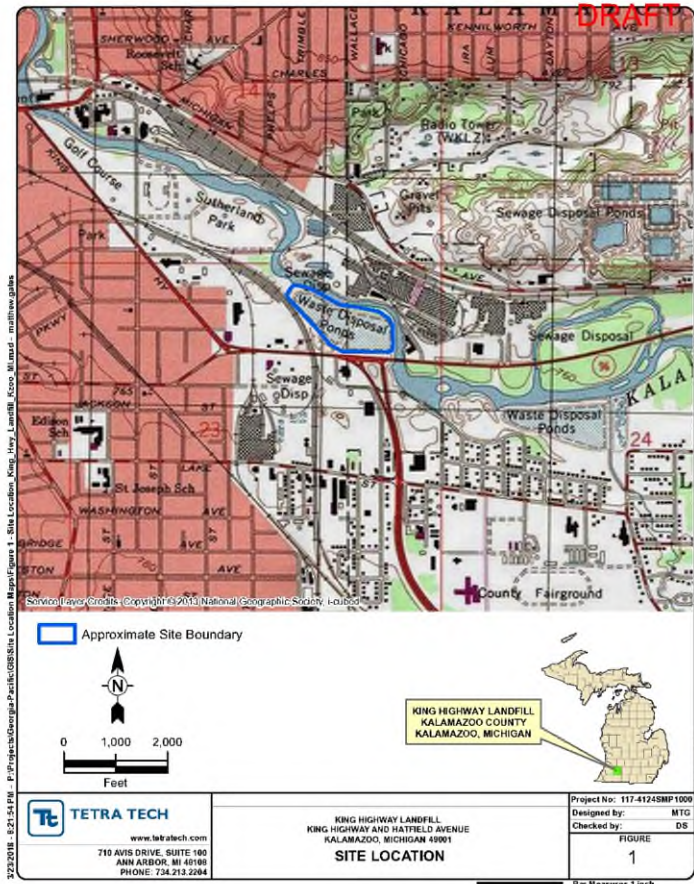
- EPA is the Regulatory Lead, State provides support, and work is performed by Georgia-Pacific (GP)
- The Willow Boulevard/A-Site Landfill is located near the intersection of Lake Street and Olmstead Road and is approximately 32-acres in size.
- Shallow groundwater discharges toward the Kalamazoo River and Davis Creek, which borders the site to the north and east.
- The nearest private drinking water wells are located approximately 0.9-miles north of the landfill. No residential well sampling is planned at this time.

Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site, Willow Blvd & A-Site Landfill (OU2)

- GP sampled groundwater for PFAS in October 2018.
- PFAS are present in groundwater at the site.
- PFAS impacts observed upgradient of site.
- Maximum concentrations observed at well MW-5A along northern boundary of site
 - Total PFAS = 345.8 ppt
 - PFOS = 150 ppt
 - PFOA = 81 ppt



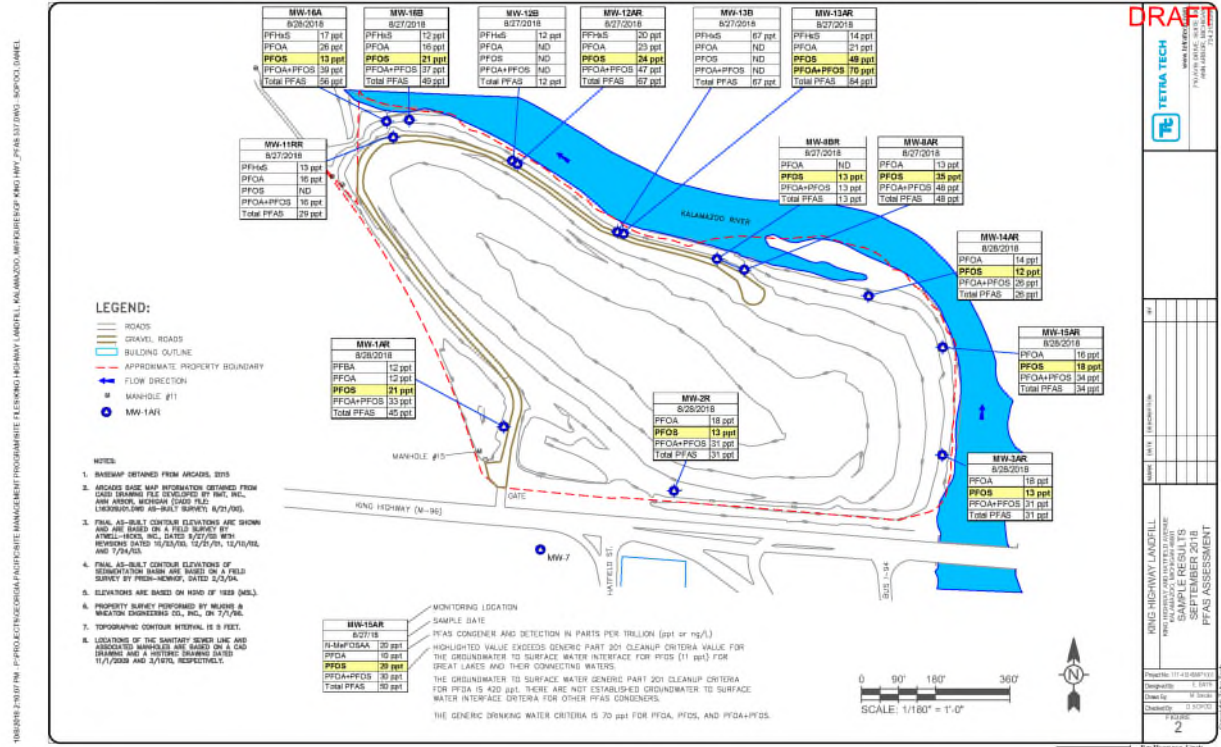
Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site, King Highway Landfill (OU3)



- State is the Regulatory Lead, EPA provides support, and work is performed by Georgia-Pacific (GP)
- The King Highway Landfill is located at the intersection of King Highway and Michigan Avenue and is approximately 23-acres in size.
- Groundwater discharges toward the Kalamazoo River, which borders the site to the north and east.
- The nearest private drinking water wells are located approximately 0.8 miles north of the landfill. No residential well sampling is planned at this time.

Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site, King Highway LF (OU3)

- GP sampled groundwater for PFAS in October 2018.
- Maximum concentrations observed at well MW-13AR along northern boundary of site
 - Total PFAS = 84 ppt
 - PFOS = 49 ppt
 - PFOA = 21 ppt



Southeast Berrien County Landfill, Berrien County

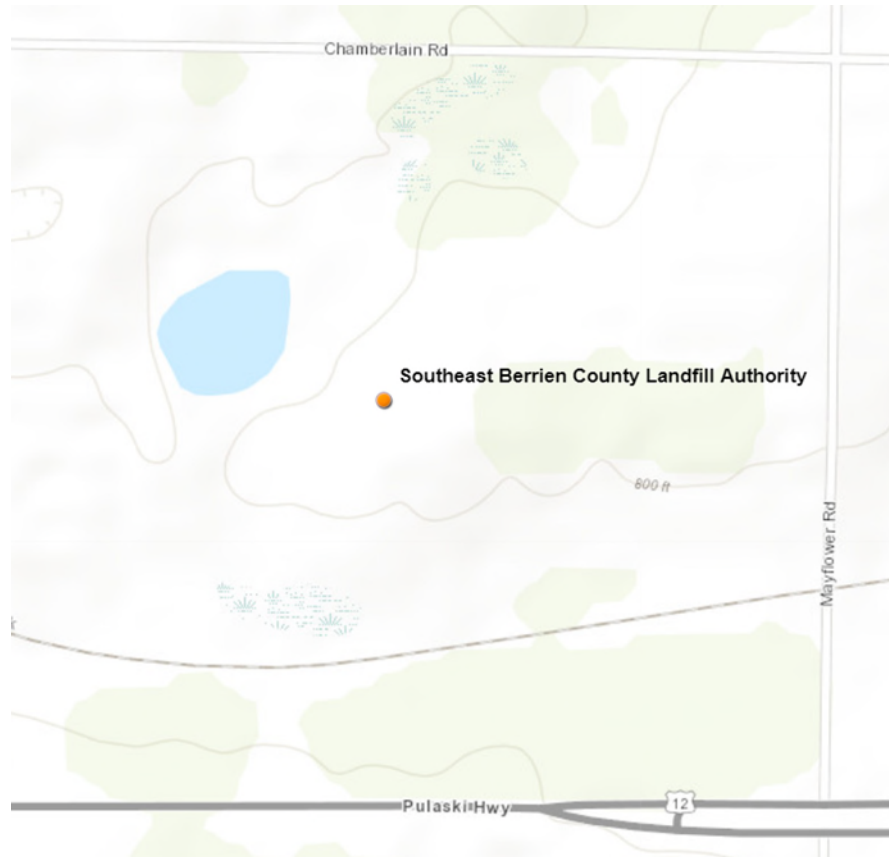
Lee Anne Thor

Michigan Department of Environment, Great Lakes, and Energy

269-365-8951

ThorL@Michigan.gov

Southeast Berrien County Landfill Authority



- 1540 Mayflower Road, Niles
- Active Municipal Solid Waste Landfill (Type II)

Southeast Berrien County Landfill Authority



- Groundwater flow is northwest
- In 2019, EGLE requested PFAS sampling as part of a statewide landfill survey
- October 15, 2019 – samples collected, four locations

Southeast Berrien County Landfill Authority

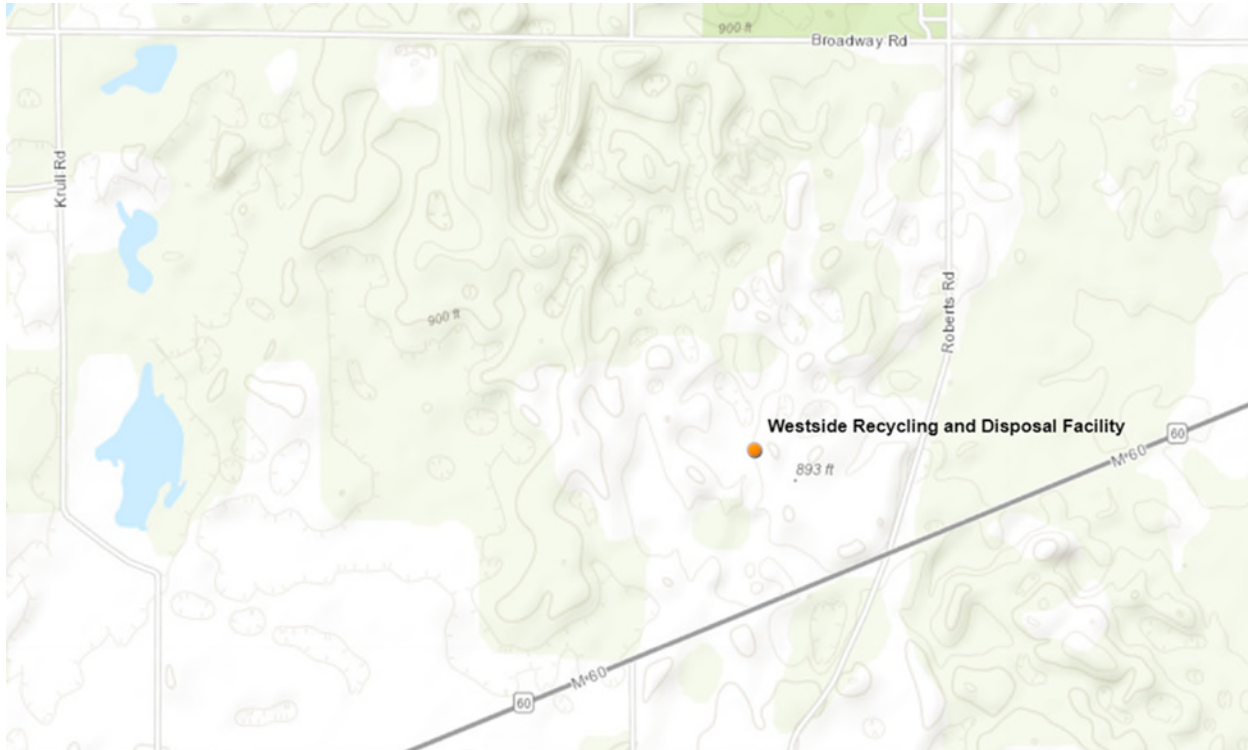


- Monitoring well MW-7 exceeded the new Part 201 Criteria for PFOA (8 ppt) at 16 ppt PFOA / non-detect for PFOS.
 - No residents immediately downgradient
- Working with the city and local health department to confirm nearby residents are connected to municipal water.

Westside Recycling and Disposal Facility, St. Joseph County

Lee Anne Thor
Michigan Department of Environment, Great Lakes, and Energy
269-365-8951
ThorL@Michigan.gov

Westside Recycling and Disposal Facility



- 14094 M-60 West, Three Rivers
- Consists of:
 - Active and Closed Municipal Solid Waste Landfill (Type II)
 - Closed Industrial, Construction and Demolition Waste Landfill (Type III) – August 2004

Westside Recycling and Disposal Facility



- Groundwater flow – generally northeast
- Due to historical contamination EGLE requested PFAS sampling in 2019
- December 16, 2019 – samples collected, four locations

Westside Recycling and Disposal Facility

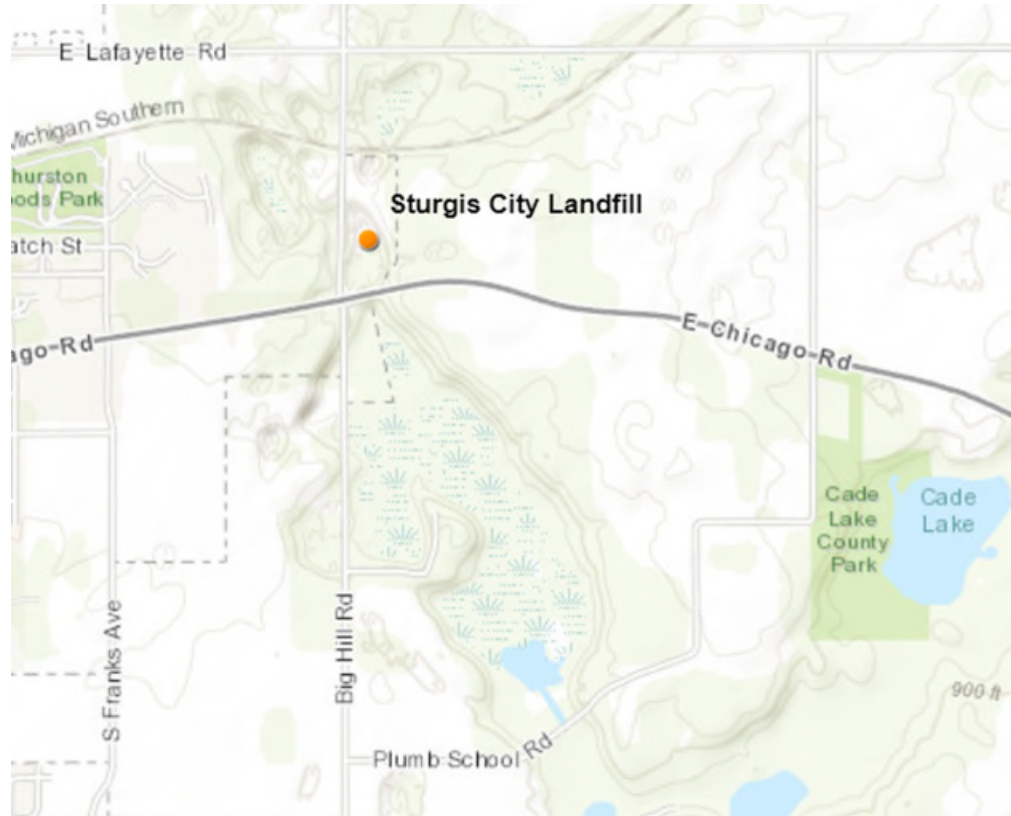


- Two monitoring wells exceeded the new Part 201 Criteria for PFOA (8 ppt)
 - MW-6S - 56 ppt PFOA / non-detect for PFOS.
 - MW-9S - 28 ppt PFOA / non-detect for PFOS.
- Working with local health department to determine if any residential wells need to be evaluated.

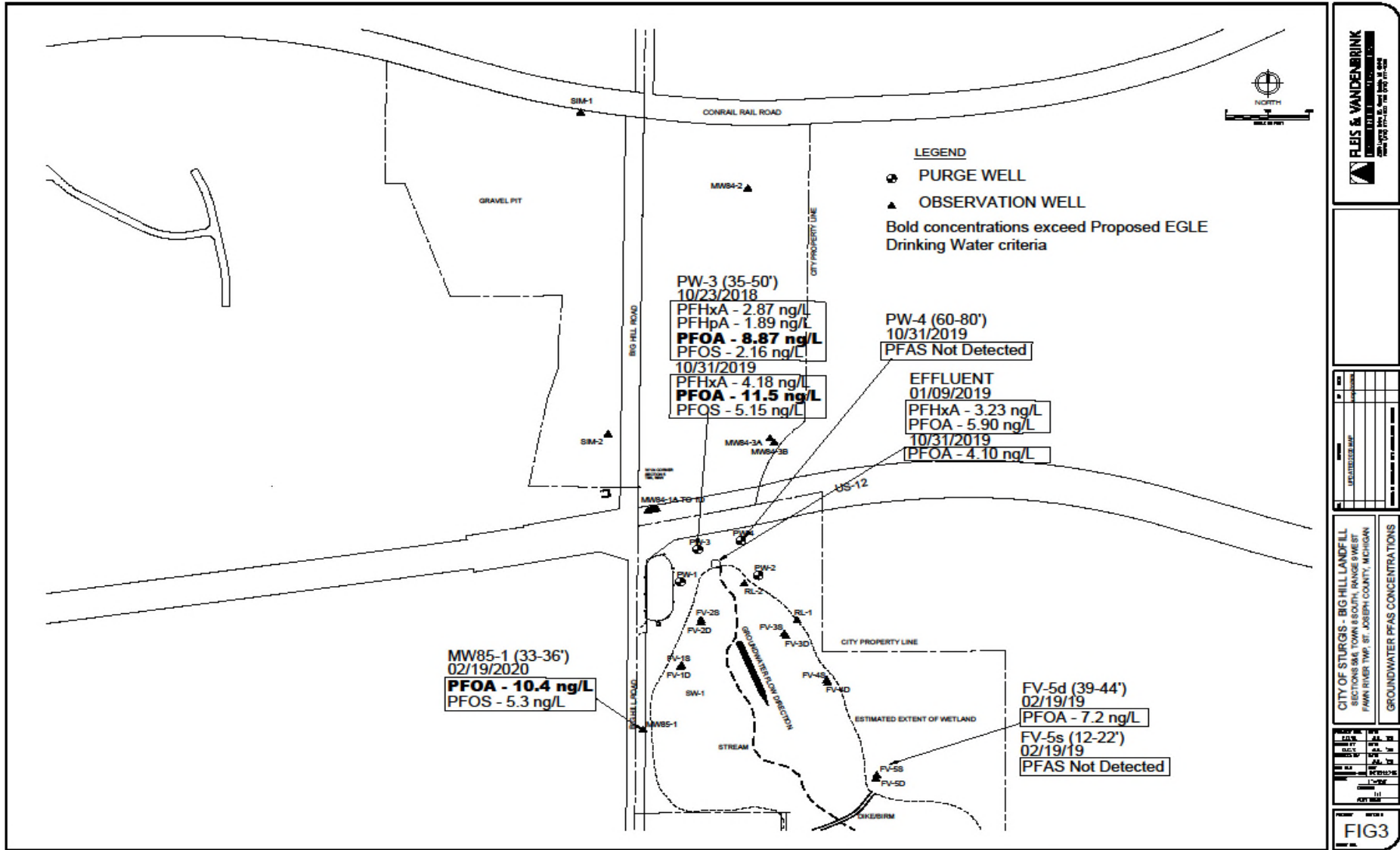
Sturgis City Landfill, St. Joseph County

Michael Baranoski
Michigan Department of Environment, Great Lakes, and Energy
269-567-3524
BaranoskiM@Michigan.gov

Sturgis City Landfill



- US Highway 12 and Big Hill Road, northeast and southeast corners of intersection.
- Chlorinated solvent plume from the landfill is treated on site by Sturgis Wastewater Treatment Plant (WWTP). Sturgis WWTP sampled for PFAS/PFOA in October 2018 as part of its effluent testing program.
- Groundwater flows to the south-southwest.
- The City of Sturgis tested several off-site downgradient monitor wells in February 2020 and confirmed PFOA/PFAS in groundwater.
- The city tested nine private water supply wells downgradient of the site in August and results are pending.



FLIS & VANDENBRINK
 Environmental Science & Technology
 1000 West 10th Street, Suite 100
 St. Joseph, MI 49780
 Phone: 517.233.8888 Fax: 517.233.8889

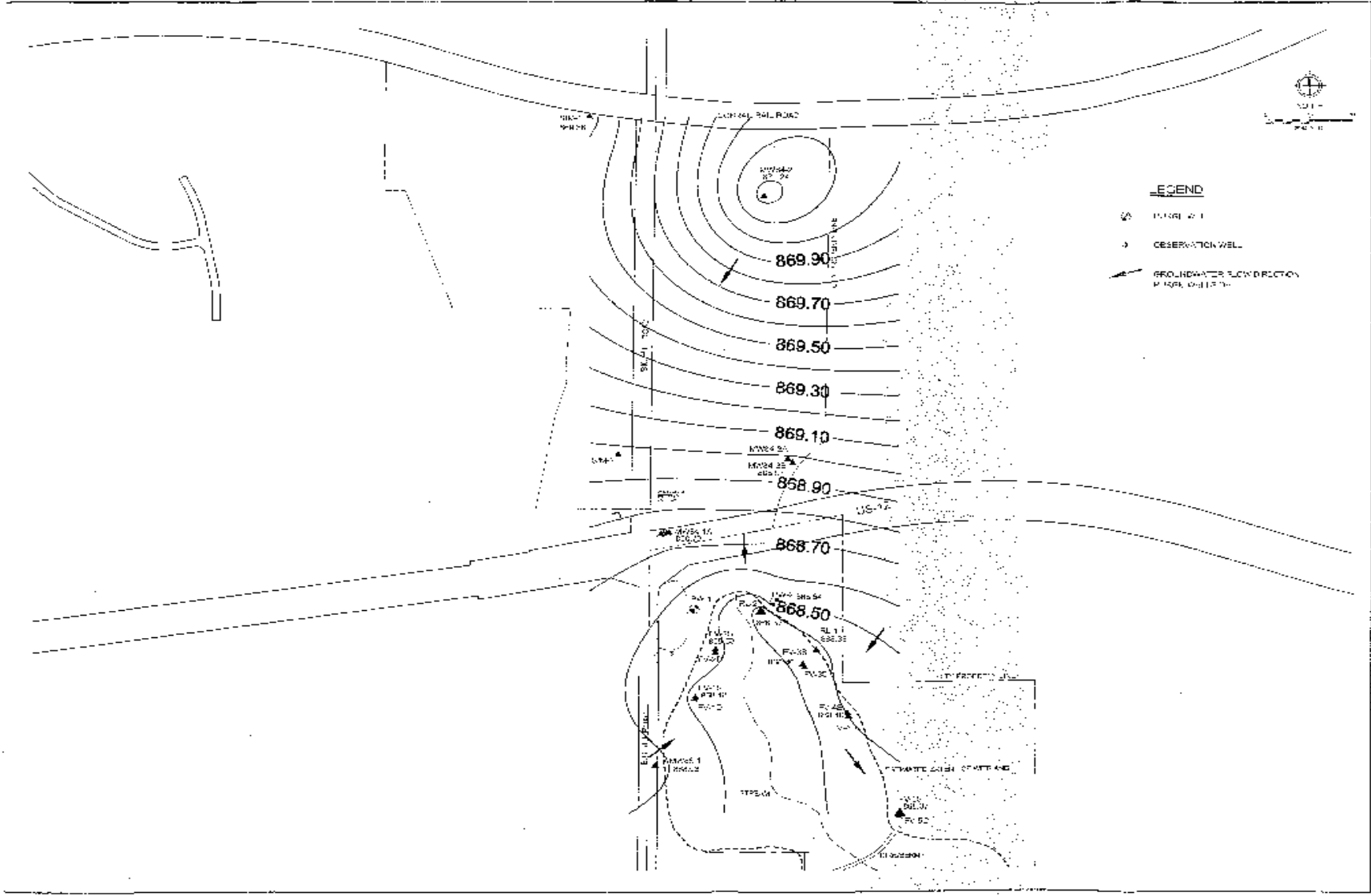
DATE	02/19/2020
BY	JAV
CHECKED BY	JAV
APPROVED BY	JAV
PROJECT	PFAS MONITORING
LOCATION	BIG HILL LANDFILL
WELL	MW85-1
ANALYST	JAV
LAB	FLIS & VANDENBRINK
CLIENT	CITY OF STURGIS

CITY OF STURGIS - BIG HILL LANDFILL
 SECTIONS 36A, TOWN 8 SOUTH, RANGE 9 WEST
 FARM RIVER TWP, ST. JOSEPH COUNTY, MICHIGAN

GROUNDWATER PFAS CONCENTRATIONS

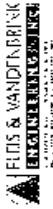
WELL	DATE	PFOA (ng/L)	PFOS (ng/L)	PFAS (ng/L)
PW-3	10/23/2018	8.87	2.16	Not Detected
PW-4	10/31/2019	Not Detected	Not Detected	Not Detected
EFFLUENT	01/09/2019	5.90	Not Detected	Not Detected
EFFLUENT	10/31/2019	4.10	Not Detected	Not Detected
MW85-1	02/19/2020	10.4	5.3	Not Detected
FV-5d	02/19/19	7.2	Not Detected	Not Detected
FV-5s	02/19/19	Not Detected	Not Detected	Not Detected

FIG3



LEGEND

- OBSERVATION WELL
- OBSERVATION WELL
- GROUNDWATER FLOW DIRECTION
BASED ON ELEVATION



DATE	SCALE	SHEET NO.	TOTAL SHEETS	PROJECT NO.										
CITY OF ST. JOHNS - BAY HILLS AND TOLL SECTION 8 AND 9 - WATER MAINS FROM THE CITY OF ST. JOHNS - WATER MAINS GROUNDWATER FLOW - MATCH W. 2209														
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">NO.</td> <td style="width: 20%;">DATE</td> <td style="width: 20%;">BY</td> <td style="width: 20%;">CHECKED</td> <td style="width: 20%;">APPROVED</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>					NO.	DATE	BY	CHECKED	APPROVED					
NO.	DATE	BY	CHECKED	APPROVED										
FIG 2														



EGLE Site Contact Information

Jackson Region Sites:

Liberty Environmentalists Landfill and Werner Road Landfill;

Brett Coulter, 517-614-7714, CoulterB1@Michigan.gov

Kalamazoo Region Sites:

Aero-Motive Company;

Erica Bays, 269-350-0080, BaysE@Michigan.gov

Allied Paper, Superfund Sites;

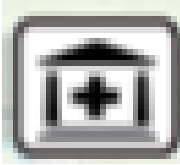
Dan Peabody, 517-285-3924, PeabodyD@Michigan.gov

Southeast Berrien County Landfill Authority and Westside Recycling and Disposal Facility;

Lee Anne Thor, 269-365-8951, ThorL@Michigan.gov

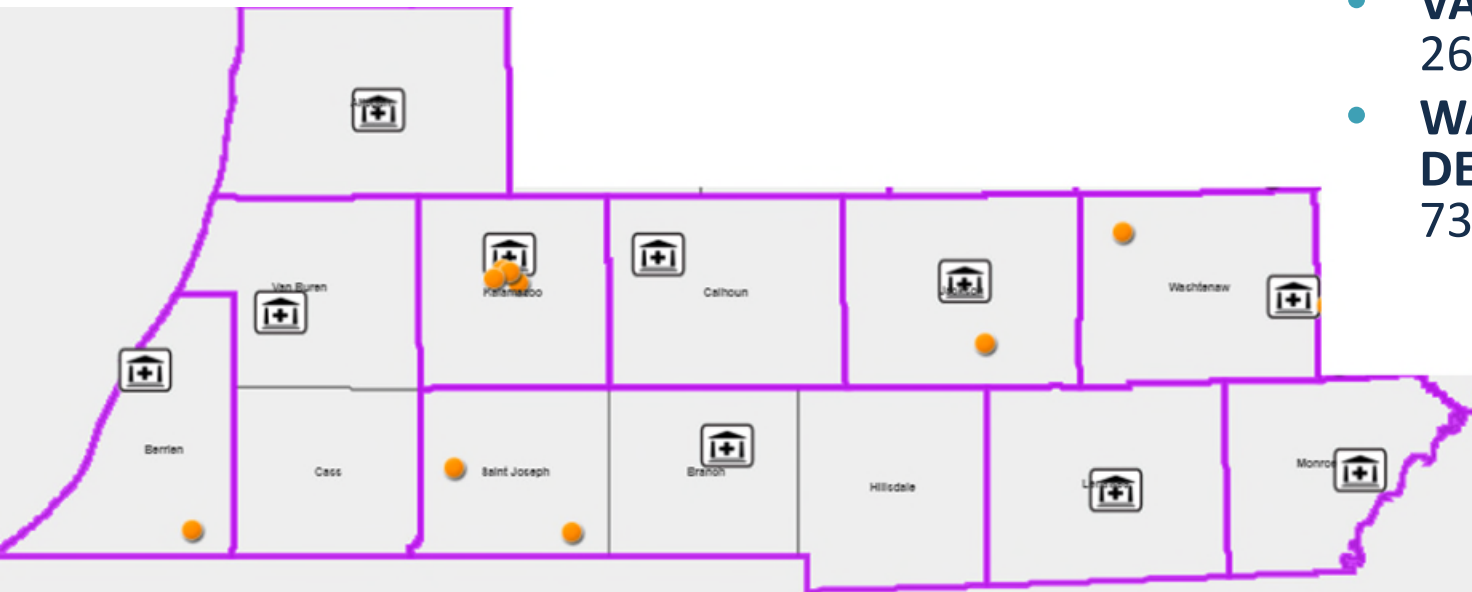
Sturgis City Landfill;

Mike Baranoski, 269-567-3524, BaranoskiM@Michigan.gov



Local Health Departments

- **ALLEGAN COUNTY HEALTH DEPARTMENT**
269-673-5411
- **CALHOUN COUNTY HEALTH DEPARTMENT**
269-969-6380
- **BERRIEN COUNTY HEALTH DEPARTMENT**
269-926-7121
- **BRANCH-HILLSDALE-SAINT JOSEPH COMMUNITY HEALTH AGENCY**
517-279-9561
- **JACKSON COUNTY HEALTH DEPARTMENT**
517-788-4420
- **KALAMAZOO COUNTY HUMAN SERVICES DEPARTMENT**
269-373-5200
- **LENAWEE COUNTY HEALTH DEPARTMENT**
517-264-5202
- **MONROE COUNTY HEALTH DEPARTMENT**
734-240-7804
- **VAN BUREN-CASS DISTRICT HEALTH DEPARTMENT**
269-621-3143
- **WASHTENAW COUNTY PUBLIC HEALTH DEPARTMENT**
734-544-6700



Questions?

MICHIGAN PFAS ACTION RESPONSE TEAM (MPART)

www.Michigan.gov/PfasResponse



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY



THANK YOU!

We will share the slides and a recording and closed-captioned copy of today's conversation via email and on our website in the next few days.