

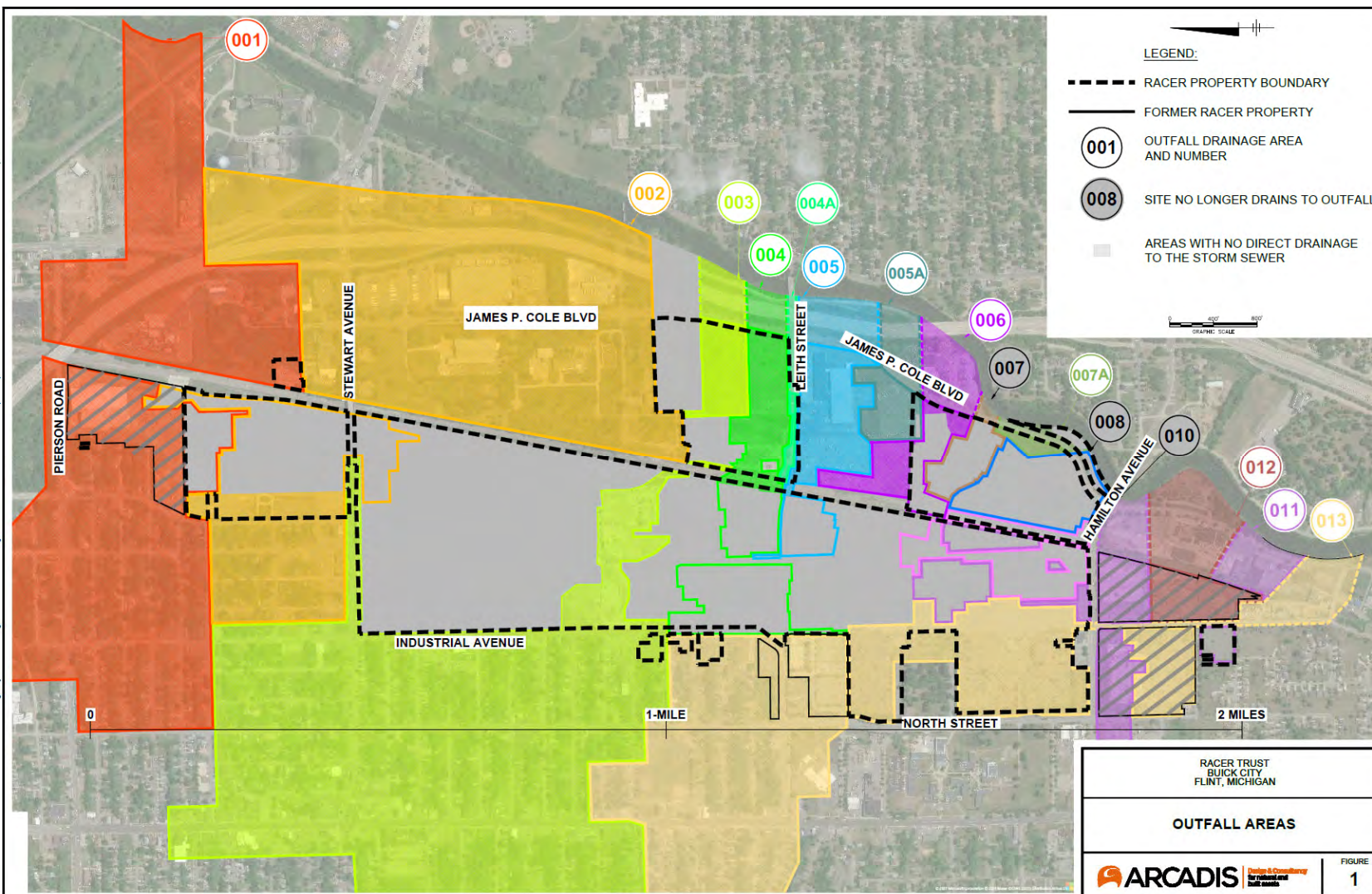
BUICK CITY SITE PUBLIC MEETING

RACER Trust

June 21, 2023

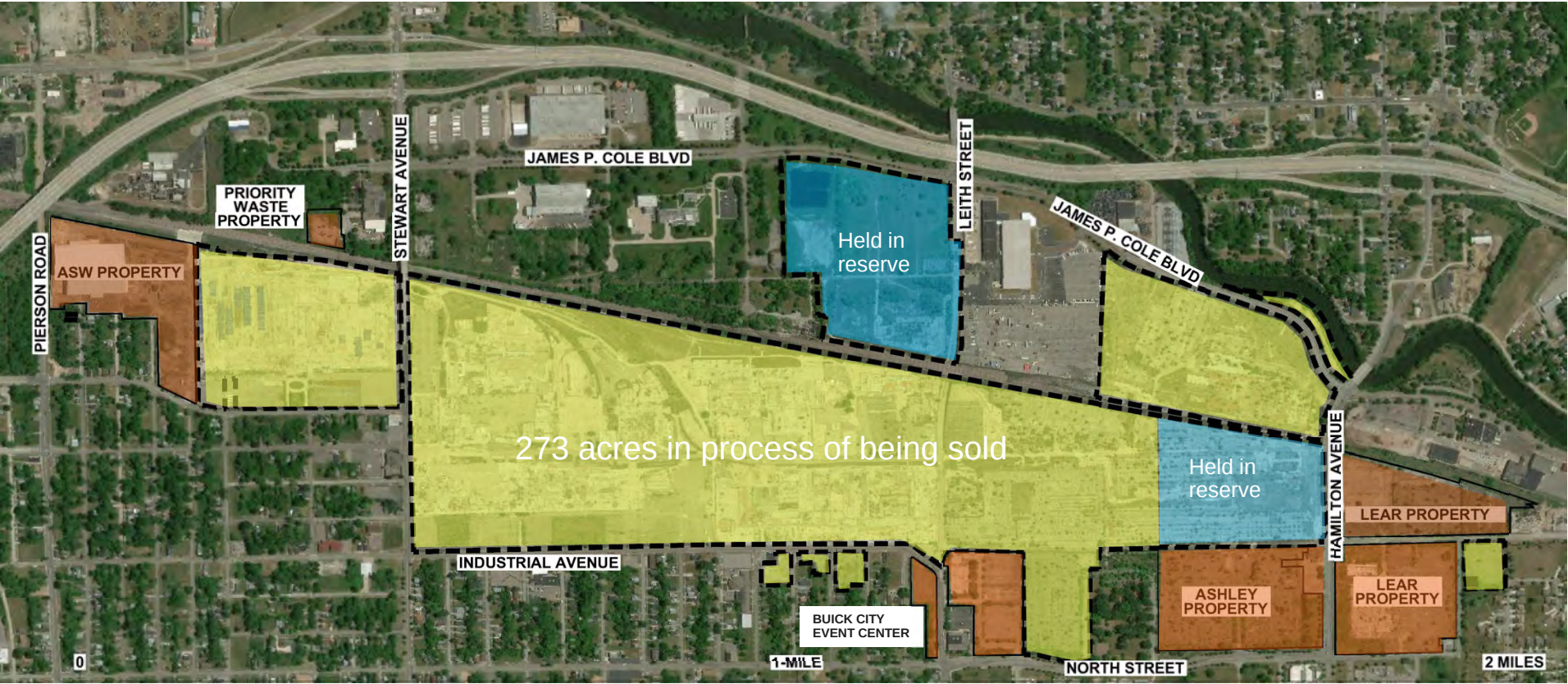
6 pm to 7:30 pm

The Dome Auditorium – Flint City Hall



Site Redevelopment

 RACER property in process of being sold



 Former RACER property

 Portions reserved from sale pending remediation

Oil-Water Interceptor #2 Decommissioning

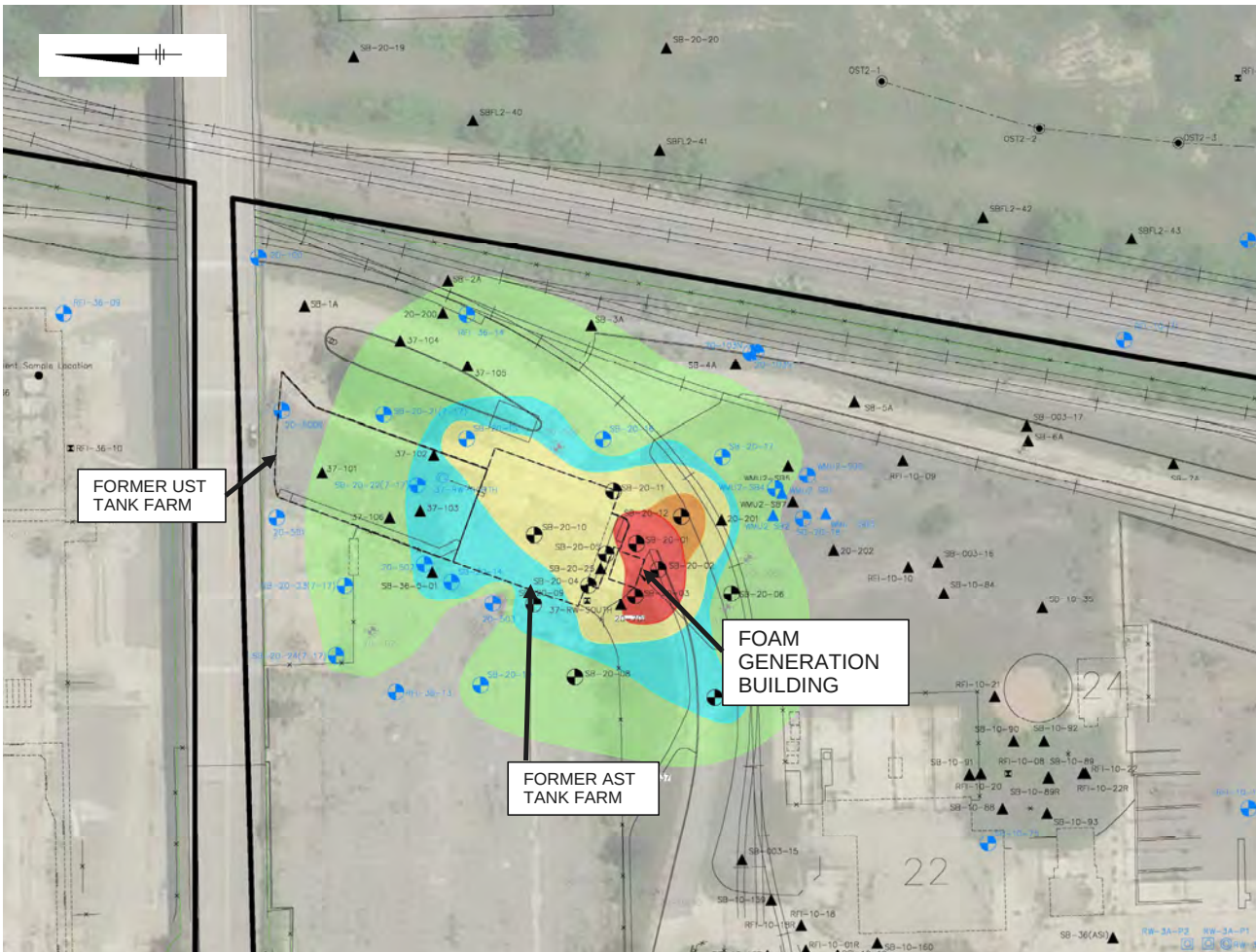
Oil Interceptor #2 was abandoned and closed as part of the Outfall 003 re-route work



PFAS Investigation Update



Former Foam Generation Building

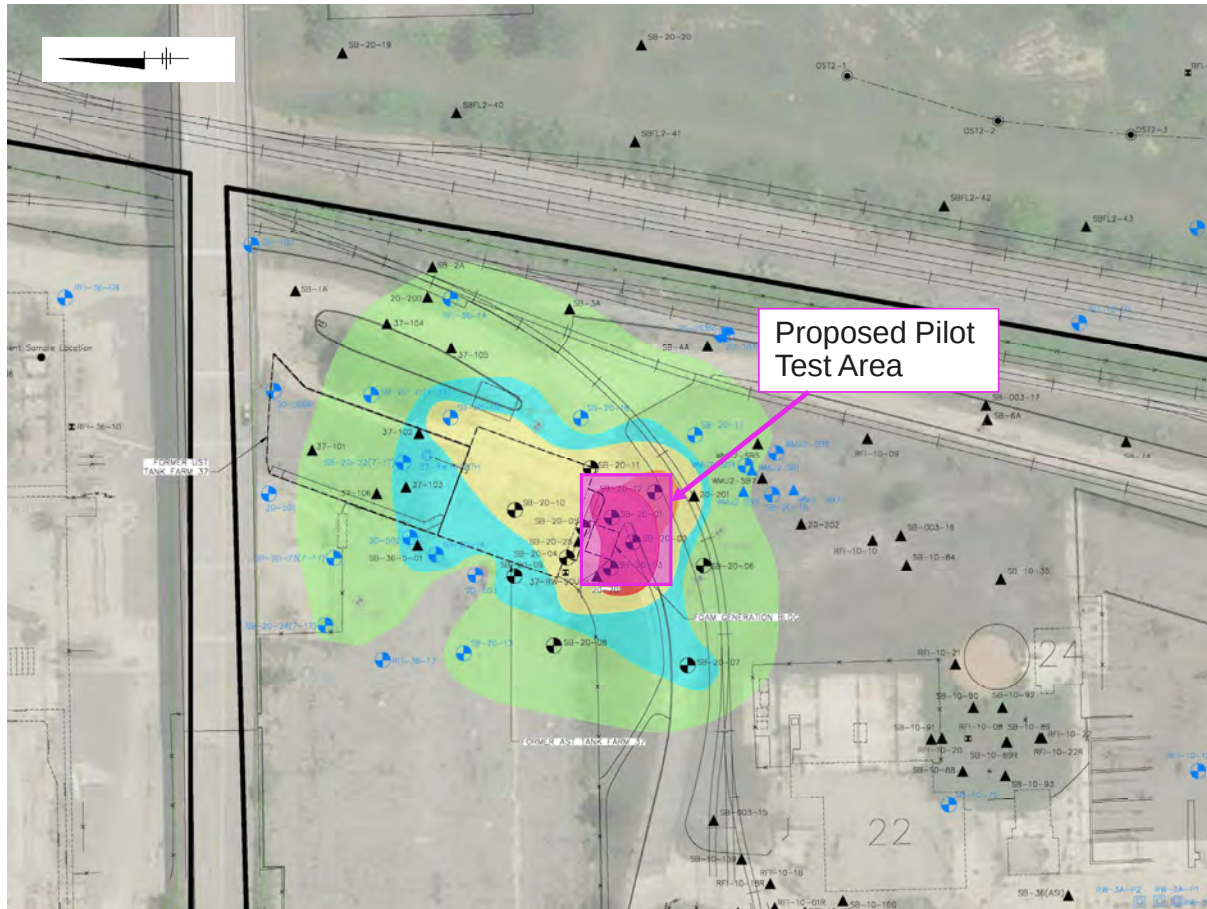


GROUNDWATER PFOS CONCENTRATIONS



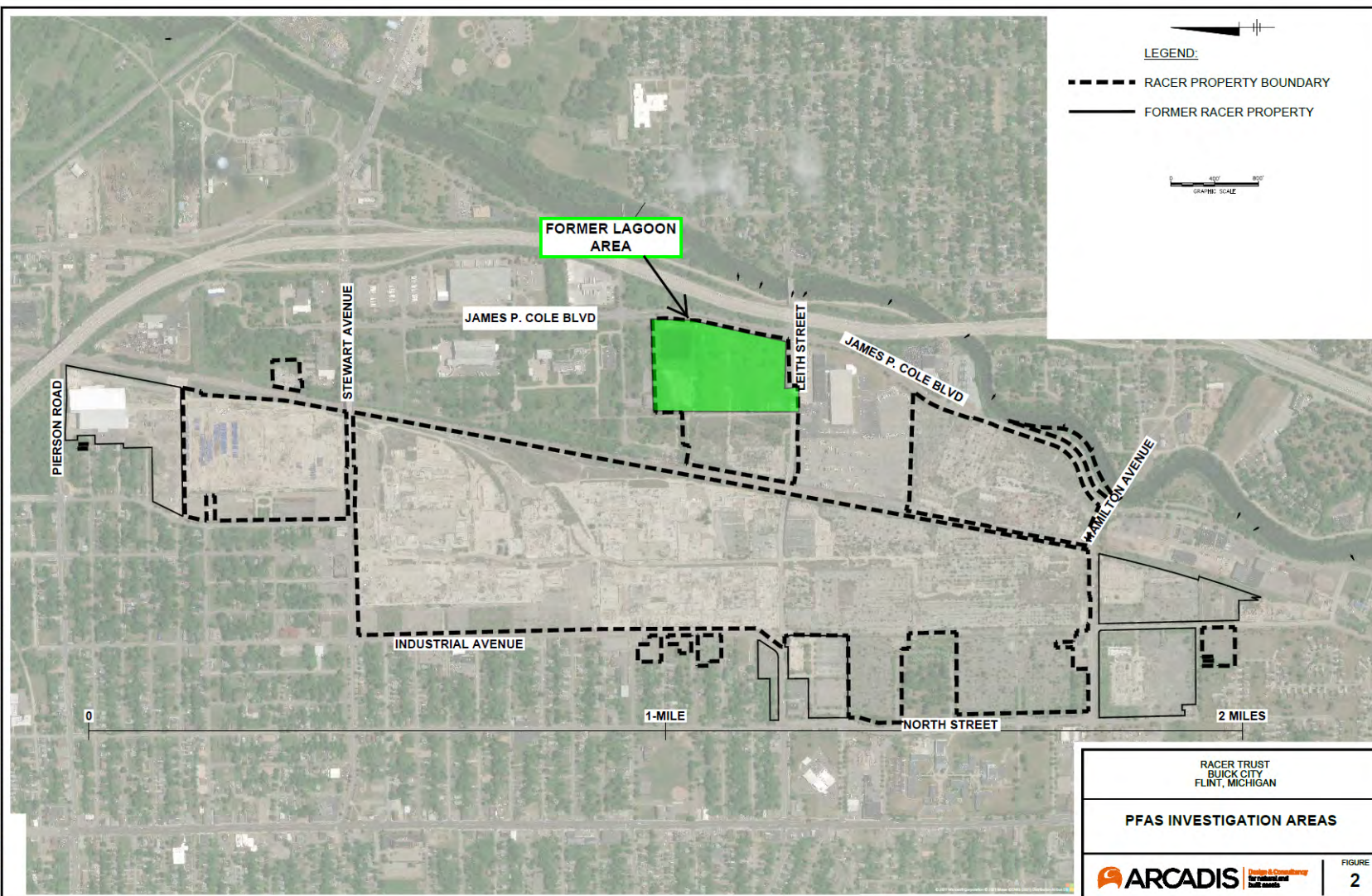
Most recent concentration of PFOS in groundwater shown at each location

Proposed Pilot Test



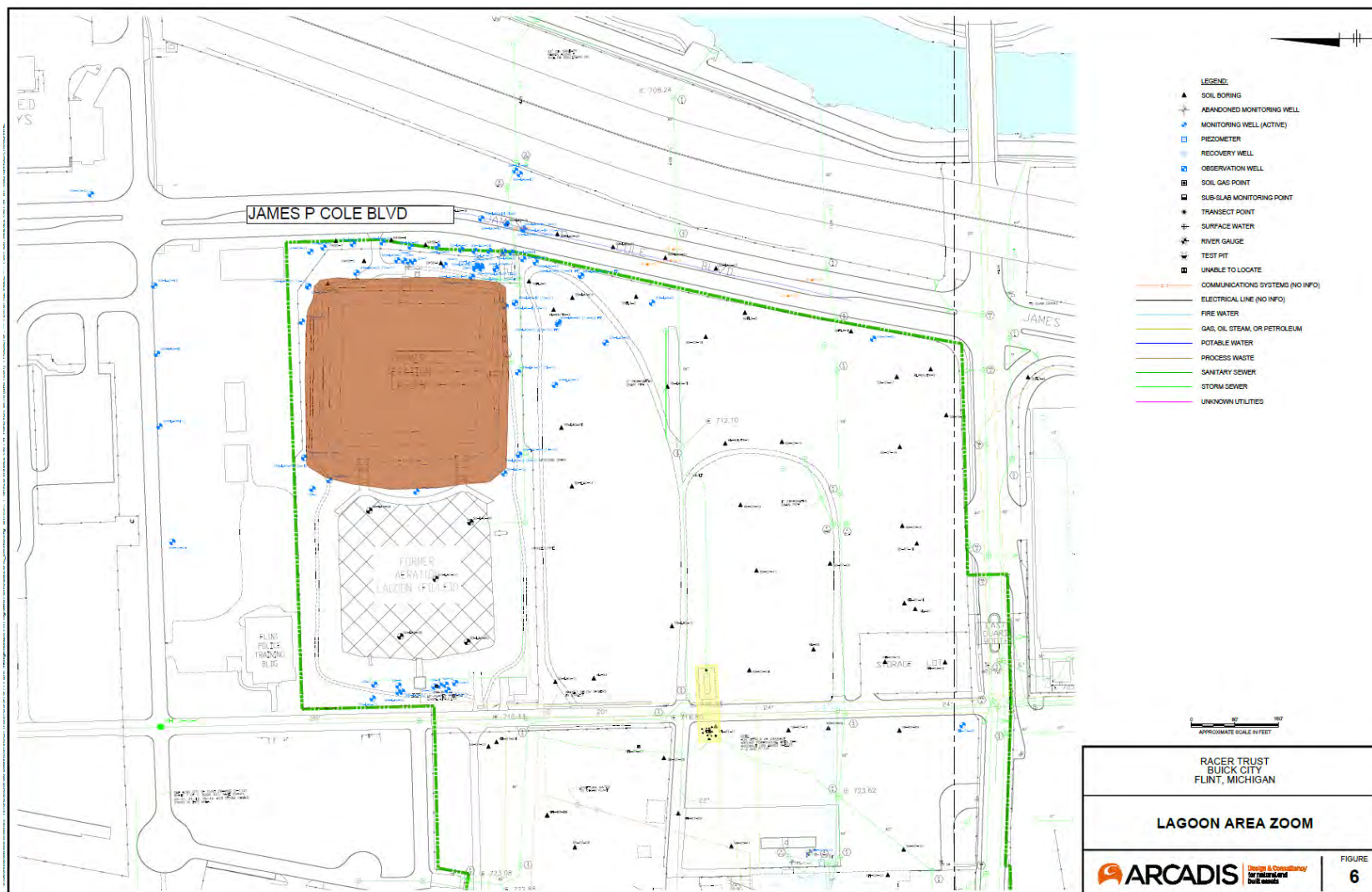
Outside vendor is currently seeking permission from EGLE to complete on-site pilot test for groundwater remediation

Bench scale testing on samples from this area showed a decrease in PFOS using the proposed technology



22 June 2023

8





June 9

June 15



22 June 2023

11

July 6



July 6



22 June 2023

13



July 6

July 6



Treatment Process

Treated Soils Included:

- Sediment from the lagoon bottom
- Side slope soils with phragmites
- Stockpiled clay soils
- Soils around the perimeter of the lagoon
- Selected areas of soils south of the lagoon

Capped with soils from I69 rebuild and new pump station off Hemphill Road

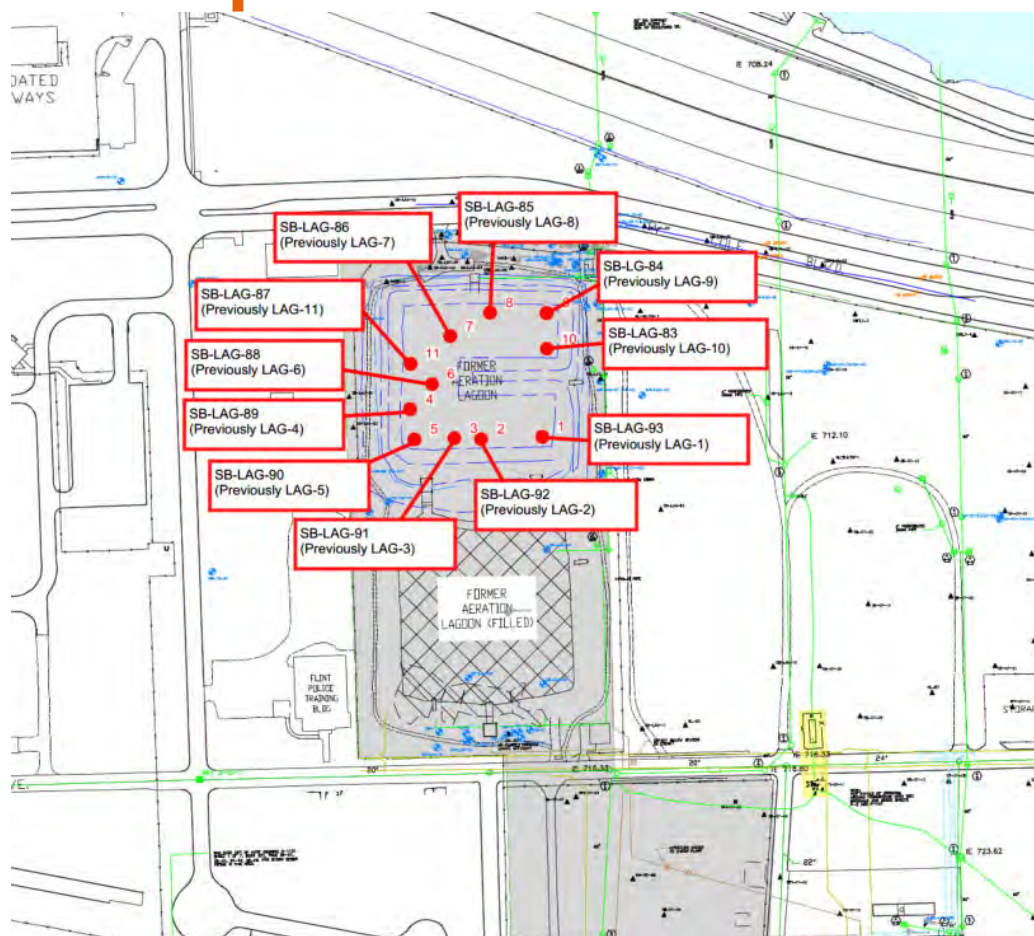
Treatment agents:

- Blend of Powdered Activated Carbon (PAC) and bentonite clay
- Rembind – specialty activated carbon
- PAC
- Granular Activated Carbon (Spent)
- Portland Cement
- EnviroSet – a blend based on Portland cement

October 2022



Samples Collected on June 8



Samples:

- Collected 35 soil samples
- At 11 locations around the lagoon
- Goal is to evaluate how each of the treatment agents performed.
- Activated carbon captures PFAS
- Portland binds it
- Which is better and why?

Sonic Drilling Rig

June 8, 2023

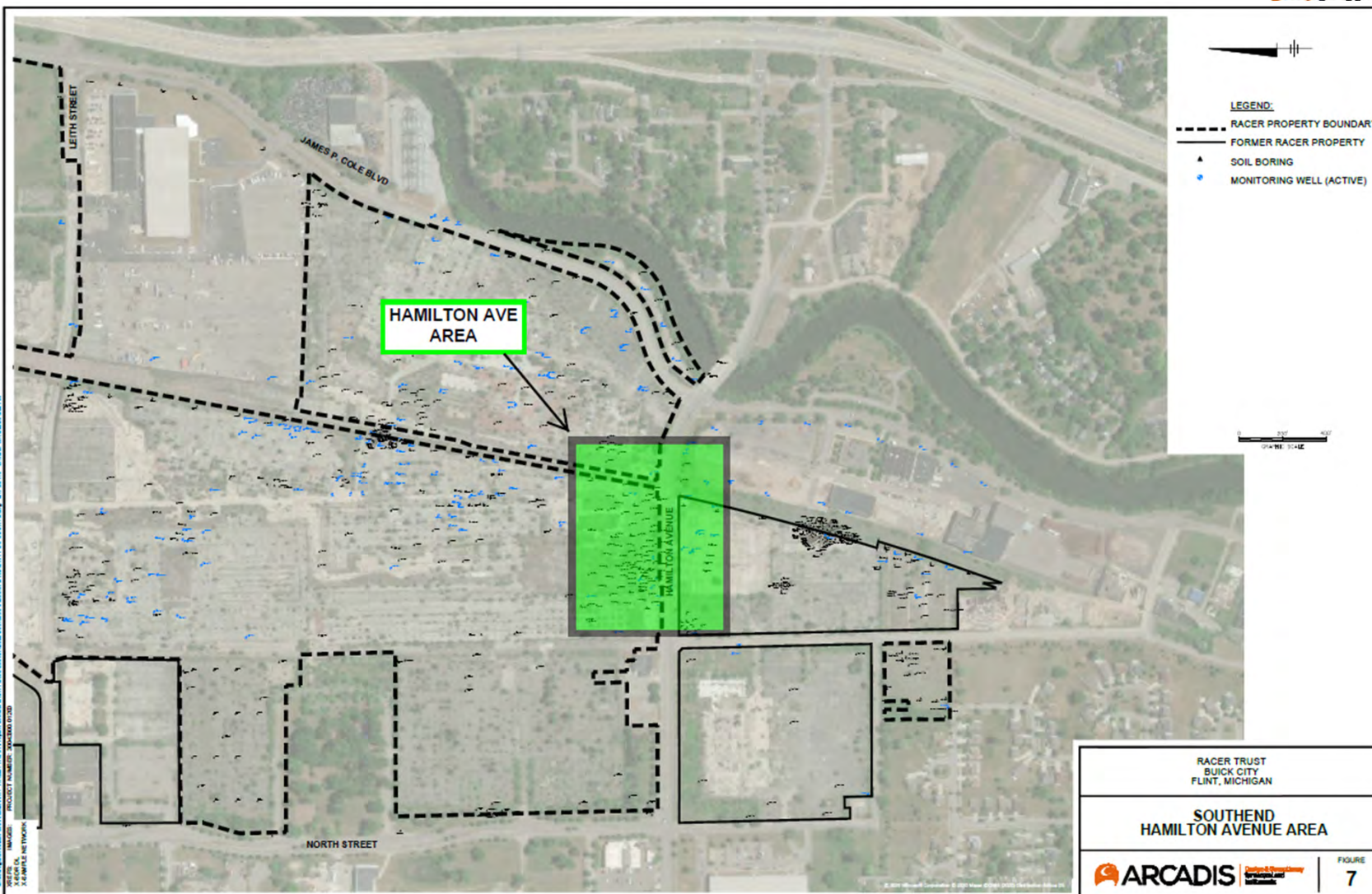


Phragmites in soils treated with PAC



Phragmites and soils treated with PAC - under wet soils



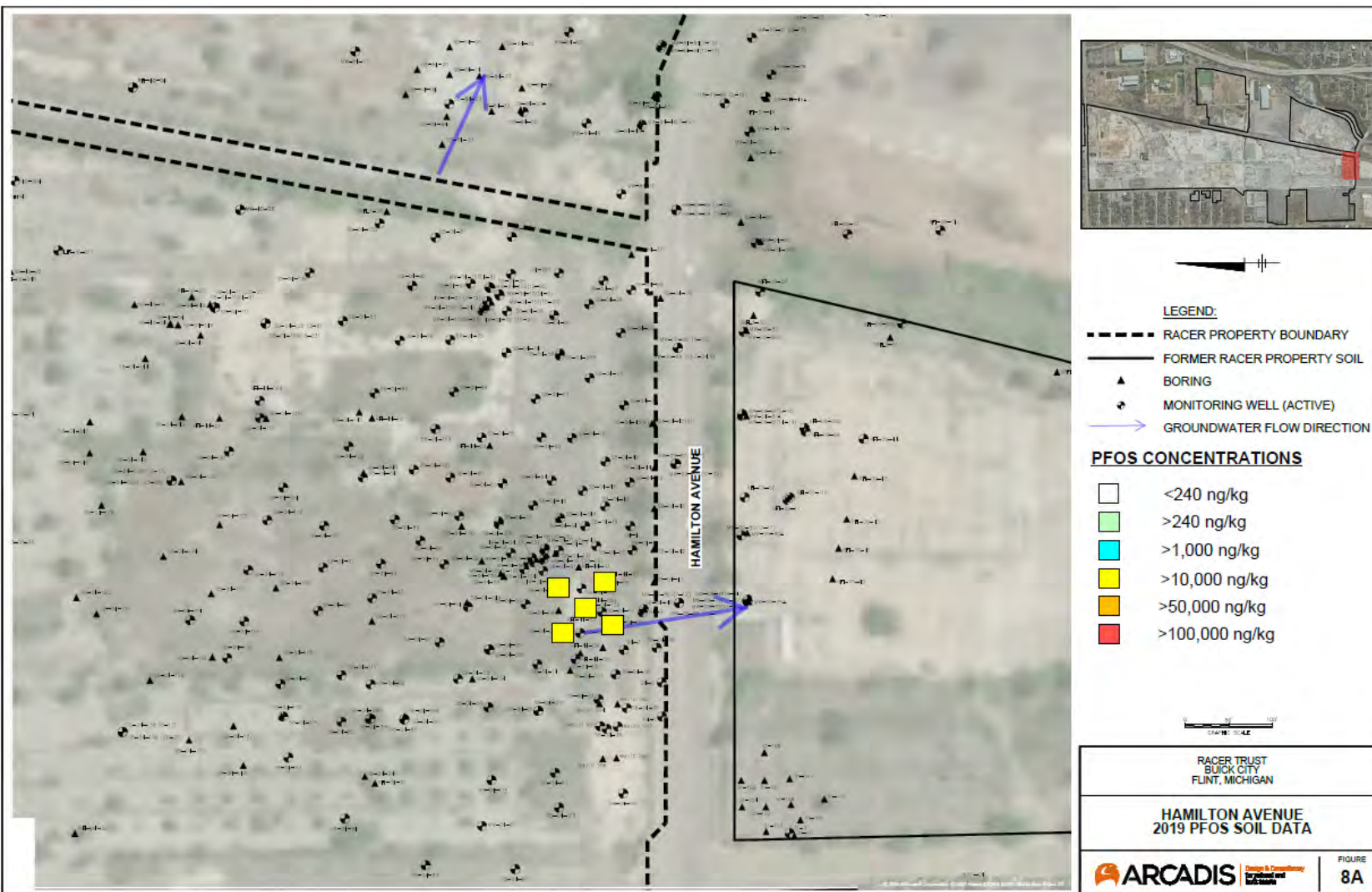


22 June 2023

22

Hamilton Ave Area

2019 PFOS Soil Data

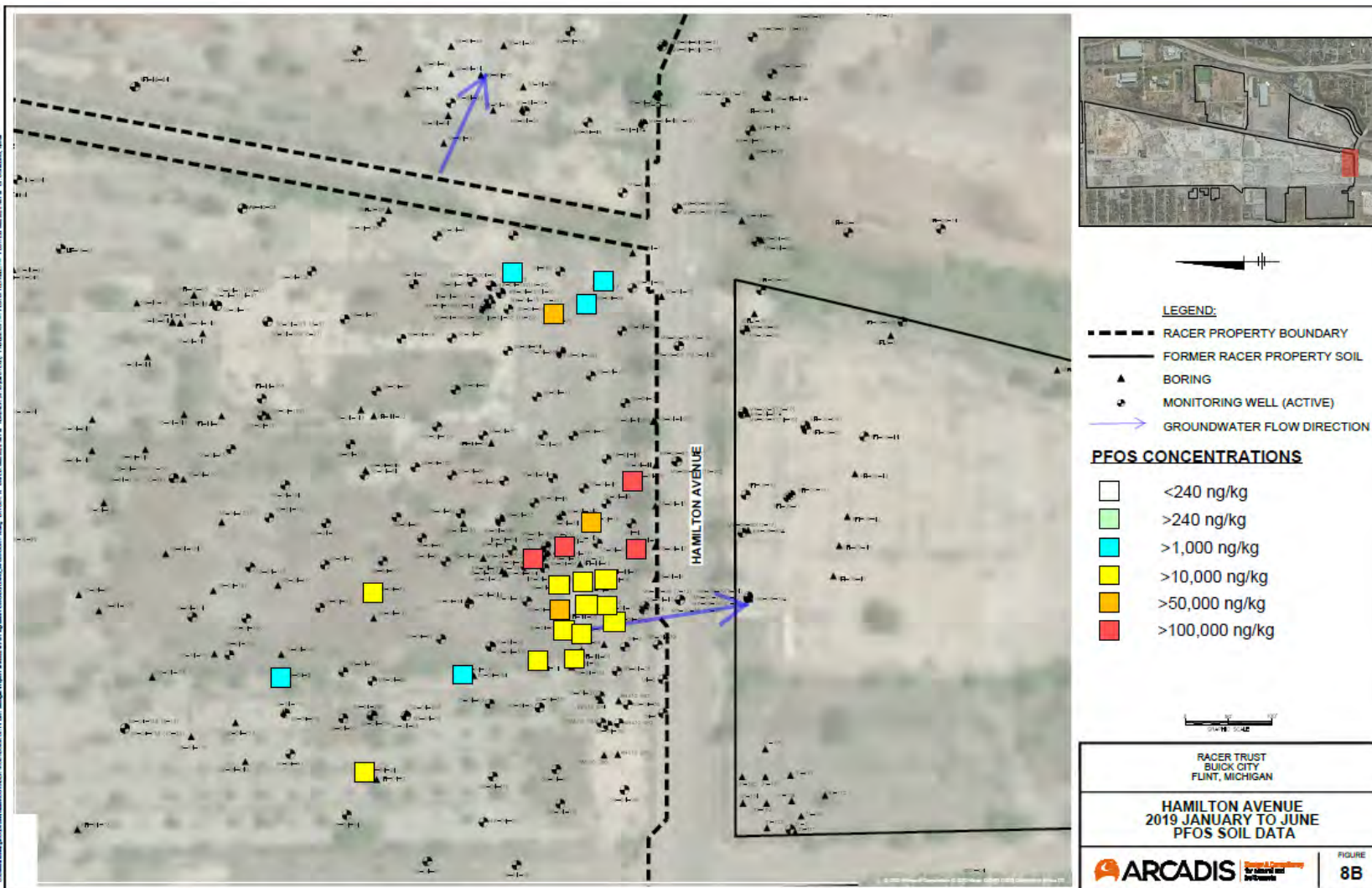


22 June 2023

23

Hamilton Ave Area

January – June 2020 PFOS Soil Data

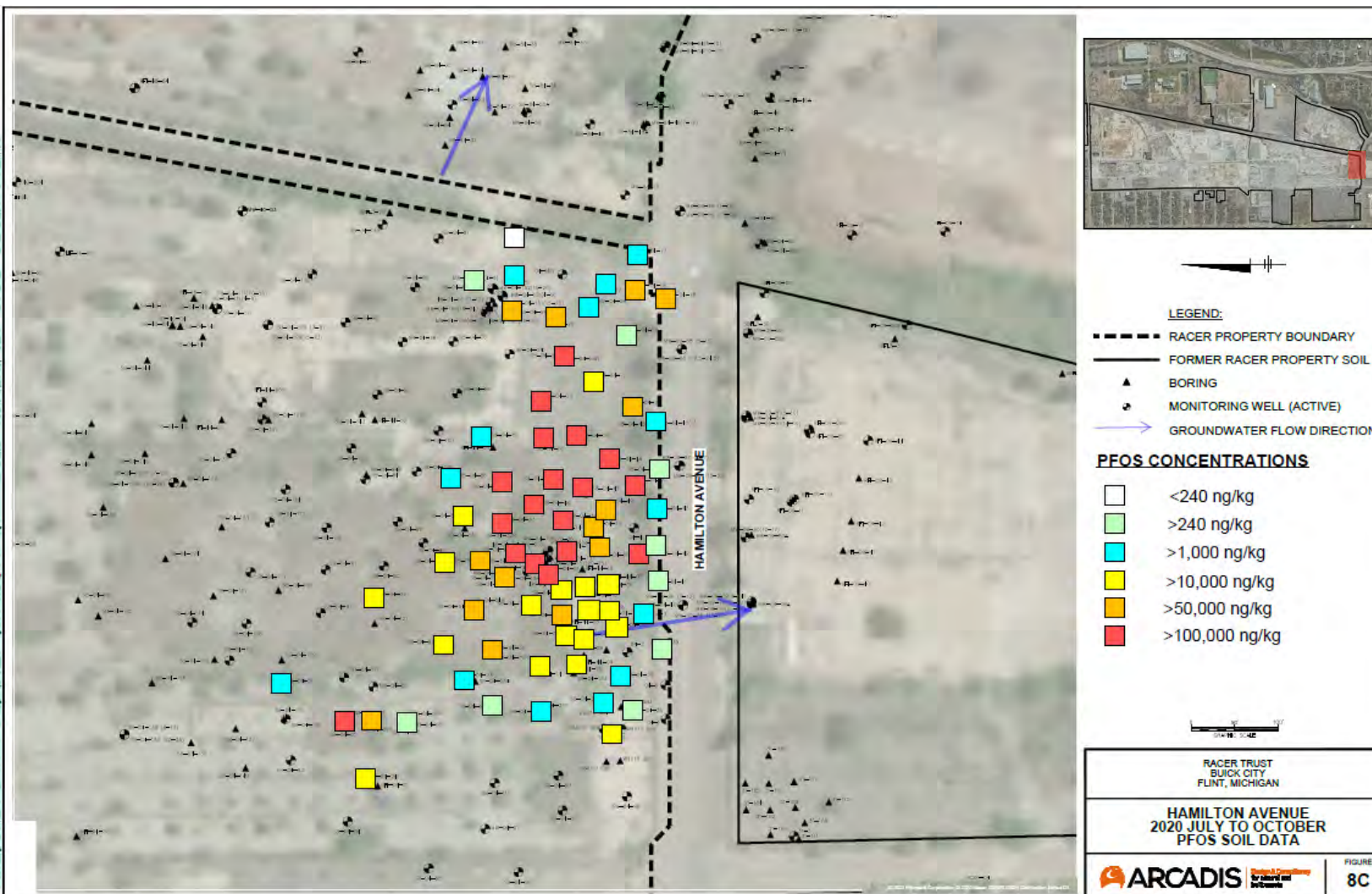


22 June 2023

24

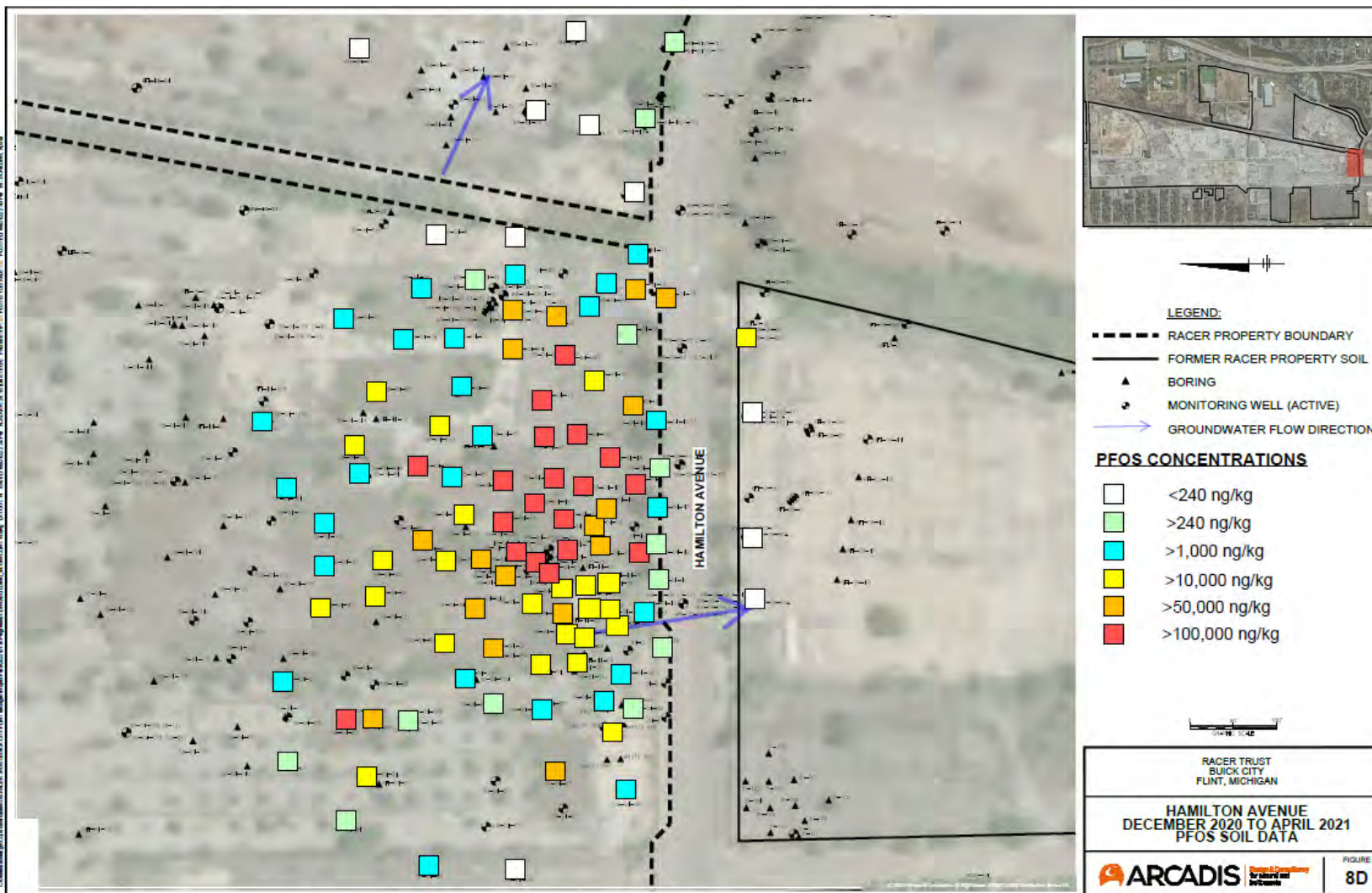
Hamilton Ave Area

July – October 2020 PFOS Soil Data



Hamilton Ave Area

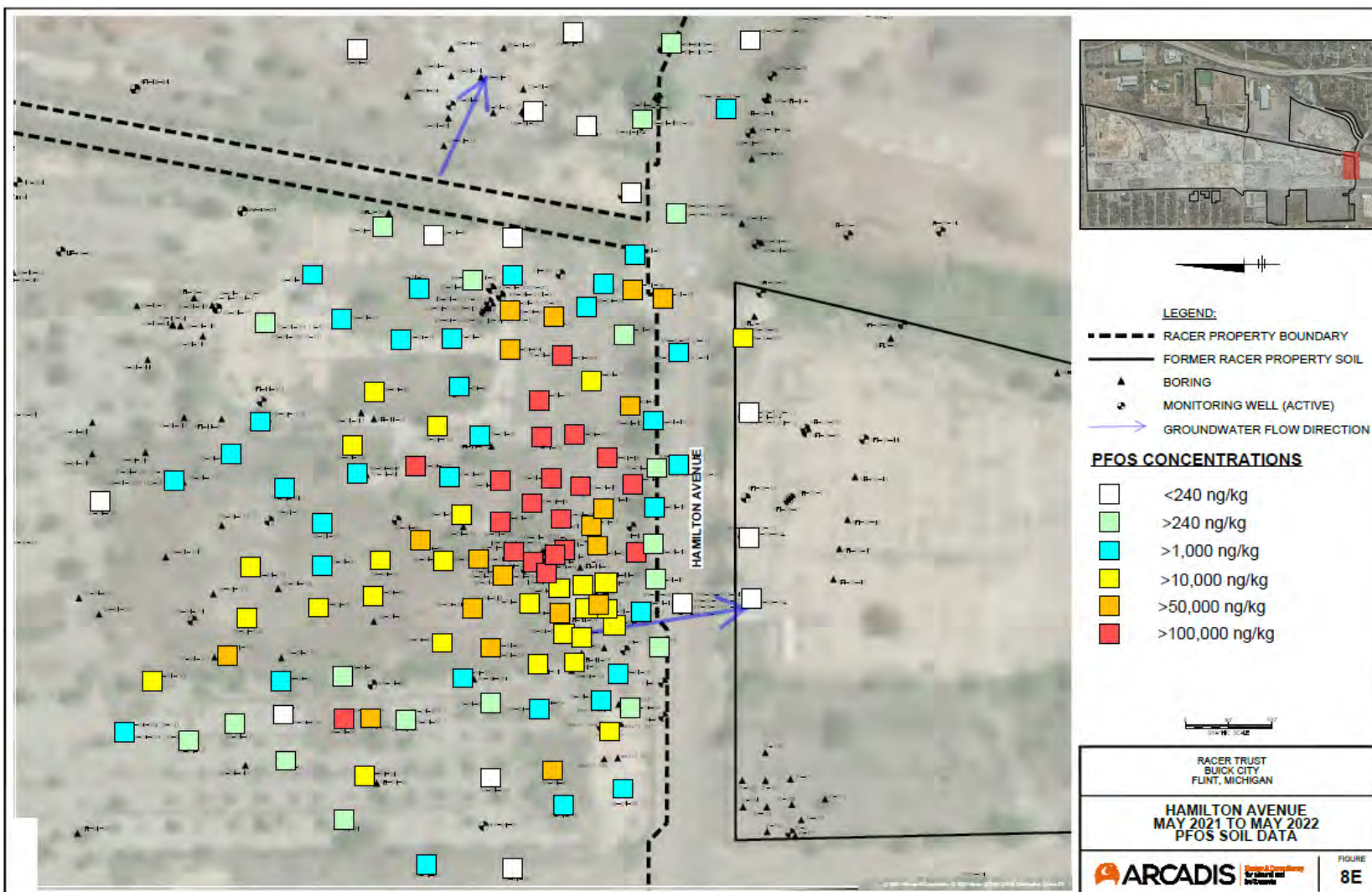
**December 2020 – April
2021
PFOS Soil Data**



22 June 2023

26

Hamilton Ave Area



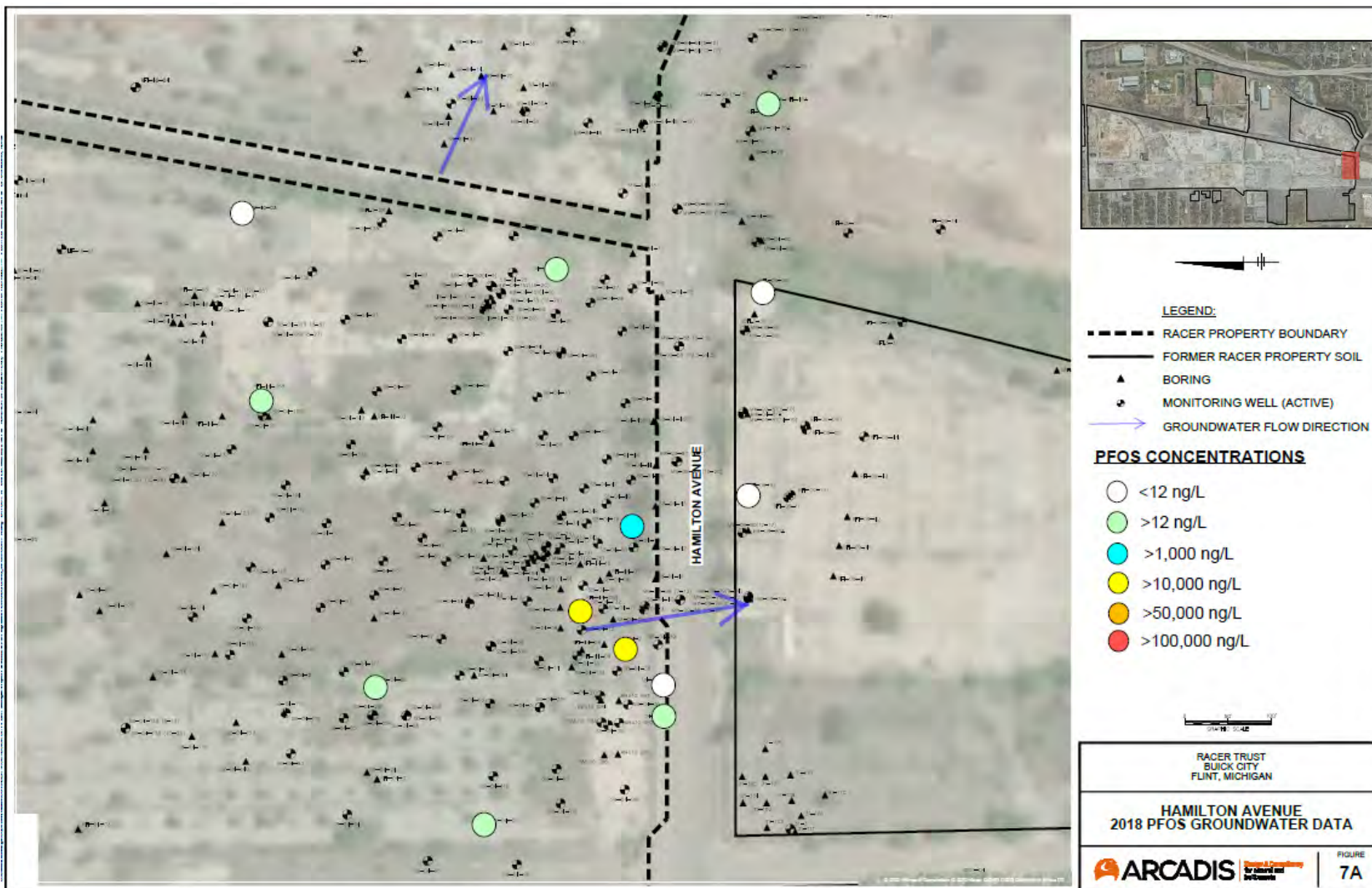
**May 2021 – May 2022
PFOS Soil Data**

10 borings installed south
of Hamilton Avenue

17 borings installed to
the northwest for
additional delineation

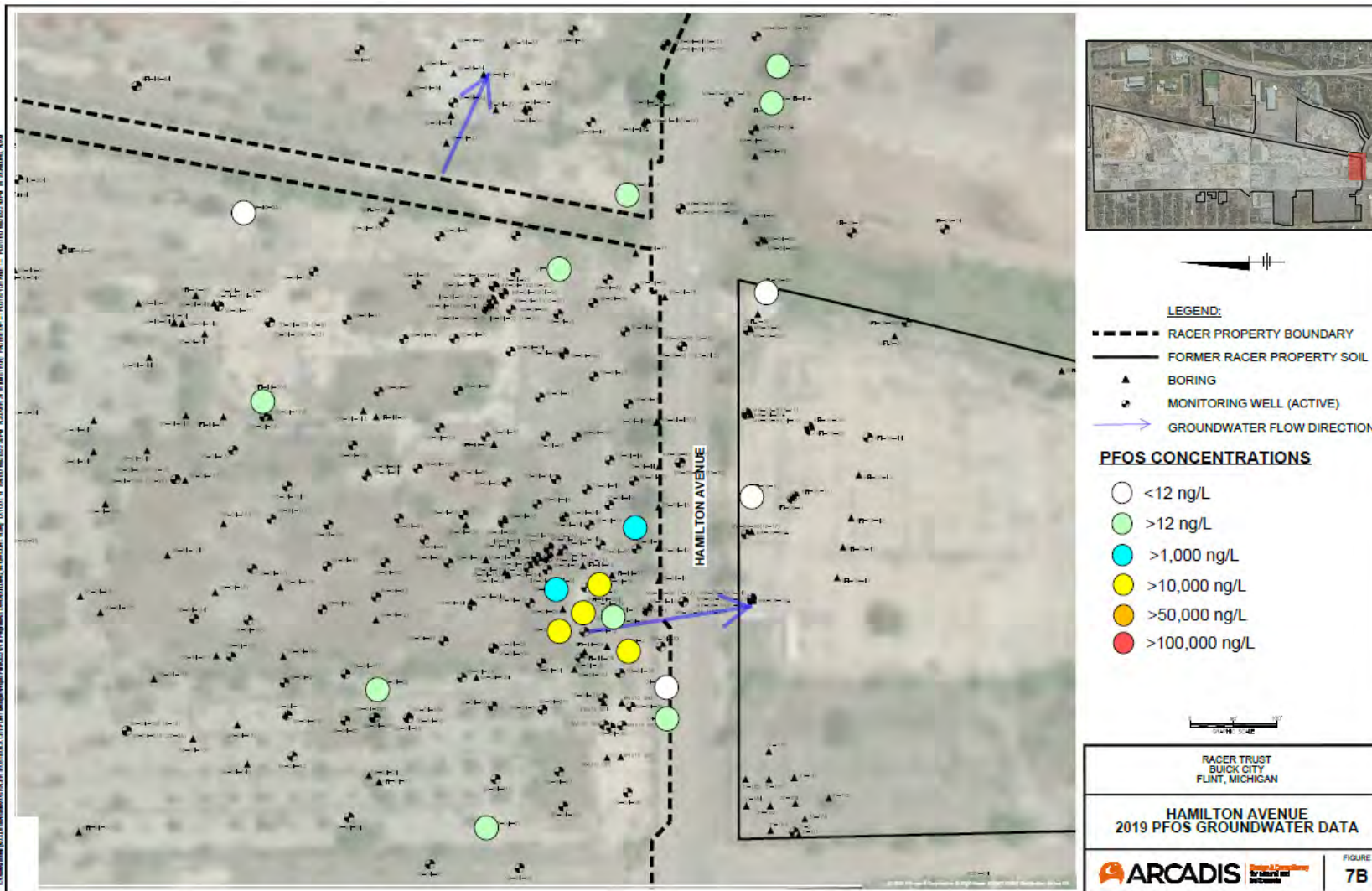
Hamilton Ave Area

2018 PFOS Groundwater Data



Hamilton Ave Area

2019 PFOS Groundwater Data

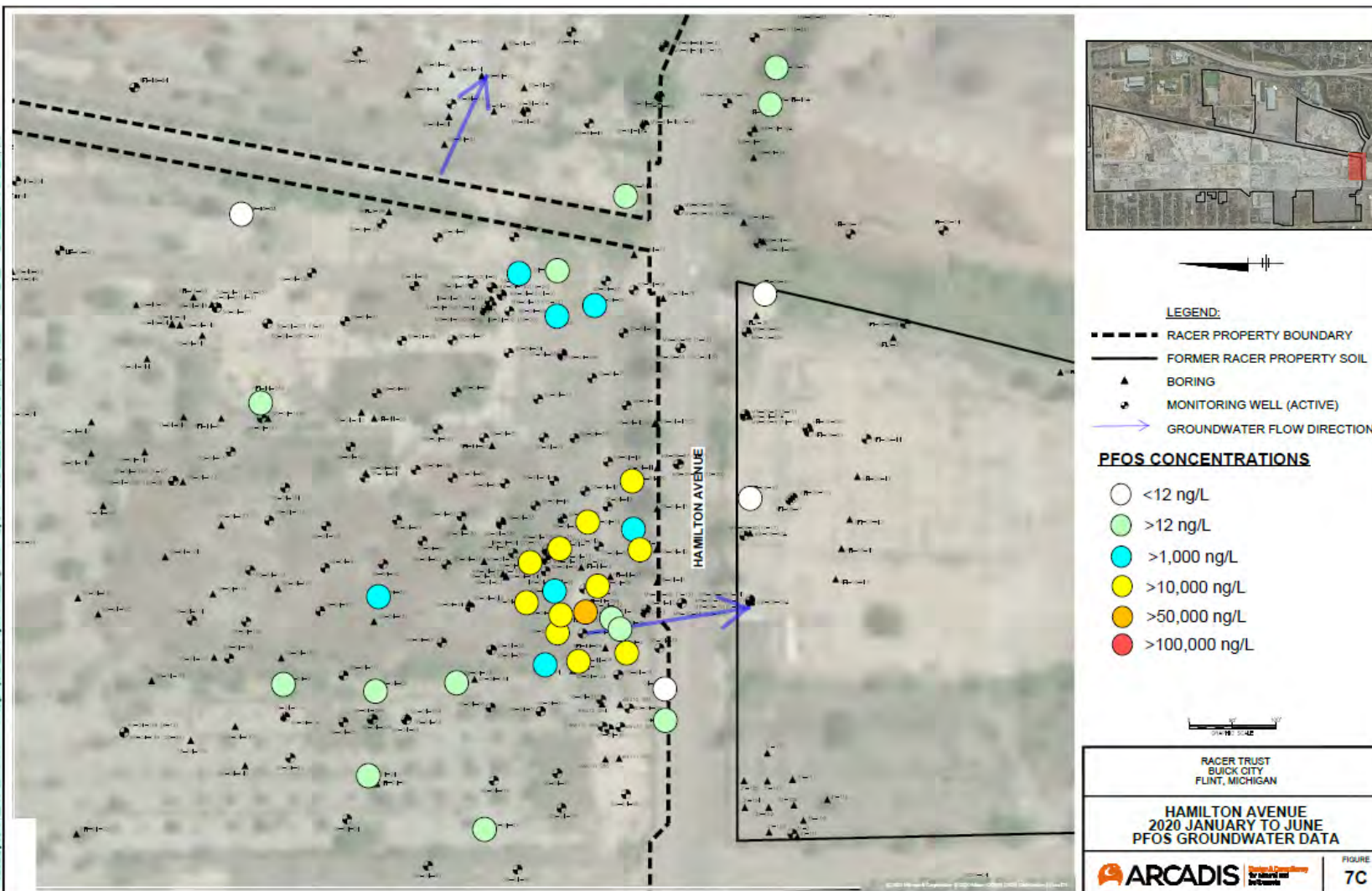


22 June 2023

29

Hamilton Ave Area

January – June 2020
PFOS Groundwater
Data

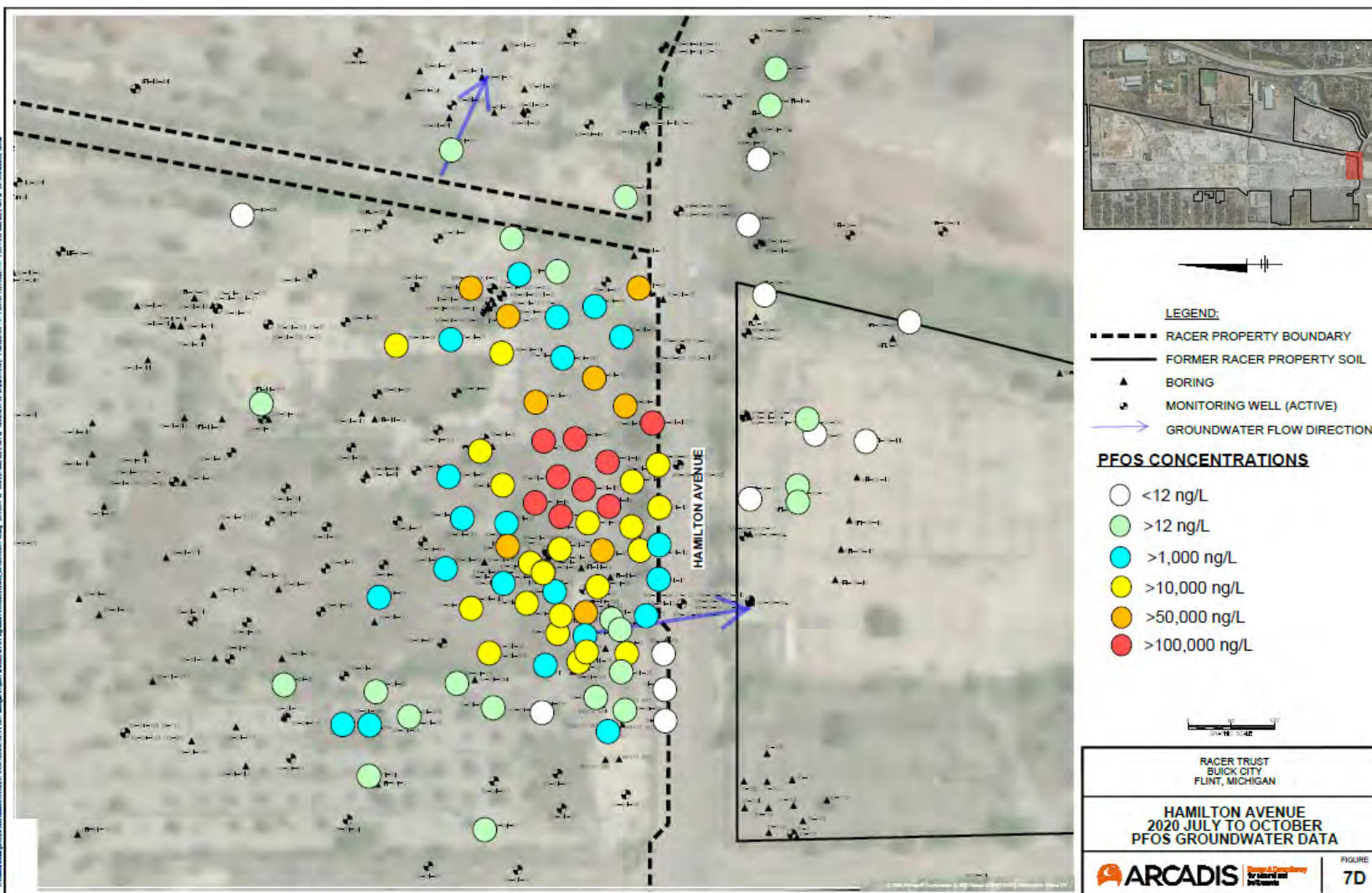


22 June 2023

30

Hamilton Ave Area

July – October 2020
PFOS Groundwater
Data

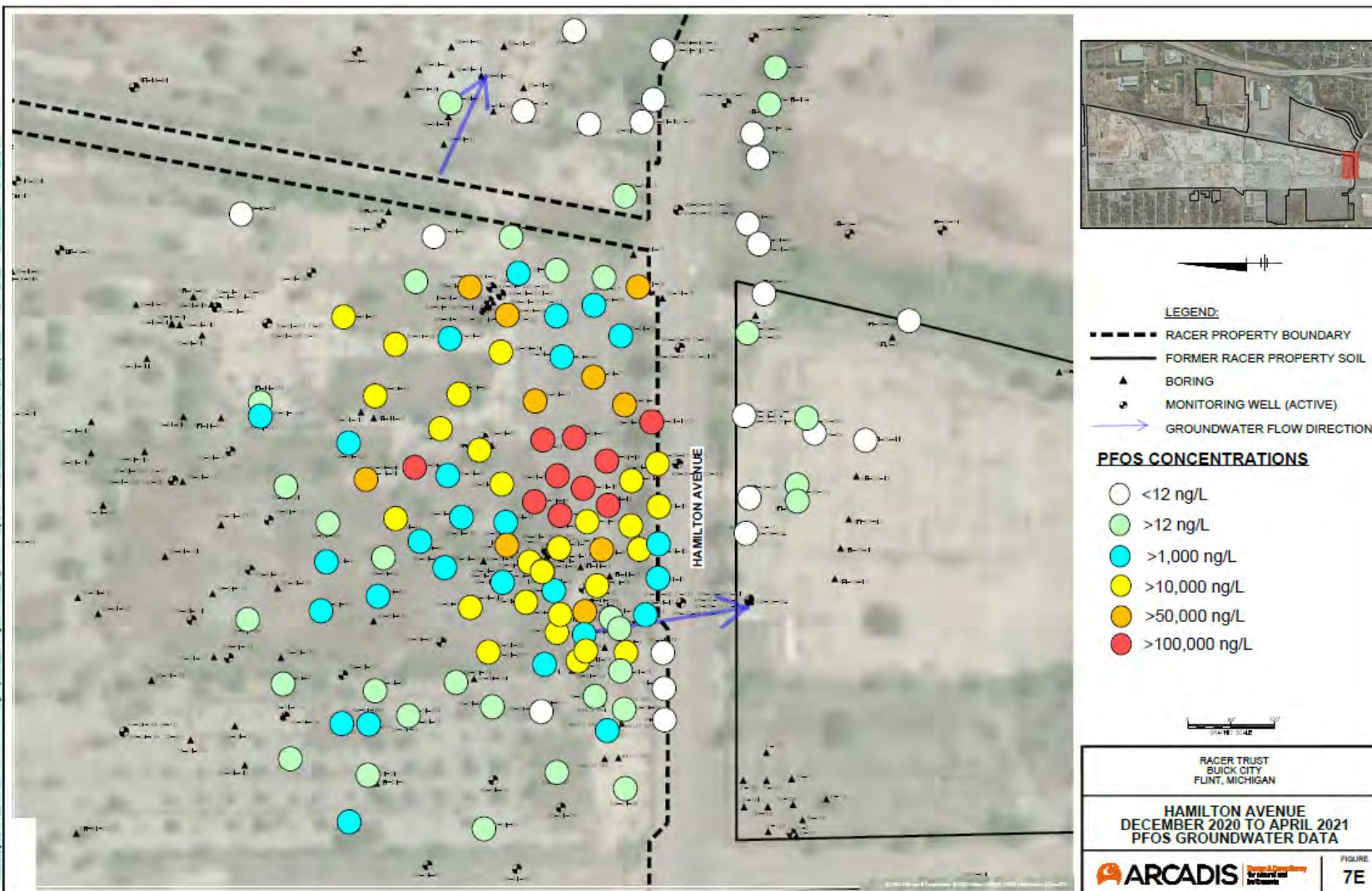


22 June 2023

31

Hamilton Ave Area

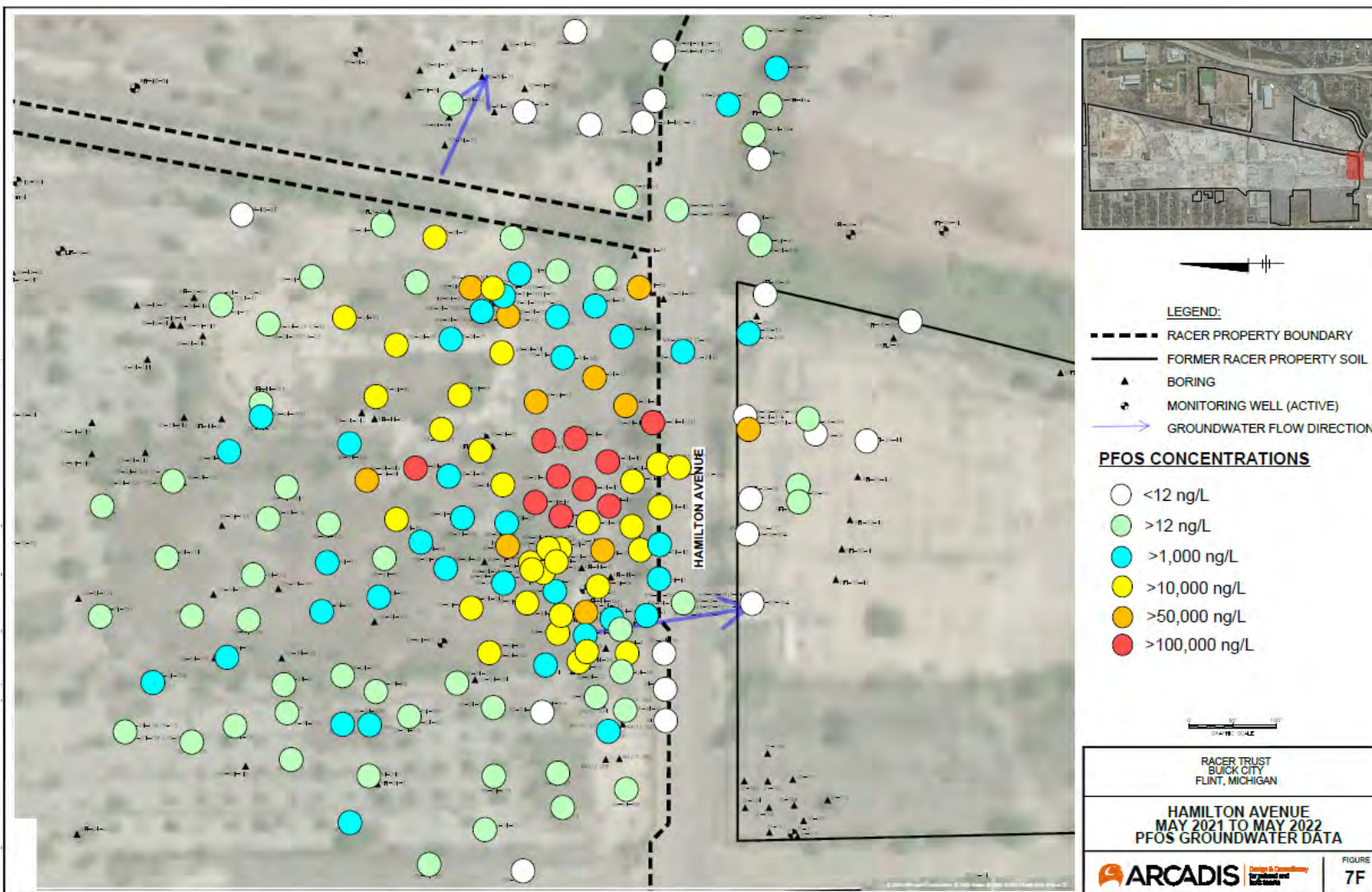
December 2020 – April
2021
PFOS Groundwater
Data



22 June 2023

32

Hamilton Ave Area



**May 2021 – May 2022
PFOS Groundwater
Data**

6 wells installed in
Hamilton Avenue

13 wells installed south
of Hamilton Avenue

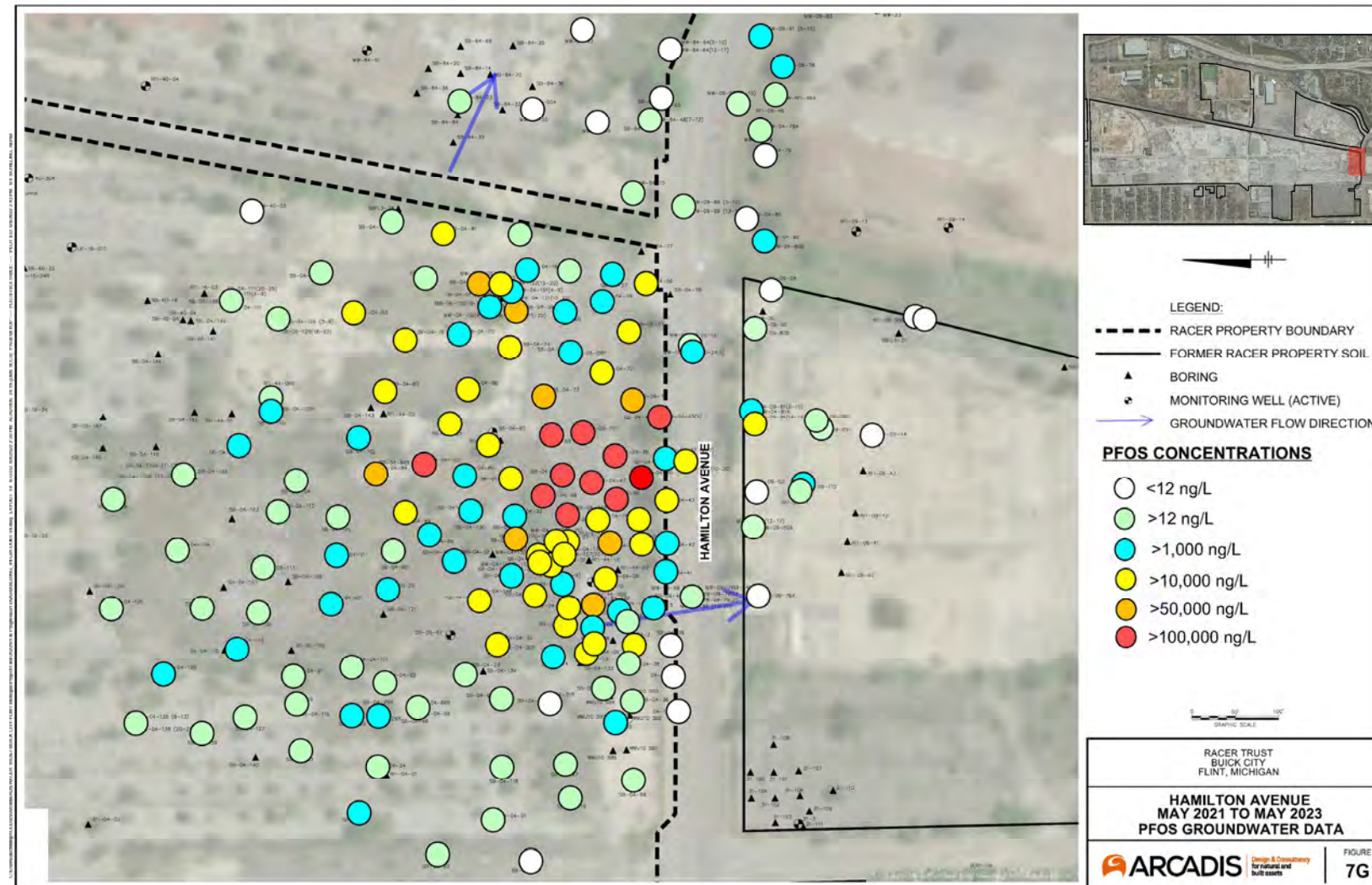
22 wells installed to the
northwest for additional
delineation

Hamilton Ave Area

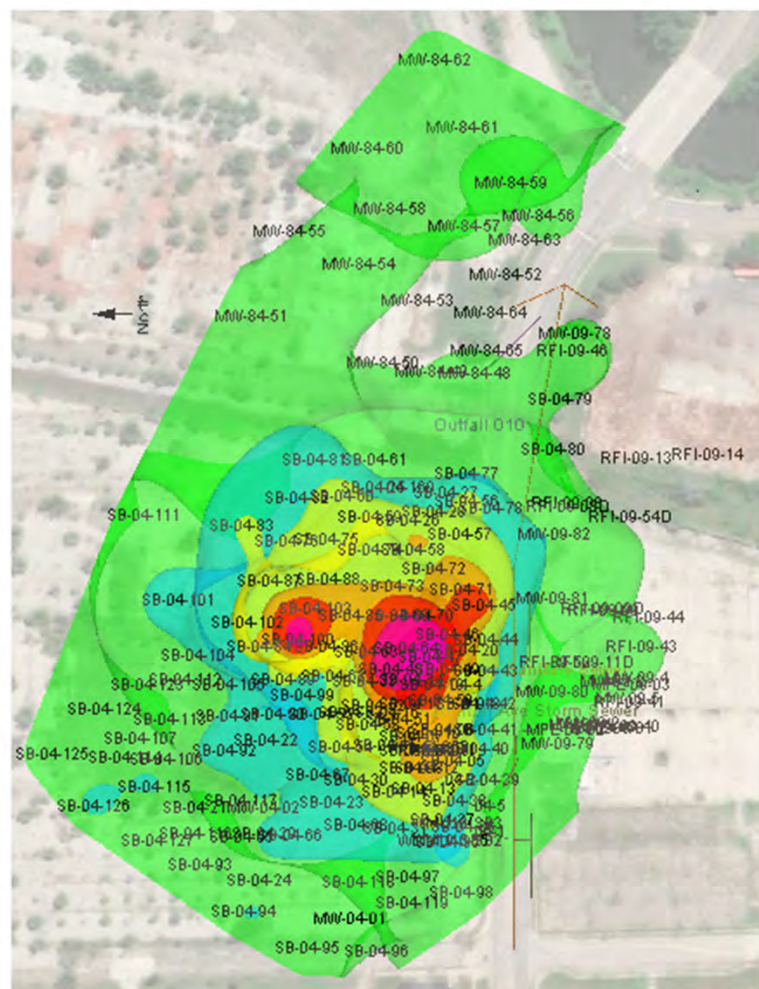
**May 2021 – May 2023
PFOS Groundwater
Data**

1 well installed south
of Hamilton Avenue

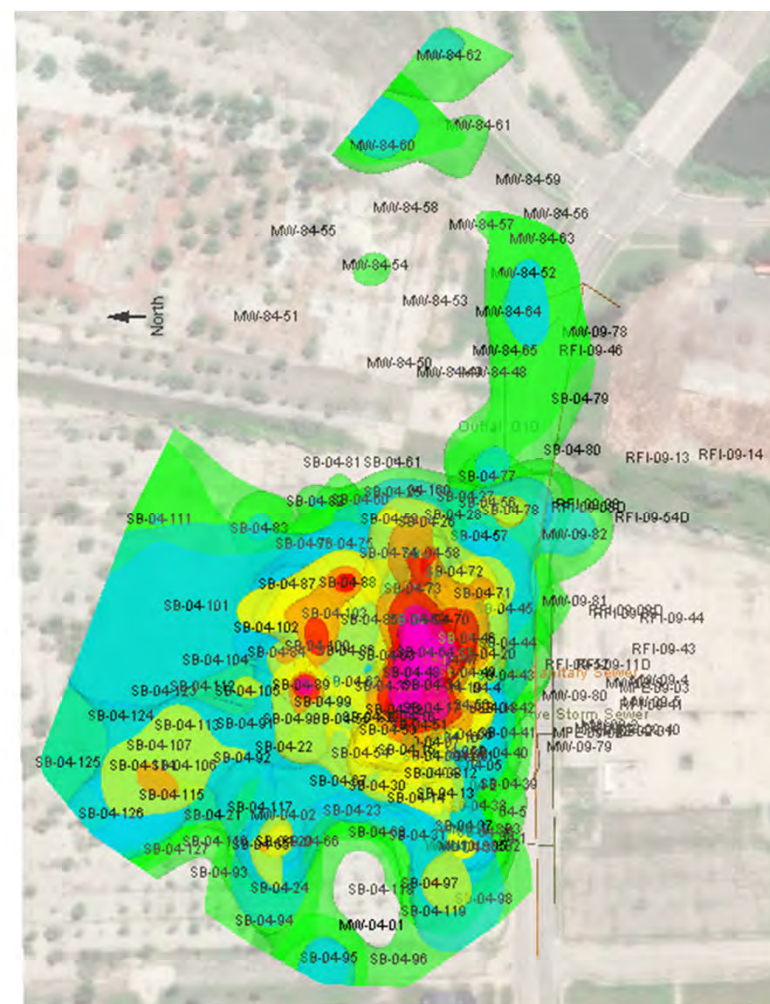
4 monitoring wells
installed north of
Hamilton Avenue for
the Tracer Study



Hamilton Ave Area 3-D Model, Sept 2021



PFOS in Groundwater



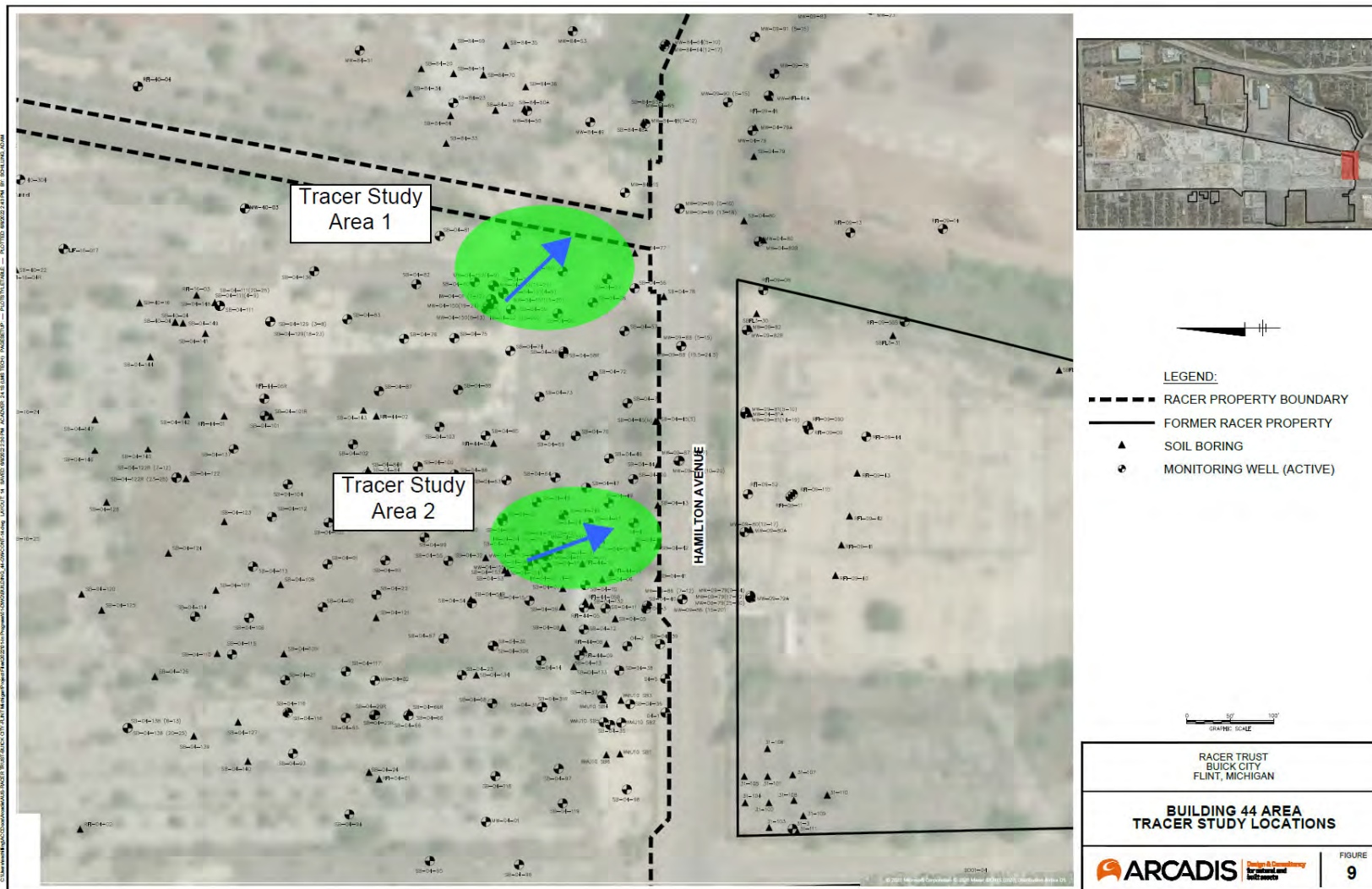
PFOS in Soil

June 2023

Hamilton Ave Select April 2023 Data



Tracer Study

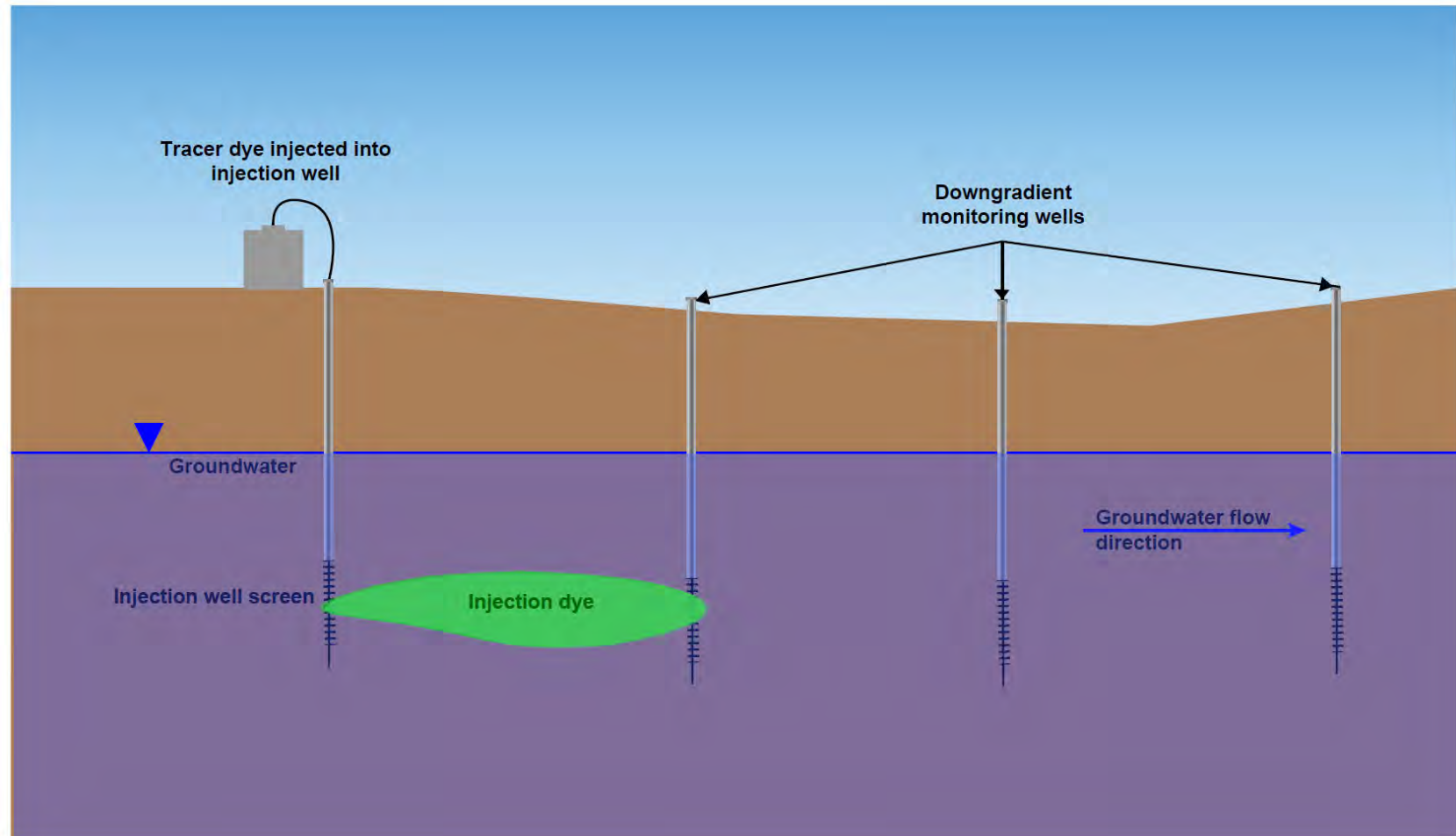


The tracer study is being conducted to evaluate the speed and direction of groundwater flowing in two areas near Hamilton Avenue.

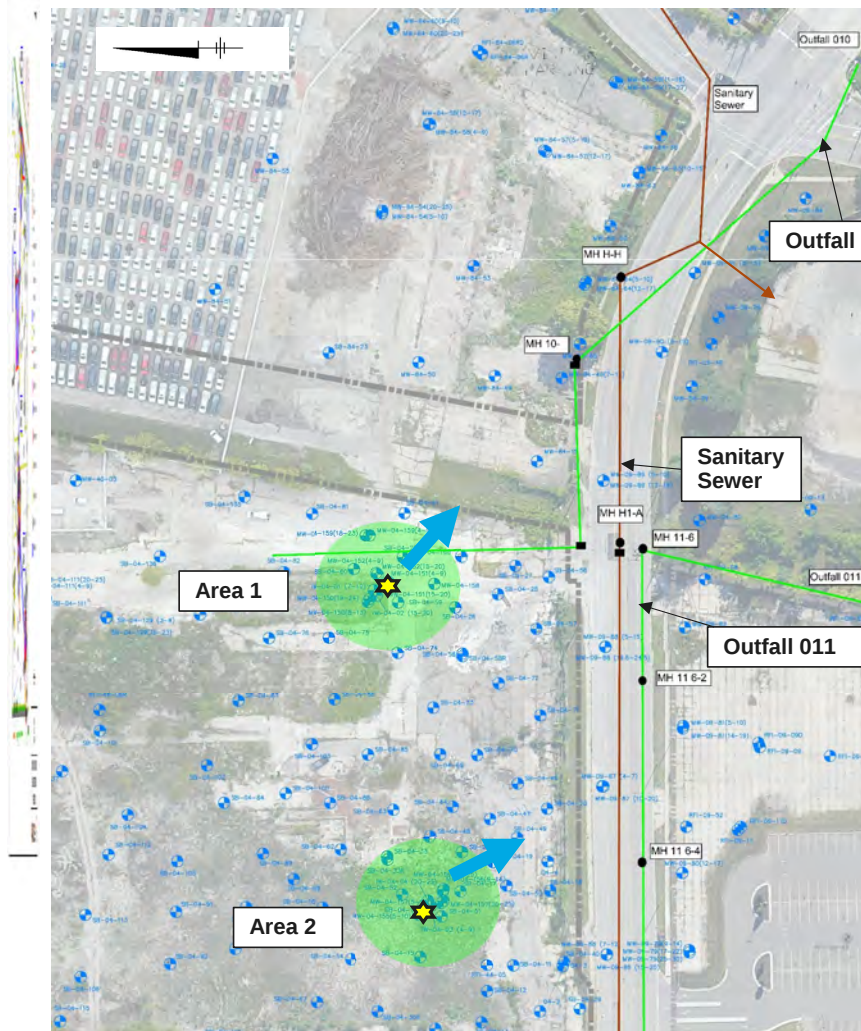
Three different dye colors (green, orange and yellow) will be used in the tracer study.

Downgradient monitoring wells will be monitored for the presence of dye over the course of several months to better understand how groundwater moves in this area.

Conceptual Tracer Study Cross Section

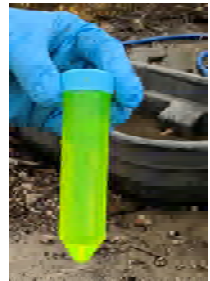


Dye Tracer Test Update



The dye tracer study was started in September 2022 to evaluate the speed and direction of groundwater flowing in two areas near Hamilton Avenue.

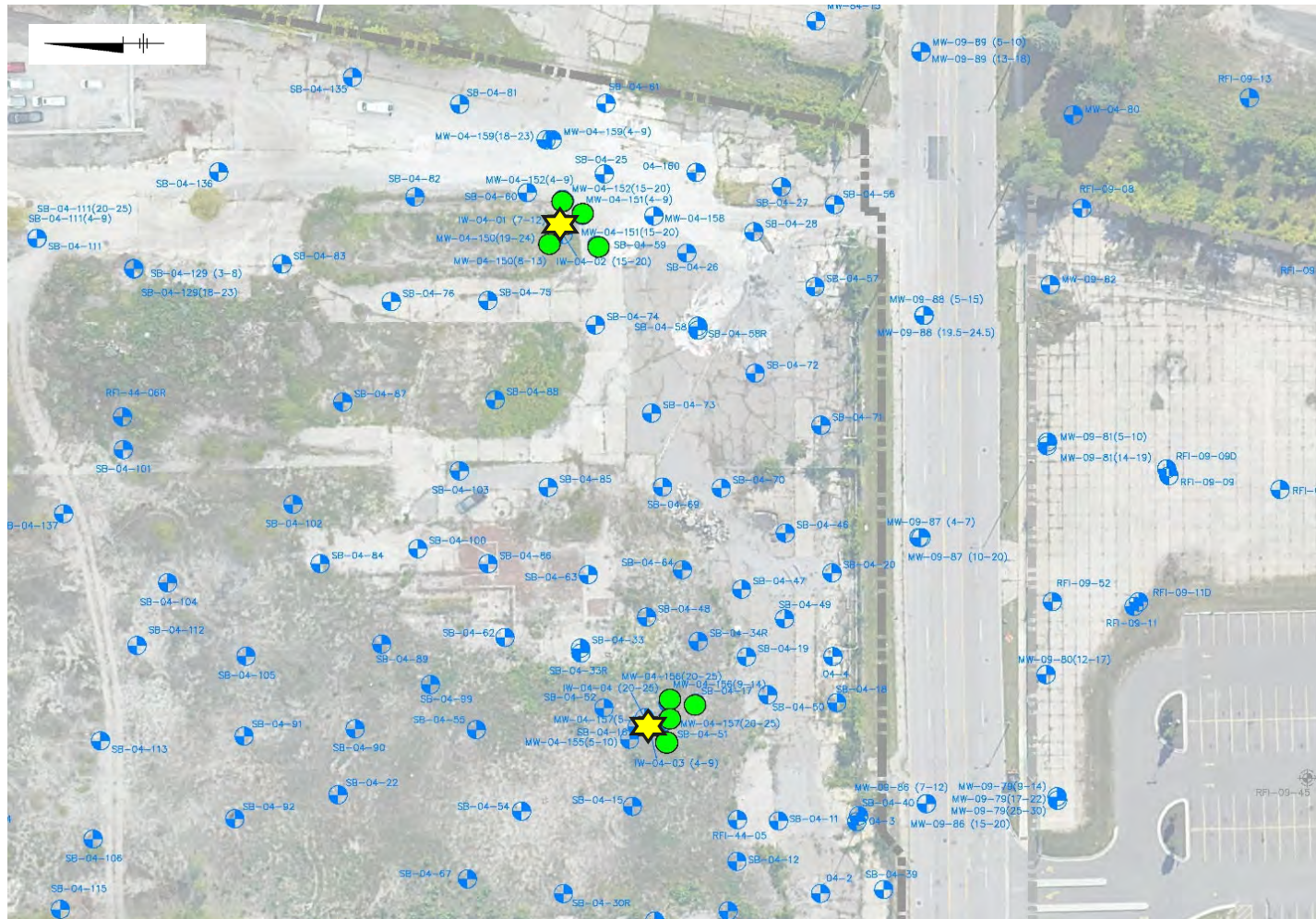
- Green dye was injected sequentially in Areas 1 and 2 from September 2022 to November 23, 2022.
- Downgradient monitoring wells and sewers are being monitored regularly for the presence of dye.
- Sampling locations are adjusted based on observations from the previous sampling event.



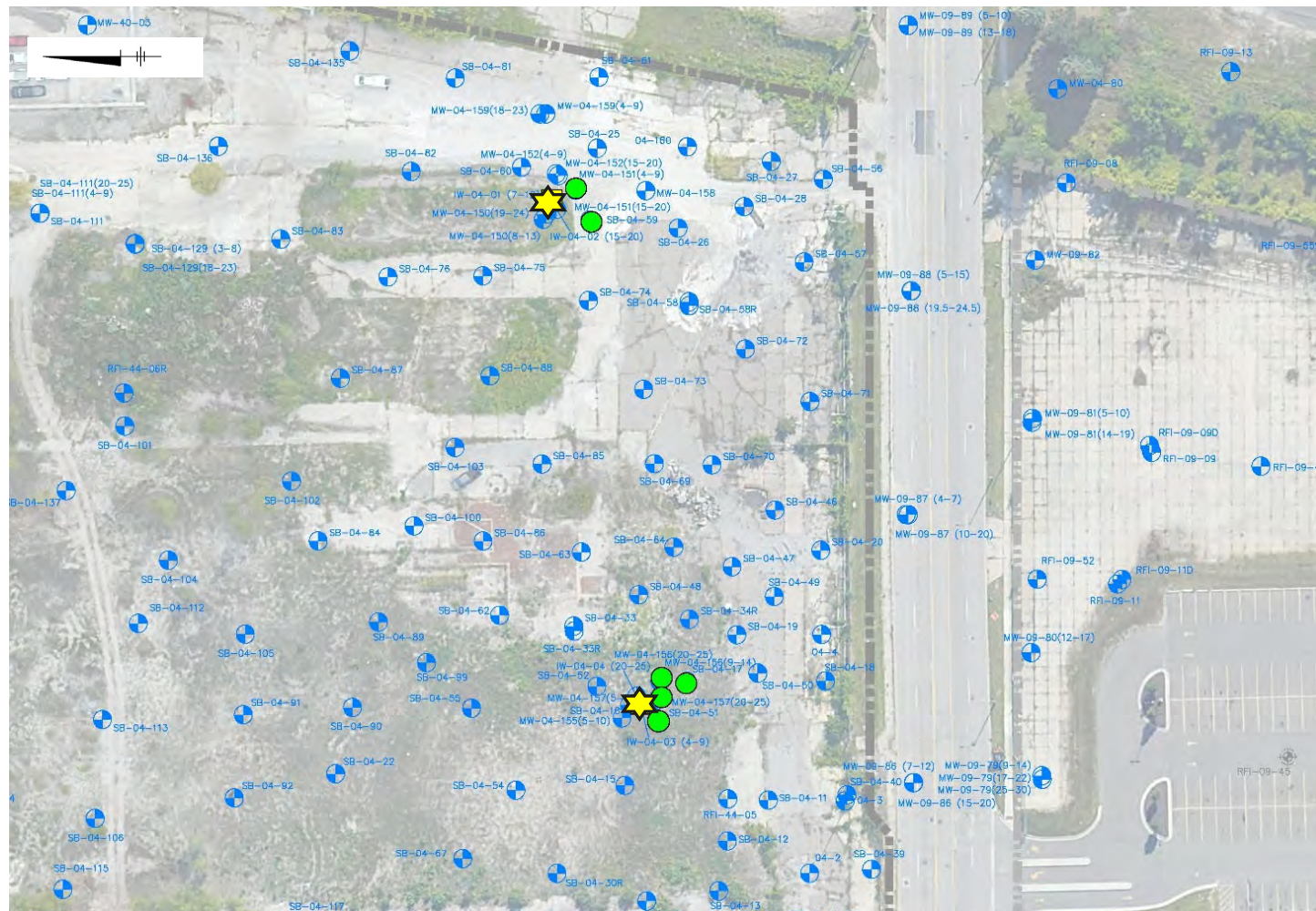
-  Study Area
-  Injection Well
-  Overall Groundwater Flow Direction

ARCADIS | Design & Consultancy
for natural and
built assets

 INJECTION WELL
 DYE DETECTED



Monitoring Wells with Dye Detectors



March 1, 2023

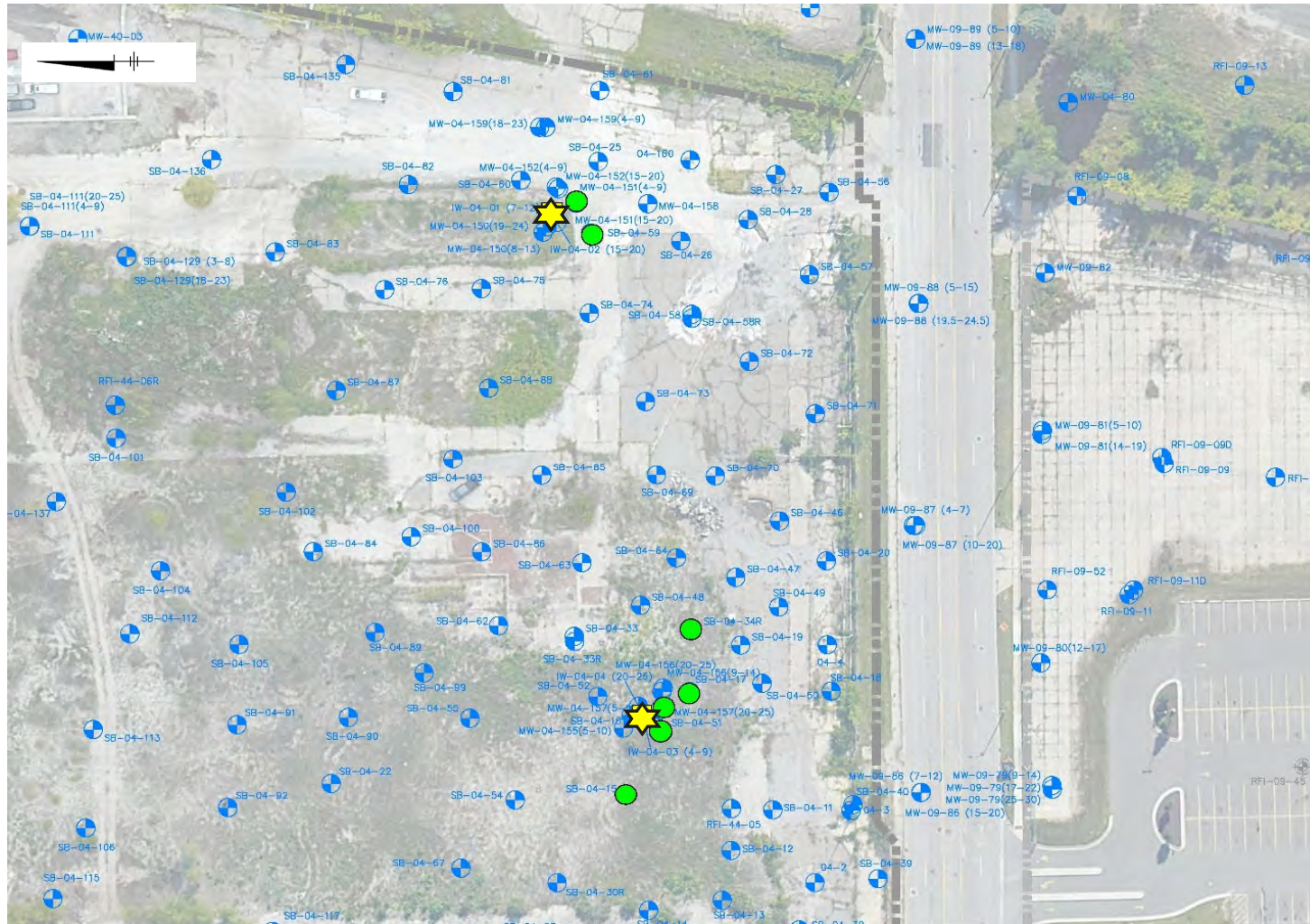
-  INJECTION WELL
-  DYE DETECTED

Monitoring Wells with Dye Detection

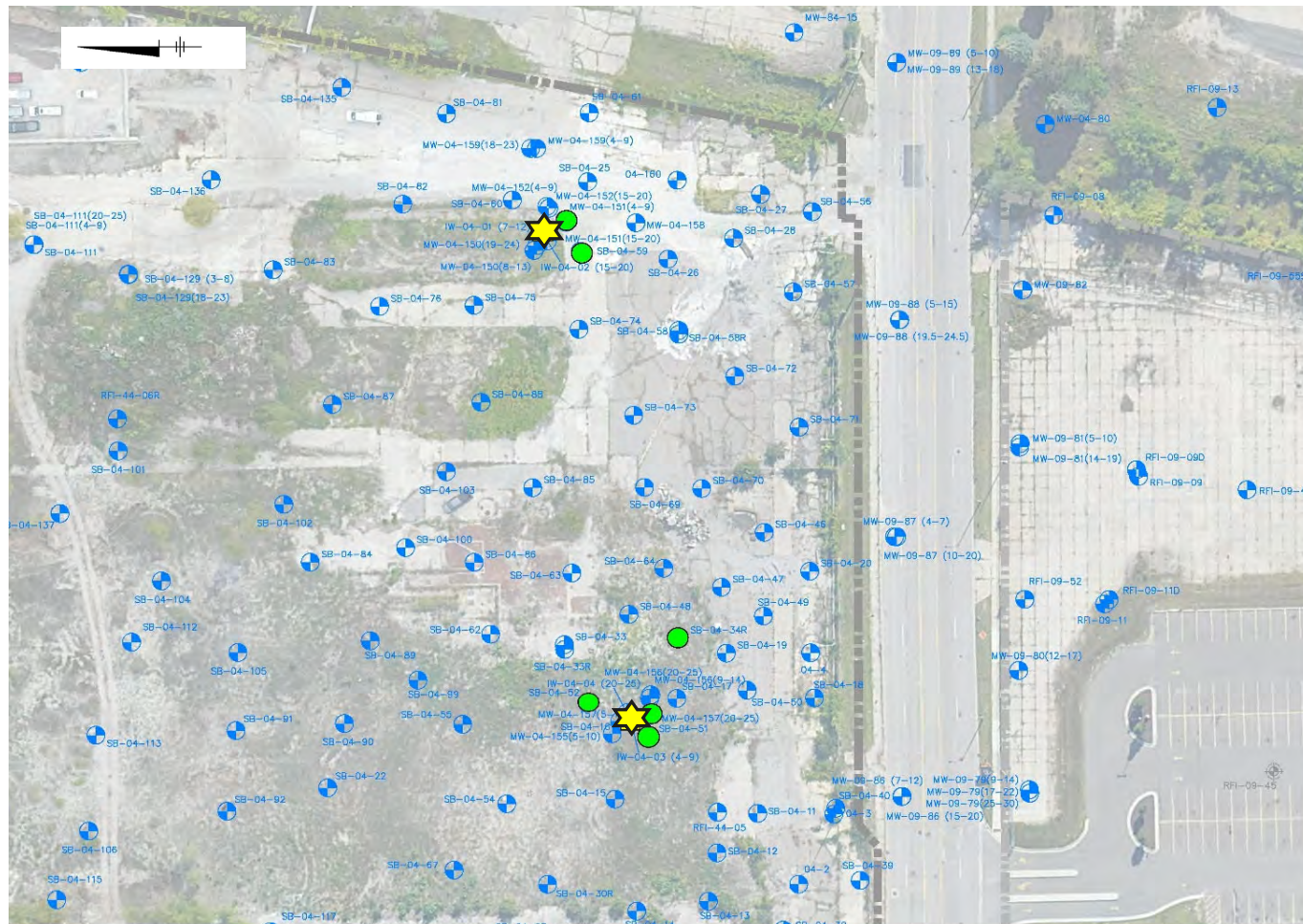
April 12, 2023

★ INJECTION WELL
● DYE DETECTED

**First detection
Closer to street**



Monitoring Wells with Dye Detectors



May 23, 2023

-  INJECTION WELL
-  DYE DETECTED

Tracer Study Observations to Date



- Observed groundwater flow has been slower than expected
 - Pre-tracer estimate: 0.6 ft/day (166 days to travel 100 ft)
 - Current estimate: 0.3 ft/day (333 days to travel 100 ft)
- Subsurface obstructions (concrete) may be influencing local flow

Sampling will continue until a robust data set is collected, which is currently anticipated to be Fall 2023/Spring 2024

May 23, 2023



INJECTION WELL

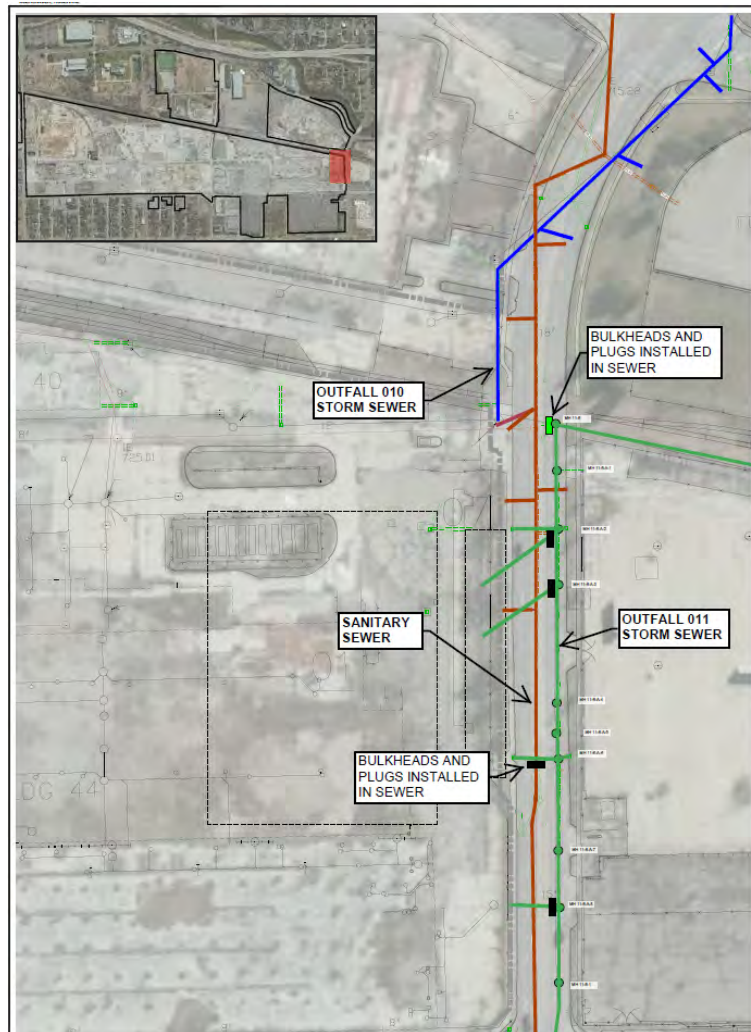


APPARENT GROUNDWATER FLOW



DYE DETECTED

Hamilton Avenue – Outfall 010 and 011 Storm Sewers



Outfall 010

- Bulkhead installation completed in September 2021 to eliminate contributions from the Site.
- Before bulkhead installation PFOS concentrations ranged from 1,500 ng/L to 3,000 ng/L.
- Most recent sample indicates PFOS concentration at 550 ng/L in April 2022.

Outfall 011

- Permanent bulkheads installed in December 2021 to eliminate contributions from the Site.
- Most recent samples indicate groundwater is still entering the Outfall 011 storm sewer.
- Additional work is planned to address sewer lines and manholes servicing the road.

PFAS Next Steps – Remedial Technologies

Soil

- Stabilization in place – reduces potential for soil to leach PFAS
 - Chemical fixation
 - Encapsulation
- Soil washing and water treatment
- Containment – slurry wall
- On-site treatment and disposal in approved containment unit (landfill liner)
- Off-site disposal
- Bioremediation potential

Water

- Granular activated carbon
- Anion exchange resins
- Absorptive media
- Fractionation
- Membrane filtration
 - Nanofiltration/ultrafiltration
 - Reverse osmosis
- Bioremediation potential

Research and Work to Find Solutions

- PFAS in drinking water has been the primary focus of scientists and agencies
- We have only encountered 1 site in Michigan with a drinking water well issue
 - At our Coldwater Road site we worked with County Health officials and installed two in-home treatment systems
- Surface water impacts are the next most important area for PFAS
- As our summary shows, we continue to work hard to understand and address PFAS in groundwater and surface water
- A great deal of research is going on to find technology to cost-effectively address PFAS

Working with Third-Party PFAS Researchers

Provided soil and/or groundwater samples to:

- Parsons Engineering
- Heritage Environmental Services
- EcoSpears-Florida
- University of California - Berkeley
- University of Washington
- Battelle Memorial Institute
- Clarkson University
- University of Michigan

Site Activities

- We have arranged to accept clean fill dirt from several road construction projects including I-69 and 475. These soils have been used for environmental remediation work and can be used to prepare building pads for new development.
- We have licensed portions of the site for vehicle parking and equipment storage. Site improvements to support those activities have been provided by the licensees.
- We have installed plugs in the storm and sanitary sewers to eliminate Site contributions to the sewer system and Flint River.
- We continue to evaluate surface impacts at the Site. Surface covers have been installed over several impacted soil areas.

Redevelopment

- RACER has positioned its Buick City property to capture a significant economic development opportunity, in terms of new investment, tax revenues and jobs, for the City of Flint and the Flint region.
- RACER has signed an agreement to sell the remaining 352 acres to Ashley Capital – an experienced and well qualified developer who we have worked with before, most recently in Livonia.
- We are working hard to provide information to Ashley Capital to help their analysis of this opportunity.
- If they are satisfied with this analysis, we are hopeful they will close within the coming months.
- If they purchase the remaining property, we will continue to perform our work to address the old contamination issues.