Virtual Town Hall
East Bay Township Area

Steve Sliver, MPART Executive Director

Michigan PFAS Action Response Team

(517) 290-2943

SliverS@Michigan.gov

MPART

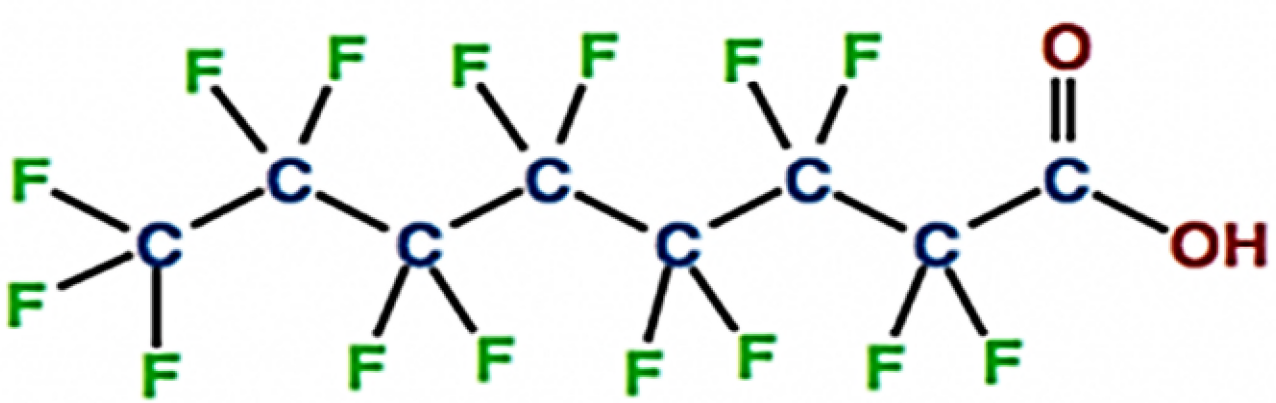
Introductions, Logistics and Agenda

- Introductions – Steve Sliver, MPART Executive Director
- Logistics – Q&A at the end; how to ask questions – Steve
- Agenda:
  - MPART Overview – Steve
  - Health – Rosa Jaiman, Michigan Department of Health and Human Services and Dan Thorell, Environmental Health Director, Grand Traverse Health Department
  - Investigation Area – Ann Emington, Michigan Department of Environment, Great Lakes, and Energy
  - MPART Website – Steve
- Q&A

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
- Highly Stable
- Repel Water, Oil, Fat, and Grease
- Began Developing in 1940s
- 5,000+ Compounds Today

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PFAS Uses

Aerospace

Apparel

Building and Construction

Chemicals and Pharmaceuticals

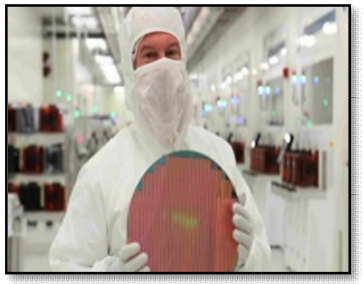
Electronics

Oil & Gas

Energy

Healthcare and Hospitals

Aqueous Film Forming Foam



Semiconductors

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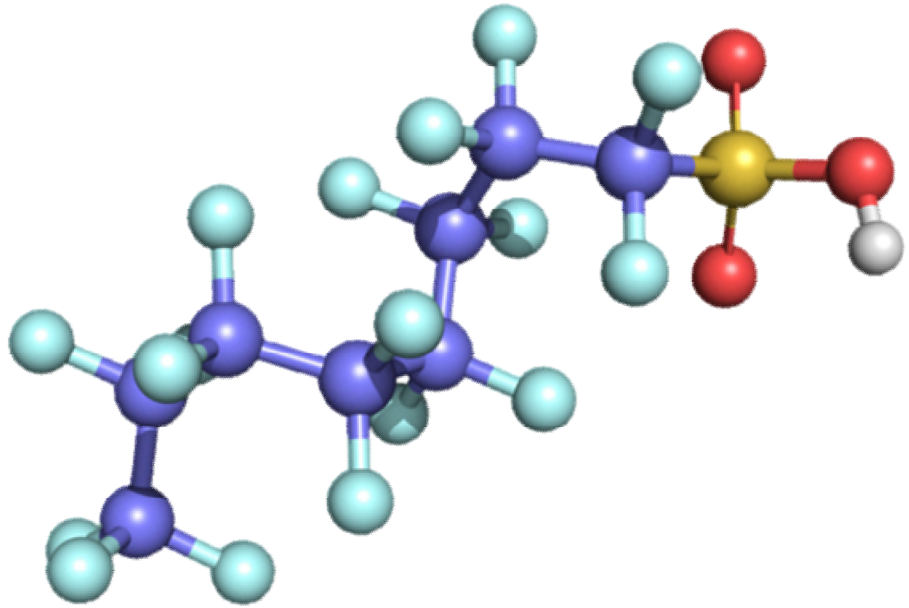
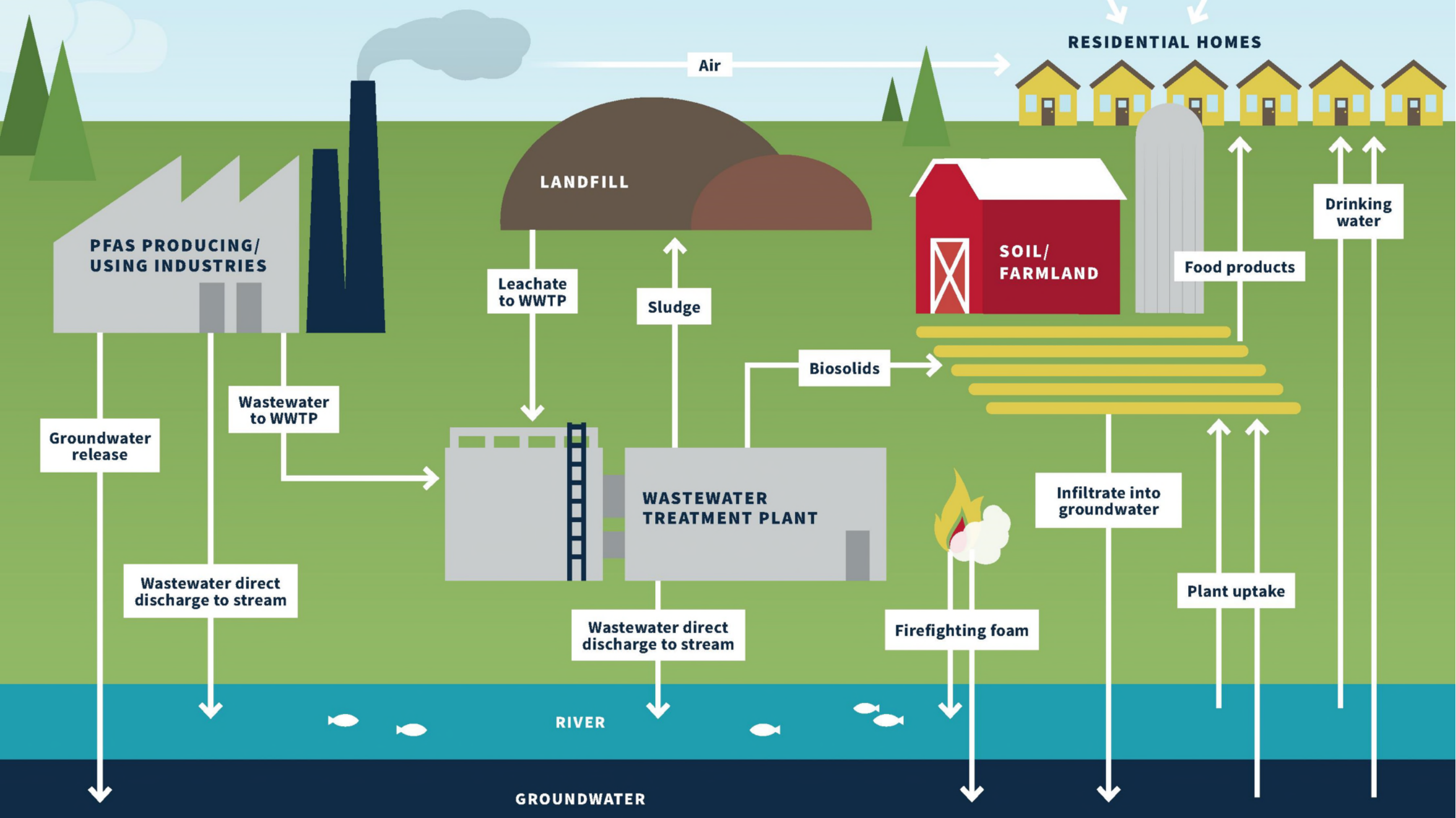
Why the Concern?

- 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 Standards




RESIDENTIAL HOMES
Air
LANDFILL
PFAS PRODUCING/
USING INDUSTRIES
SOIL/
FARMLAND
Drinking
water
Food products
Leachate
to WWTP
Sludge
Biosolids
Wastewater
to WWTP
Groundwater
release
WASTEWATER
TREATMENT PLANT
Infiltrate into
groundwater
Plant uptake
Wastewater direct
discharge to stream
Wastewater direct
discharge to stream
Firefighting foam
RIVER
GROUNDWATER




Surface Water Investigations

- Survey of Surface Water and Fish
- Foam
- Wastewater

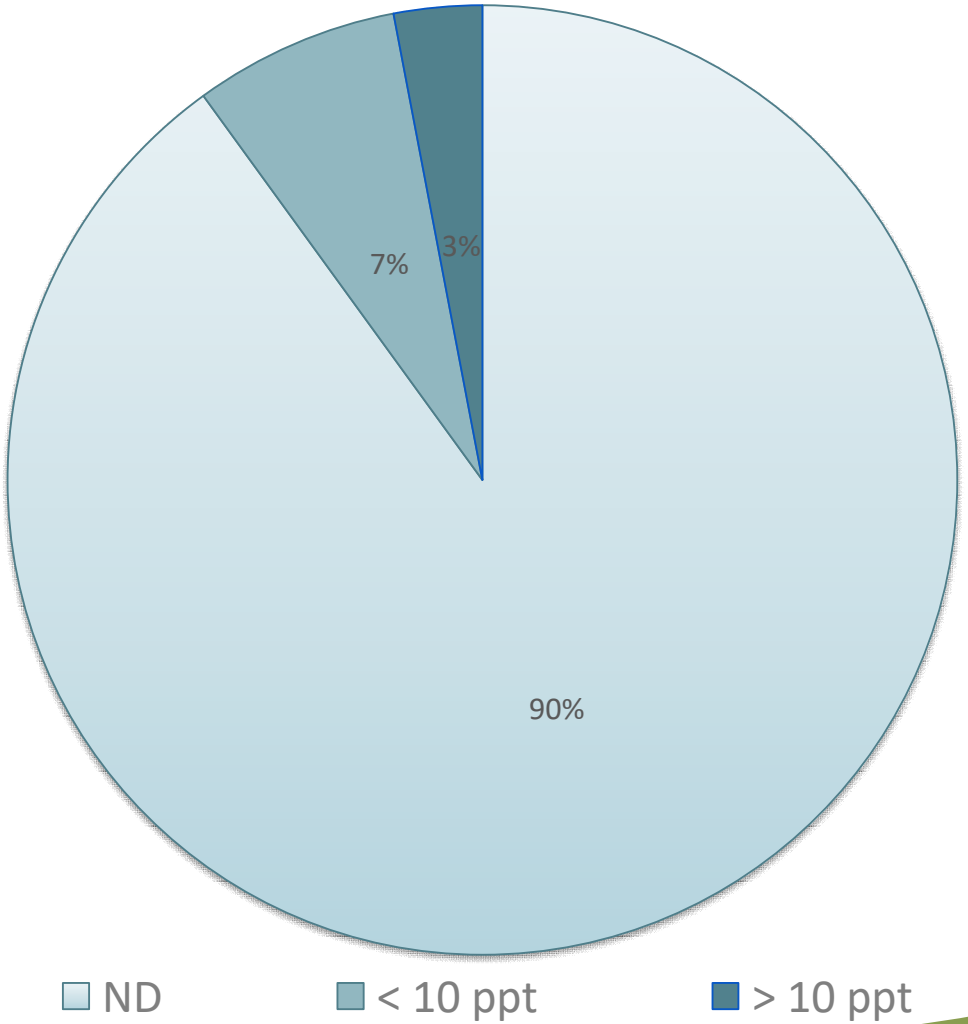
Public Water Supply Testing

- All Community Water Supplies (1,114)
- All Tribal Systems (17)
- Schools and Larger Day Cares (619)
- Additional Select 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
PFTrDA	PFUnA	



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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 promulgated standards in rule**

Michigan Drinking Water Standards

- Maximum Contaminant Levels (MCLs)
- August 3, 2020
- 2,700 water systems

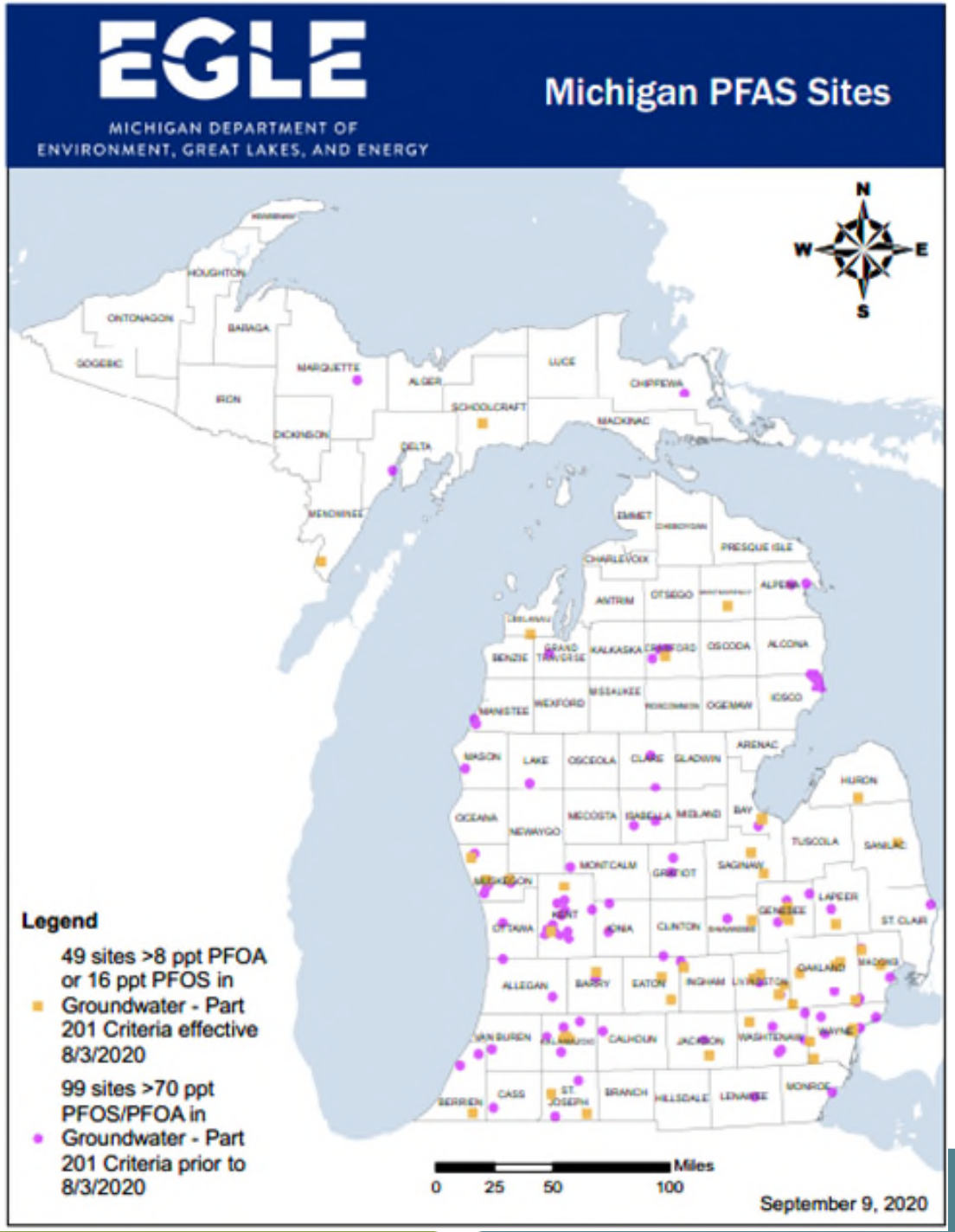
Compound	MCL	EPA Recommendation
PFNA	6 ppt	NA
PFOA	8 ppt	70 ppt combined
PFOS	16 ppt	
PFHxS	51 ppt	NA
GenX (HFPO-DA)	370 ppt	NA
PFBS	420 ppt	NA
PFHxA	400,000 ppt	NA

7 MCLs ≠ 7 Cleanup Criteria

- Groundwater cleanup criteria already in rule

Compound	Prior to 8/3/20	After 8/3/20
PFOA	70 ppt combined	8 ppt
PFOS		16 ppt

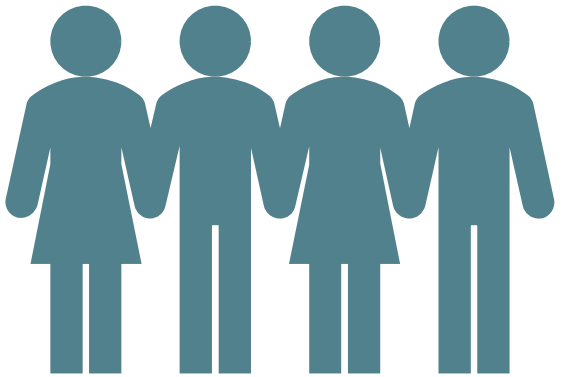
- Rulemaking necessary for other 5 MCLs to become groundwater cleanup criteria
- Important for how we define a PFAS site



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

Public Health Response Actions to PFAS in Drinking Water

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Michigan Department of Health and Human Services (MDHHS)
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JaimanR@Michigan.gov

Dan Thorell, Environmental Health Director
Grand Traverse County Health Department
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dthorell@gtcountymi.gov

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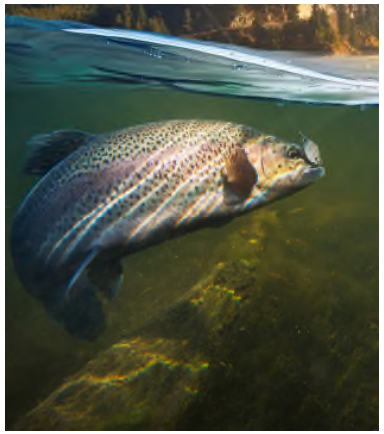
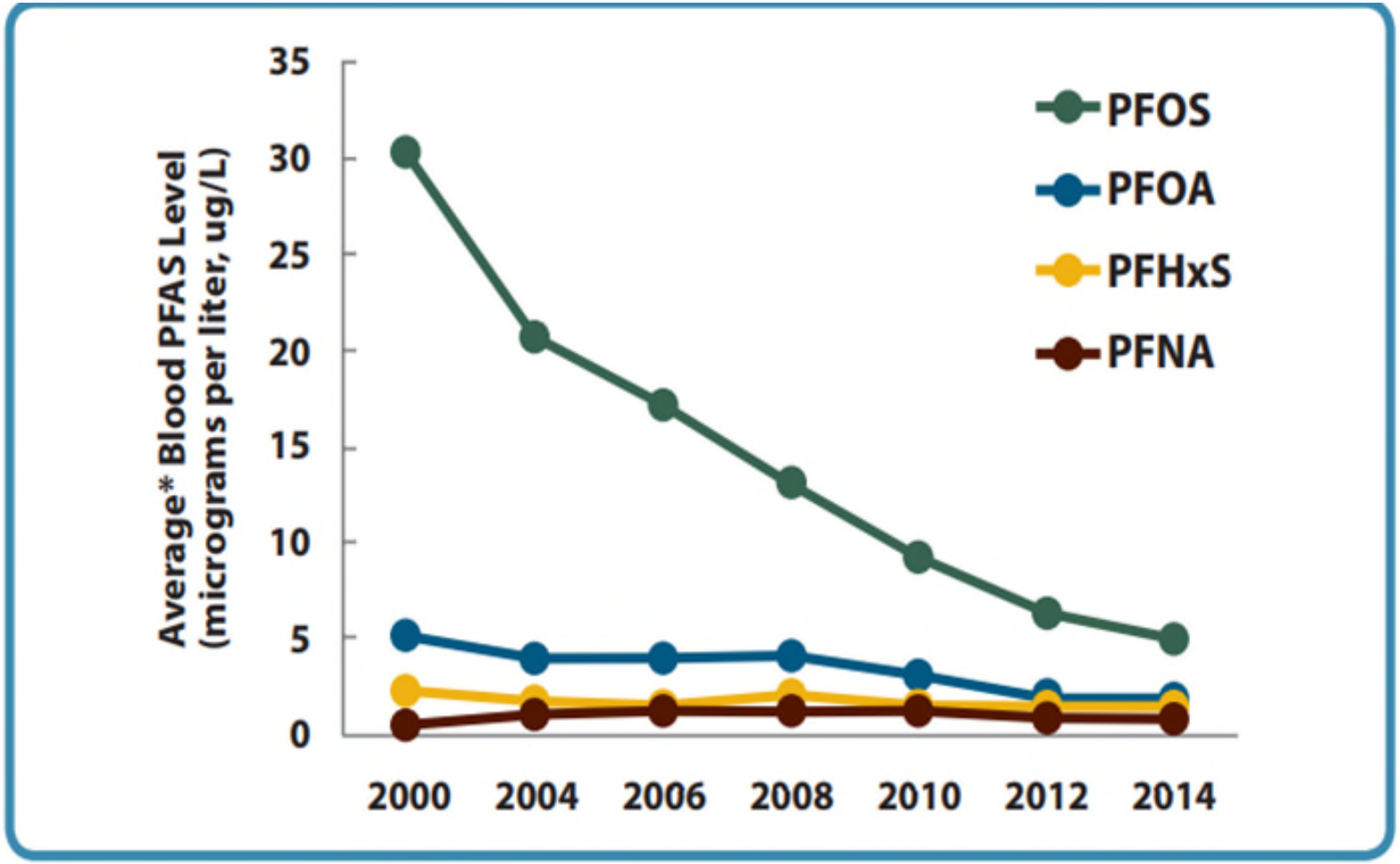
The Role of MDHHS/ Grand Traverse County Health Department (GTHD)

- 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
  - "Eat Safe Fish" Guidelines
- 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).

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

Multiple Lines of Consideration for Determining Public Health Response Actions

- MDHHS Comparison Values
- Residential Well Results (individually and collectively)
- Site–specific information (e.g., known source, geology, etc.)

MDHHS Comparison Values

- MDHHS Comparison Values are the lowest of:
  - MDHHS Public Health Drinking Water Screening Level
  - MPART Health-Based Value or Maximum Contaminant Level (MCL)

- Both the MDHHS screening levels and the MCL were set to protect everyone
  - including those most at risk of harm to their health: fetuses and breastfed babies

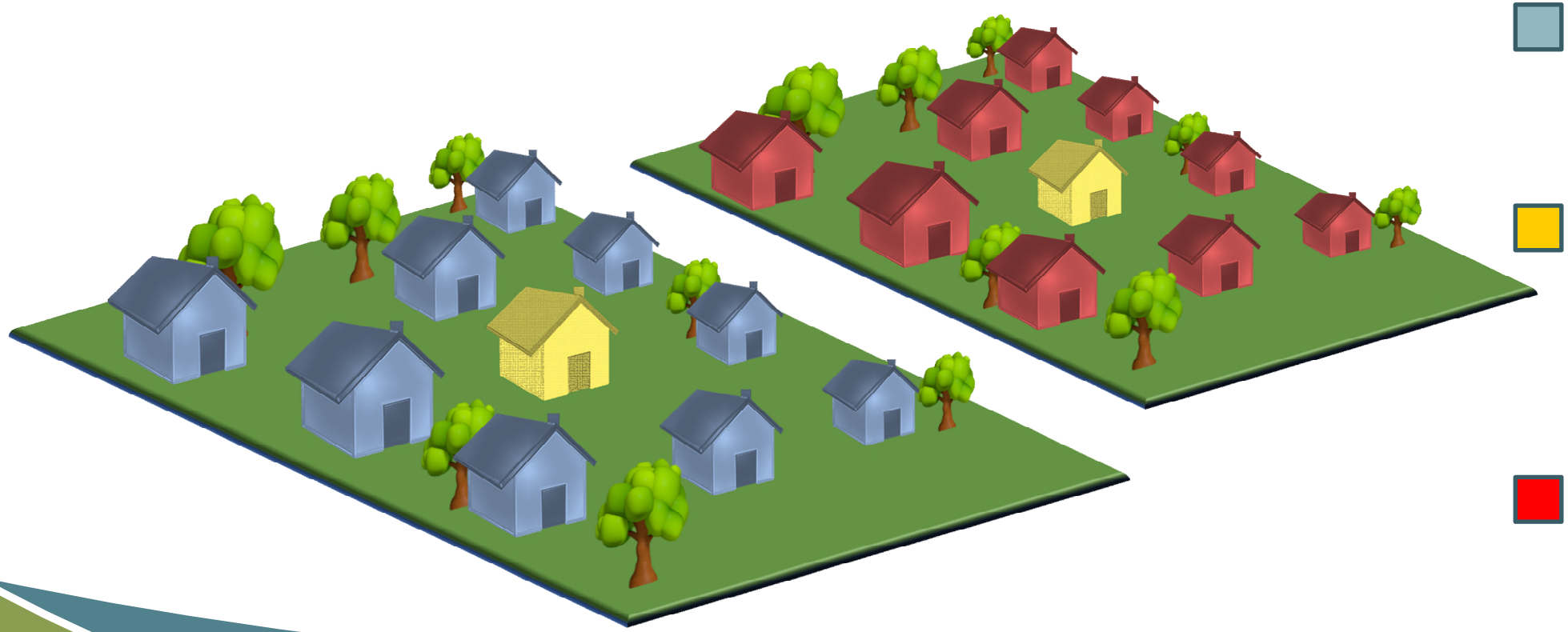
22

MDHHS Comparison Values

PFAS	Comparison Values
PFOS	8 ppt [A]
PFOA	8 ppt [B]
PFNA	6 ppt [B]
PFHxS	51 ppt [B]
PFBS	420 ppt [B]
PFHxA	400,000 ppt [B]
GenX	370 ppt [B]

A. MDHHS Public Health Drinking Water Screening Level
B. MPART Health-Based Value or Maximum Contaminant Level (MCL)

Residential Well Results (individually and collectively)



No Detection

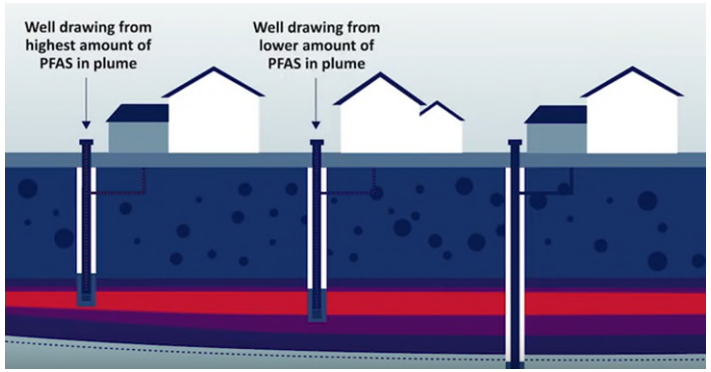
Detected but less than the comparison value

Exceedance

Site–Specific Information

Known Source

Geology



Plume

MPART

MDHHS/GTHD
Public Health Response Actions

- No public health actions necessary
- Recommend filter or use of alternate water
  - Need time to conduct investigation
  - Provides residents with protection from potential fluctuations in PFAS levels, if any, while investigation is ongoing
- Education
  - Provide information on PFAS in drinking water

Grand Traverse Health Department Role in PFAS Response

- Acts as a liaison between affected residents and our State partners (EGLE, MDHHS)
- Establish a system to distribute bottled water if needed
- Establish long term alternate water sources if needed
- Resource to answer PFAS related questions and help interpret sample results
- Evaluate long term solutions with local partners.

The Investigation Area

Ann Emington, Geologist
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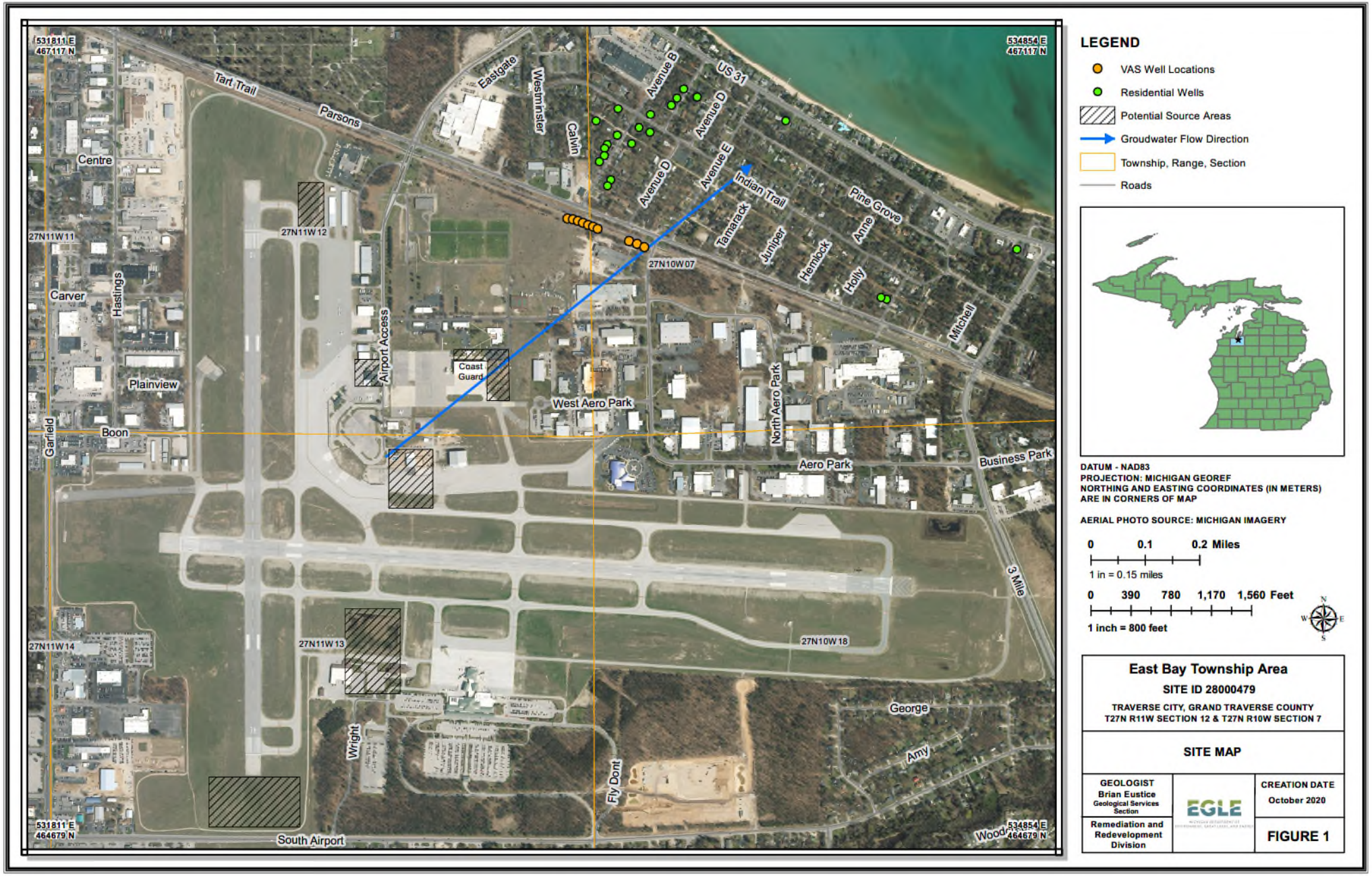
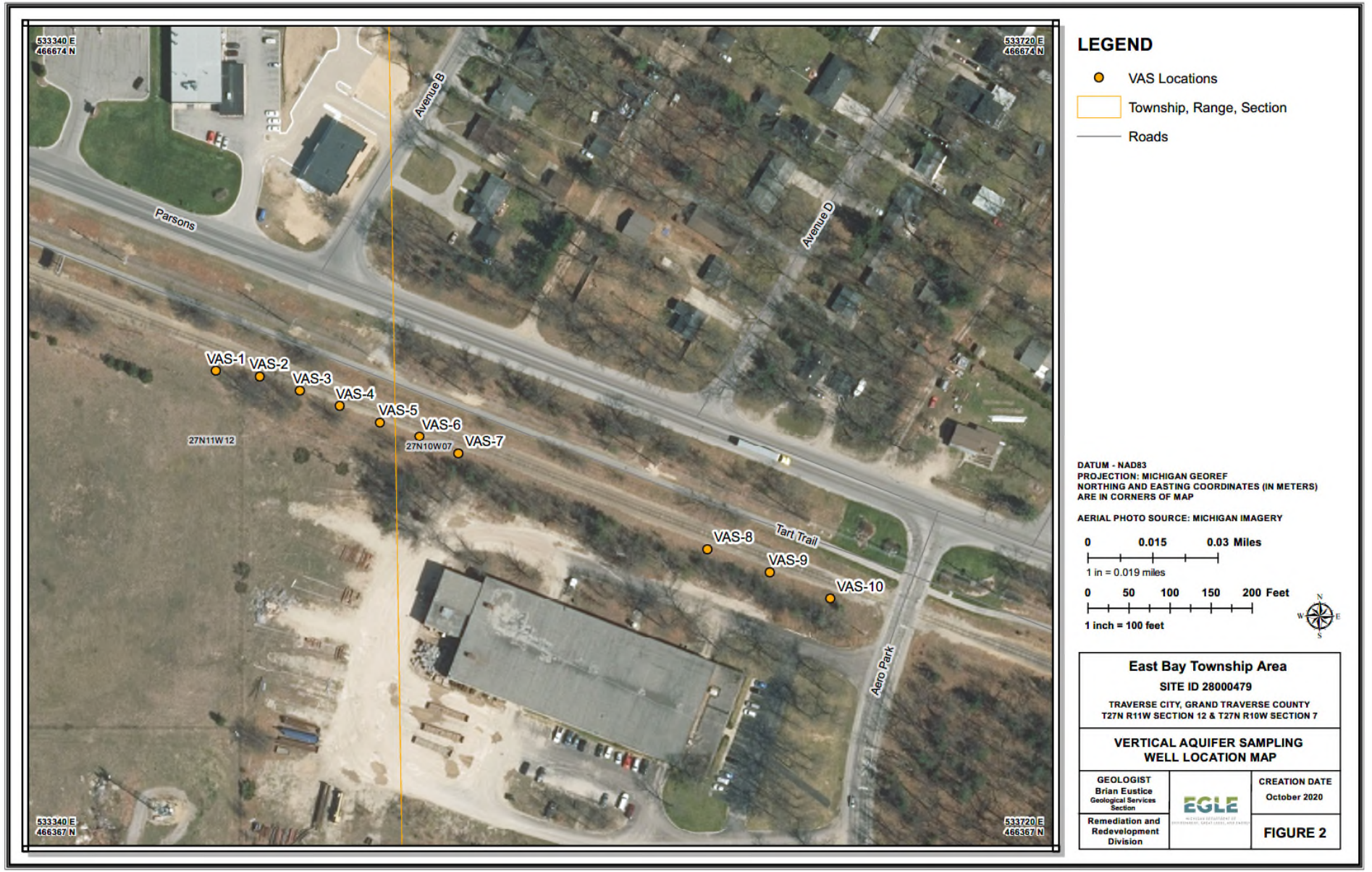

531811 E
467117 N
534854 E
467117 N
Tart Trail
Parsons
Eastgate
Westminster
Calvin
Avenue B
US 31
Avenue D
Avenue E
Indian Trail
Pine Grove
Tamarack
Juniper
Hemlock
Anne
Holly
Mitchell
Centre
27N11W11
27N11W12
27N10W07
Carver
Hastings
Airport Access
Coast Guard
Plainview
West Aero Park
North Aero Park
Aero Park
Business Park
Garfield
Boon
3 Mile
27N11W14
27N11W13
27N10W18
George
Amy
Wright
Fly Dont
531811 E
464679 N
South Airport
534854 E
464679 N
LEGEND
VAS Well Locations
Residential Wells
Potential Source Areas
Groudwater Flow Direction
Township, Range, Section
Roads
DATUM - NAD83
PROJECTION: MICHIGAN GEOREF
NORTHING AND EASTING COORDINATES (IN METERS)
ARE IN CORNERS OF MAP
AERIAL PHOTO SOURCE: MICHIGAN IMAGERY
0 0.1 0.2 Miles
1 in = 0.15 miles
0 390 780 1,170 1,560 Feet
1 inch = 800 feet
East Bay Township Area
SITE ID 28000479
TRAVERSE CITY, GRAND TRAVERSE COUNTY
T27N R11W SECTION 12 & T27N R10W SECTION 7
SITE MAP
GEOLOGIST
Brian Eustice
Geological Services Section
Remediation and Redevelopment Division
EGLE
CREATION DATE
October 2020
FIGURE 1

MPART


533340 E
466674 N
533720 E
466674 N
Parsons
Avenue B
Avenue D
VAS-1
VAS-2
VAS-3
VAS-4
VAS-5
VAS-6
VAS-7
27N11W12
27N10W07
VAS-8
VAS-9
VAS-10
Tart Trail
Aero Park
533340 E
466367 N
533720 E
466367 N
LEGEND
VAS Locations
Township, Range, Section
Roads
DATUM - NAD83
PROJECTION: MICHIGAN GEOREF
NORTHING AND EASTING COORDINATES (IN METERS)
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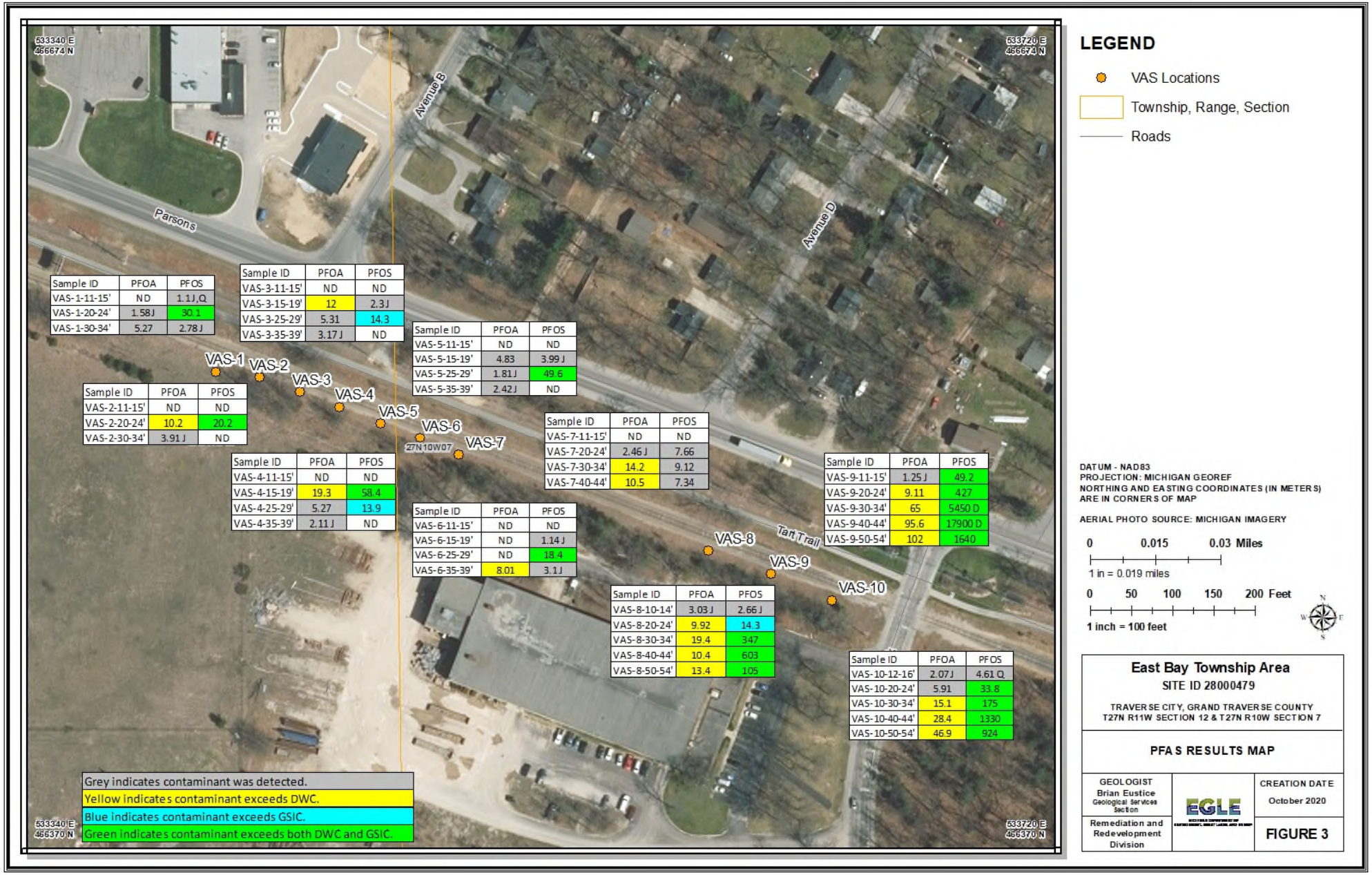
0 0.015 0.03 Miles
1 in = 0.019 miles
0 50 100 150 200 Feet
1 inch = 100 feet
East Bay Township Area
SITE ID 28000479
TRAVERSE CITY, GRAND TRAVERSE COUNTY
T27N R11W SECTION 12 & T27N R10W SECTION 7
VERTICAL AQUIFER SAMPLING
WELL LOCATION MAP
GEOLOGIST
Brian Eustice
Geological Services Section
Remediation and Redevelopment Division
EGLE
CREATION DATE
October 2020
FIGURE 2

MPART


533340 E
466674 N
533720 E
466674 N
Parsons
Avenue B
Avenue D
VAS-1
VAS-2
VAS-3
VAS-4
VAS-5
VAS-6
VAS-7
27N 10W 07
VAS-8
VAS-9
VAS-10
Tart Trail
Sample ID | PFOA | PFOS
VAS-1-11-15' | ND | 1.1 J,Q
VAS-1-20-24' | 1.58 J | 30.1
VAS-1-30-34' | 5.27 | 2.78 J
Sample ID | PFOA | PFOS
VAS-2-11-15' | ND | ND
VAS-2-20-24' | 10.2 | 20.2
VAS-2-30-34' | 3.91 J | ND
Sample ID | PFOA | PFOS
VAS-3-11-15' | ND | ND
VAS-3-15-19' | 12 | 2.3 J
VAS-3-25-29' | 5.31 | 14.3
VAS-3-35-39' | 3.17 J | ND
Sample ID | PFOA | PFOS
VAS-4-11-15' | ND | ND
VAS-4-15-19' | 19.3 | 58.4
VAS-4-25-29' | 5.27 | 13.9
VAS-4-35-39' | 2.11 J | ND
Sample ID | PFOA | PFOS
VAS-5-11-15' | ND | ND
VAS-5-15-19' | 4.83 | 3.99 J
VAS-5-25-29' | 1.81 J | 49.6
VAS-5-35-39' | 2.42 J | ND
Sample ID | PFOA | PFOS
VAS-6-11-15' | ND | ND
VAS-6-15-19' | ND | 1.14 J
VAS-6-25-29' | ND | 18.4
VAS-6-35-39' | 8.01 | 3.1 J
Sample ID | PFOA | PFOS
VAS-7-11-15' | ND | ND
VAS-7-20-24' | 2.46 J | 7.66
VAS-7-30-34' | 14.2 | 9.12
VAS-7-40-44' | 10.5 | 7.34
Sample ID | PFOA | PFOS
VAS-8-10-14' | 3.03 J | 2.66 J
VAS-8-20-24' | 9.92 | 14.3
VAS-8-30-34' | 19.4 | 347
VAS-8-40-44' | 10.4 | 603
VAS-8-50-54' | 13.4 | 105
Sample ID | PFOA | PFOS
VAS-9-11-15' | 1.25 J | 49.2
VAS-9-20-24' | 9.11 | 427
VAS-9-30-34' | 65 | 5450 D
VAS-9-40-44' | 95.6 | 17900 D
VAS-9-50-54' | 102 | 1640
Sample ID | PFOA | PFOS
VAS-10-12-16' | 2.07 J | 4.61 Q
VAS-10-20-24' | 5.91 | 33.8
VAS-10-30-34' | 15.1 | 175
VAS-10-40-44' | 28.4 | 1330
VAS-10-50-54' | 46.9 | 924
Grey indicates contaminant was detected.
Yellow indicates contaminant exceeds DWC.
Blue indicates contaminant exceeds GSIC.
Green indicates contaminant exceeds both DWC and GSIC.
533340 E
466370 N
533720 E
466370 N
LEGEND
VAS Locations
Township, Range, Section
Roads
DATUM - NAD83
PROJECTION: MICHIGAN GEOREF
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T27N R11W SECTION 12 & T27N R10W SECTION 7
PFAS RESULTS MAP
GEOLOGIST
Brian Eustice
Geological Services Section
Remediation and Redevelopment Division
EGLE
CREATION DATE
October 2020
FIGURE 3

MPART

Drinking Water in the Area

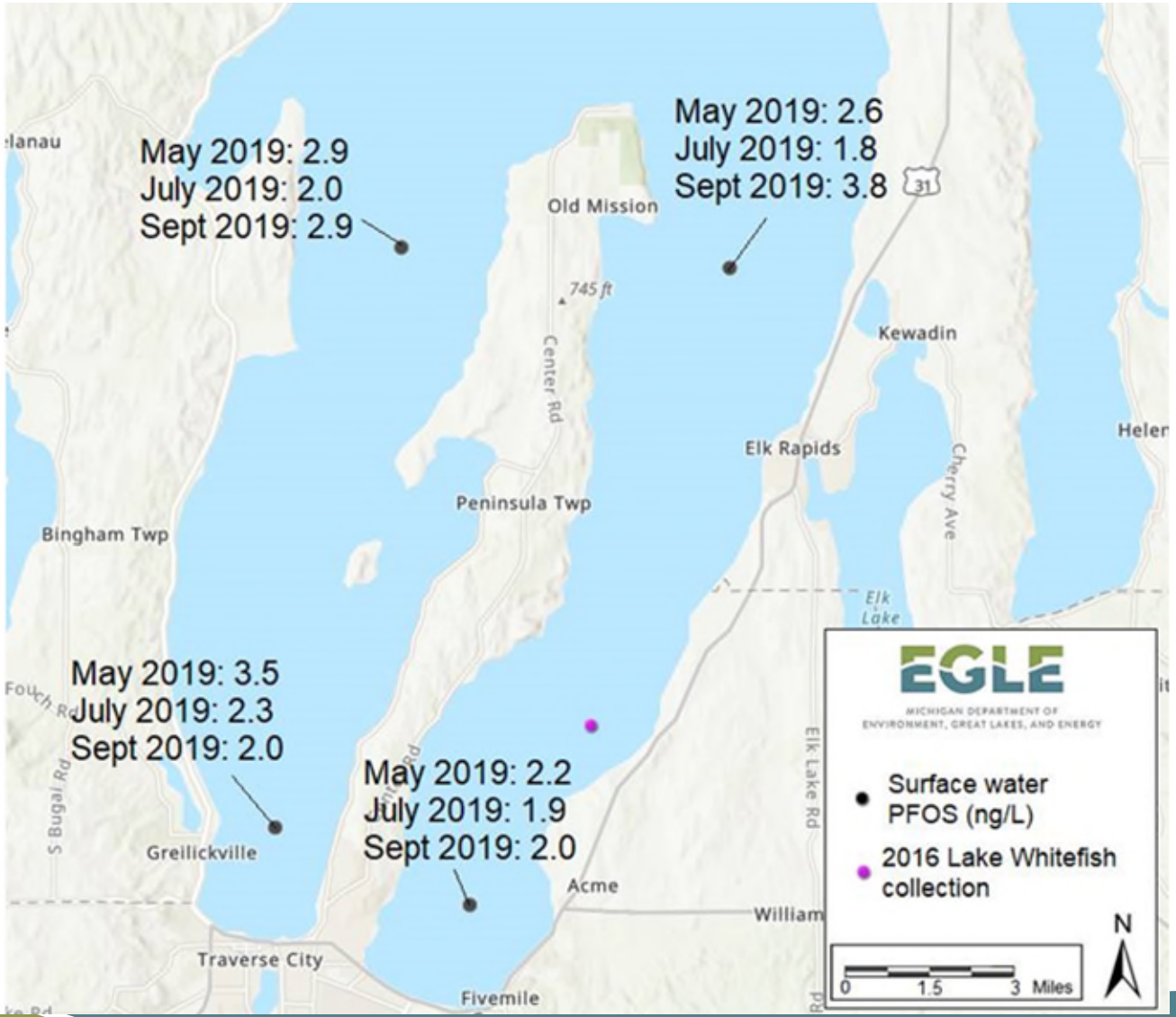
Traverse City

- Uses surface water for its water source
- The intake was sampled 7 times from October 2018 to September 2019
- All samples but one were non-detect
- The one sample, taken July 2019, had 3 ppt PFOA and PFOS combined; total PFAS of 5 ppt

East Bay Township

- Uses groundwater for its water source
- Wells are upgradient and side-gradient of the most likely sources to the groundwater sampled along Parsons Road
- Sampled 10/24/18
- 3 samples were all non-detect

Surface Water



- Samples collected in May, July, and September 2019
- Southern area, results range from 1.9 ppt PFOS to 2.2 ppt PFOS
- Norther area results range from 1.8 ppt PFOS to 3.8 ppt PFOS
- Surface water standard is 11 ppt PFOS

Fish

- In 2016 lake whitefish were collected form the East Arm of the Grand Traverse Bay
- PFOS ranged from 3.0 ppb to 12 ppb
- These concentrations did not warrant a fish consumption advisory due to PFOS, however, there is an advisory for Lake Michigan whitefish due to PCBs and dioxins. Refer to the Michigan Eat Safe Fish website: Michigan.gov/eatsafefish

MICHIGAN PFAS ACTION RESPONSE TEAM (MPART)

www.Michigan.gov/PfasResponse

EGLE
MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

Michigan Department of Agriculture & Rural Development

MDHHS
Michigan Department of Health & Human Services

MDOT
Michigan Department of Transportation

Department of Natural Resources DNR Michigan

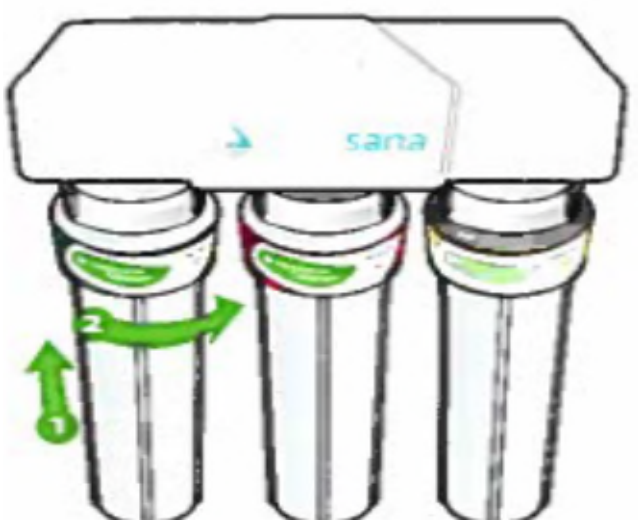
LARA
Licensing and Regulatory Affairs
Customer Driven. Business Minded.

Department of Military and Veterans Affairs Michigan

Questions and Answers

Point-of-Use Filters

- NSF P473 Certification, or…
- NSF/ANSI Standards 42, 53, 401
- Certified to remove up to 96% of PFOA and PFOS



Full system certified to NSF/ANSI Standards 42, 53, 401 and conforms to NSF protocol P473.