

GRAYLING AIRFIELD MDEQ UPDATE

Randall L. Rothe



Remediation and Redevelopment Division (MDEQ)

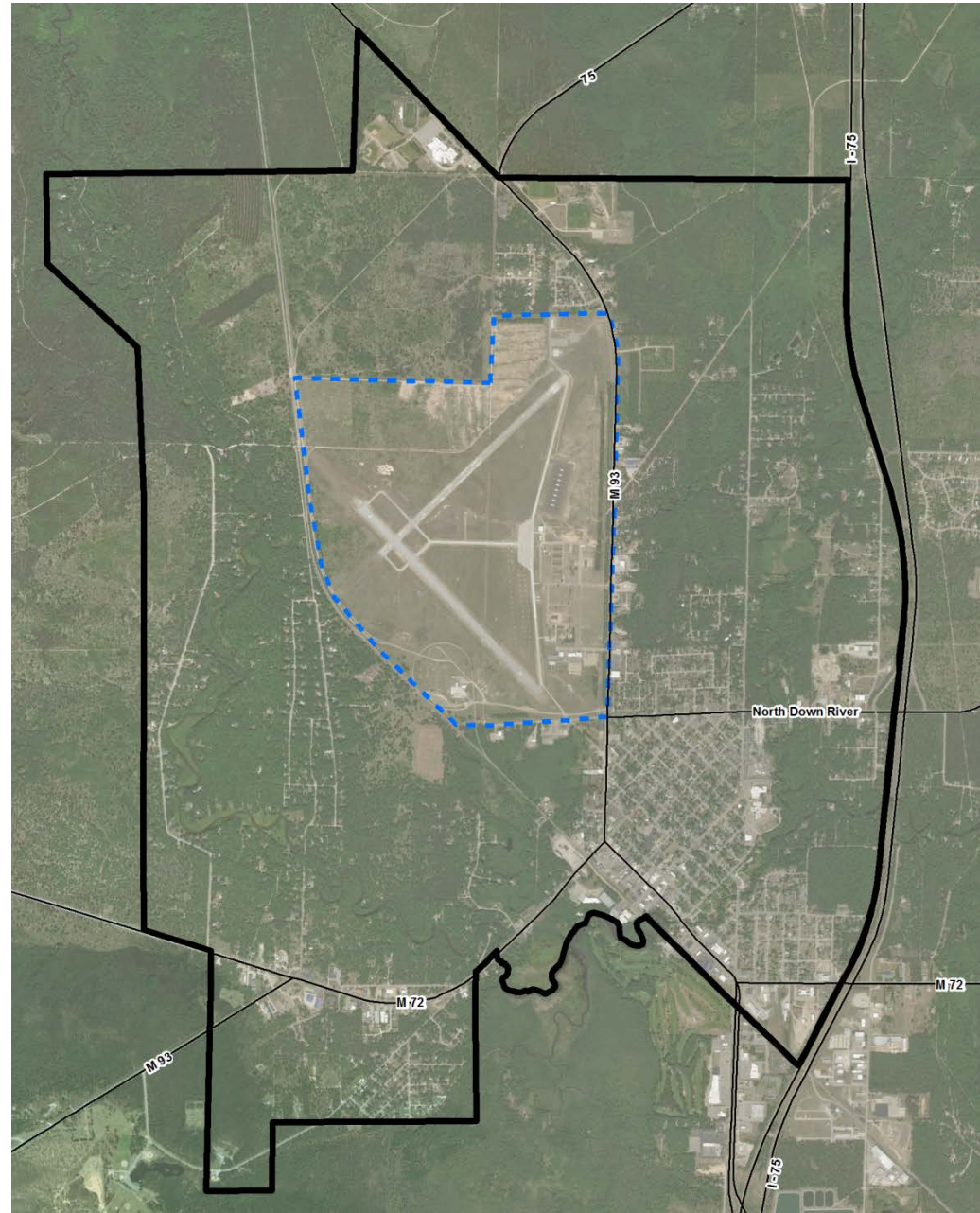
June 5, 2018



Grayling Airfield Residential Sampling Area

Legend

-  Investigation Area
-  Grayling Airfield Boundary



Residential Sampling Summary (PFOA + PFOS)

Sample Type	Samples Collected	Analytical Results Received	Non-Detections	Detections Below Criteria	Detections Above Criteria
Drinking Water	643	632	408	208	16
Remedial Investigation Groundwater Sample	210	210	83	118	9
Cumulative	853	842	491	326	25

Residential PFOA & PFOS Heat Map

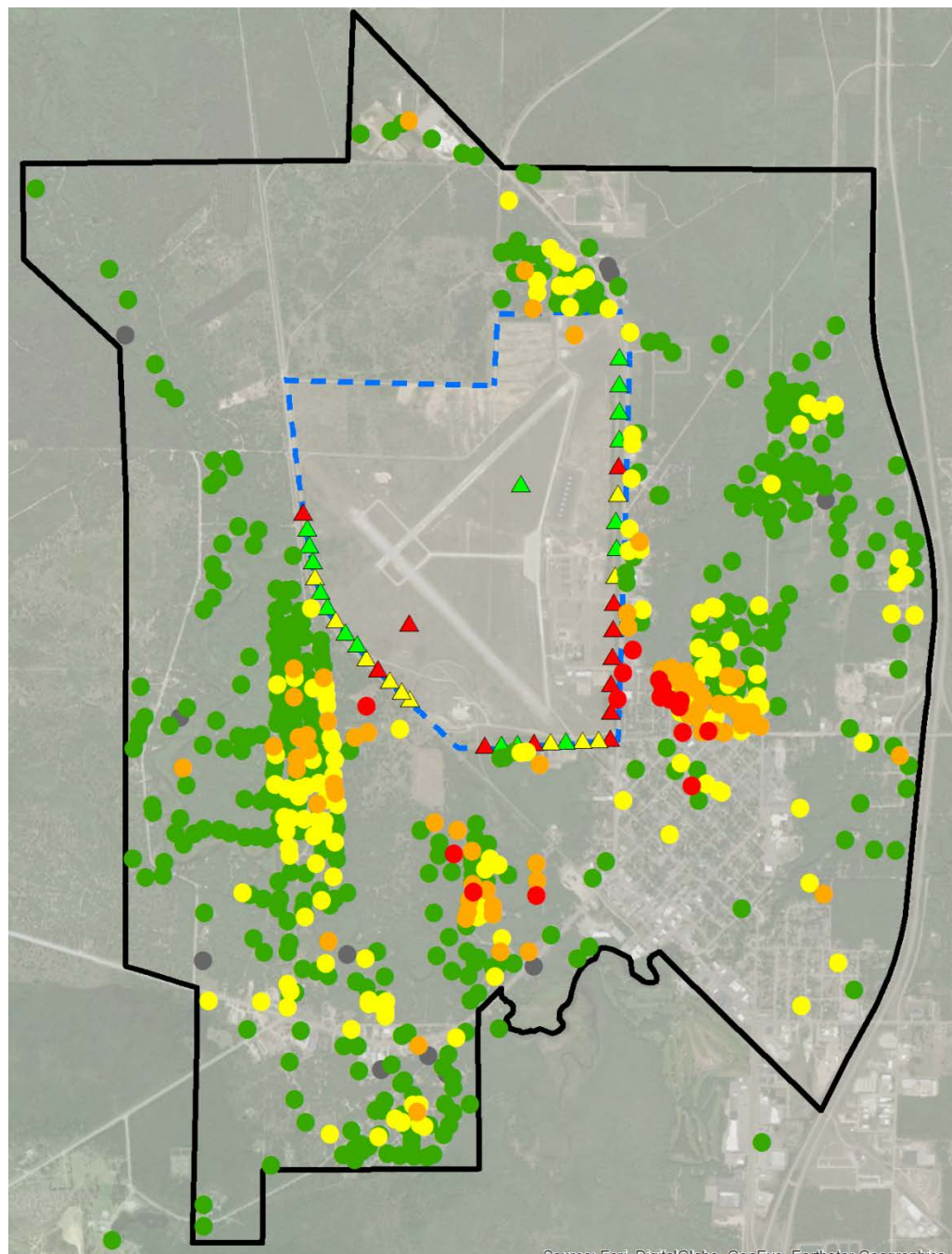
Legend

PFOA + PFOS, ppt (643 total samples)

- Results Pending (11)
- Non-Detect (408)
- >0 to 10 (138)
- >10 to 70 (70)
- > 70 (16)

Previous VAS Sampling Locations

- ▲ VAS Sample Below Method Detection Limit
- ▲ VAS Sample Detected but Under Criteria
- ▲ VAS Analyte Exceeds USEPA Drinking Water Advisory and/or MDEQ Groundwater Surface Water Interface Criteria
- ▬ Grayling Airfield Boundary
- ▭ Expanded Investigation Area



Residential Total PFAS Heat Map

Legend

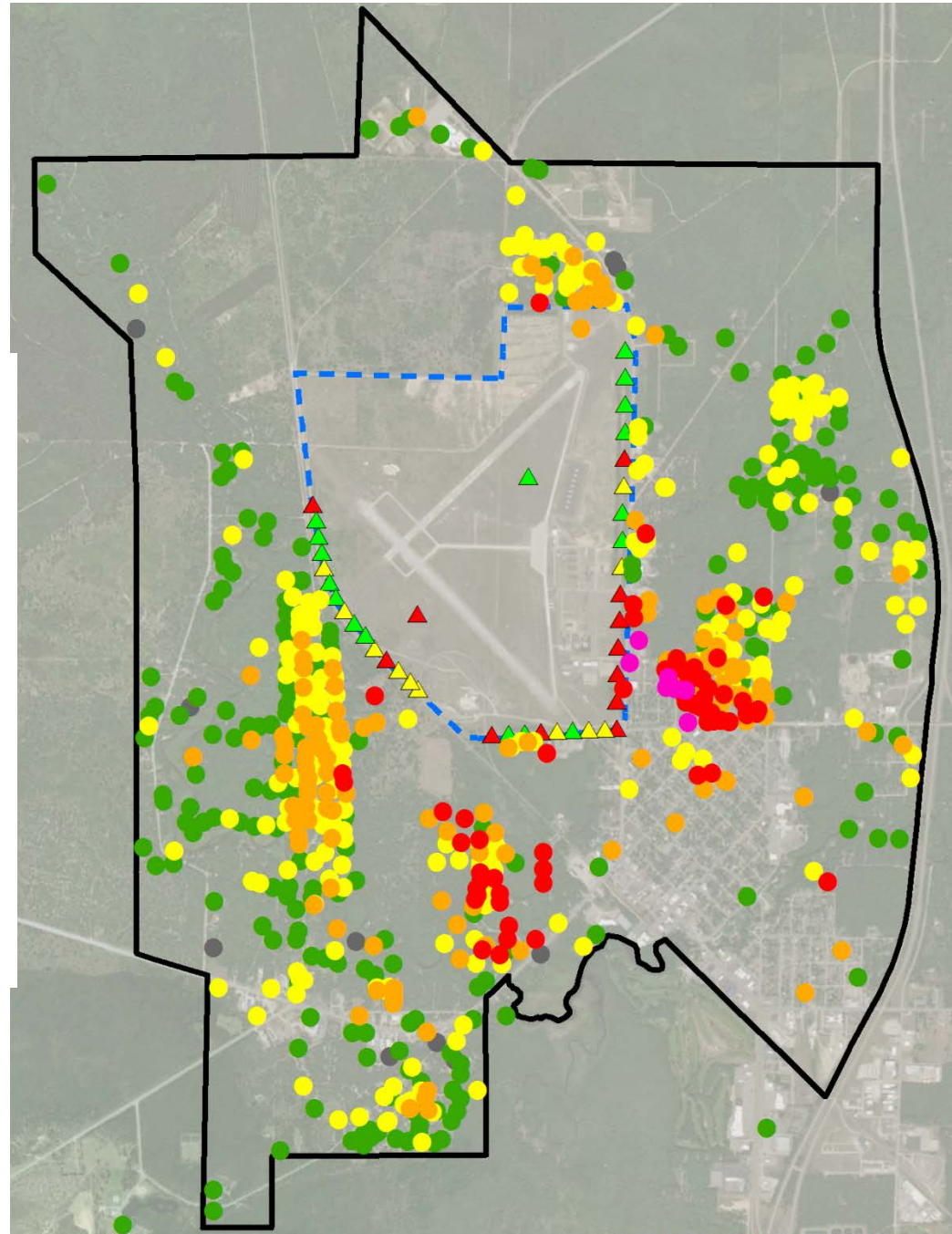
Total PFAS, ppt (643 total samples)

- Results Pending (11)
- Non-Detect (224)
- >0 to 10 (210)
- >10 to 70 (131)
- >70 to 1,000 (60)
- > 1,000 (7)

Previous VAS Sampling Locations

- ▲ VAS Sample Below Method Detection Limit
- ▲ VAS Sample Detected but Under Criteria
- ▲ VAS Analyte Exceeds USEPA Drinking Water Advisory and/or MDEQ Groundwater Surface Water Interface Criteria



- ▬ Grayling Airfield Boundary
- ▭ Expanded Investigation Area

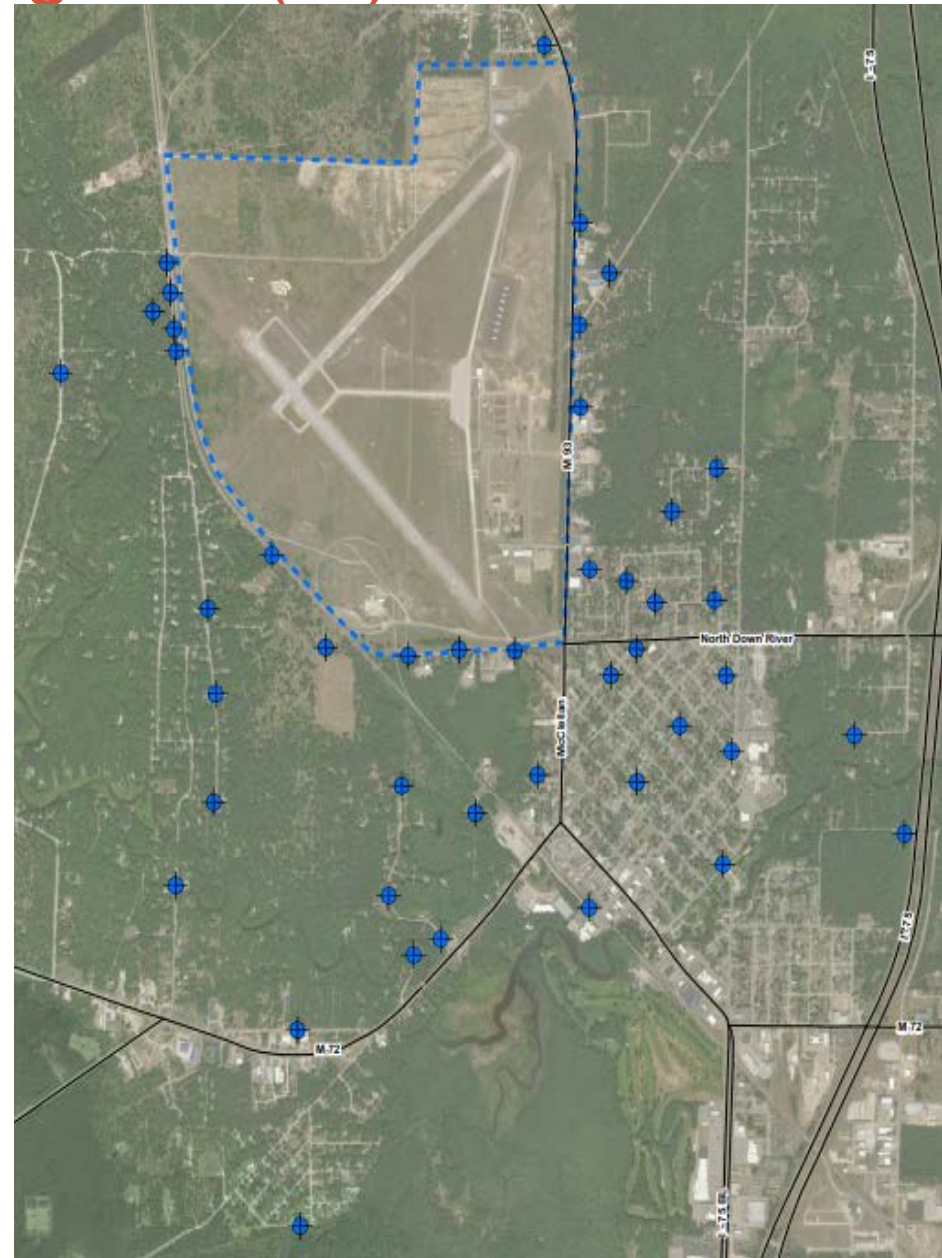


Phase 1 Remedial Investigation (RI) Results

- Total of 44 boring locations completed between Fall of 2017 and Spring of 2018.
- Drilled to depths between 35 and 73 feet.
- Stopped at competent clay layer at bottom of shallow aquifer.
- Locations based on residential well results and MNG on-base investigation results.

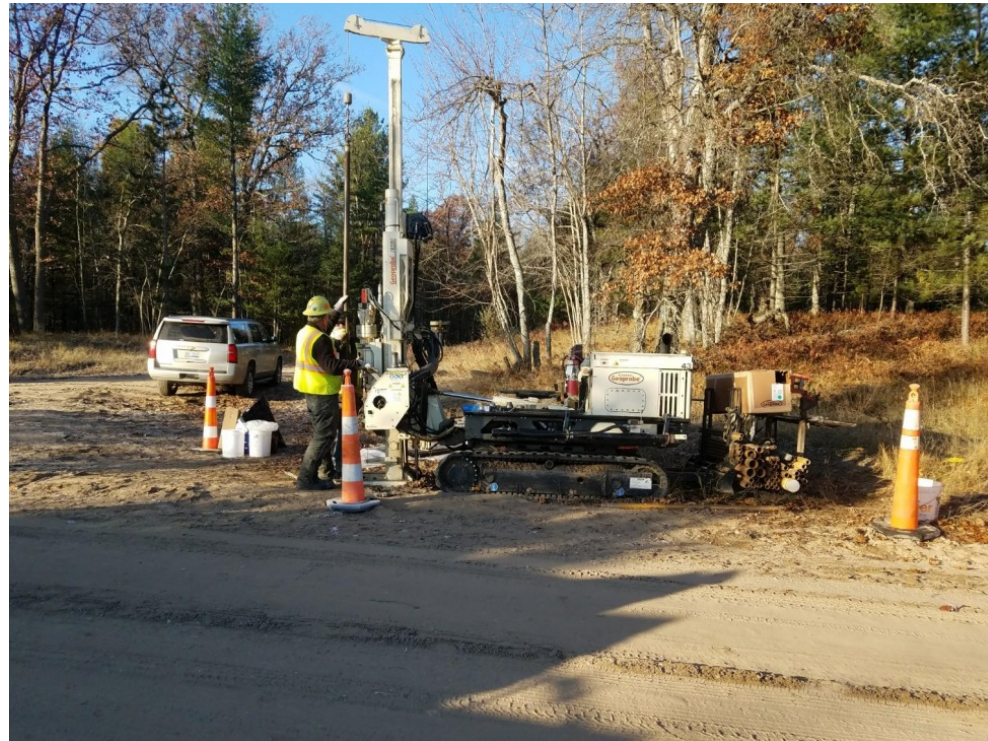
Legend

-  Phase I Boring
-  Grayling Airfield Boundary



Phase 1 Remedial Investigation (RI) Results

- Typical soils encountered were fine to coarse sands, fine to medium gravels, and clay.
- Groundwater samples were collected every 10 ft. below the water table.
- Between 2 and 6 groundwater samples were collected per boring location (210 total samples).
- Shallowest groundwater sample:
 - 3-7 feet below ground surface.
- Deepest groundwater sample:
 - 65-69 feet below ground surface.



Phase 1 RI PFOA & PFOS Heat Map

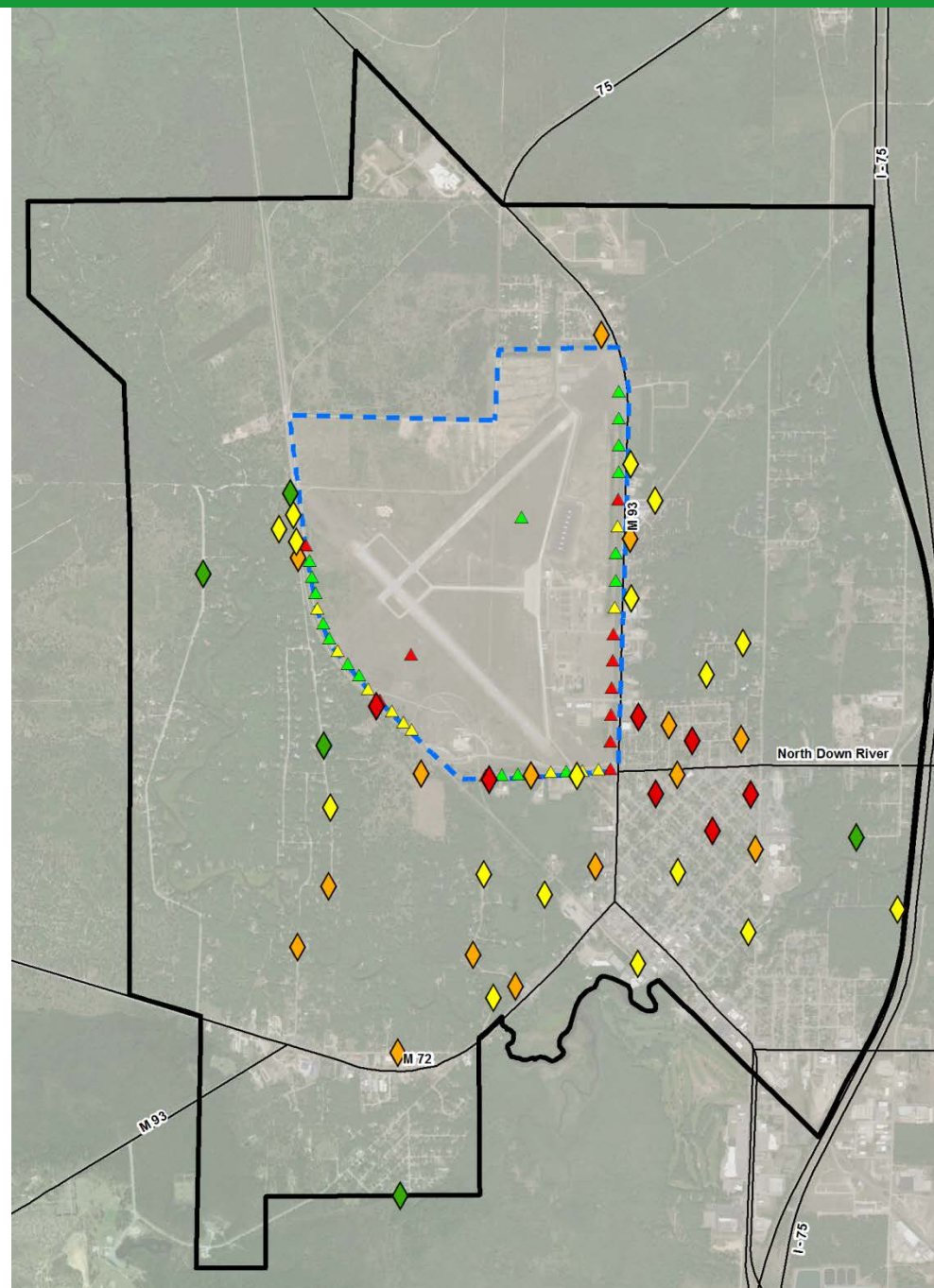
Legend

2017-2018 RI Borings - PFOA + PFOS, ppt

- ◆ Non - Detect
- ◆ >0 - 10
- ◆ >10 - 70
- ◆ >70

Previous VAS Sampling Locations

- ▲ VAS Sample Below Method Detection Limit
- ▲ VAS Sample Detected but Under Criteria
- ▲ VAS Analyte Exceeds Criteria



Phase 1 RI Total PFAS Heat Map

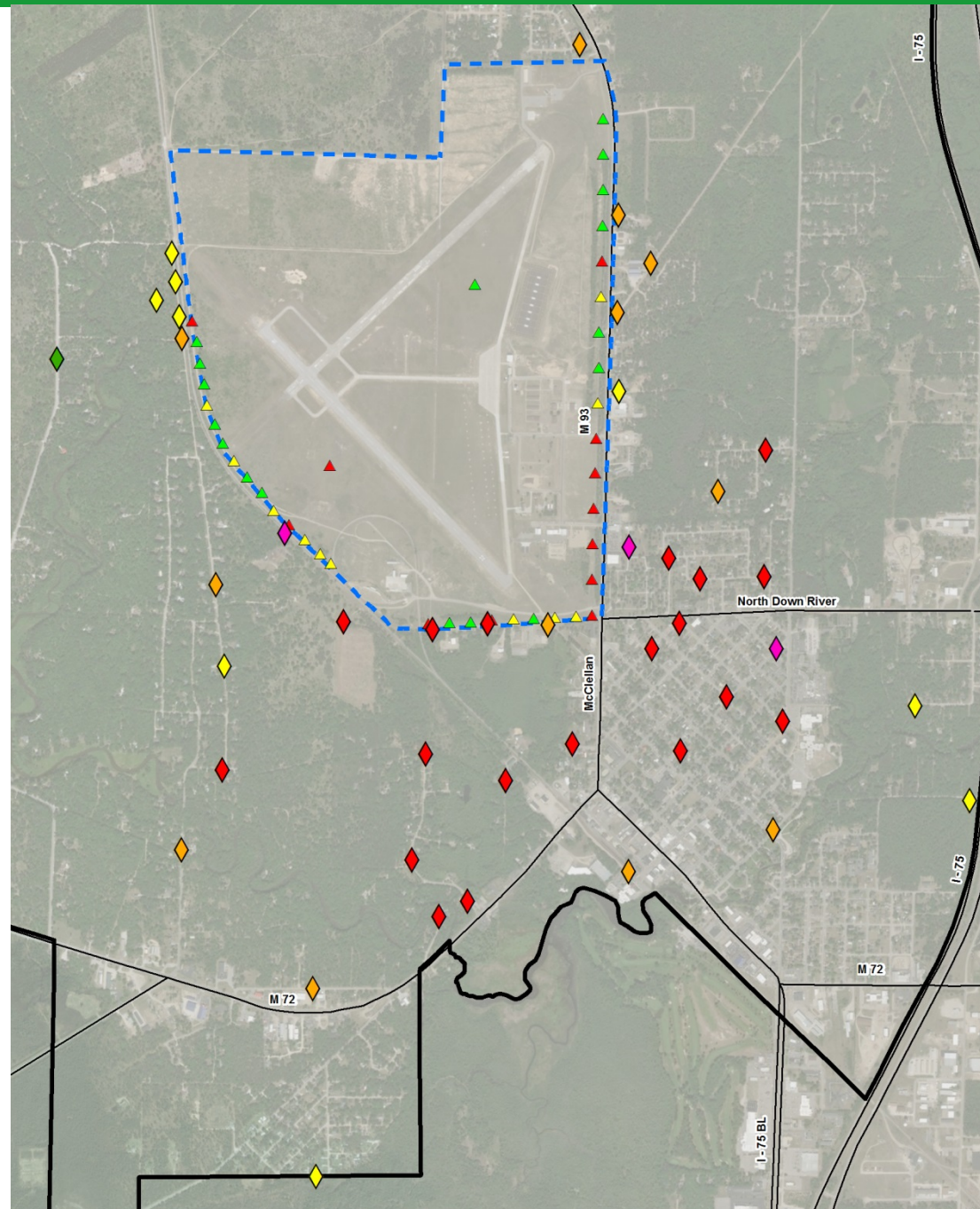
Legend

2017-2018 RI Borings - Total PFAS, ppt

- ◆ Non-Detect
- ◆ <10
- ◆ 10 - <70
- ◆ 70 - <1,000
- ◆ >1,000

Previous VAS Sampling Locations

- ▲ VAS Sample Below Method Detection Limit
- ▲ VAS Sample Detected but Under Criteria
- ▲ VAS Analyte Exceeds Criteria

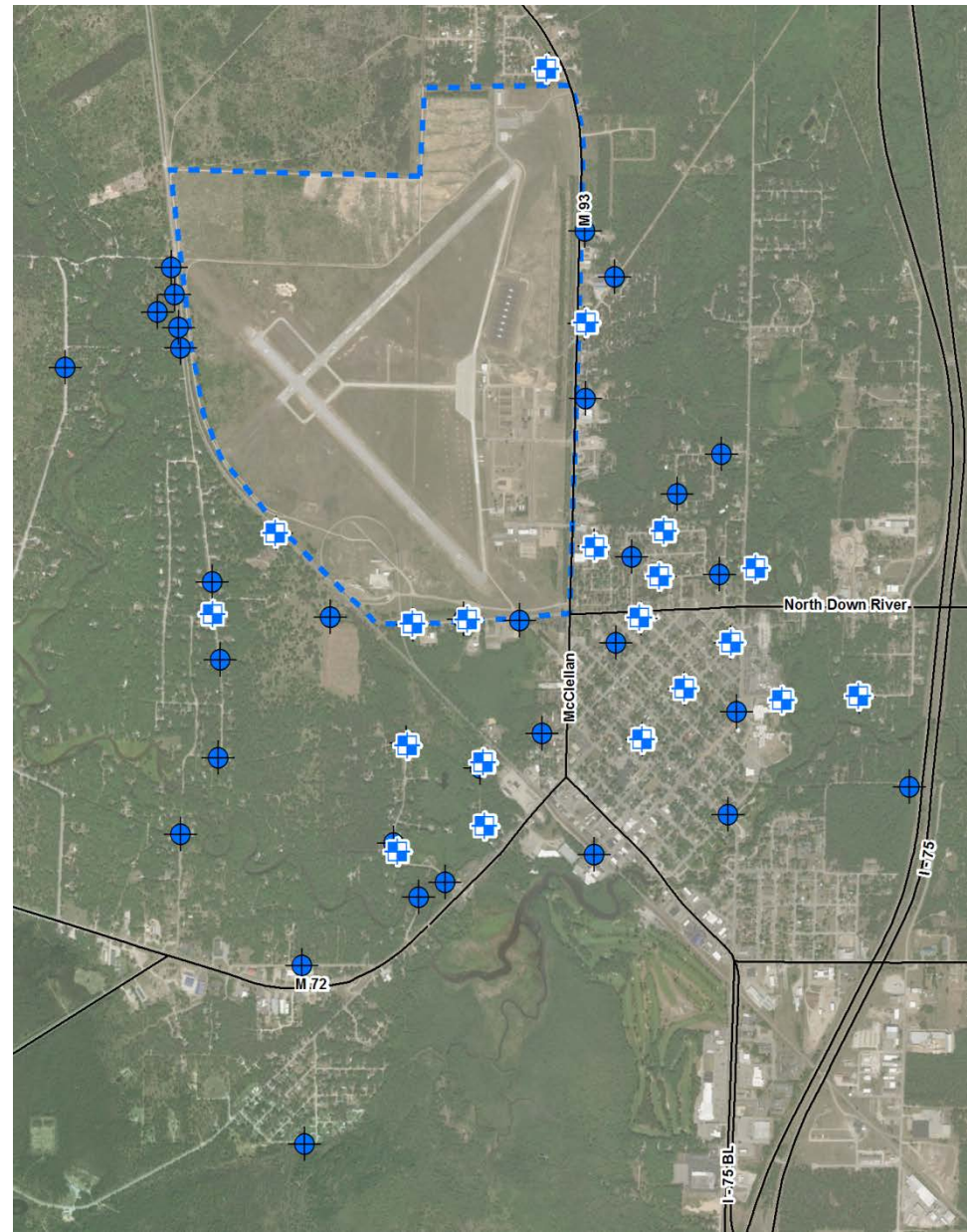


Proposed Phase 2 Remedial Investigation

- Install a network of 20 groundwater monitoring locations.
 - 3 monitoring wells per location.
 - Monitor PFAS concentrations in groundwater over time.
 - Determine direction of groundwater flow.
- Locations based on residential drinking water and Phase I RI groundwater sample exceedances of the USEPA Health Advisory and MDEQ Criteria.
- Phase 2 anticipated to start the last week of June 2018, and finish late summer/early fall 2018.

Legend

-  Phase II Proposed Monitoring Well
-  Grayling Airfield Boundary
-  Phase I Boring



Randall L. Rothe

MDEQ - RRD

989-705-3416

rother@michigan.gov