

Grayling Area PFAS

August 1, 2019

Drinking Water Sampling Status

Total Samples	Results Pending	Non-Detects	Detections Below Criteria*	Detections Above Criteria*
694	1	458	218	17

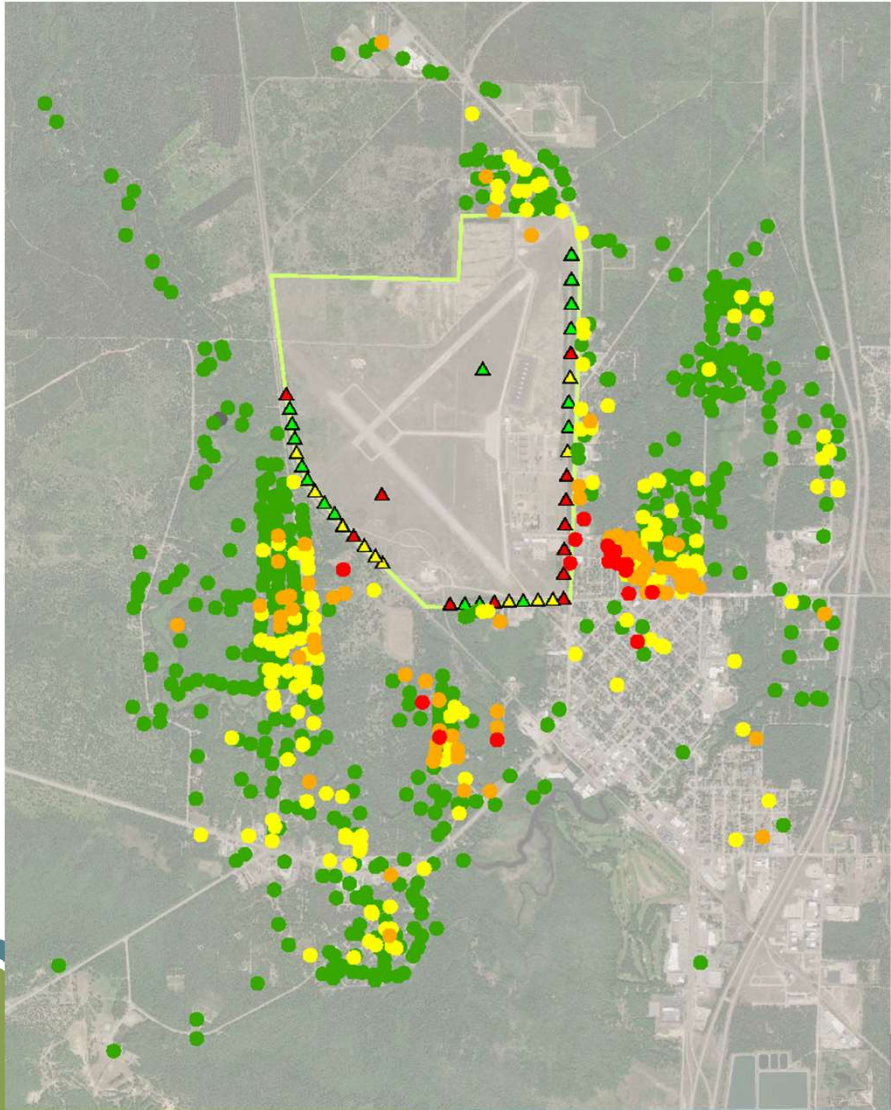
***Criteria:**
PFOA + PFOS > 70 ppt

Drinking Water Sampling Status – Samples Since December, 2018

Total Samples	Results Pending	Non-Detects	Detections Below Criteria*	Detections Above Criteria*
17	1	13	3	0

***Criteria:**
PFOA + PFOS > 70 ppt

Residential Drinking Water Heat Map (PFOA+PFOS)



Legend

**Drinking Water Sample Locations
PFOA+PFOS (694 Samples)**

- Results Pending
- Non-Detect (458)
- >0 to 10 ppt (147)
- >10 to 70 ppt (71)
- >70 ppt (17)

Previous VAS Sampling Locations

- ▲ Non-Detect
- ▲ >0 to 70 ppt
- ▲ >70 ppt

□ **Grayling Airfield Boundary**

Au Sable Surface Water/Pore Water Sampling

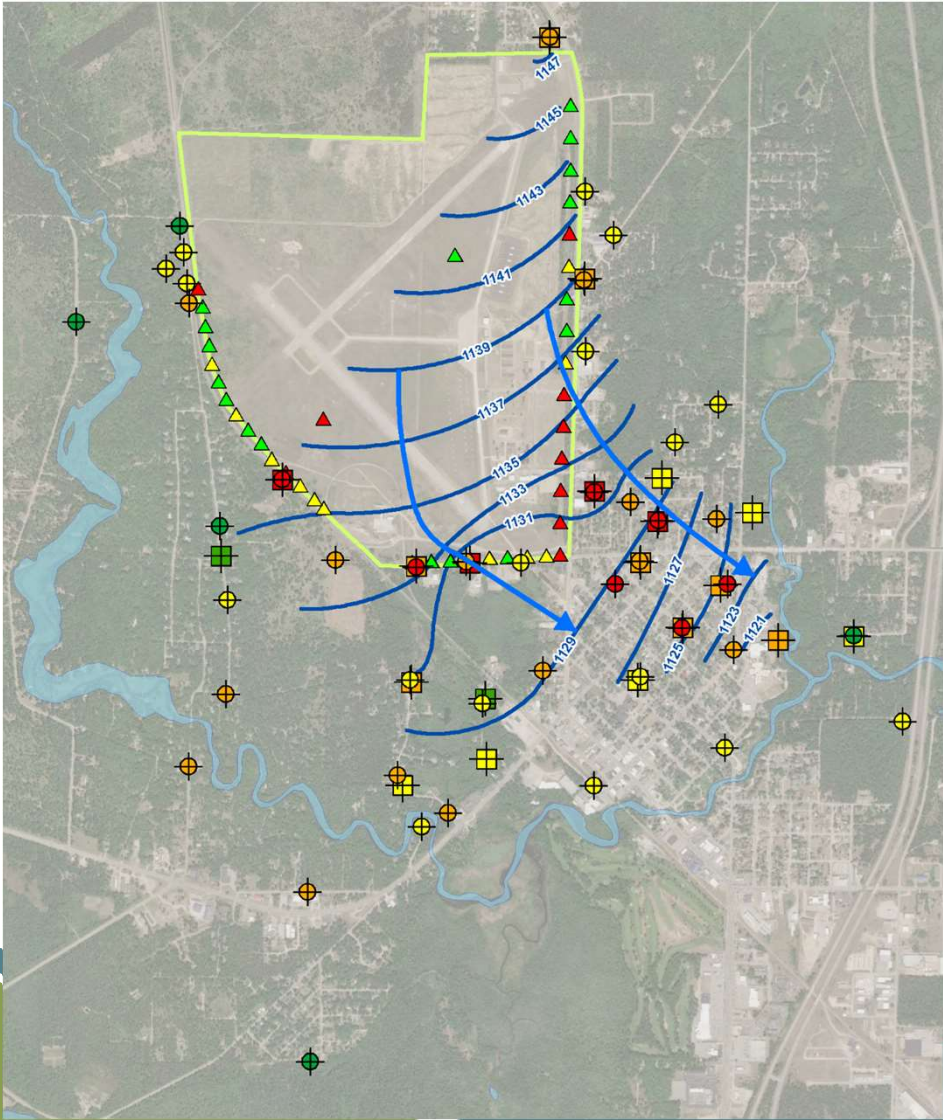
- EGLE collected pore and surface water samples from 23 locations on July 8th and 9th
- Springs found with thermometers
- 12 locations between Ole Dam Rd and M-72
- 11 locations between I-75 Business Loop and confluence of East and Main Branch Au Sable
- Results pending



Remedial Investigation Update

- Completed two quarterly groundwater sampling events of monitoring wells:
 - February 2019
 - May 2019

Remedial Investigation Update



Legend

VAS Sample Locations PFOA+PFOS

- ⊕ Non-Detect
- ⊕ >0 to 10 ppt
- ⊕ >10 to 70 ppt
- ⊕ >70 ppt

**Permanent Monitoring Well Locations
PFOA+PFOS**

- ⊕ Non-Detect
- ⊕ >0 to 10 ppt
- ⊕ >10 to 70 ppt
- ⊕ >70 to 1,000 ppt

— Groundwater Contour (2-ft interval)

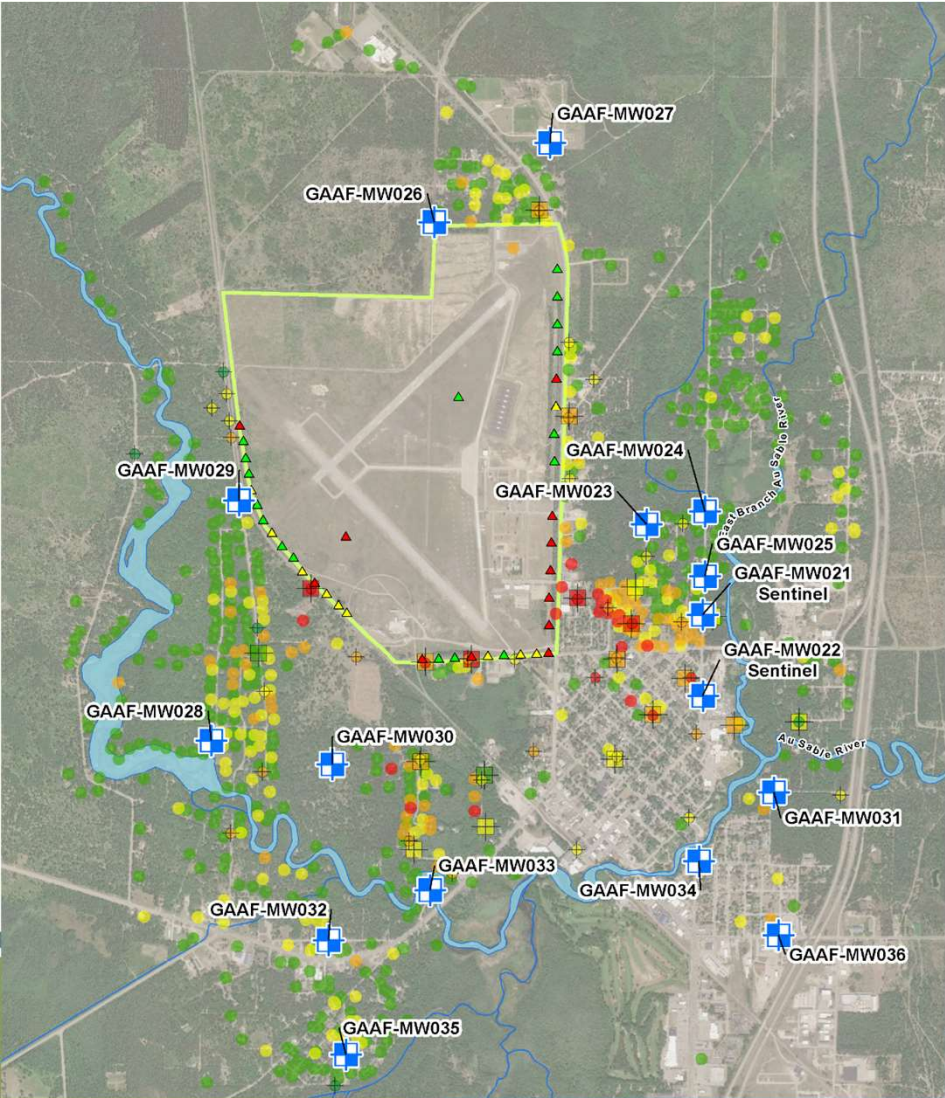
➤ Residential Drinking Water Sampling

- Continuing to schedule residents that request sampling in Sampling Area.

➤ Remedial Investigation

- Continue quarterly groundwater sampling of monitoring wells.
 - Next sampling event, August 2019.
- Coordinate data exchange with Army Guard.
- Remedial Investigation Phase III, Anticipated start, Fall 2019.

Remedial Investigation Update



Proposed Phase III Monitoring Wells

- 14 additional nested monitoring wells to further delineate impacted groundwater.
- Nested monitoring wells up groundwater gradient of City of Grayling Municipal supply wells.

Legend

■ Phase III Monitoring Well Locations

□ Grayling Airfield Boundary

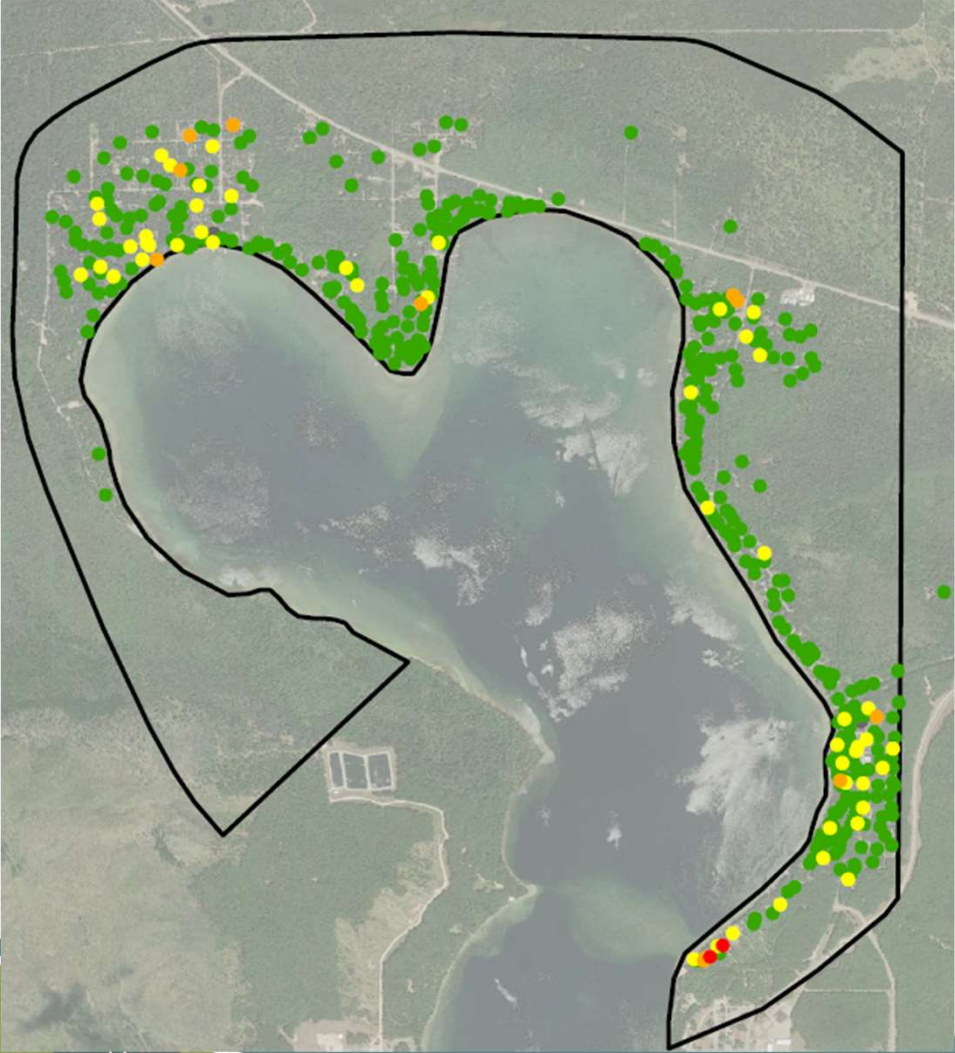
Camp Grayling – Lake Margrethe PFAS Investigation

August 1, 2019

Residential Well Samples

Type of Sample	Criteria	Total Number of Samples	Number of Non-Detects	Number of Detections Below Criteria	Number of Detections Above Criteria
Drinking Water Well	PFOA + PFOS > 70 ppt	463	400	61	2

Residential Drinking Water Heat Map – PFOA + PFOS



Legend

**Drinking Water Sample Locations
PFOA + PFOS (447 Samples)**

- Non-Detect (384)
- >0 to 10 ppt (50)
- >10 to 70 ppt (11)
- >70 ppt (2)

□ Lake Margrethe Sampling Area



- Quarterly Monitoring
 - 5 permanent monitoring wells sampled quarterly
 - Total of 14 samples collected per event
 - 1st Quarterly Event: February 2019
 - 2nd Quarterly Event: May 2019

Legend

Permanent Monitoring Well Locations

PFOA+PFOS

- Non-Detect
- >0 to 10 ppt
- >10 to 70 ppt
- >70 ppt

— Groundwater Contour (2-ft interval)

□ Lake Margrethe Sampling Area

Foam and Surface Water Sampling



➤Foam

- One new foam sample collected in 2019
- PFOS: 719 – 30,400 ppt
- PFOA: 0 – 165 ppt
- Total PFAS: 1,580 – 41,328 ppt

Legend

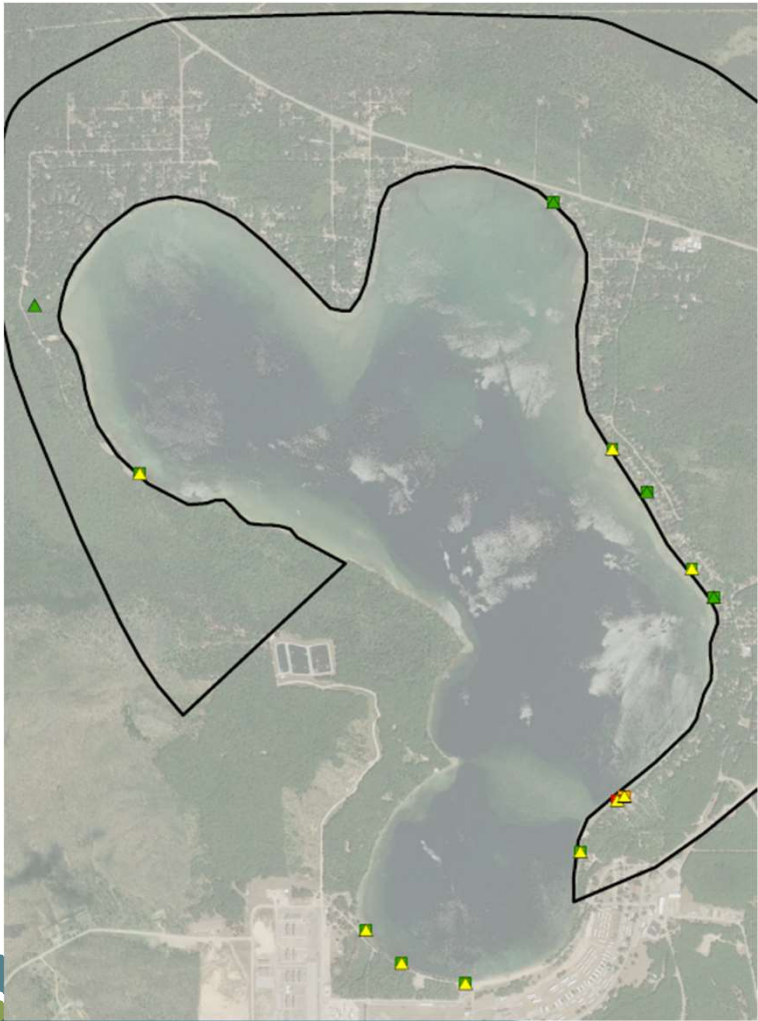
Total PFAS (ppt)

- >0 to 10,000
- >10,000 to 20,000 ppt
- >20,000 to 30,000 ppt
- >30,000 to 40,000 ppt
- >40,000 ppt

Pore Water and Surface Water Samples – June 2019

Type of Sample	Criteria	Total Number of Samples	Number of Non-Detects	Number of Detections Below Criteria	Number of Detections Above Criteria
Pore Water	PFOS > 12 ppt	12	10	0	2
Surface Water	PFOS > 12 ppt	13	6	7	0

Pore Water and Surface Water Sampling



➤ **Pore Water**

- PFOS: 0 – 77.5 ppt
- Total PFAS: 0 – 216.7 ppt

➤ **Surface Water**

- PFOS: 0 – 8.9 ppt
- Total PFAS: 0 – 26.0 ppt

Legend

- **Pore Water Sample Location**
- ▲ **Surface Water Sample Location**
- **Lake Margrethe Sampling Area**

Groundwater Seep Investigation



Next Steps

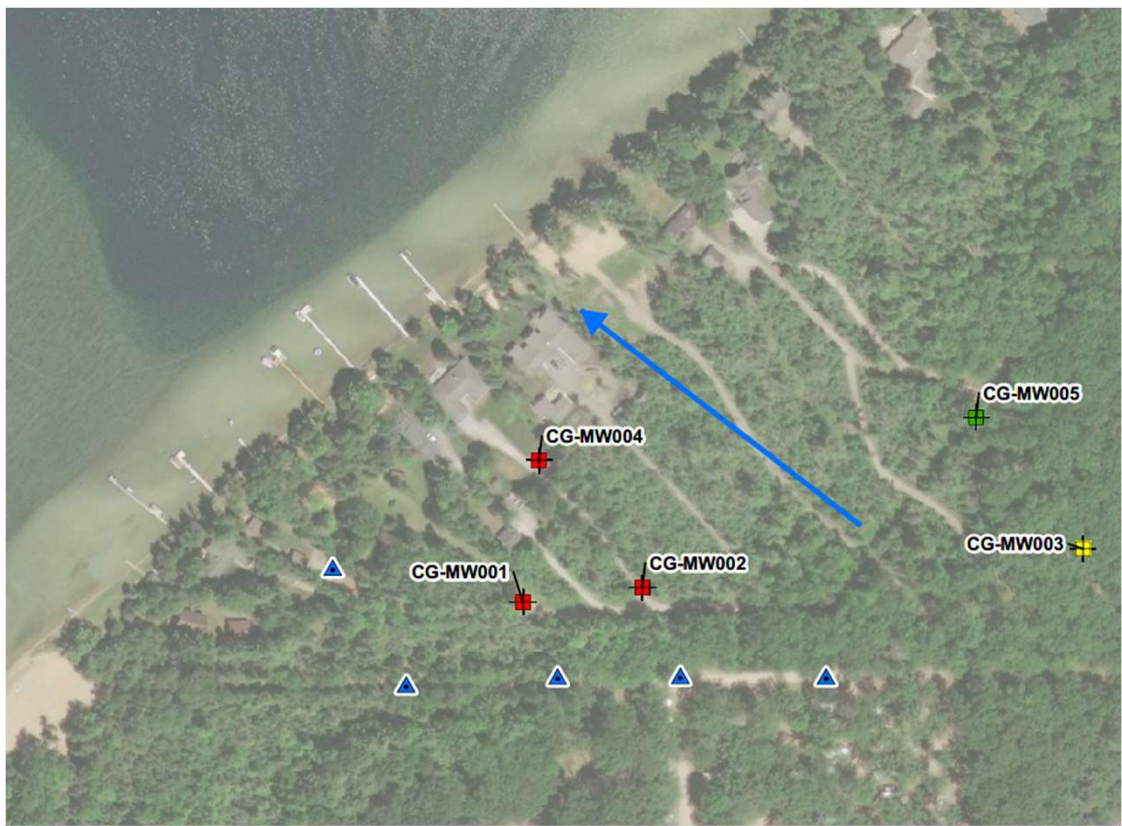
➤ Residential Drinking Water Sampling

- Continuing to schedule residents that request sampling in Sample Area.
- Continue to collect foam samples from Lake Margrethe in new areas.

➤ Remedial Investigation

- Continue Quarterly Groundwater sampling of monitoring wells.
 - Next Sampling event, August - September 2019.
- Coordinate data exchange with Army Guard.
- Remedial Investigation Phase II, Anticipated start, Fall 2019.

Proposed Phase II Remedial Investigation



Proposed Phase II Monitoring Wells

- 5 additional nested monitoring wells to further delineate impacted groundwater.
- 4 wells proposed on Camp Grayling property.

Legend

▲ Phase II Monitoring Well Locations

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