Kevin Mooney
Senior Project Manager
Global Operations - Environment, Health & Safety

General Electric Company
1 Plastics Ave.
Pittsfield, MA 01201

T (413) 553-6610
kevin.mooney@ge.com

Via Electronc Mail

November 23, 2022

Mr. Christopher Smith
EPA Project Manager
U.S. Environmental Protection Agency
New England Region
Five Post Office Square, Suite 100
Boston, MA 02109

Re: GE-Pittsfield/Housatonic River Site
Rest of River (GECD850)
Vernal Pool Pilot Study Selection Proposal

Dear Mr. Smith:

In accordance with Section 4.2.4 of GE's *Final Revised Rest of River Statement of Work*, attached is GE's proposal for selection of the 10 vernal pools in Reach 5A to be included in the vernal pool pilot study. As also provided in that Statement of Work, a work plan for the vernal pool pilot study will be submitted within four months after EPA's approval of this selection proposal.

Please let me know if you have any questions about this vernal pool selection proposal or if you would like to discuss it.

Very truly yours,

Kevin G. Mooney
Senior Project Manager – Environmental Remediation

Attachment

Cc: (via electronic mail)
Dean Tagliaferro, EPA
Tim Conway, EPA
John Kilborn, EPA
Richard Fisher, EPA
Joshua Fontaine, EPA
Anni Loughlin, EPA
Christopher Ferry, ASRC Primus

Thomas Czelusniak, HDR Inc.
Scott Campbell, Taconic Ridge Environmental
Izabella Zapisek, Taconic Ridge Environmental
Michael Gorski, MassDEP
Elizabeth Stinehart, MassDEP
John Ziegler, MassDEP
Ben Guidi, MassDEP
Michelle Craddock, MassDEP
Jeffrey Mickelson, MassDEP
Mark Tisa, MassDFW
Jonathan Regosin, MassDFW
Betsy Harper, MA AG
Traci Iott, CT DEEP
Susan Peterson, CT DEEP
Graham Stevens, CT DEEP
Lori DiBella, CT AG
Molly Sperduto, USFWS
Mark Barash, US DOI
Ken Finkelstein, NOAA
James McGrath, City of Pittsfield
Andrew Cambi, City of Pittsfield
Michael Coakley, PEDA
Melissa Provencher, BRPC
Christopher Ketchen, Town of Lenox
Town Administrator, Lee
Town Manager, Great Barrington
Town Administrator, Stockbridge
Town Administrator, Sheffield
Andrew Silfer, GE
Andrew Thomas, GE
Michael Werth, Anchor QEA
Dennis Lowry, AECOM
James Bieke, Sidley Austin
Public Information Repository at David M. Hunt Library in Falls Village, CT
GE Internal Repository

Vernal Pool Pilot Study Selection Proposal

November 23, 2022

Introduction

On December 16, 2020, pursuant to the 2000 Consent Decree for the GE-Pittsfield/Housatonic River Site, the U.S. Environmental Protection Agency (EPA) issued to the General Electric Company (GE) a final revised modification of GE's Resource Conservation and Recovery Act (RCRA) Corrective Action Permit (Revised Final Permit) for the Housatonic Rest of River (ROR) (EPA 2020). In accordance with Section II.B.3.b.(2)(d)-(g) of the Revised Final Permit, GE will conduct a pilot study to evaluate the use of both traditional excavation/restoration techniques and amendments such as activated carbon for the remediation of vernal pools. As described in Section 4.2.4 of GE's *Final Revised Rest of River Statement of Work* (Final Revised SOW; Anchor QEA et al. 2021), approved by EPA on September 16, 2021, GE stated it would first submit to EPA a report proposing up to 10 specific vernal pools to be included in the pilot study, with such pools anticipated to be located in Reach 5A of the ROR. This Vernal Pool Pilot Study Selection Proposal constitutes that report.

Vernal Pool Selection Criteria

GE's *Final Report on Potential Vernal Pool Investigations* (AECOM 2020) provides detailed physical and biological information for each of the 59 confirmed vernal pools located in Reach 5A. Between May and August 2022, pursuant to GE's *Second Revised Pre-Design Investigation Work Plan for Reach 5A Non-Residential Floodplain Exposure Areas* (Floodplain PDI Work Plan; Anchor QEA 2021), additional polychlorinated biphenyl (PCB) characterization sampling was conducted in the top one foot of soil in all 59 of these vernal pools, plus one additional vernal pool area located east of 5A-VP-24A (identified as 5A-VP-24B) that EPA directed GE to investigate. All of this information has been evaluated collectively to select the 10 vernal pools that GE proposes to include in the pilot study. The following criteria have been used to select those 10 vernal pools and are summarized for all the vernal pools in Attachment 1:[1]

- **Spatially Weighted Average PCB Concentration:** Spatially weighted average PCB concentrations were calculated for the 0- to 1-foot depth interval in each individual vernal pool, using only the data collected within each pool, according to the methodology described in Appendix A to the Floodplain PDI Work Plan. Data used for these calculations include the historical data set described in Section 3 of that Appendix A and the 2022 floodplain pre-design investigation (PDI) data.[2] Thiessen polygons were first generated separately for the 0- to 6-inch and 6- to 12-inch depth intervals. Each depth interval was then converted to a 3×3-meter raster grid and averaged

[1] Application of these criteria relates only to the selection of pools for the pilot study. GE recognizes that these criteria will not apply to full-scale remediation of vernal pools, where all vernal pools with spatially weighted average PCB concentrations exceeding 3.3 mg/kg will need to be remediated.

[2] The PDI data used for these spatially weighted average PCB concentration calculations are unvalidated and should be considered preliminary.

vertically to compute a 0- to 1-foot spatially weighted average PCB concentration within each pool. Thiessen polygons for each 6-inch interval and the computed 0- to 1-foot average for each pool are shown on Figures 1 through 17. The calculated spatially weighted average PCB concentrations in all vernal pools evaluated are shown in Attachment 1. They range from 0.08 to 77 milligrams per kilogram (mg/kg). Of the 60 pools evaluated, 47 have a spatially weighted average PCB concentration that exceeds the Performance Standard of 3.3 mg/kg. The remaining 13 pools, having PCB concentrations that achieve the Performance Standard, were not considered for the pilot study. For the pilot study, pools were selected to cover most of the range of PCB concentrations observed in the Reach 5A vernal pools to evaluate remedy effectiveness in pools with varying PCB concentrations. Specifically, the spatially weighted average PCB concentrations in the 10 selected pools range from 6.3 to 45 mg/kg.[3]

- **Size:** One consideration during selection of vernal pools for the pilot study was to capture a range of sizes. The average size of the confirmed vernal pools in Reach 5A is approximately 0.36 acre; a pool was defined as "average" in size if its size was within 50% of this average value. Pools that are larger or smaller are identified as "large" or "small" in Attachment 1.

- **Accessibility:** Many of the vernal pools in the Reach 5A floodplain are difficult to access for various reasons (e.g., located far from any existing road or upland access point, located far from the river channel, or containing extensive vegetation in the vicinity of the pool). Eventually, access roads will need to be constructed to reach all areas of the floodplain requiring remediation; however, for the purposes of the pilot study, there was a preference to select those pools that are reasonably accessible from an upland access point or from the river channel.[4]

- **Surrounding Habitat:** Another consideration during selection of vernal pools for the pilot study was the presence of any sensitive habitat in the surrounding area. Recognizing that much of the floodplain contains some elements of "sensitive habitat," application of this criterion involved an effort, where possible, to minimize the selection of pools where surrounding habitat might be particularly adversely affected by construction activities. This could include nearby vernal pools, areas that have more direct hydrologic connection to the river, proximity to local residences, or

[3] There are only three vernal pools with spatially weighted average PCB concentrations greater than the maximum concentration selected for the pilot study (45 mg/kg). Two of those pools are located in Core Area 1 habitat, which, as discussed below, were excluded for that reason in accordance with the Final Revised SOW; and one is located in an area that would be difficult to access. Thus, those three pools were not selected for inclusion in the pilot study.

[4] The accessibility criterion also considered the need for staging areas for equipment as well as for temporary soil stockpile areas and other construction-related activities. Consideration was also given to the difference in these implementation aspects between pools subjected to excavation and those subjected to placement of amendments (i.e., some pools may be difficult to access for the implementation of excavation but are more accessible for amendment application).

proximity to Core Area 1 habitats.[5] Also, availability of open habitats (e.g., a mowed field) for access or staging was considered a favorable consideration under this criterion.

- **Core Area 1 Habitat:** As stated in Section 4.2.4 of the EPA-approved Final Revised SOW, no vernal pools located within Core Area 1 habitat would be selected for the pilot study. Fifteen of the 60 pools in Reach 5A are located in Core Area 1 habitat and were, therefore, eliminated from consideration.

- **Known Species Within Pool:** The 60 vernal pools in Reach 5A encompass a range of vernal pool species as documented in past reviews. Some pools were confirmed as meeting the biological vernal pool certification criteria on the basis of finding one single "obligate" species, others based on finding numerous egg masses of one or more such species, and still others based on the identification of only "facultative" species. For the purposes of this selection process, priority was generally placed on selecting vernal pools where more numerous obligate species (e.g., wood frogs) have been documented; however, including pools with a range of vernal pool species composition was also an objective. For example, one of the pools selected for the pilot study was confirmed as a vernal pool based only on the presence of fairy shrimp, which is not an uncommon occurrence in the floodplain.

- **Vegetative Cover Within Pool:** While not a significant factor in the selection process, some consideration was given to the type of vegetative cover within the pool. The confirmed pools contain a range of habitat cover types, including open water, deep marsh, shallow marsh, shrub swamp, and forested swamp. An effort was made to select vernal pools that encompass a range of cover types, rather than focusing on only one habitat type.

- **Pool Hydrology:** While vernal pools are considered a type of wetland, most are normally dry for at least part of the year (typically during summer months). Some have characteristics that may cause them to be wetter or drier than a "normal" pool. Preference was given to selecting pools for the pilot study that exhibited a more typical vernal pool hydrology, rather than pools that appear to provide marginal vernal pool hydrology (either too dry or wet).

Pools Selected for Pilot Study

Attachment 1 provides a summary of the selection criteria described above and the pertinent information for each of the 60 vernal pools evaluated. Based on this assessment, GE has selected the following 10 pools for the pilot study: 5A-VP-4, 5A-VP-7, 5A-VP-9, 5A-VP-12, 5A-VP-15, 5A-VP-16, 5A-VP-22, 5A-VP-27, 5A-VP-52, and 5A-VP-57.[6] Locations of these pools are shown on Figure 18.

[5] As defined in the Revised Final Permit, Core Area 1 habitat consists of areas identified by the Massachusetts Division of Fisheries and Wildlife as being "the highest quality habitat for species that are most likely to be adversely impacted by PCB remediation activities," most of which species are plants because they are not mobile (Attachment B to Revised Final Permit).

[6] Inclusion of these 10 pools in the pilot study is contingent on the ability to obtain access agreements from the property owners.

These pools generally meet the criteria discussed above. In particular, they: (1) capture a range of PCB concentrations (spatially weighted average PCB concentrations ranging from 6.3 to 45 mg/kg) and sizes; (2) are reasonably accessible; (3) are located outside of Core Area 1 habitat; and (4) have a relatively normal vernal pool hydrology.

As described in Section 4.2.4 of the Final Revised SOW, GE stated it would specify which of these 10 selected pools will be subject to traditional excavation/restoration methods and which pools will be subject to placement of an amendment. Table 1 summarizes the 10 selected pools and the proposed remediation approach for each.

In accordance with the schedule provided in the Final Revised SOW, GE will submit to EPA for review and approval a Vernal Pool Pilot Study Work Plan within four months after EPA approval of this Vernal Pool Pilot Study Selection Proposal.

Table 1
Summary of Selected Vernal Pools and Remediation Type for Pilot Study

Vernal Pool ID	Area in Acres (Size)	Spatially Weighted Average PCB Concentration (0-1 foot; mg/kg)	Parcel Owner*	Accessibility	Remediation Type
5A-VP-4	0.23 (Average)	15	MassDFW	Accessible via private residential property to the north (parcel I6-1-60)	Excavation/ Restoration
5A-VP-7	0.41 (Average)	34	MassDFW	Accessible via easements to the north (EA 4) and west (EA 61)	Excavation/ Restoration
5A-VP-9	0.60 (Large)	45	MassDFW	Accessible via easement to the north (EA 4)	Amendment
5A-VP-12	0.27 (Average)	25	Private (Miss Halls School)	Access from river	Amendment
5A-VP-15	0.37 (Average)	28	Private (Parcel I6-3-1)	Accessible via easement to the north (EA 4)	Amendment
5A-VP-16	0.04 (Small)	6.8	Private (Parcel I6-3-1)	Accessible via easement to the north (EA 4)	Excavation/ Restoration
5A-VP-22	0.82 (Large)	6.3	MassDFW	Accessible via easement to the east (EA 12)	Amendment
5A-VP-27	0.08 (Small)	7.7	Private (Parcel J5-2-11)	Accessible via easement to the west (EA 12)	Amendment
5A-VP-52	0.06 (Small)	40	MassDFW	Accessible via easement to the west (EA 12)	Excavation/ Restoration
5A-VP-57	0.49 (Average)	30	MassDFW	Accessible via easement to the west (EA 12)	Excavation/ Restoration

Notes:
MassDFW: Massachusetts Division of Fisheries and Wildlife
* Inclusion of these 10 pools in the pilot study is contingent on the ability to obtain access agreements from the property owners.

References

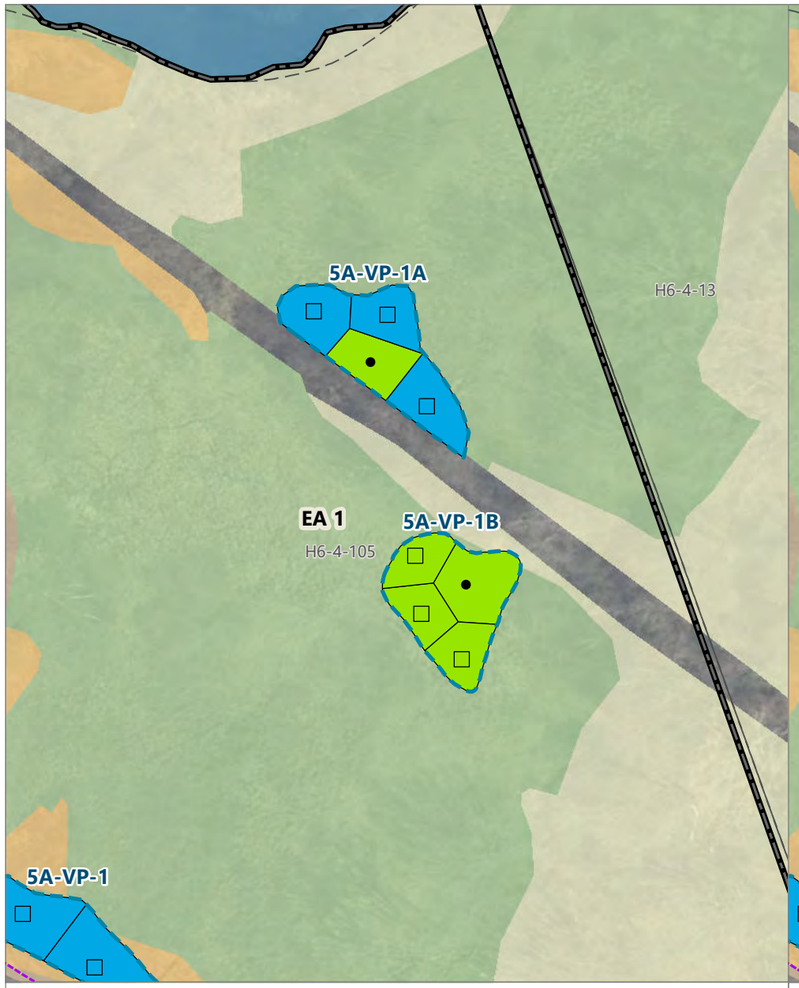
AECOM, 2020. *Final Report on Potential Vernal Pool Investigations*. Prepared for General Electric Company, Pittsfield, Massachusetts. July 16, 2020.

Anchor QEA (Anchor QEA, LLC), 2021. *Second Revised Pre-Design Investigation Work Plan for Reach 5A Non-Residential Floodplain Exposure Areas*. Prepared for General Electric Company, Pittsfield, Massachusetts. November 2021.

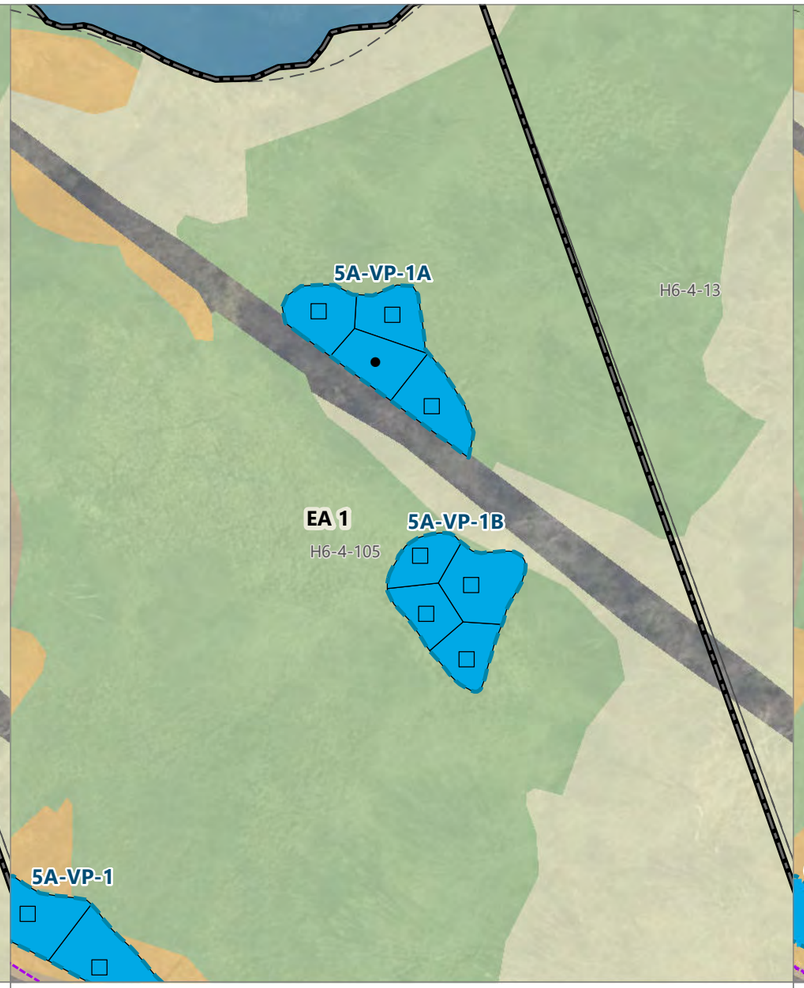
Anchor QEA, AECOM, and Arcadis, 2021. *Final Revised Rest of River Statement of Work*. Prepared for the General Electric Company. September 2021.

EPA (U.S. Environmental Protection Agency), 2020. *Revised Final Permit Modification to the 2016 Reissued RCRA Permit and Selection of CERCLA Remedial Action and Operation & Maintenance for Rest of River*. December 2020.

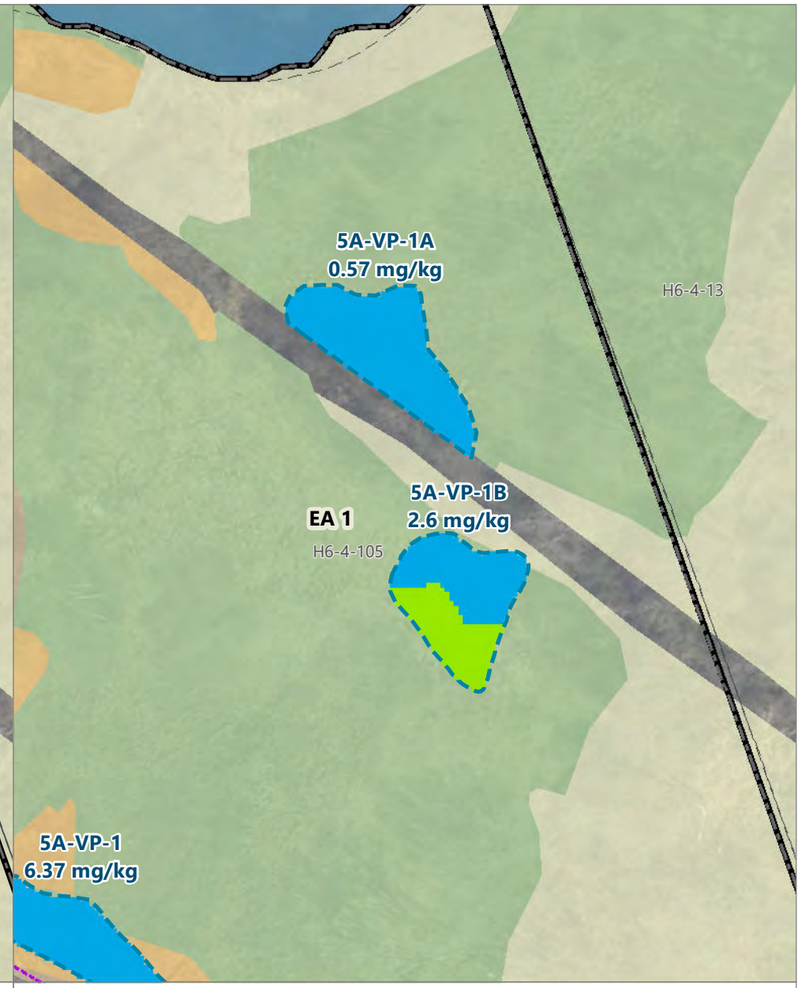
Figures



Total PCB (0 to 6 inches)



Total PCB (6 to 12 inches)



Total PCB (Interpolated 0 to 12 inches)[1]

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

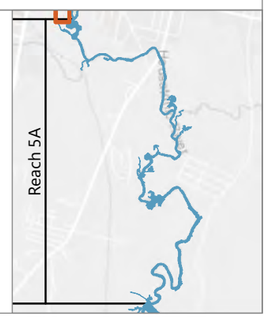
- Non-Residential PDI Sampling Locations (2022)
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

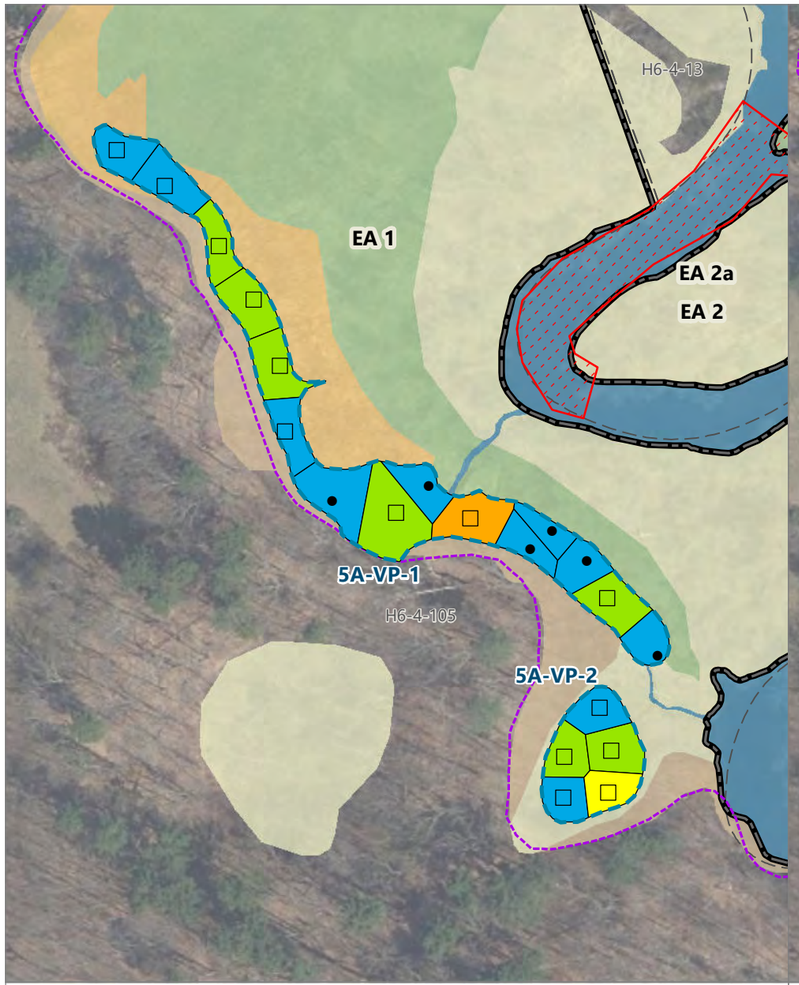
0 100
Feet



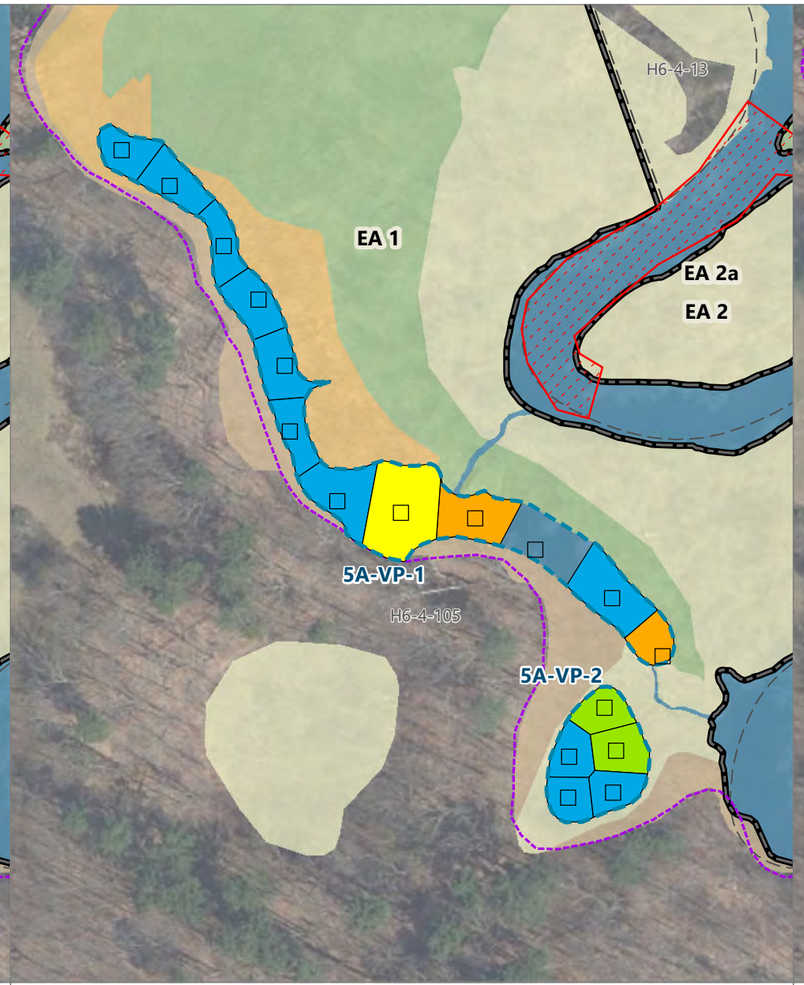
Publish Date: 2022/11/22, 11:58 AM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

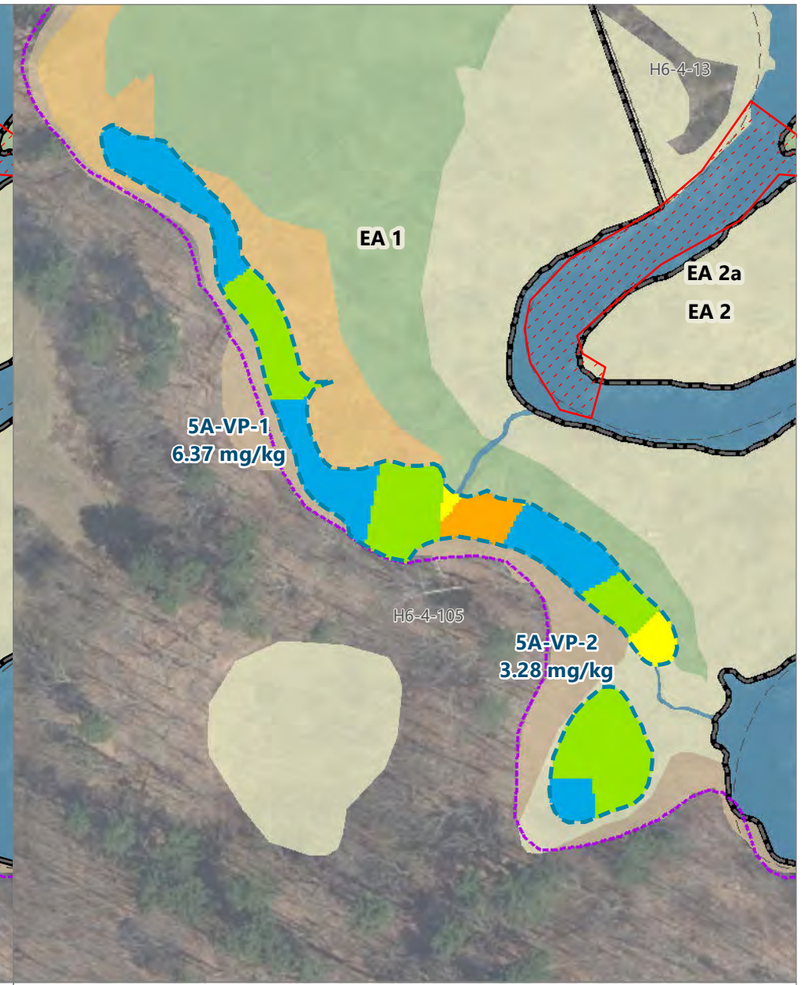
Figure 1a
Vernal Pools in EA 1
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches)



Total PCB (6 to 12 inches)



Total PCB (Interpolated 0 to 12 inches)[1]

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)
- Core Area 1 Habitat

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

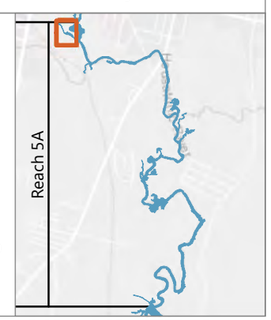
- Non-Residential PDI Sampling Locations (2022)
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

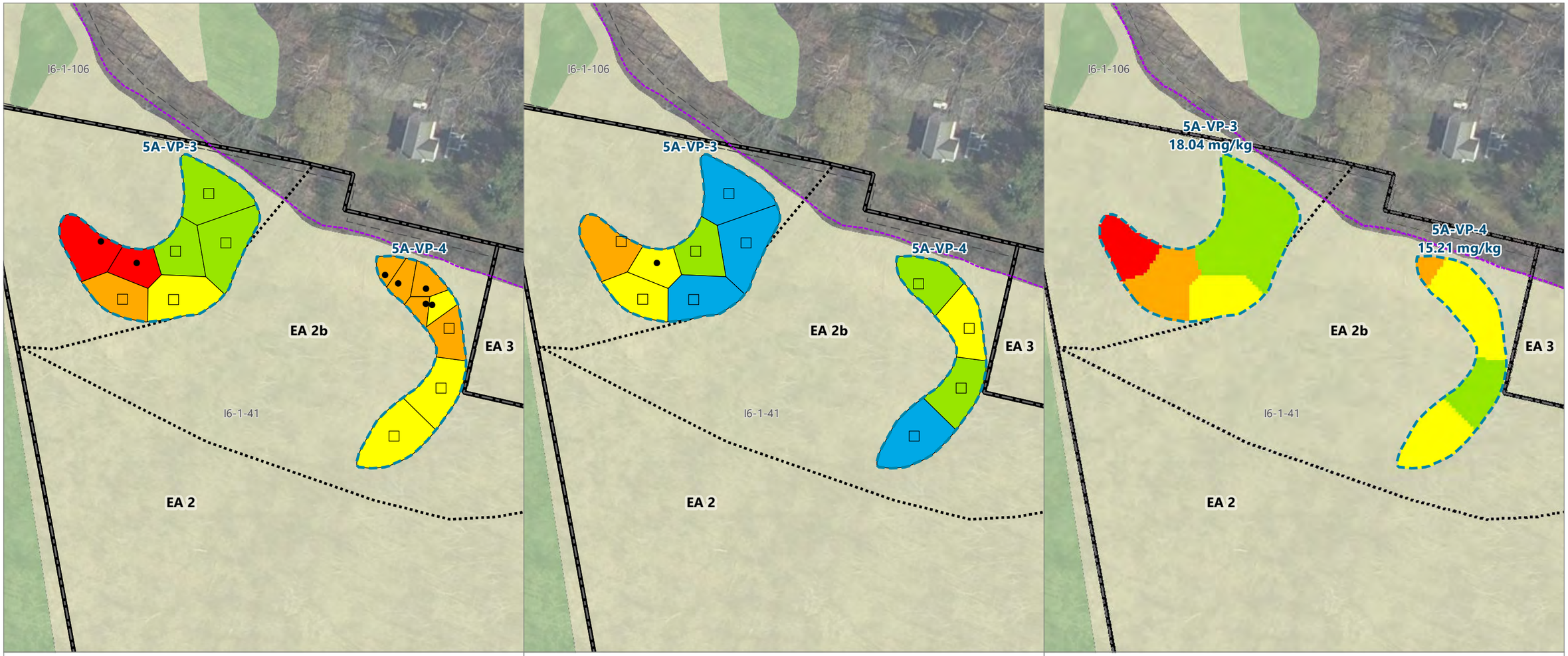
0 150
Feet



Publish Date: 2022/11/22, 11:58 AM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

Figure 1b
Vernal Pools in EA 1
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches) | **Total PCB (6 to 12 inches)** | **Total PCB (Interpolated 0 to 12 inches)[1]**

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

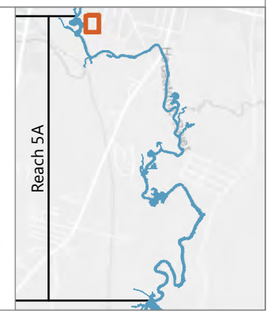
- Non-Residential PDI Sampling Locations (2022)
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

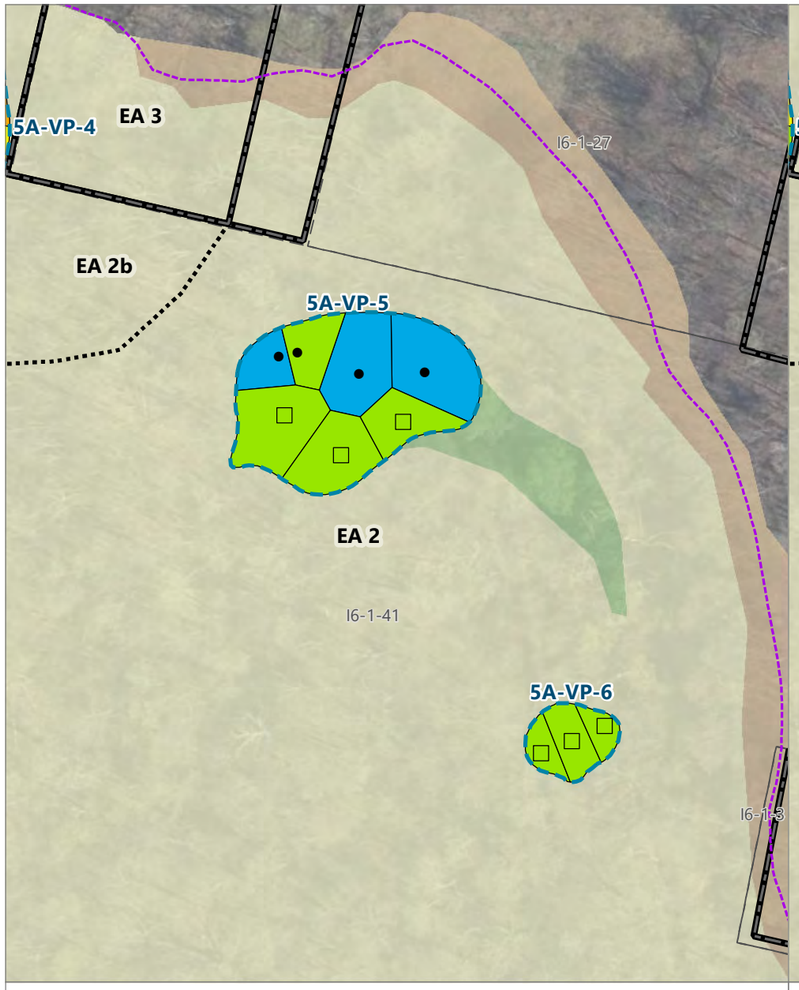
0 100
Feet



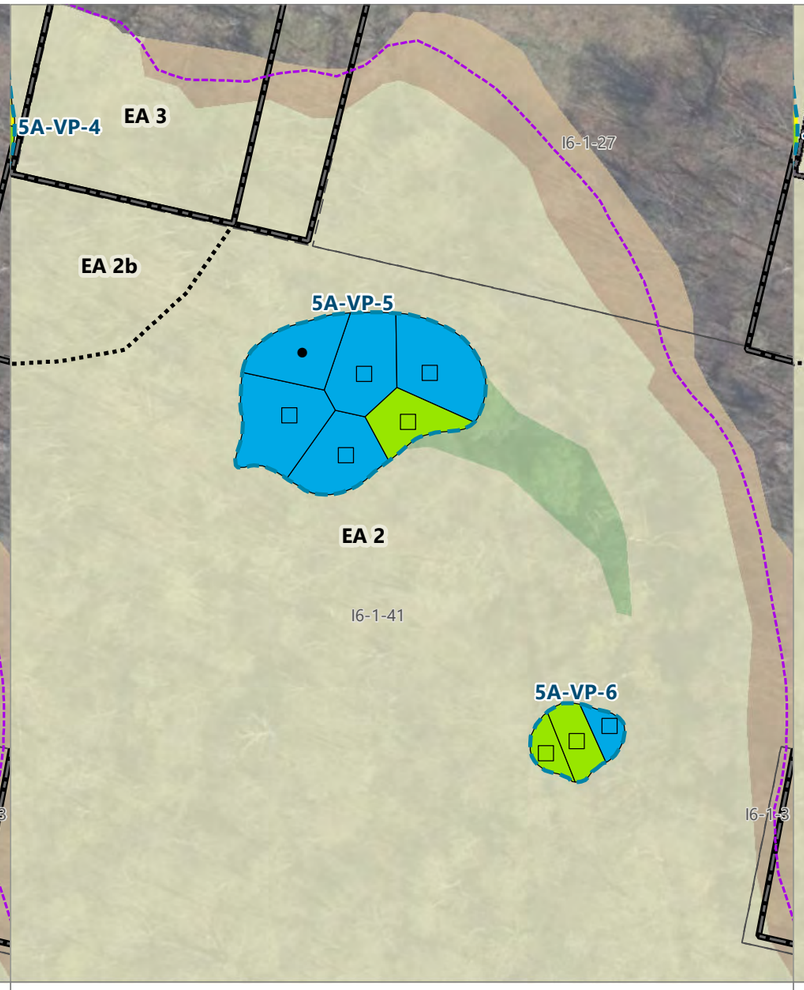
Publish Date: 2022/11/22, 11:58 AM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

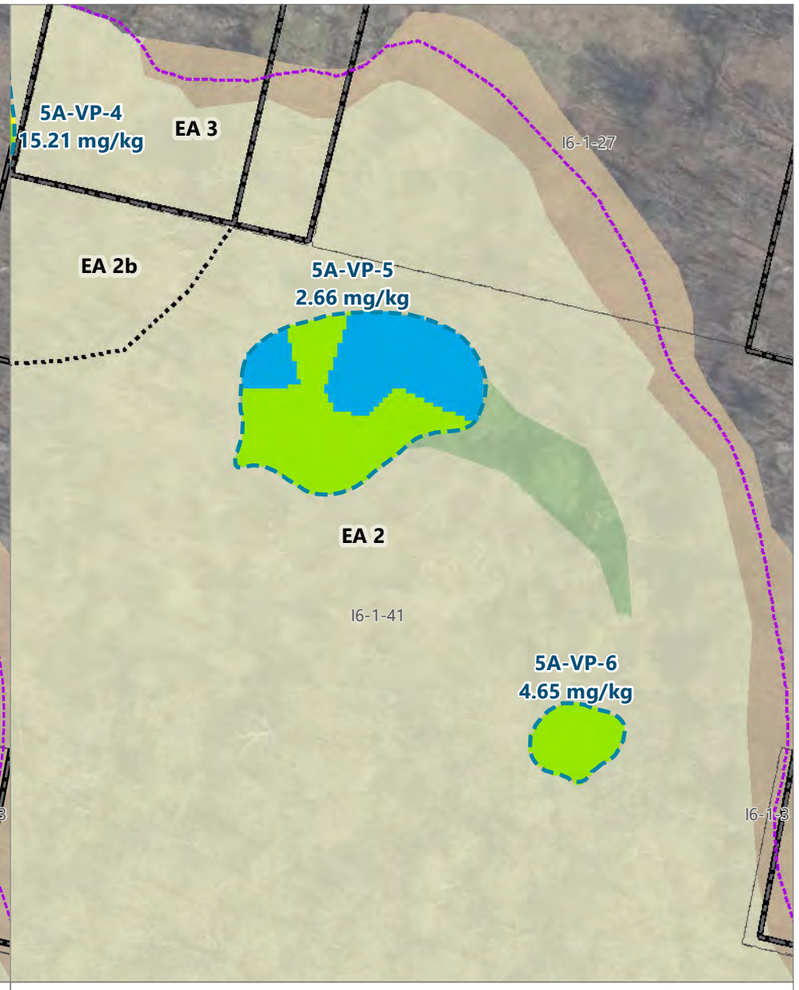
Figure 2a
Vernal Pools in EA 2
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches)



Total PCB (6 to 12 inches)



Total PCB (Interpolated 0 to 12 inches)[1]

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

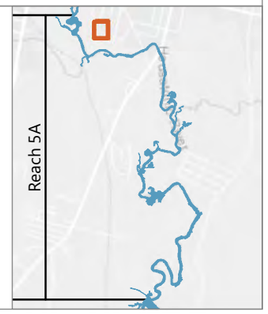
- Non-Residential PDI Sampling Locations (2022)
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

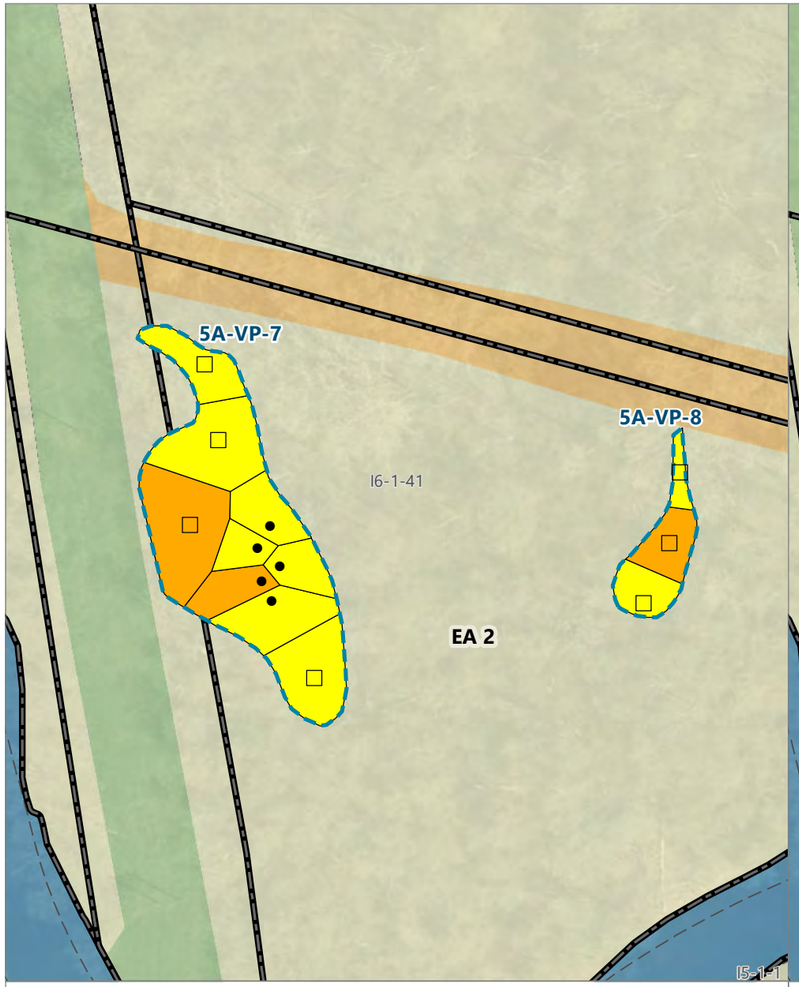
0 100
Feet



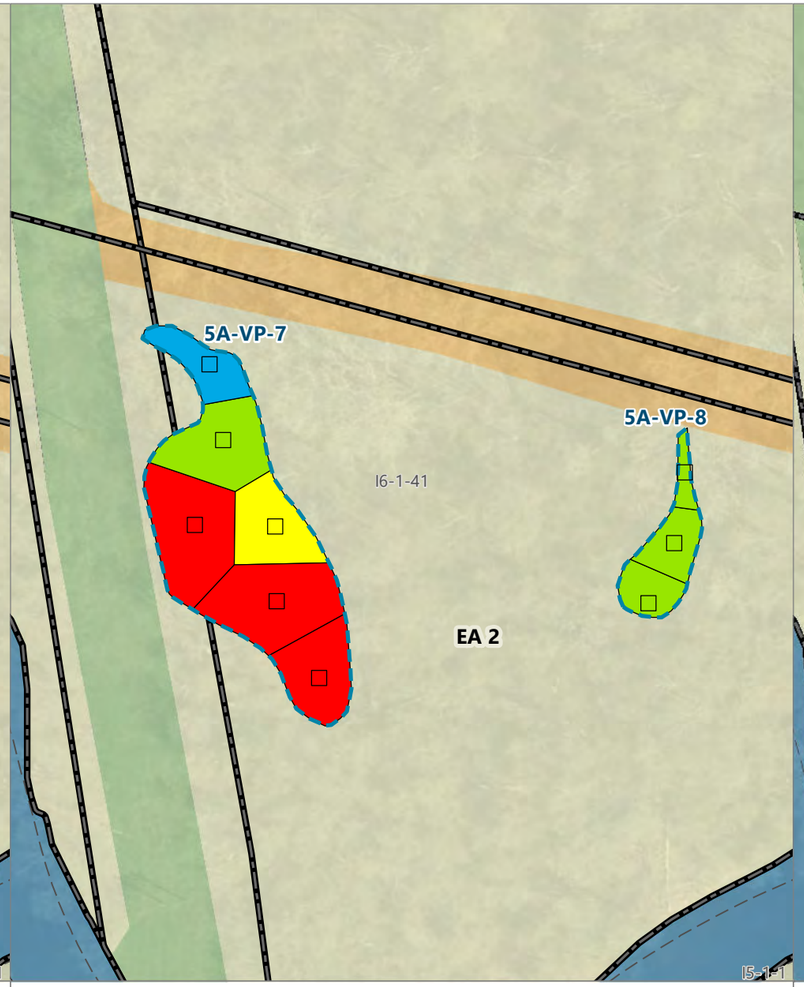
Publish Date: 2022/11/22, 11:58 AM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

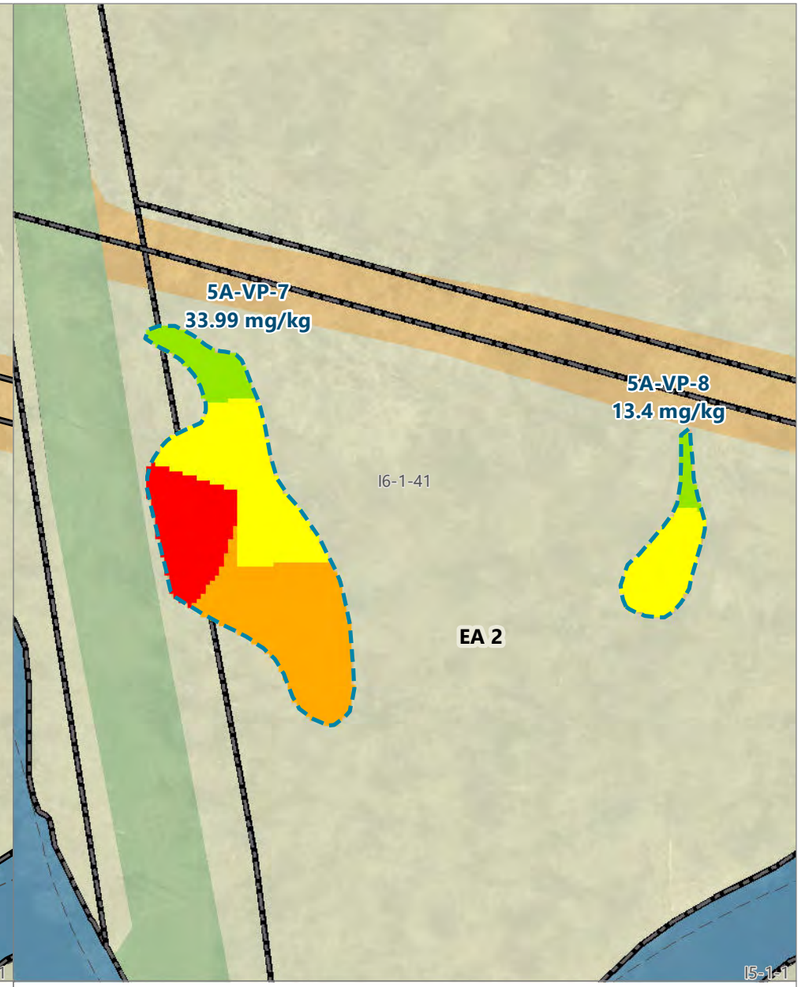
Figure 2b
Vernal Pools in EA 2
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches)



Total PCB (6 to 12 inches)



Total PCB (Interpolated 0 to 12 inches)[1]

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

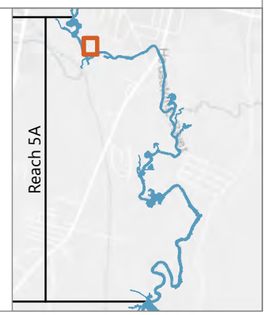
- Non-Residential PDI Sampling Locations (2022)
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

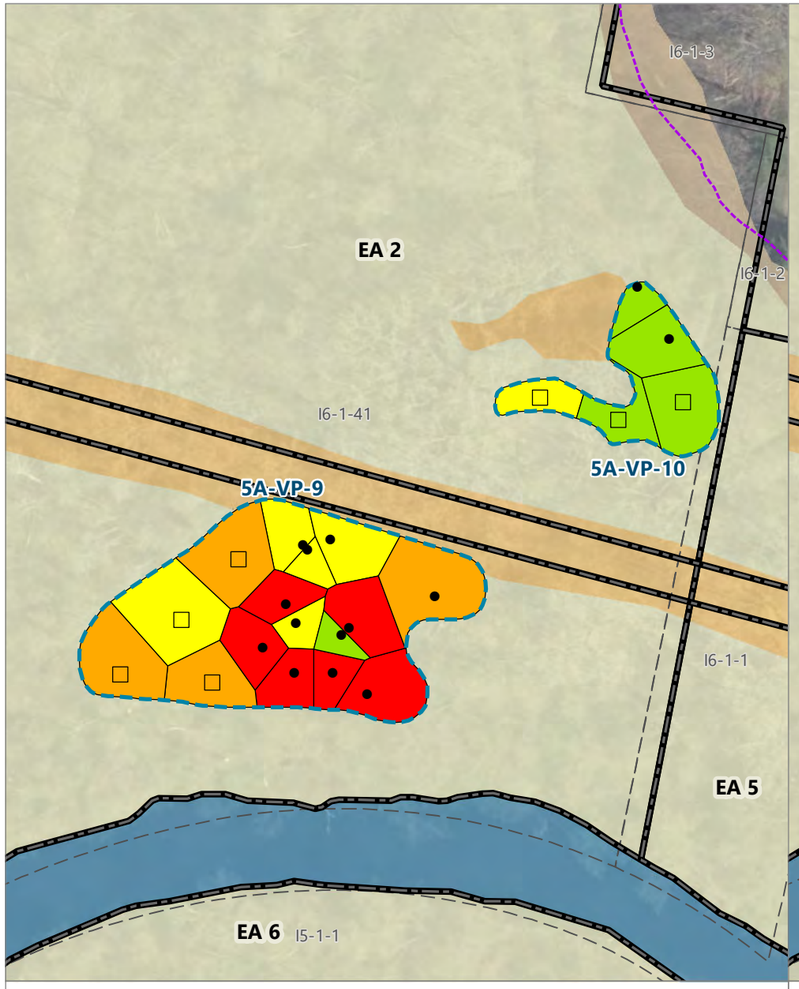
0 100
Feet



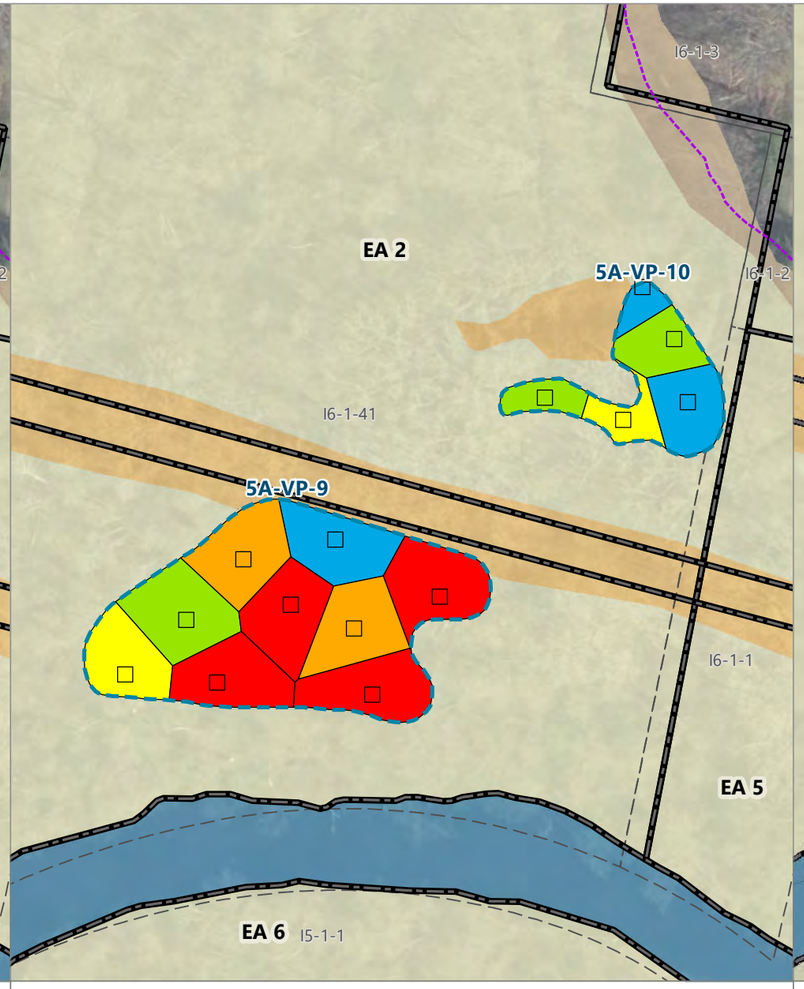
Publish Date: 2022/11/22, 11:58 AM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

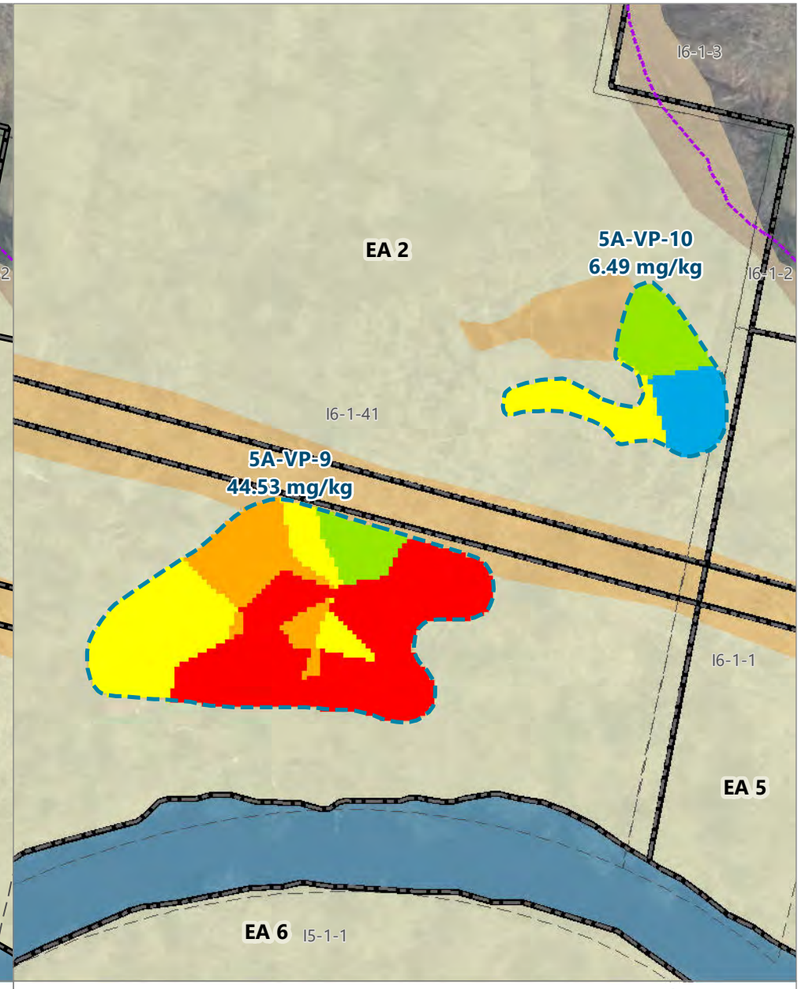
Figure 2c
Vernal Pools in EA 2
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches)



Total PCB (6 to 12 inches)



Total PCB (Interpolated 0 to 12 inches)[1]

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

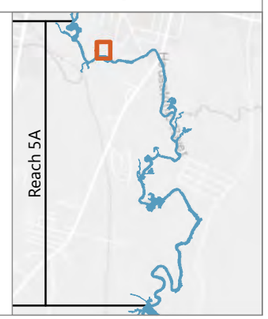
- Non-Residential PDI Sampling Locations (2022)
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

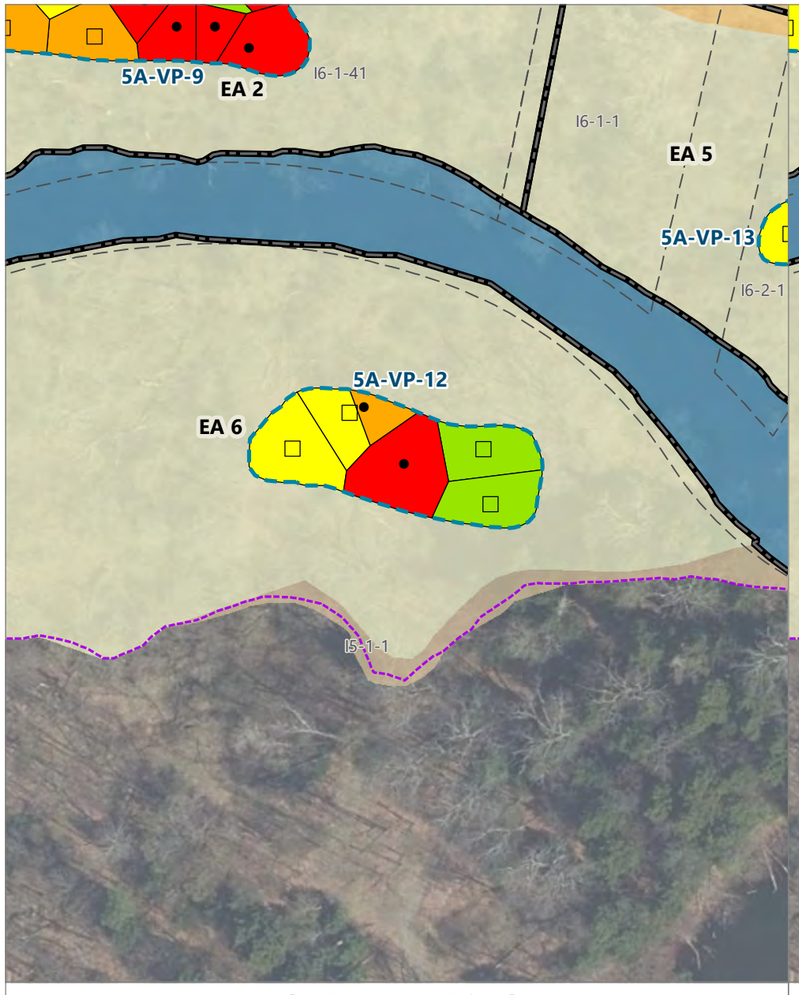
0 100
Feet



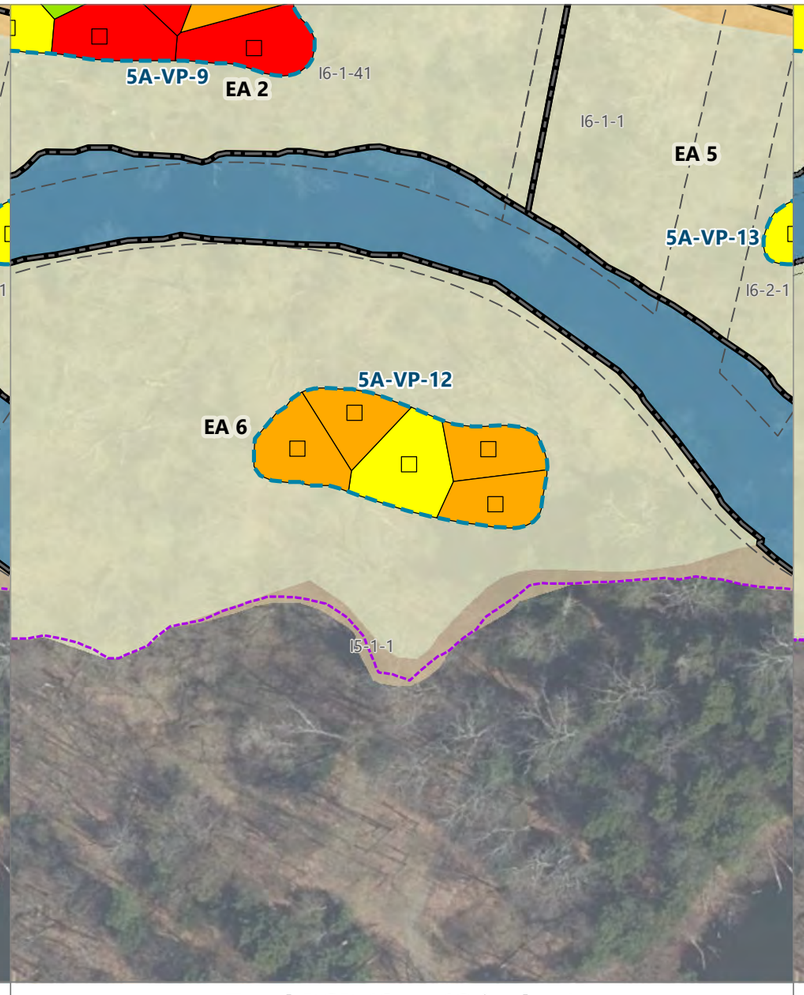
Publish Date: 2022/11/22, 11:58 AM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

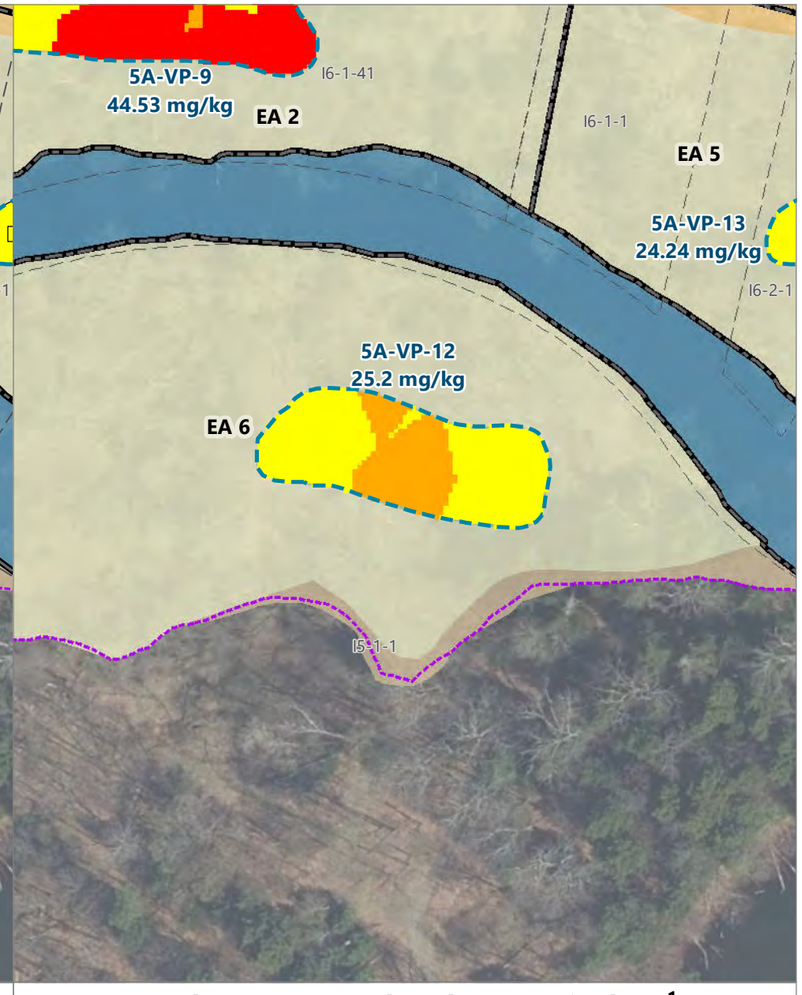
Figure 2d
Vernal Pools in EA 2
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches)



Total PCB (6 to 12 inches)



Total PCB (Interpolated 0 to 12 inches)[1]

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

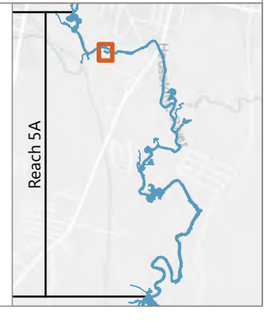
- Non-Residential PDI Sampling Locations (2022)
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

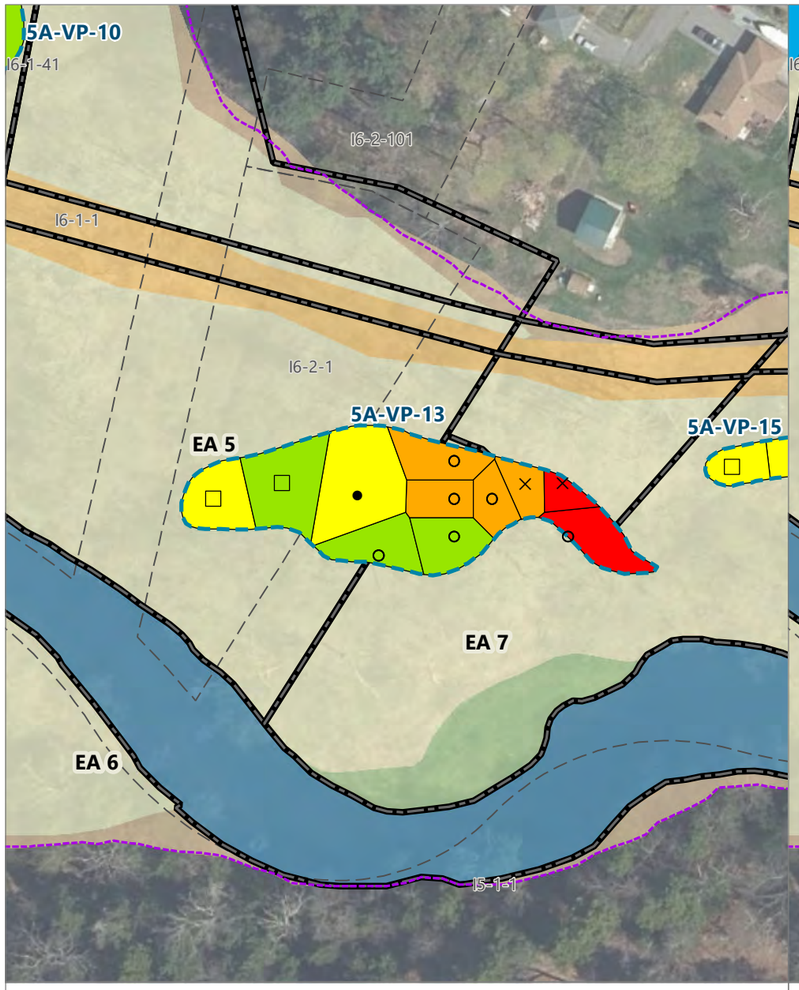
0 100
Feet



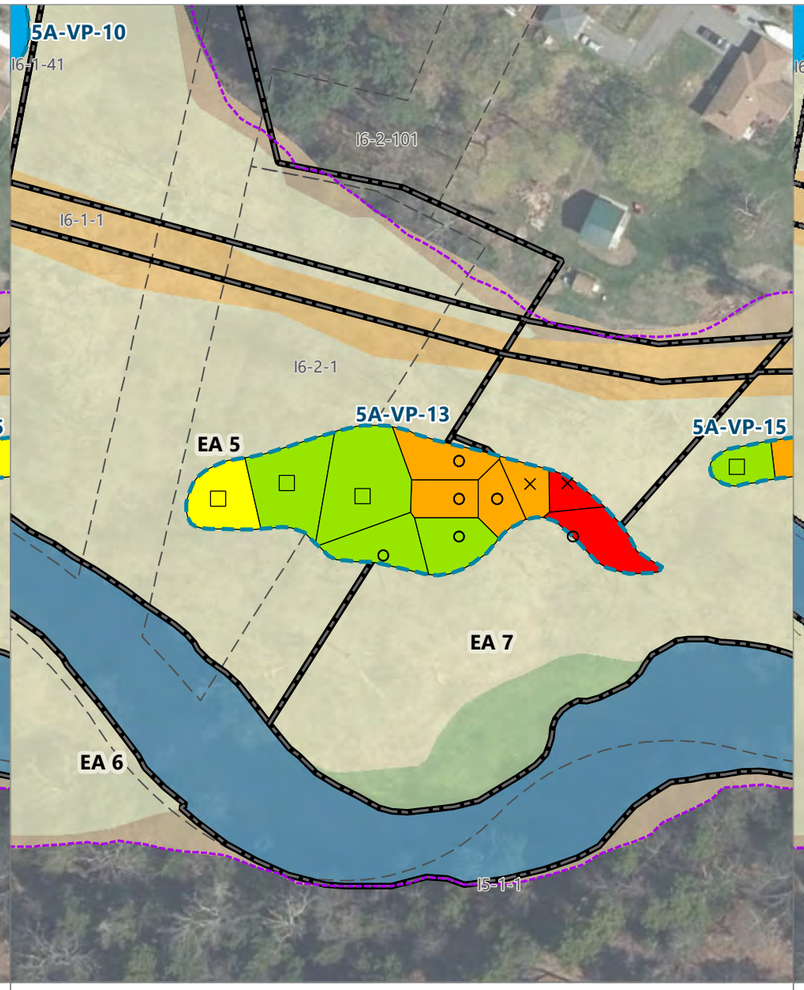
Publish Date: 2022/11/22, 11:58 AM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

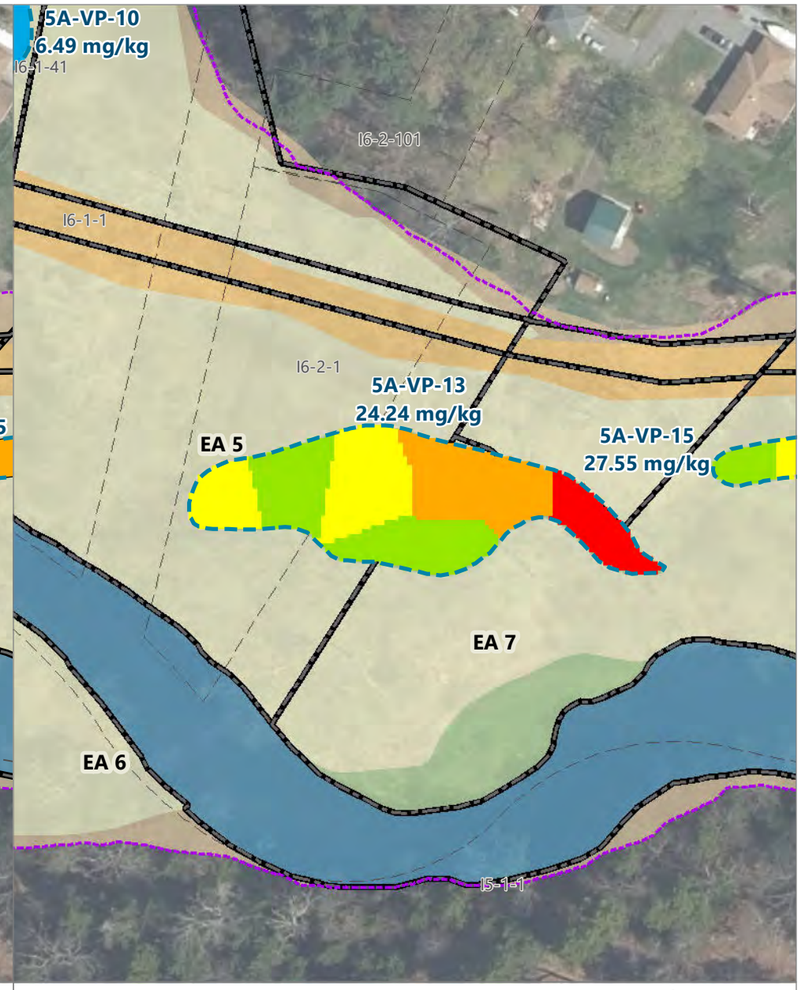
Figure 3
Vernal Pool in EA 6
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches)



Total PCB (6 to 12 inches)



Total PCB (Interpolated 0 to 12 inches)[1]

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

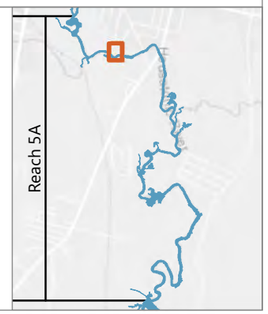
- Non-Residential PDI Sampling Locations (2022)
- Residential PDI Sampling Locations (2020-2021)
- Actual/Potential Lawn Sampling Locations
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

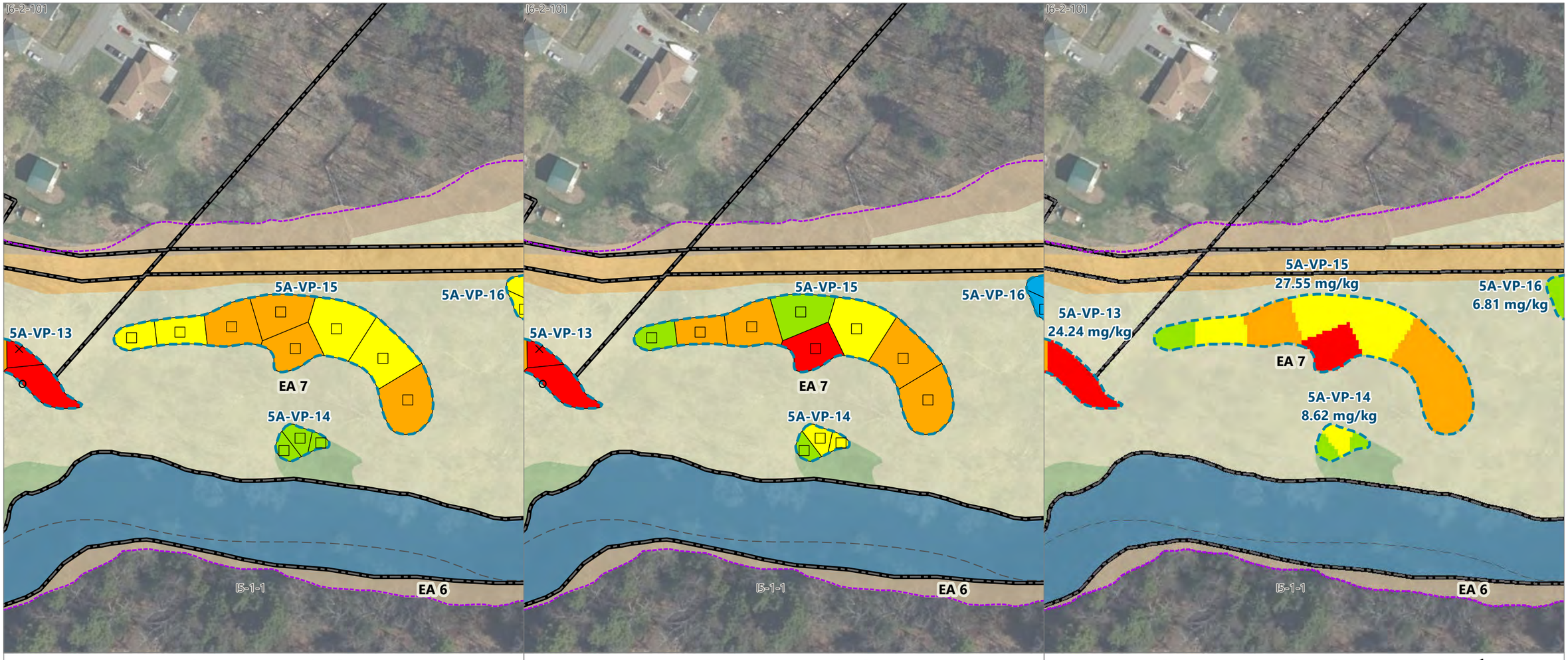
0 100
Feet



Publish Date: 2022/11/22, 11:58 AM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

Figure 4a
Vernal Pool in EA 5 and EA 7
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches) | **Total PCB (6 to 12 inches)** | **Total PCB (Interpolated 0 to 12 inches)[1]**

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

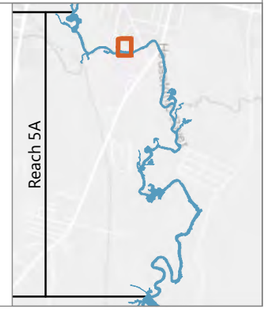
- Non-Residential PDI Sampling Locations (2022)
- Residential PDI Sampling Locations (2020-2021)
- Actual/Potential Lawn Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

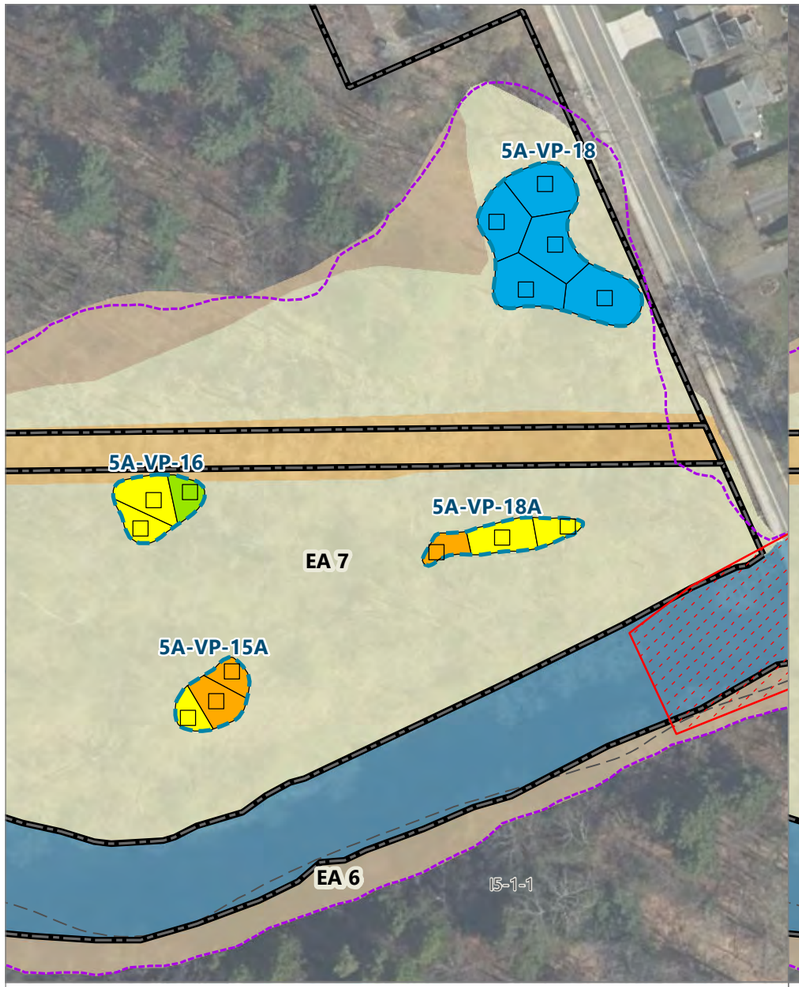
0 100
Feet



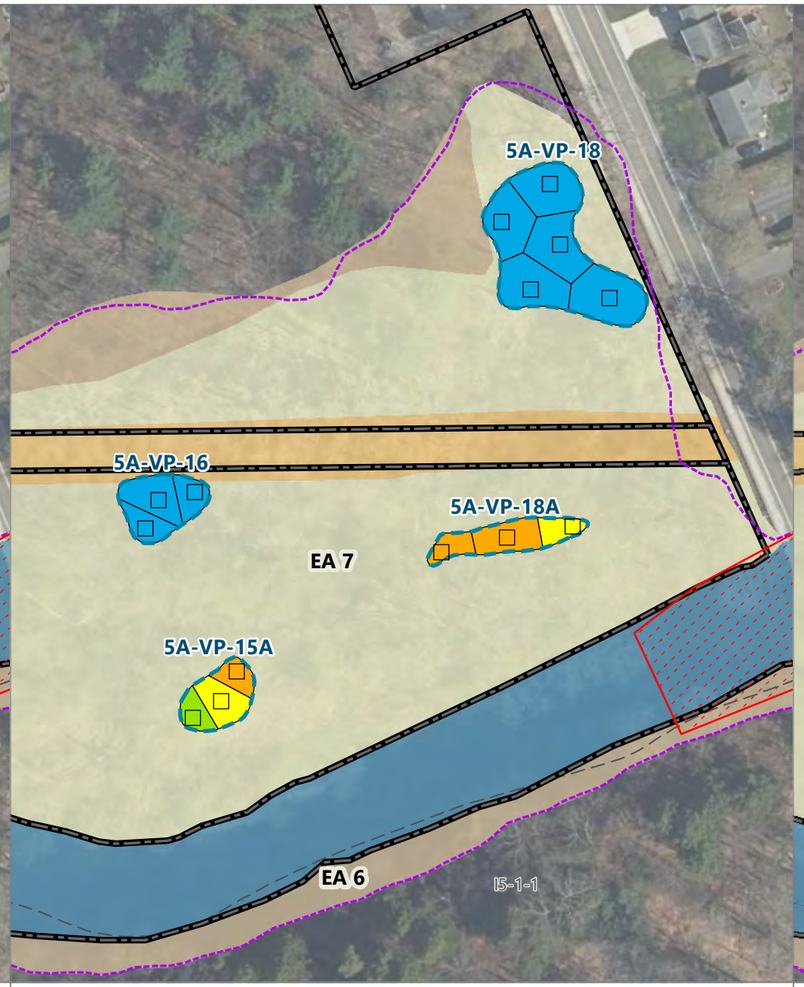
Publish Date: 2022/11/22, 11:58 AM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

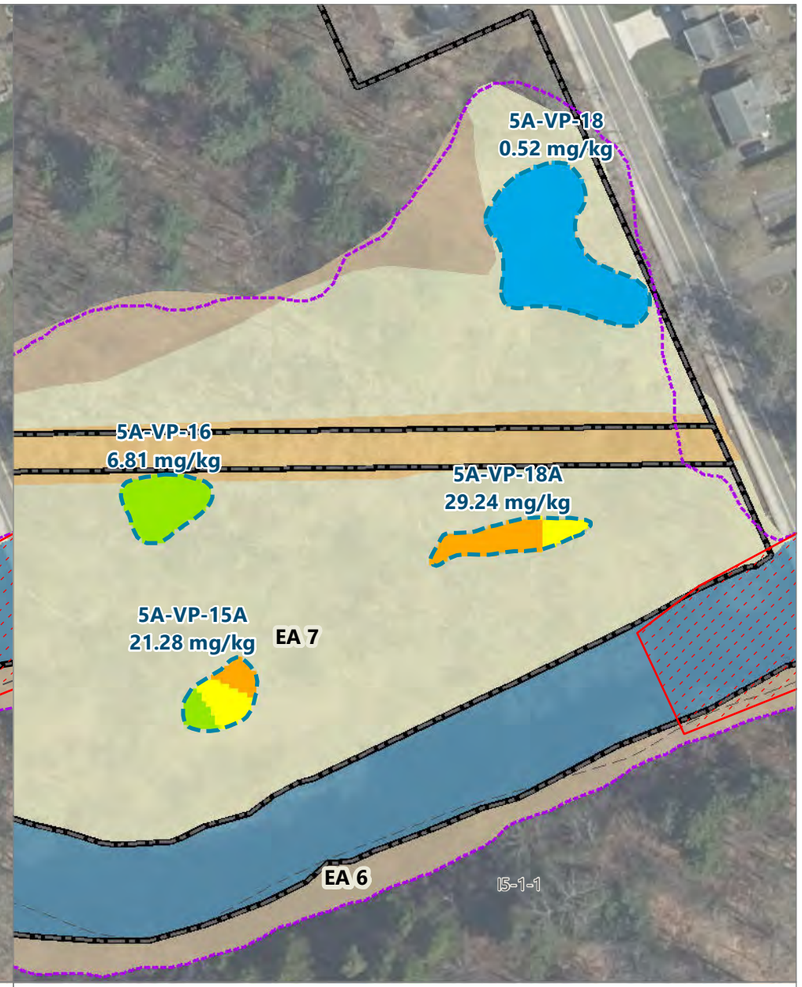
Figure 4b
Vernal Pools in EA 7
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches)



Total PCB (6 to 12 inches)



Total PCB (Interpolated 0 to 12 inches)[1]

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)
- Core Area 1 Habitat

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

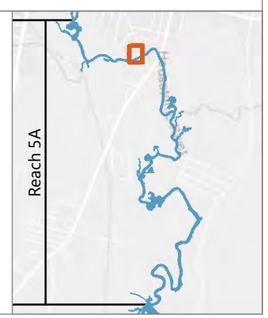
- Non-Residential PDI Sampling Locations (2022)

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

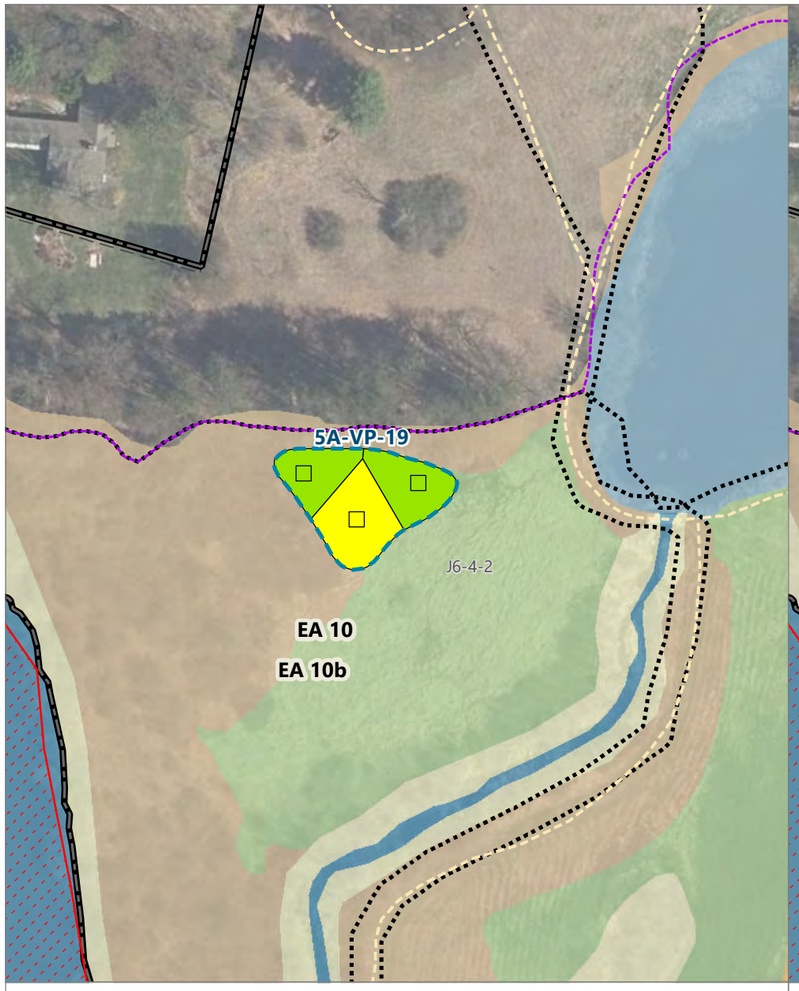
0 100
Feet



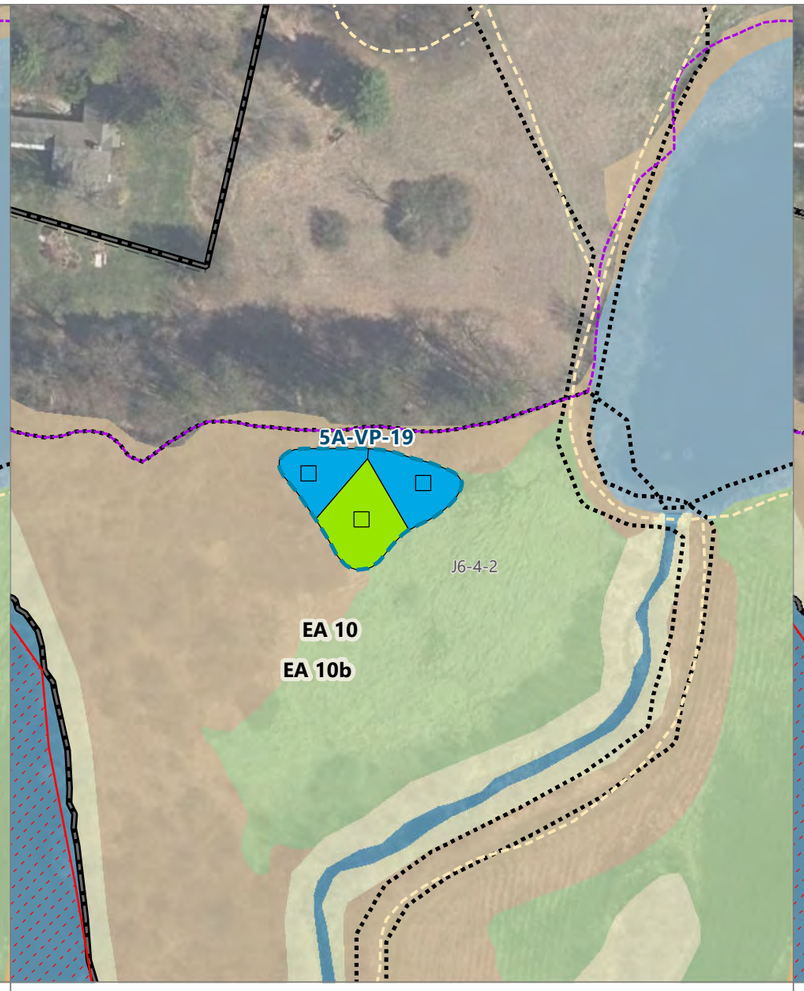
Publish Date: 2022/11/22, 11:58 AM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

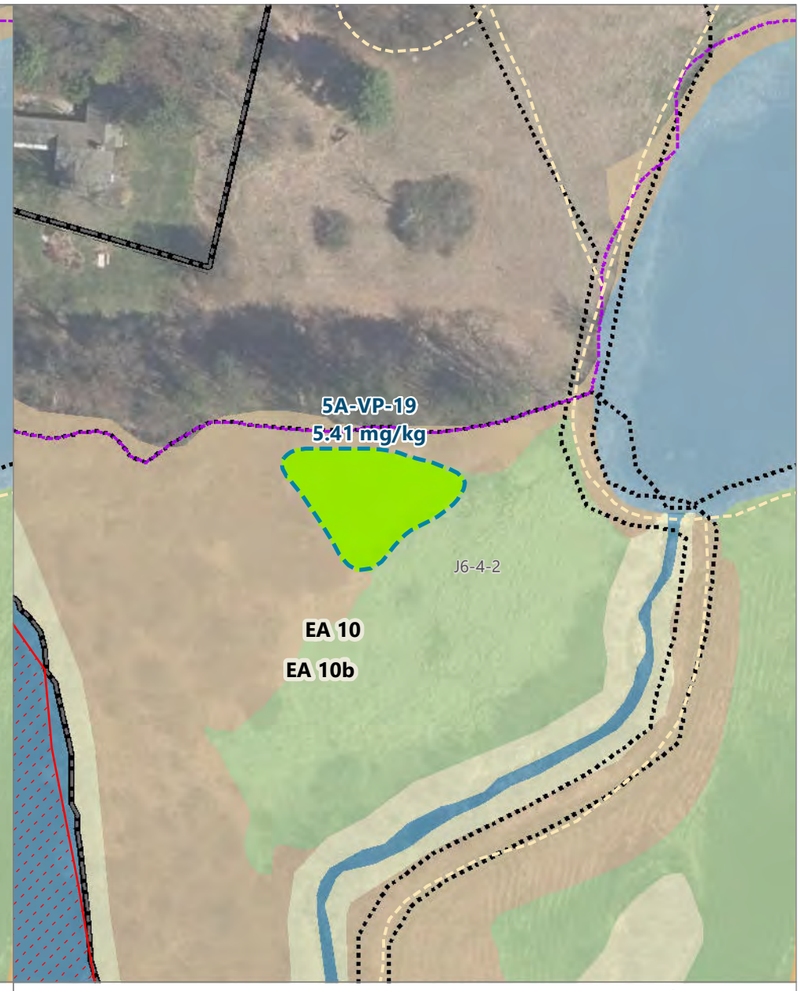
Figure 4c
Vernal Pools in EA 7
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches)



Total PCB (6 to 12 inches)



Total PCB (Interpolated 0 to 12 inches)[1]

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)
- Core Area 1 Habitat
- Walking Trails

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

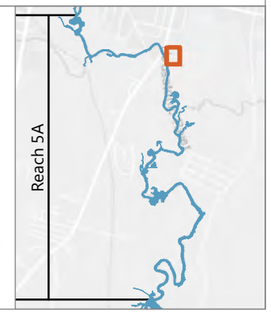
- Non-Residential PDI Sampling Locations (2022)

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

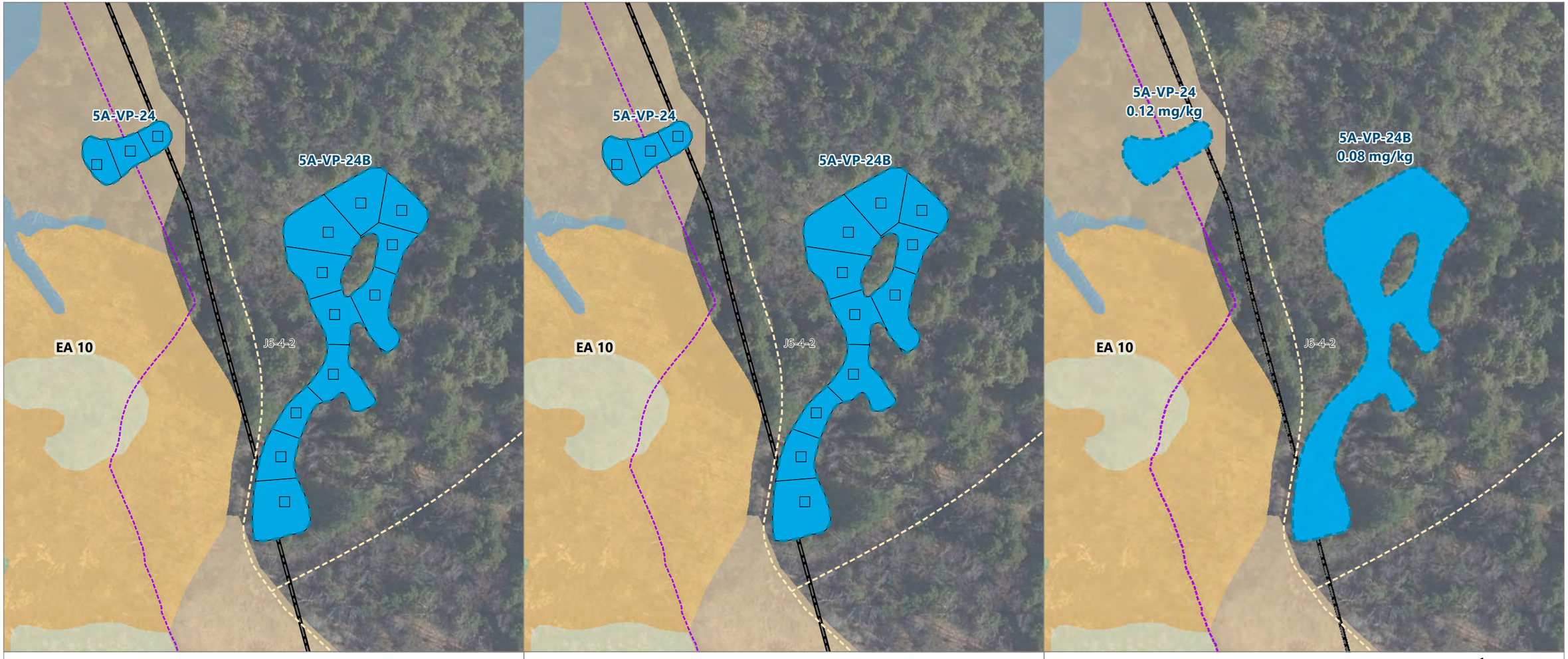
0 100
Feet



Publish Date: 2022/11/22, 11:59 AM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

Figure 5a
Vernal Pools in EA 10
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches) | **Total PCB (6 to 12 inches)** | **Total PCB (Interpolated 0 to 12 inches)[1]**

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)
- Walking Trails

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

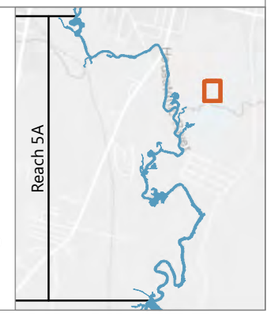
- Non-Residential PDI Sampling Locations (2022)

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

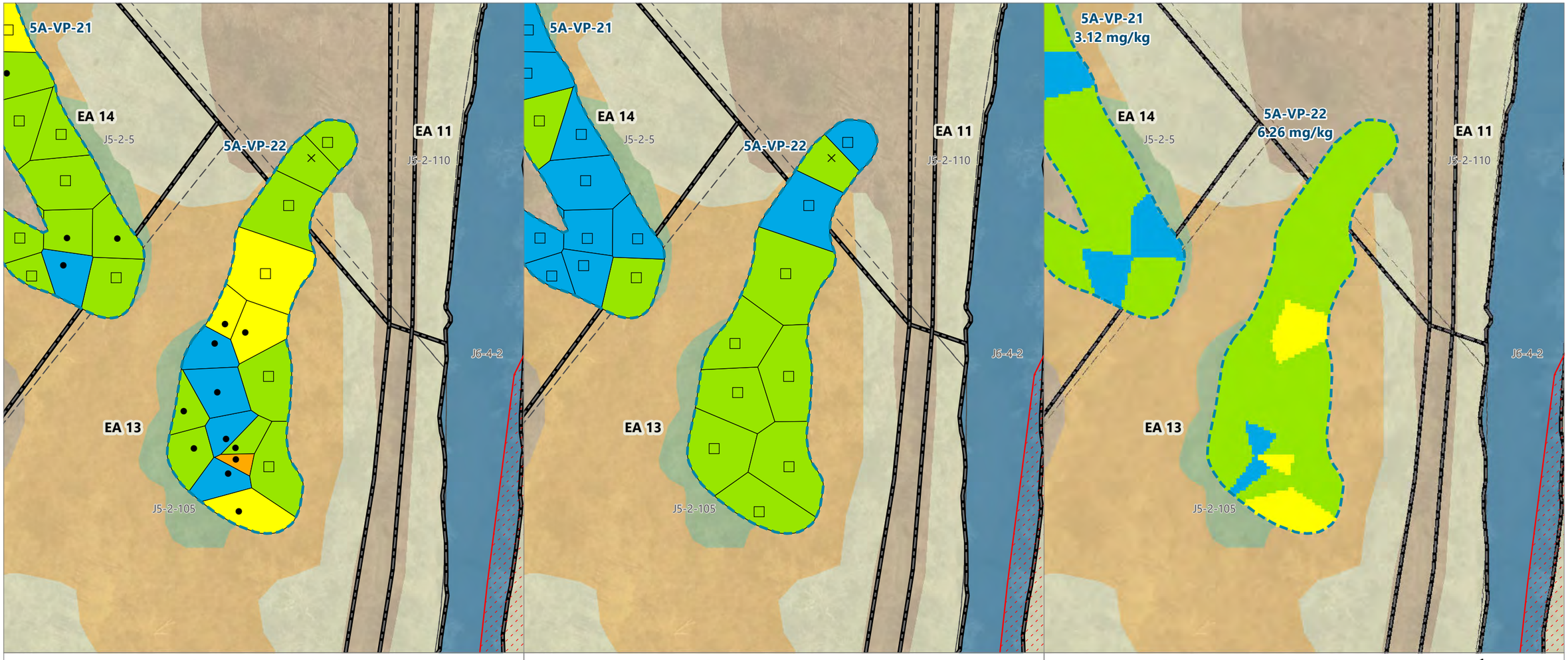
0 120
Feet



Publish Date: 2022/11/22, 11:59 AM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

Figure 5b
Vernal Pools in EA 10
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches) | **Total PCB (6 to 12 inches)** | **Total PCB (Interpolated 0 to 12 inches)[1]**

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)
- Core Area 1 Habitat

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

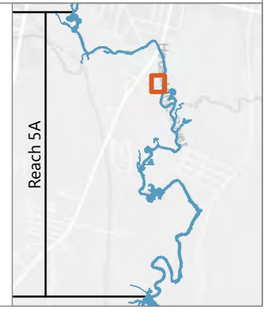
- Non-Residential PDI Sampling Locations (2022)
- Actual/Potential Lawn Sampling Locations
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

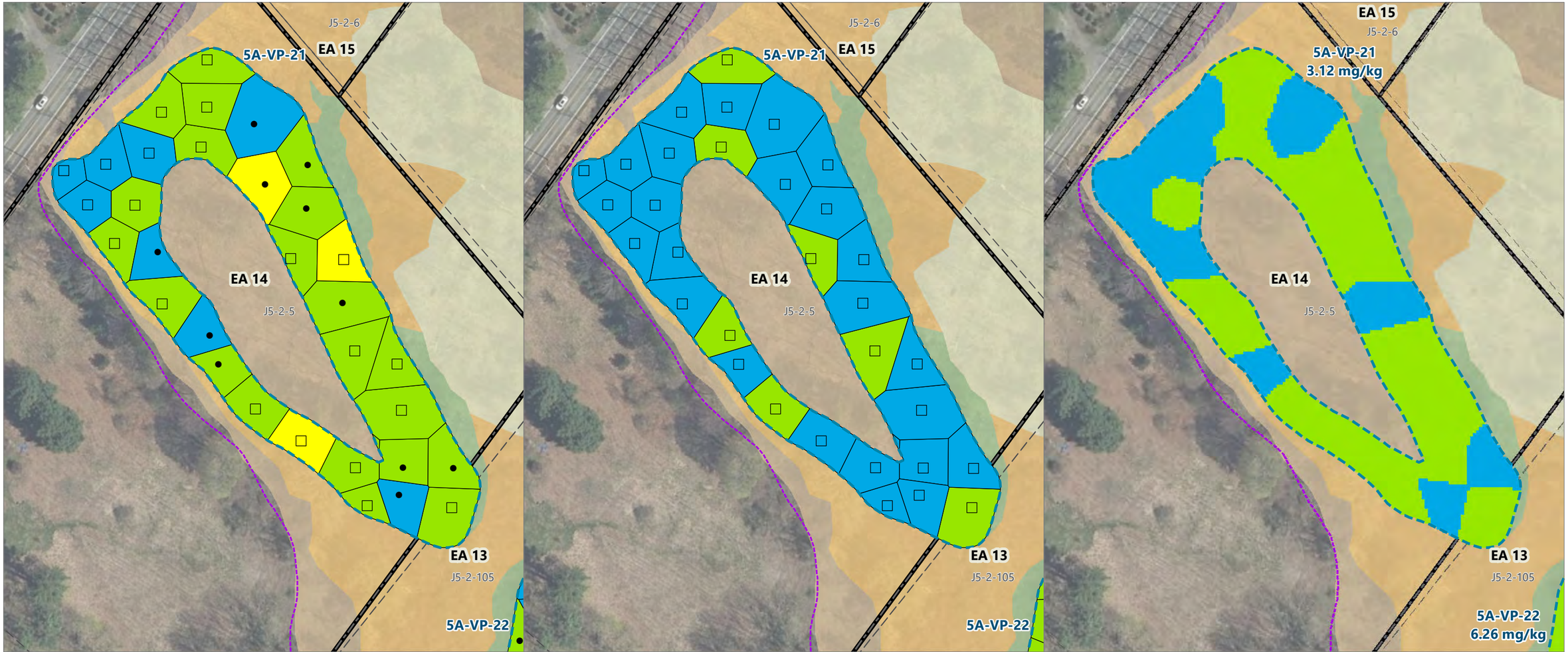
0 100
Feet



Publish Date: 2022/11/22, 11:59 AM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

Figure 6
Vernal Pool in EA 13
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches) | **Total PCB (6 to 12 inches)** | **Total PCB (Interpolated 0 to 12 inches)[1]**

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

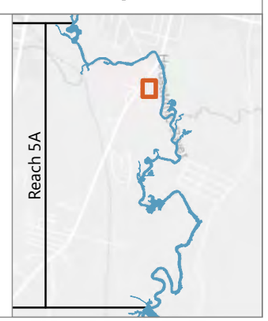
- Non-Residential PDI Sampling Locations (2022)
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

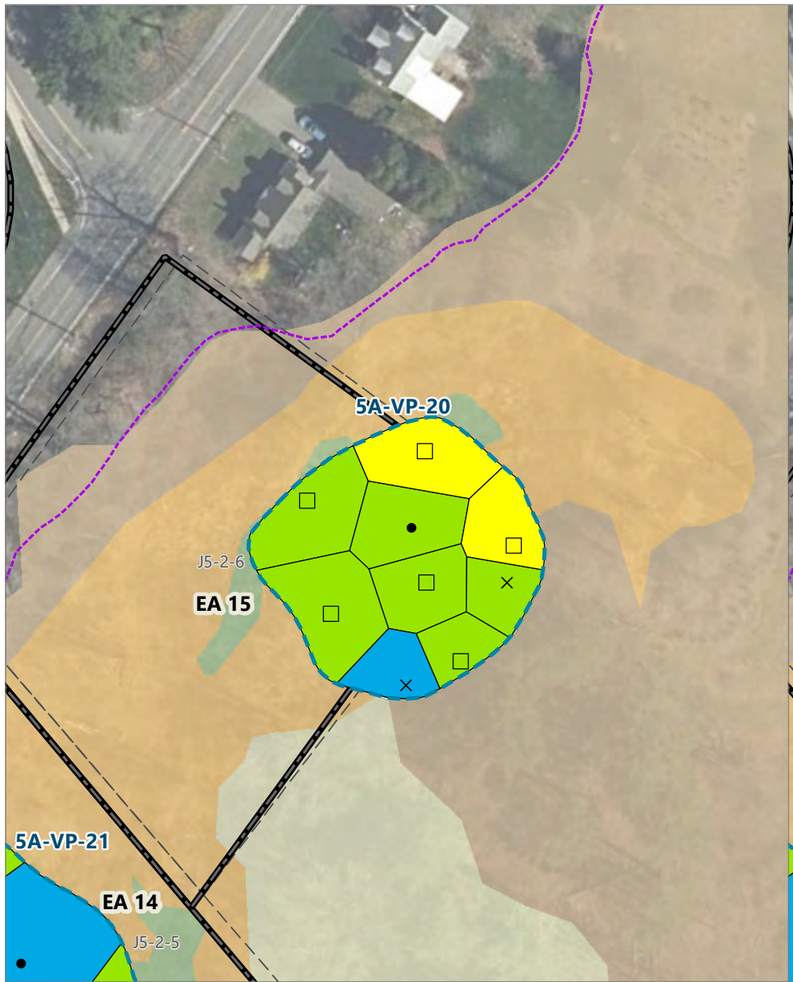
0 100
Feet



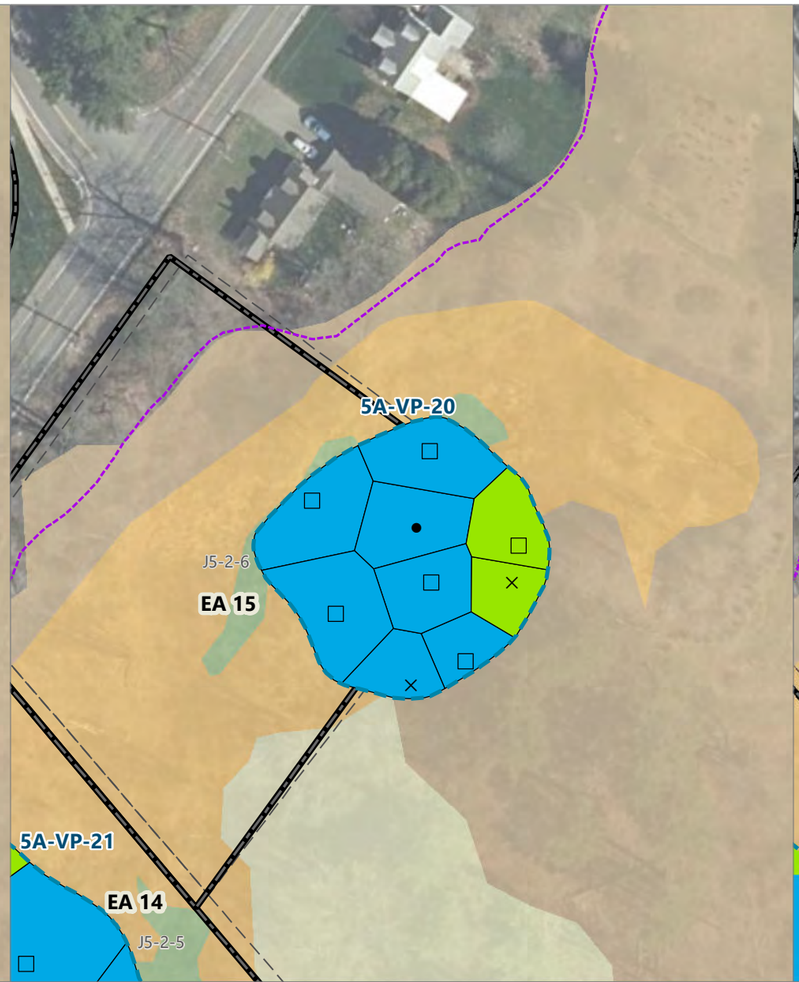
Publish Date: 2022/11/22, 11:59 AM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

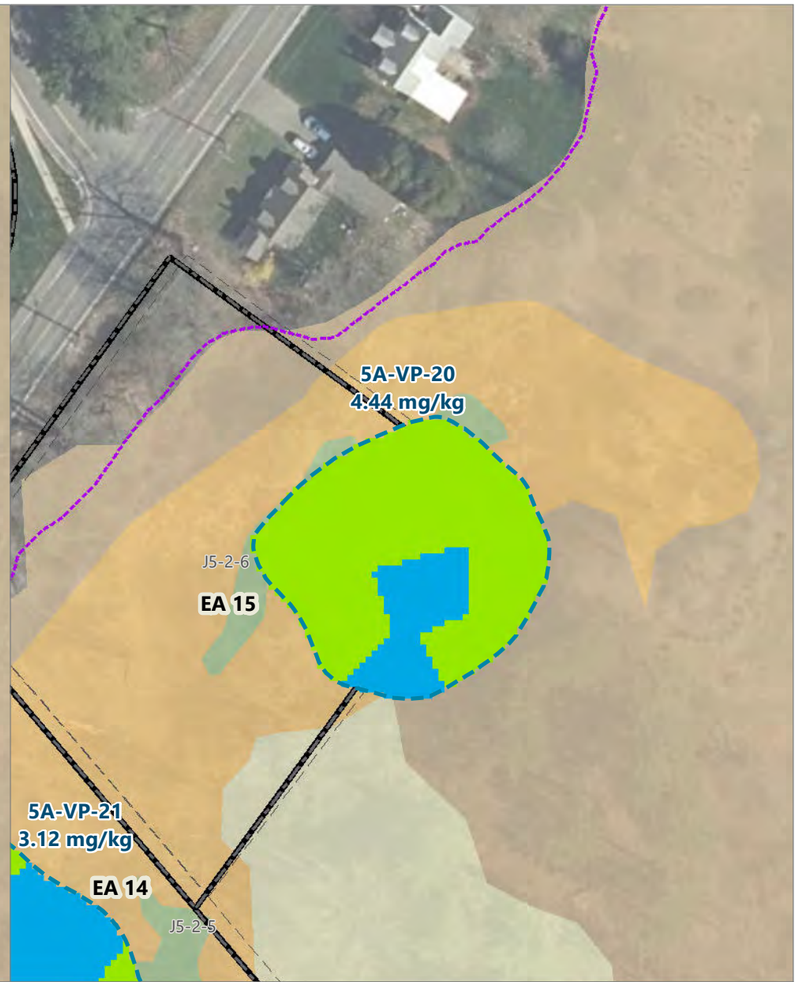
Figure 7
Vernal Pool in EA 14
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches)



Total PCB (6 to 12 inches)



Total PCB (Interpolated 0 to 12 inches)[1]

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

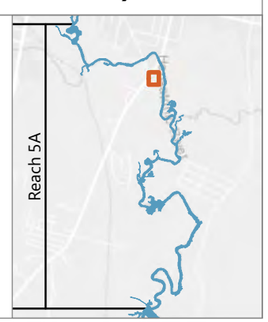
- Non-Residential PDI Sampling Locations (2022)
- Actual/Potential Lawn Sampling Locations
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

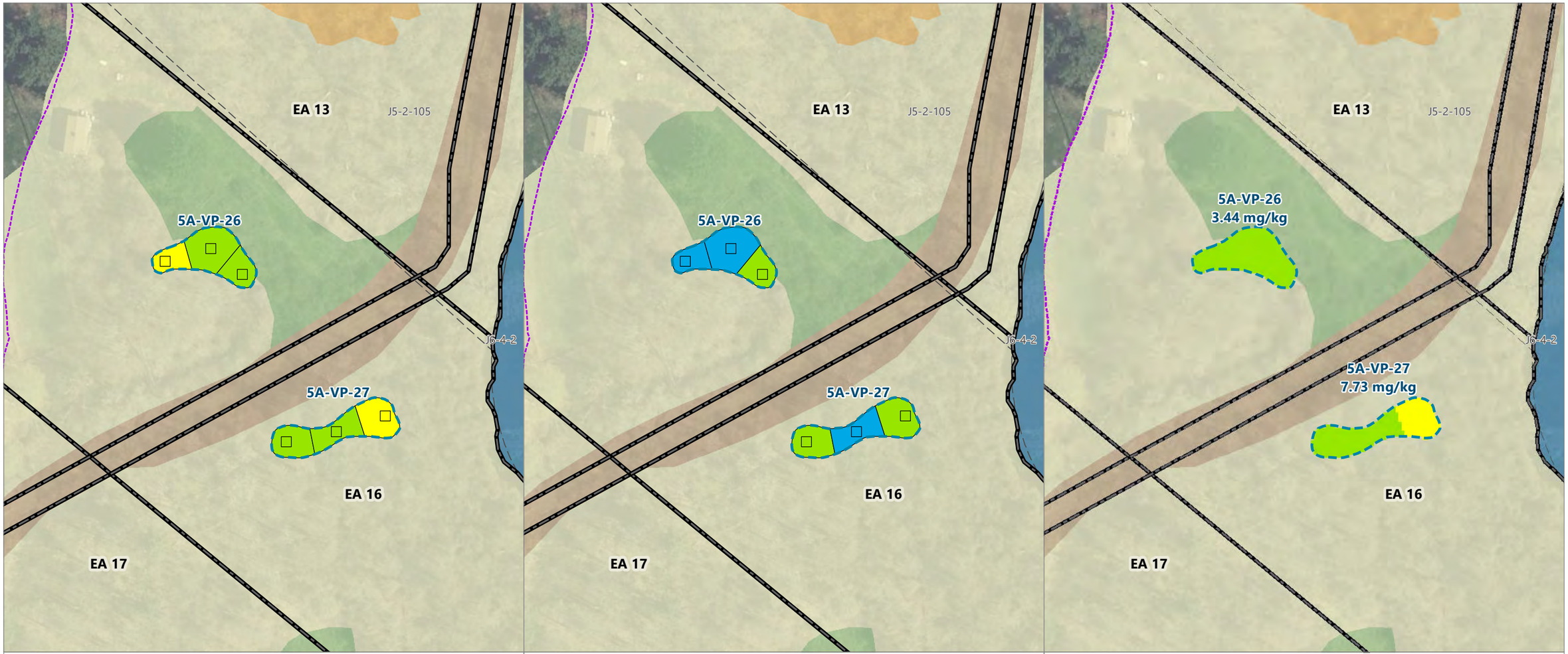
0 80
Feet



Publish Date: 2022/11/22, 11:59 AM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

Figure 8
Vernal Pool in EA 15
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches) | **Total PCB (6 to 12 inches)** | **Total PCB (Interpolated 0 to 12 inches)[1]**

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

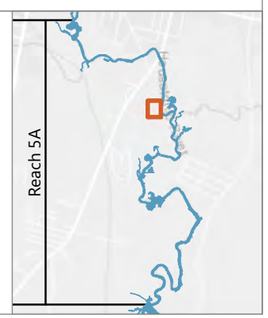
- Non-Residential PDI Sampling Locations (2022)

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

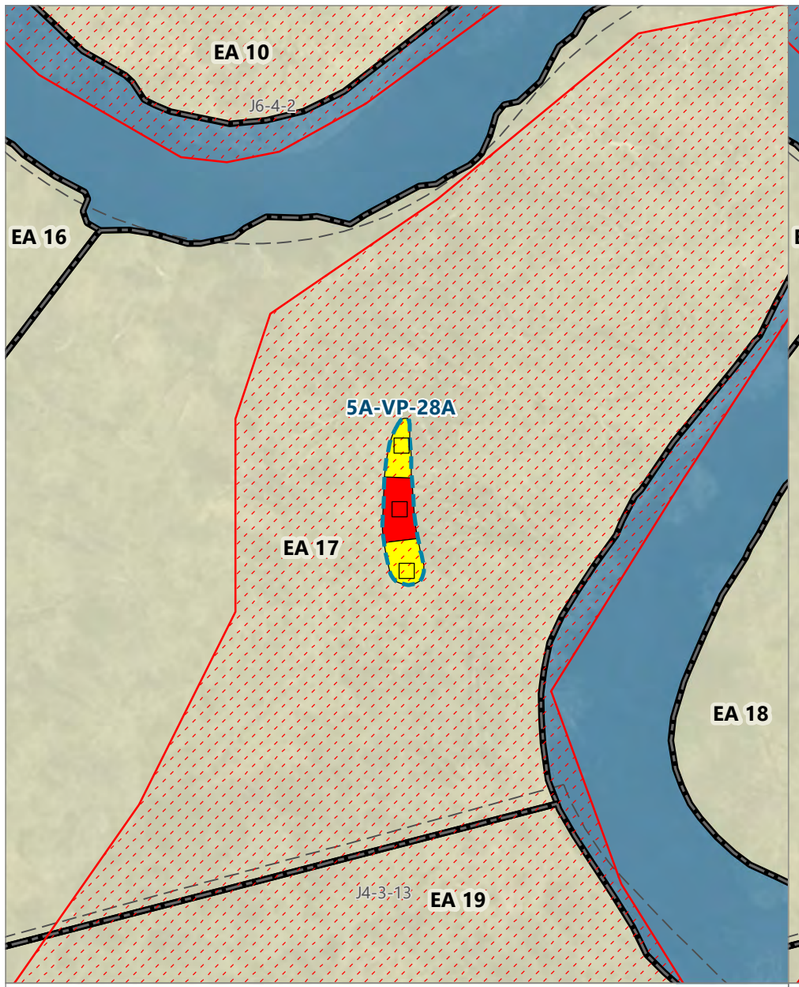
0 100
Feet



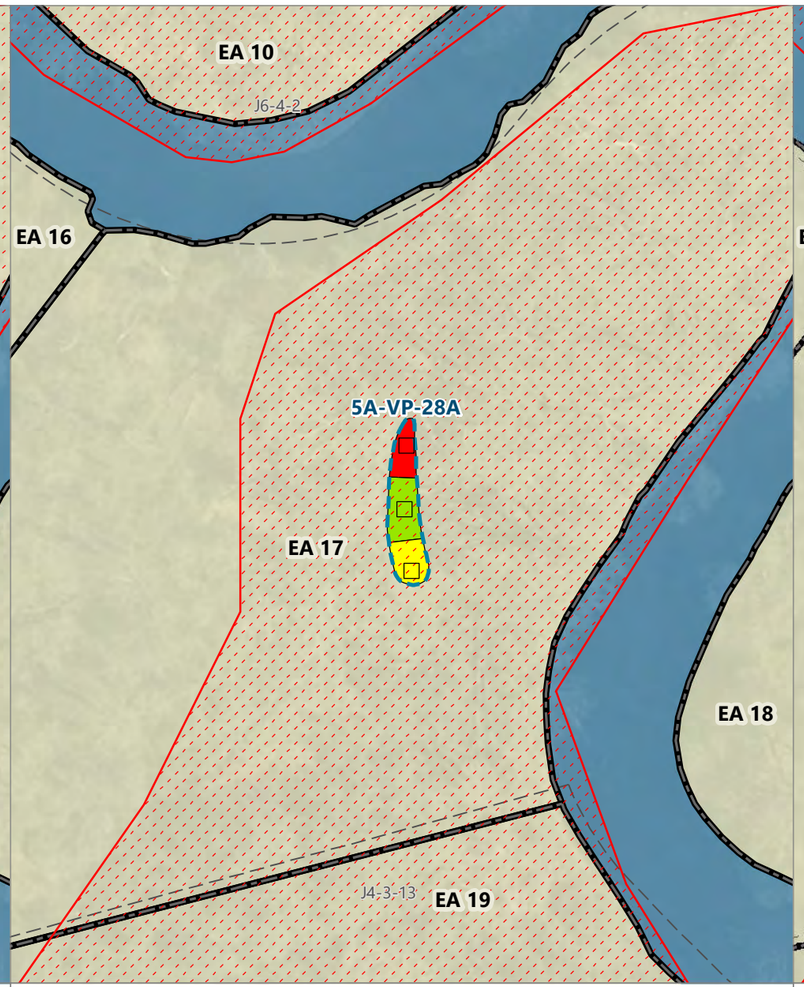
Publish Date: 2022/11/22, 11:59 AM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

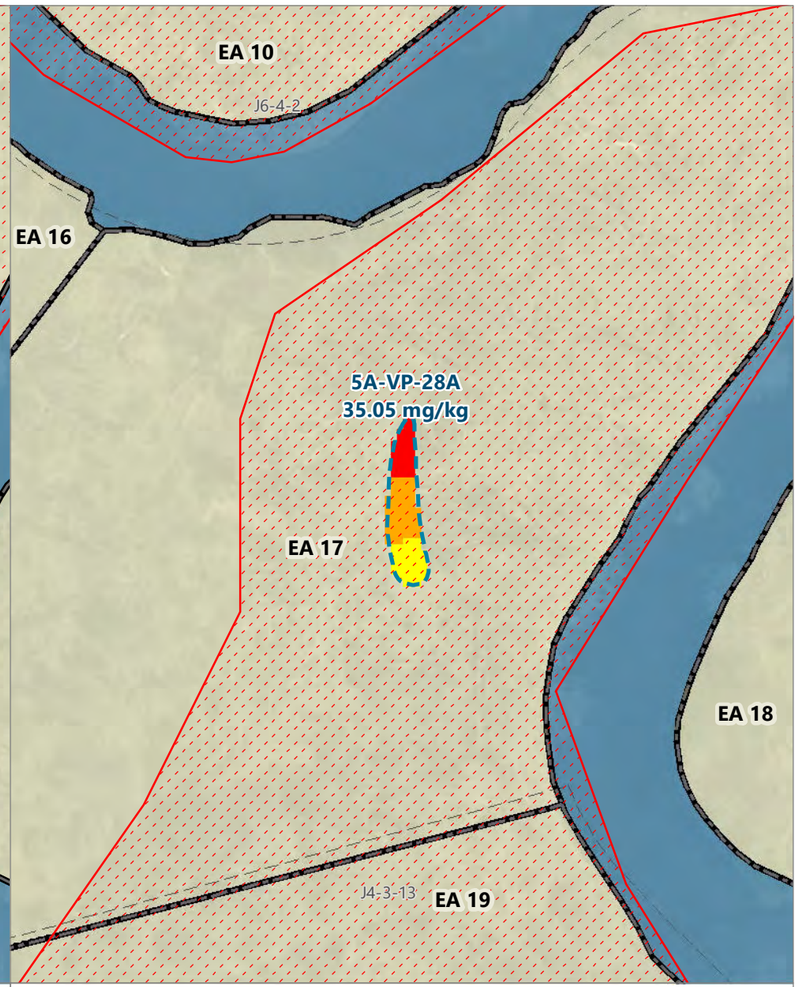
Figure 9
Vernal Pools in EA 16
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches)



Total PCB (6 to 12 inches)



Total PCB (Interpolated 0 to 12 inches)[1]

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)
- Core Area 1 Habitat

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

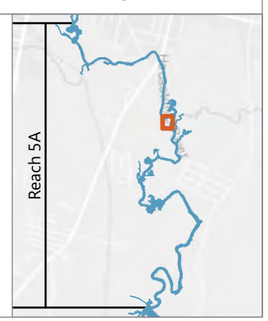
- Non-Residential PDI Sampling Locations (2022)

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

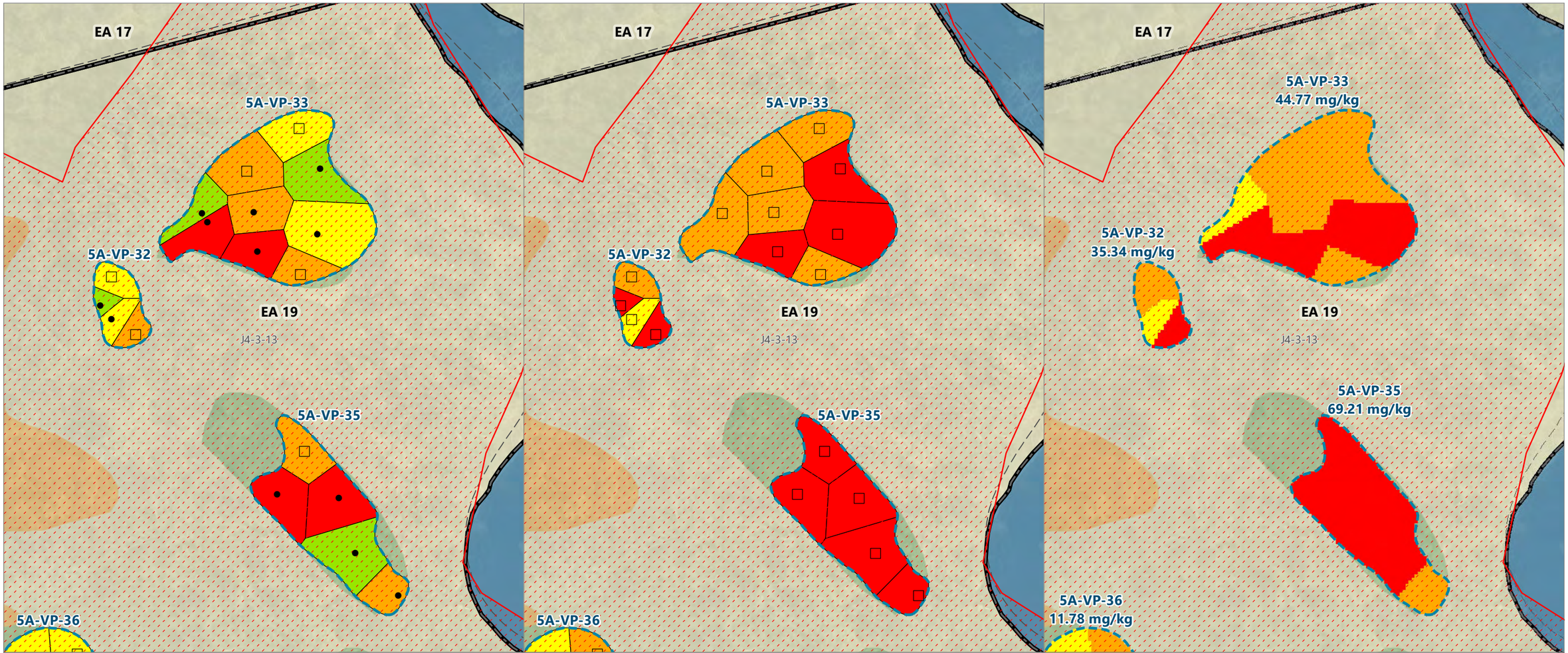
0 80
Feet



Publish Date: 2022/11/22, 11:59 AM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

Figure 10
Vernal Pool in EA 17
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches) | **Total PCB (6 to 12 inches)** | **Total PCB (Interpolated 0 to 12 inches)[1]**

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)
- Core Area 1 Habitat

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

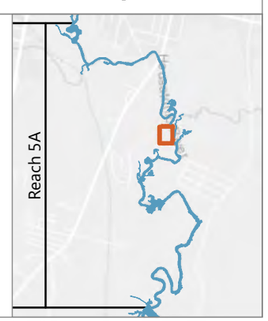
- Non-Residential PDI Sampling Locations (2022)
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

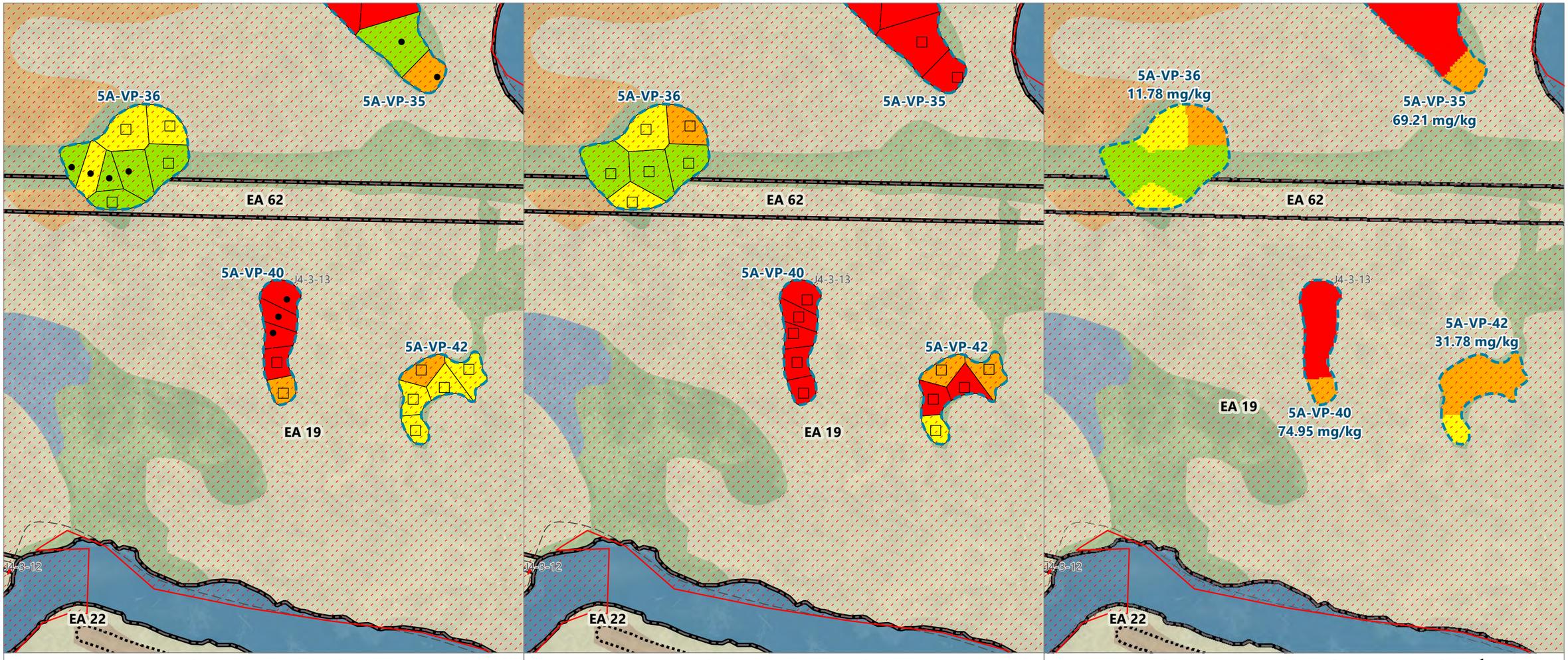
0 100
Feet



Publish Date: 2022/11/22, 11:59 AM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

Figure 11a
Vernal Pools in EA 19
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches) | **Total PCB (6 to 12 inches)** | **Total PCB (Interpolated 0 to 12 inches)[1]**

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)
- Core Area 1 Habitat

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

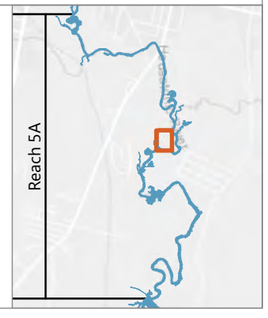
- Non-Residential PDI Sampling Locations (2022)
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

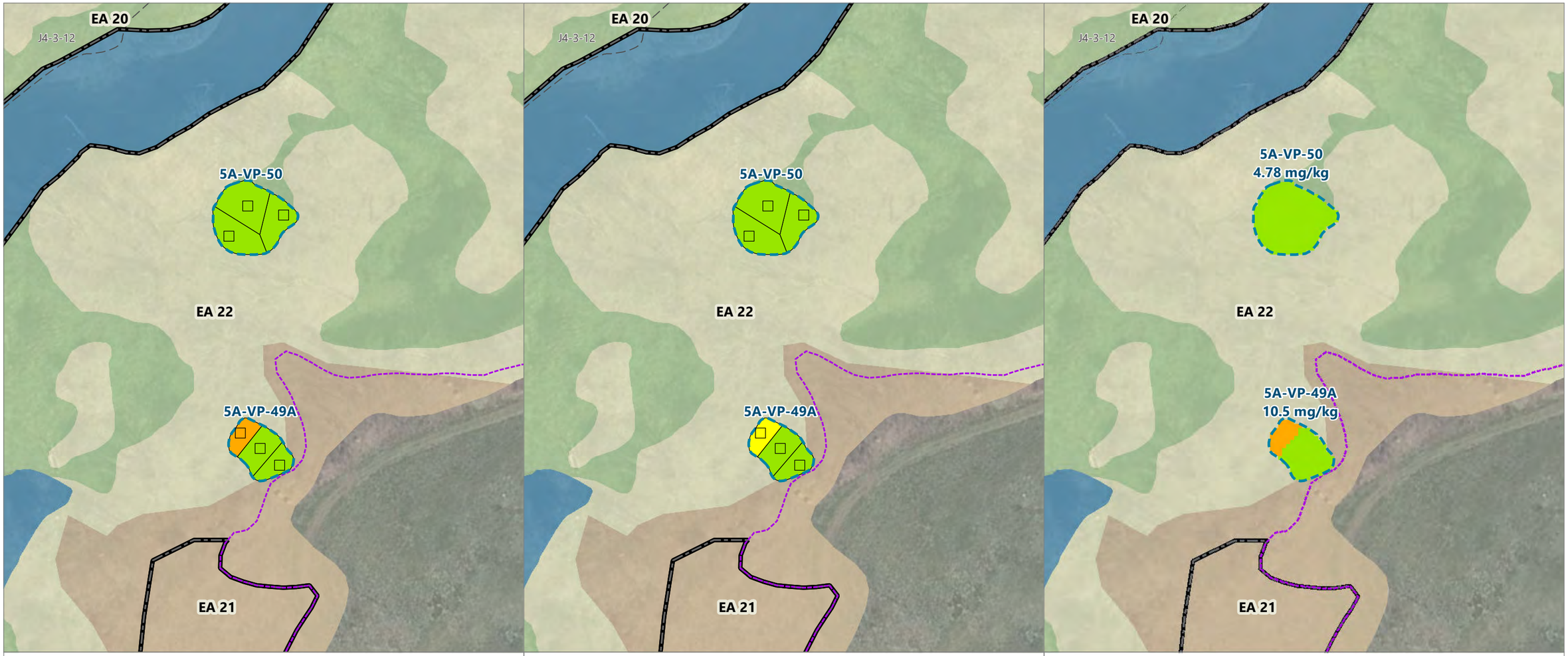
0 120
Feet



Publish Date: 2022/11/22, 11:59 AM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

Figure 11b
Vernal Pools in EA 19
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches) | **Total PCB (6 to 12 inches)** | **Total PCB (Interpolated 0 to 12 inches)[1]**

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

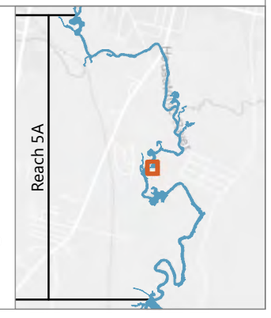
- Non-Residential PDI Sampling Locations (2022)

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

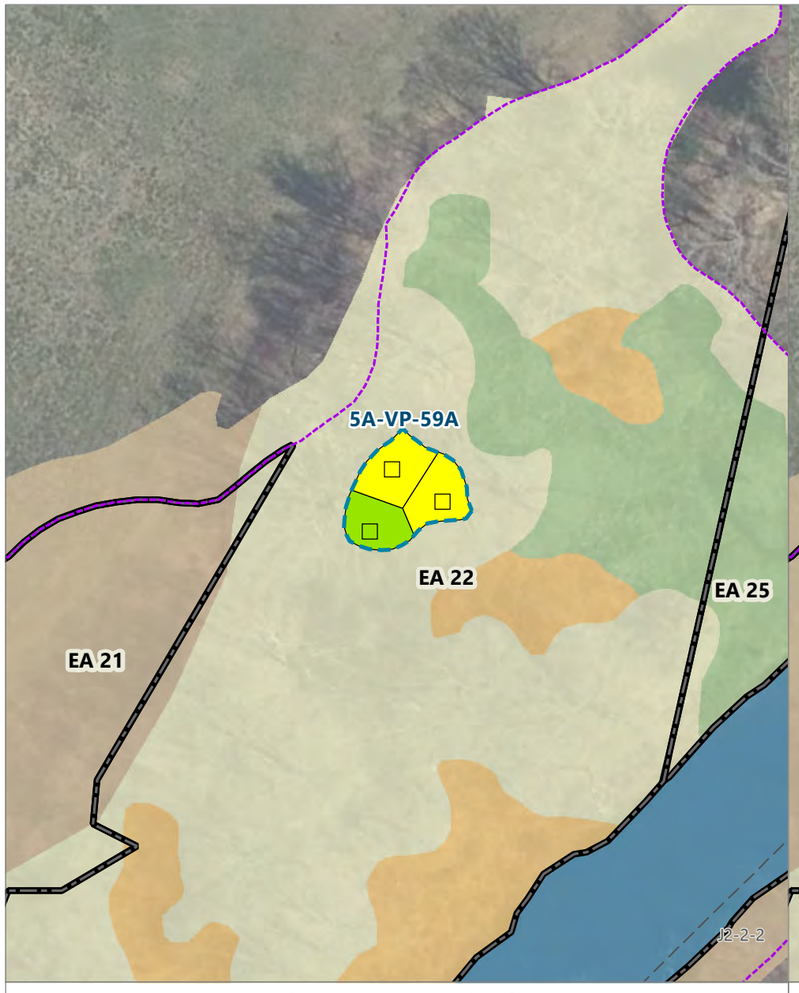
0 80
Feet



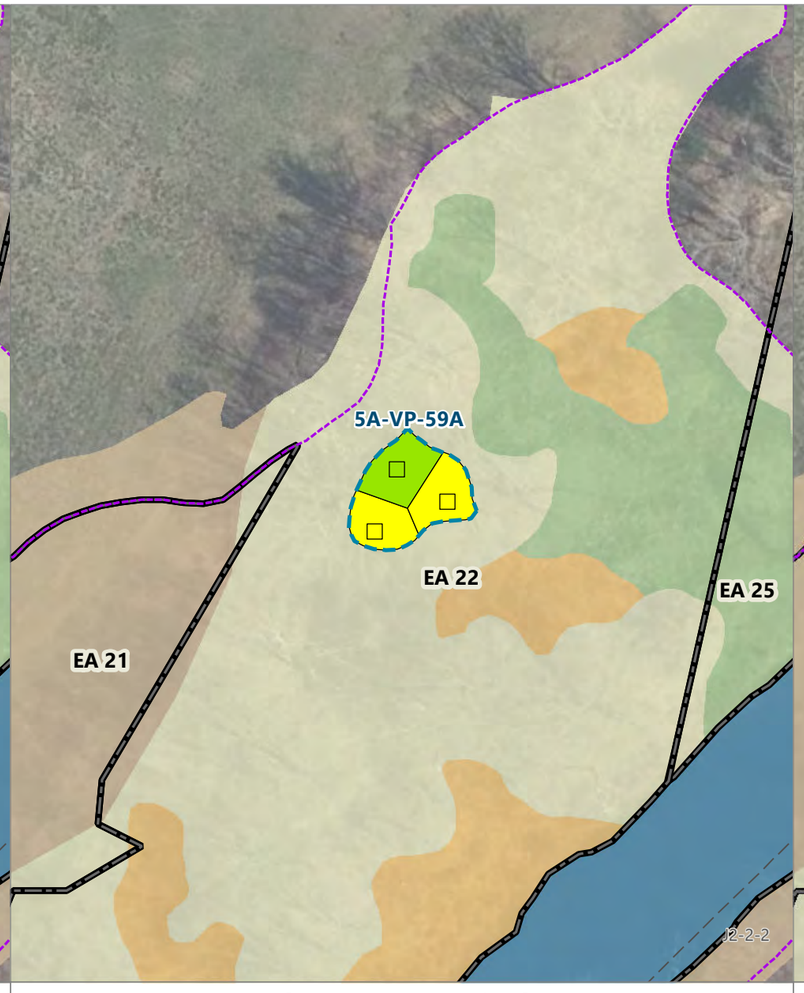
Publish Date: 2022/11/22, 12:00 PM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

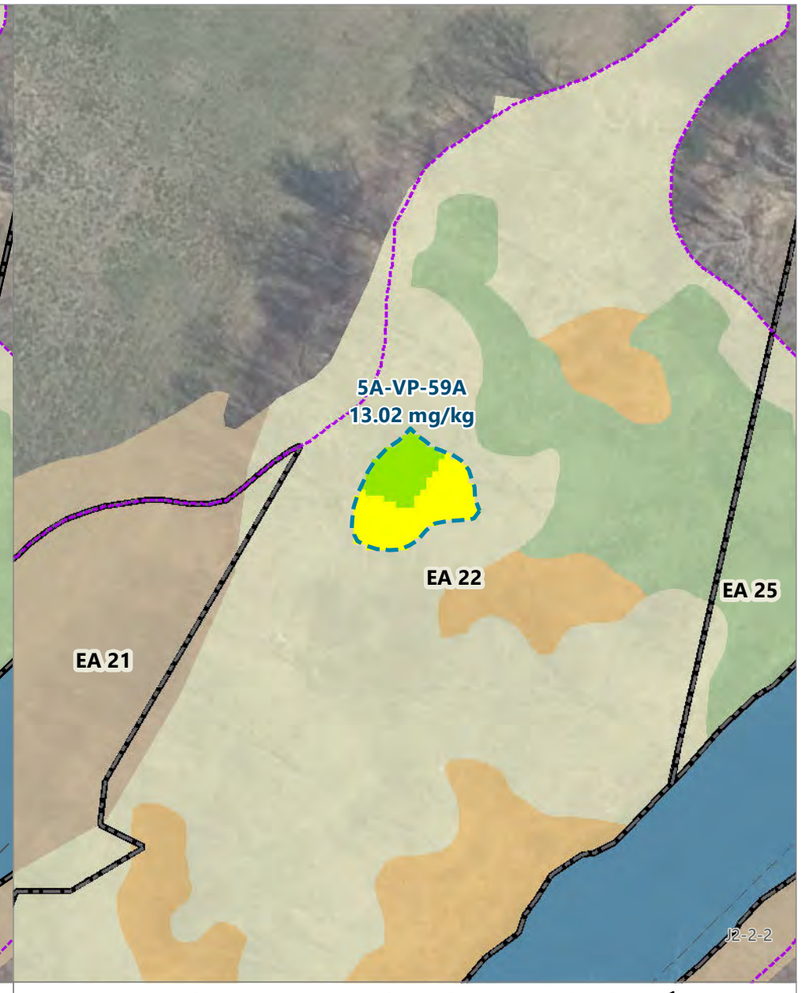
Figure 12a
Vernal Pools in EA 22
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches)



Total PCB (6 to 12 inches)



Total PCB (Interpolated 0 to 12 inches)[1]

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

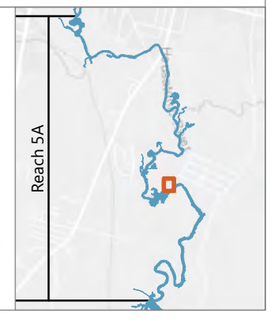
- Non-Residential PDI Sampling Locations (2022)

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

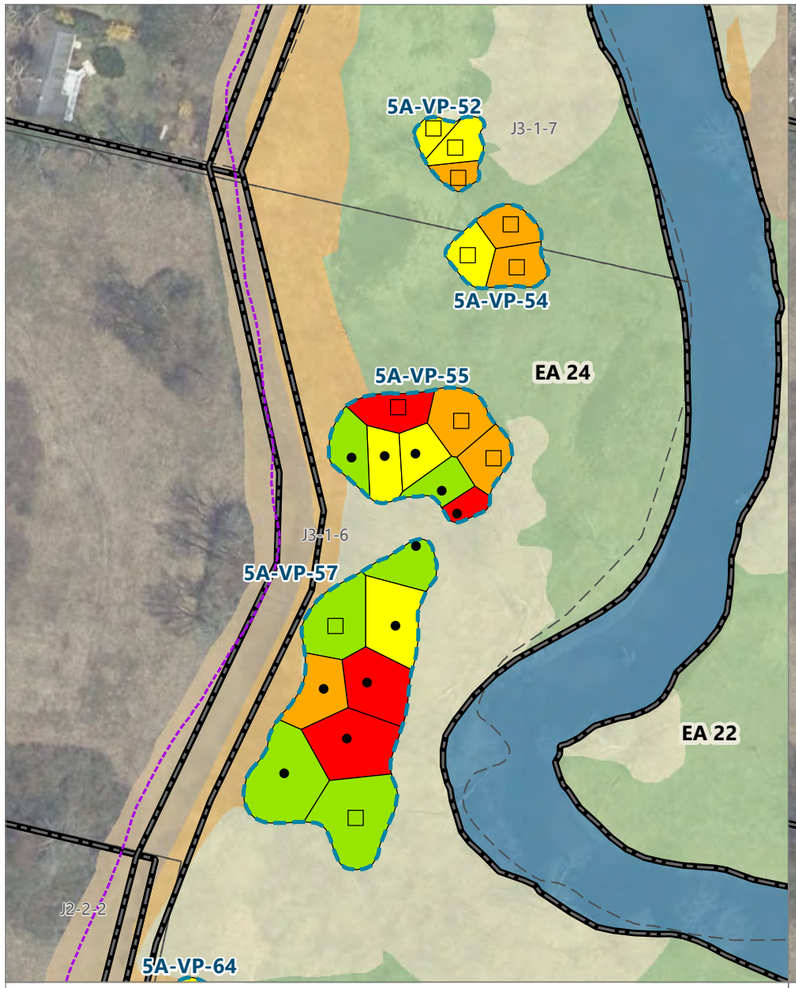
0 80
Feet



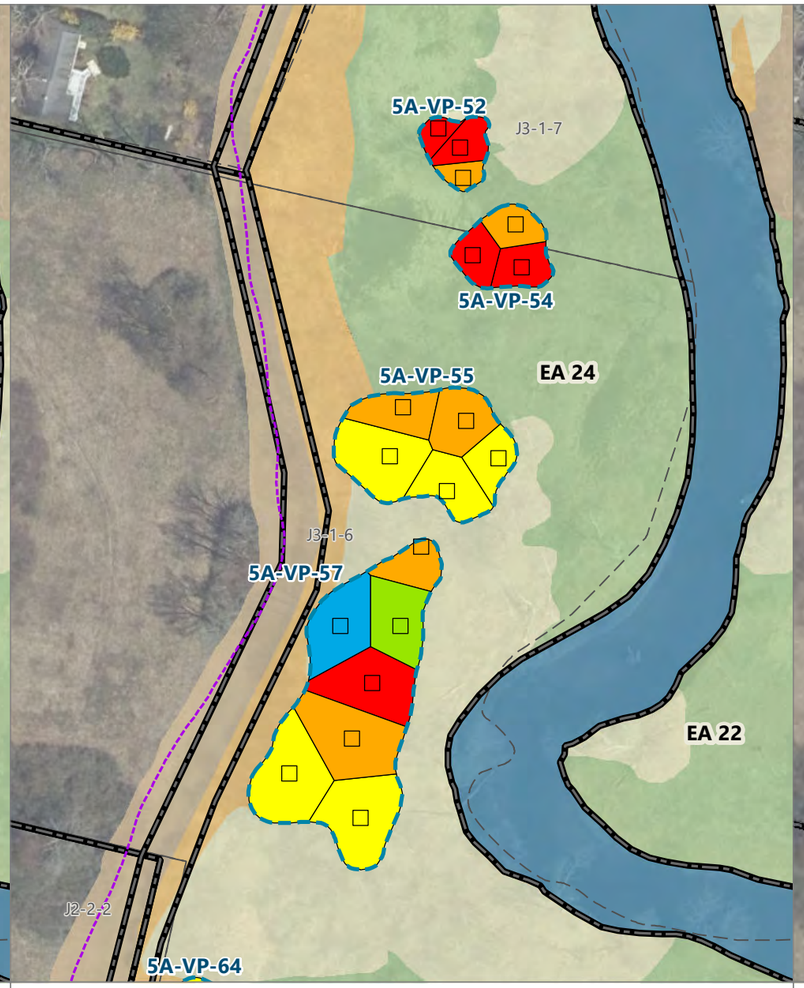
Publish Date: 2022/11/22, 12:00 PM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

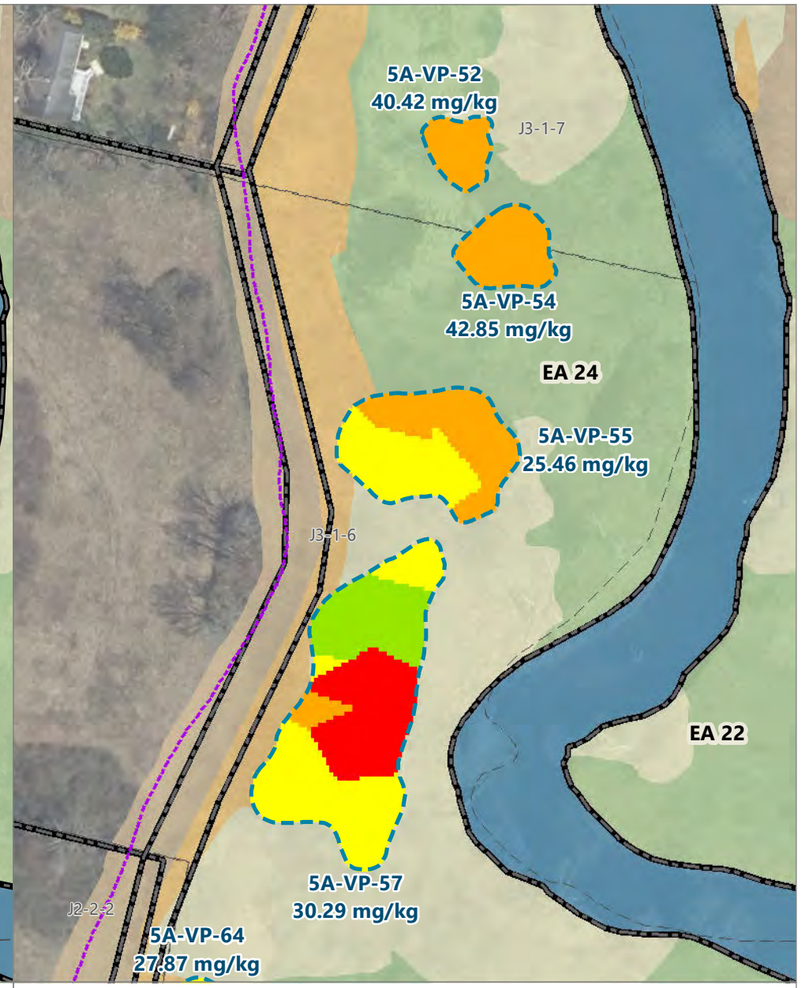
Figure 12b
Vernal Pools in EA 22
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches)



Total PCB (6 to 12 inches)



Total PCB (Interpolated 0 to 12 inches)[1]

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

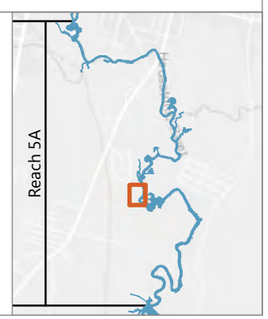
- Non-Residential PDI Sampling Locations (2022)
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

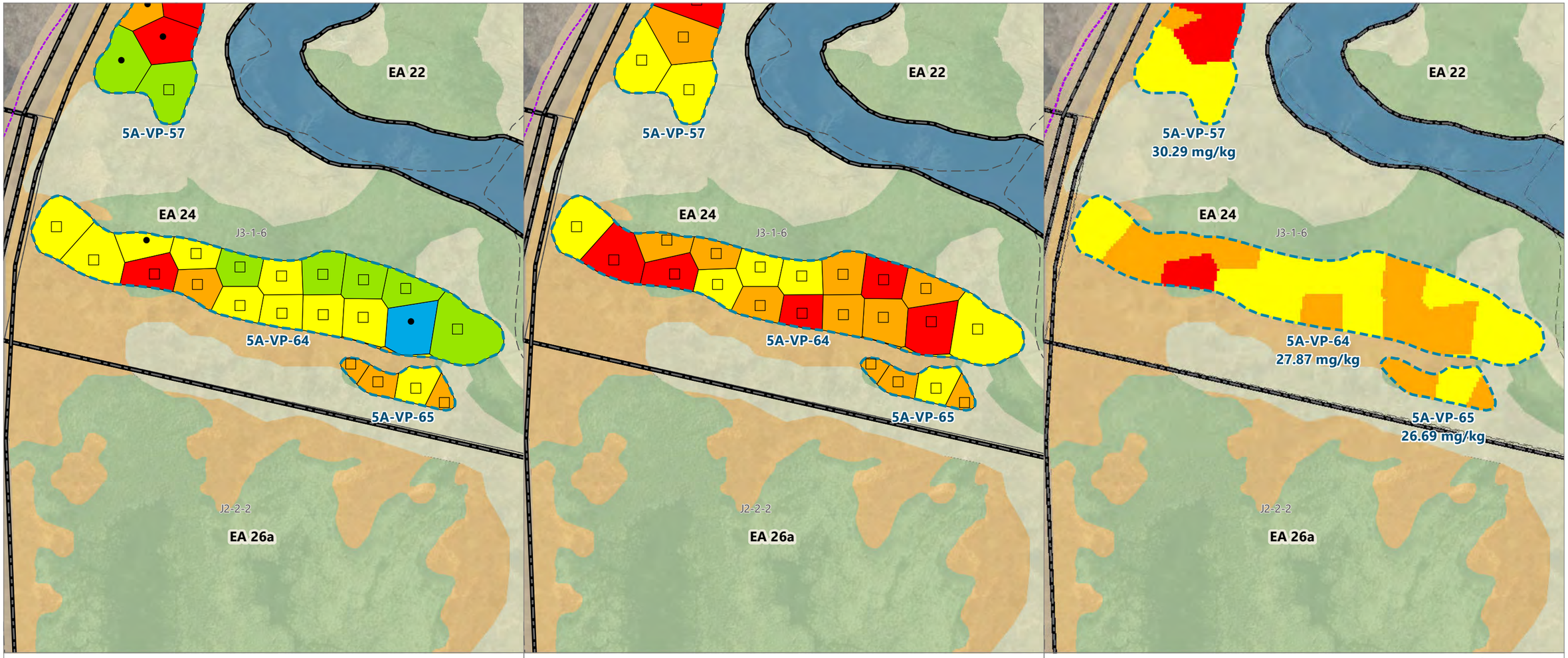
0 125
Feet



Publish Date: 2022/11/22, 12:00 PM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

Figure 13a
Vernal Pools in EA 24
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches) | **Total PCB (6 to 12 inches)** | **Total PCB (Interpolated 0 to 12 inches)[1]**

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

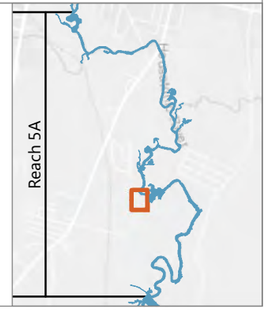
- Non-Residential PDI Sampling Locations (2022)
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

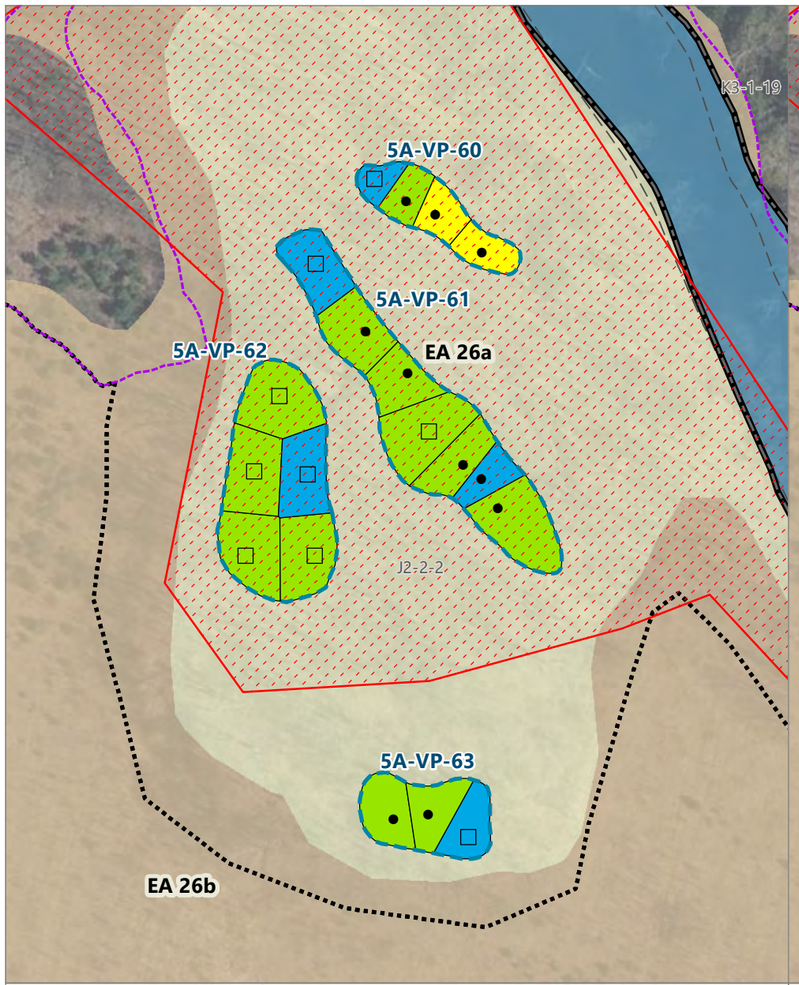
0 125
Feet



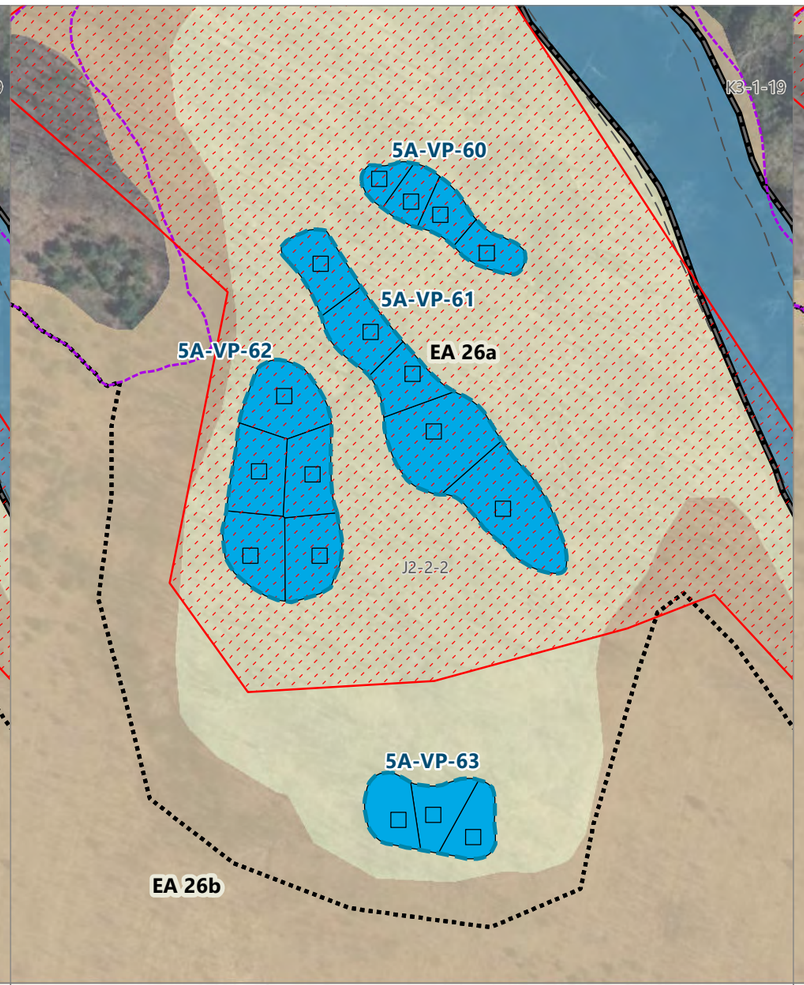
Publish Date: 2022/11/22, 12:00 PM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

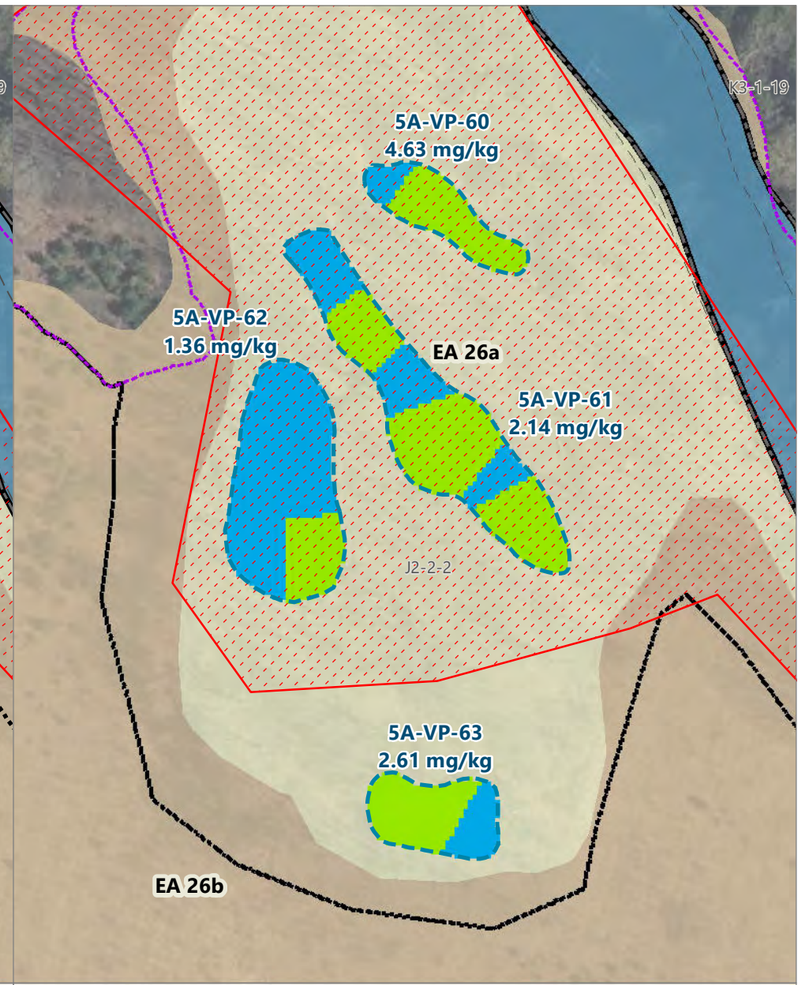
Figure 13b
Vernal Pools in EA 24
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches)



Total PCB (6 to 12 inches)



Total PCB (Interpolated 0 to 12 inches)[1]

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)
- Core Area 1 Habitat

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

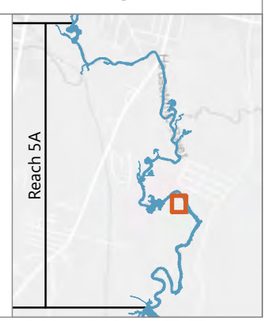
- Non-Residential PDI Sampling Locations (2022)
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

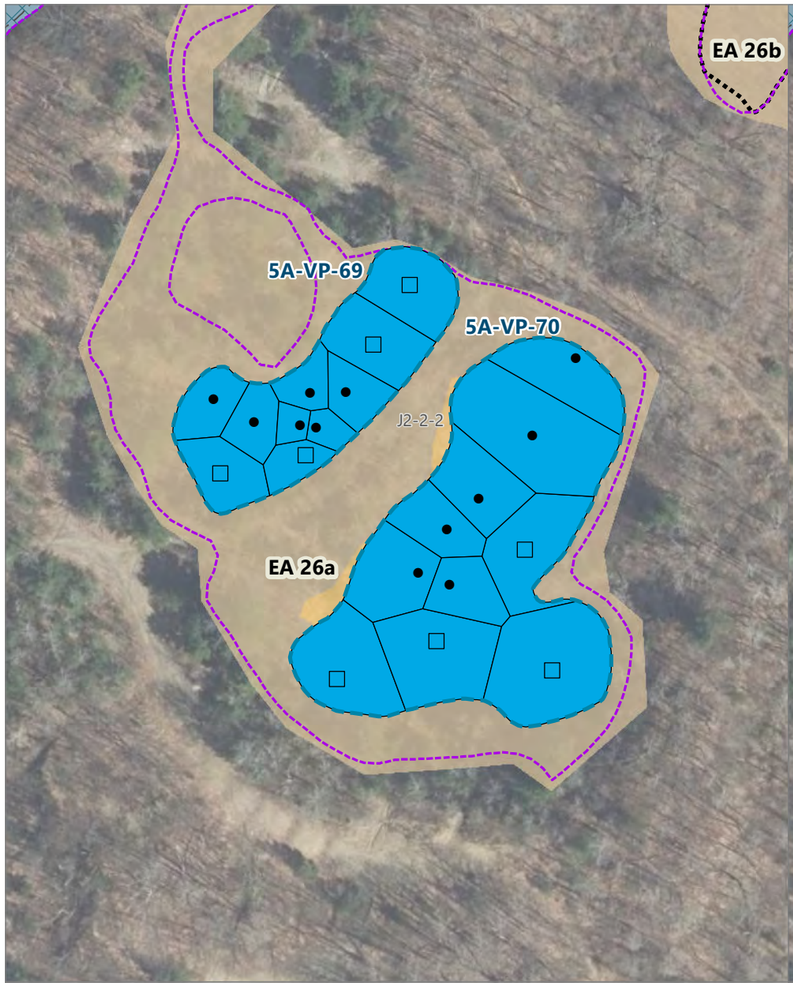
0 100
Feet



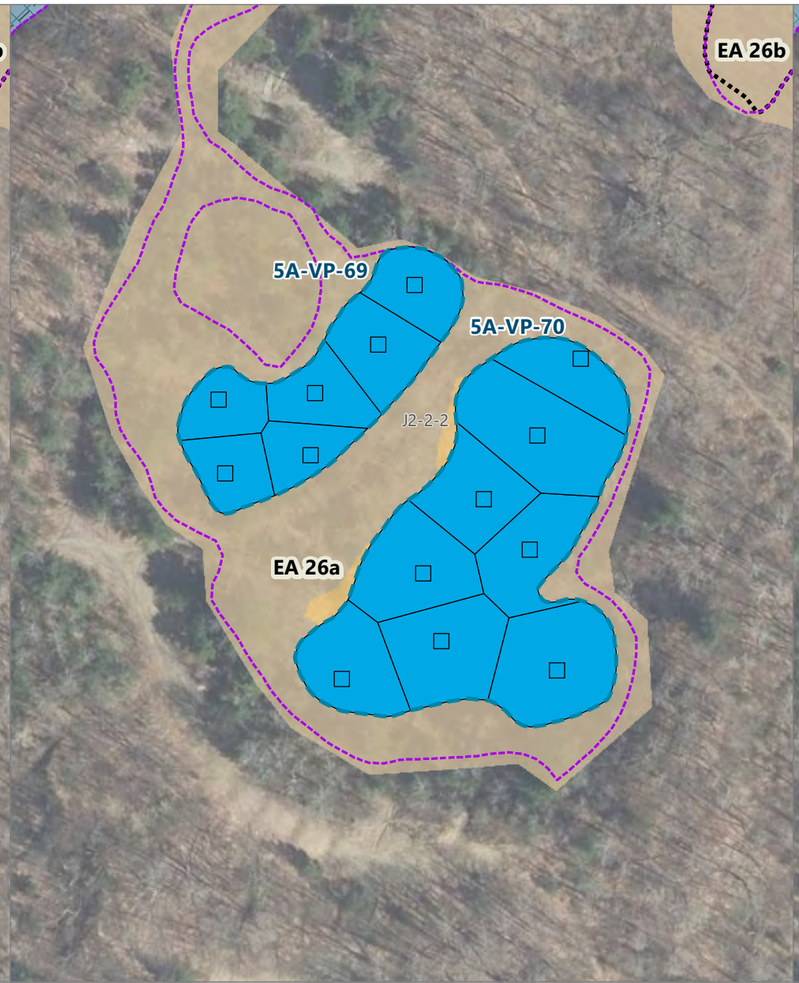
Publish Date: 2022/11/22, 12:00 PM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

Figure 14a
Vernal Pools in EA 26
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches)



Total PCB (6 to 12 inches)

Total PCB (Interpolated 0 to 12 inches)[1]

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

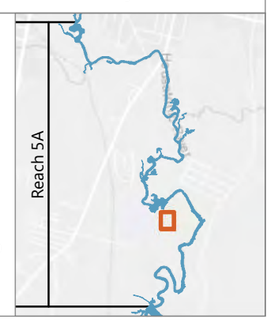
- Non-Residential PDI Sampling Locations (2022)
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

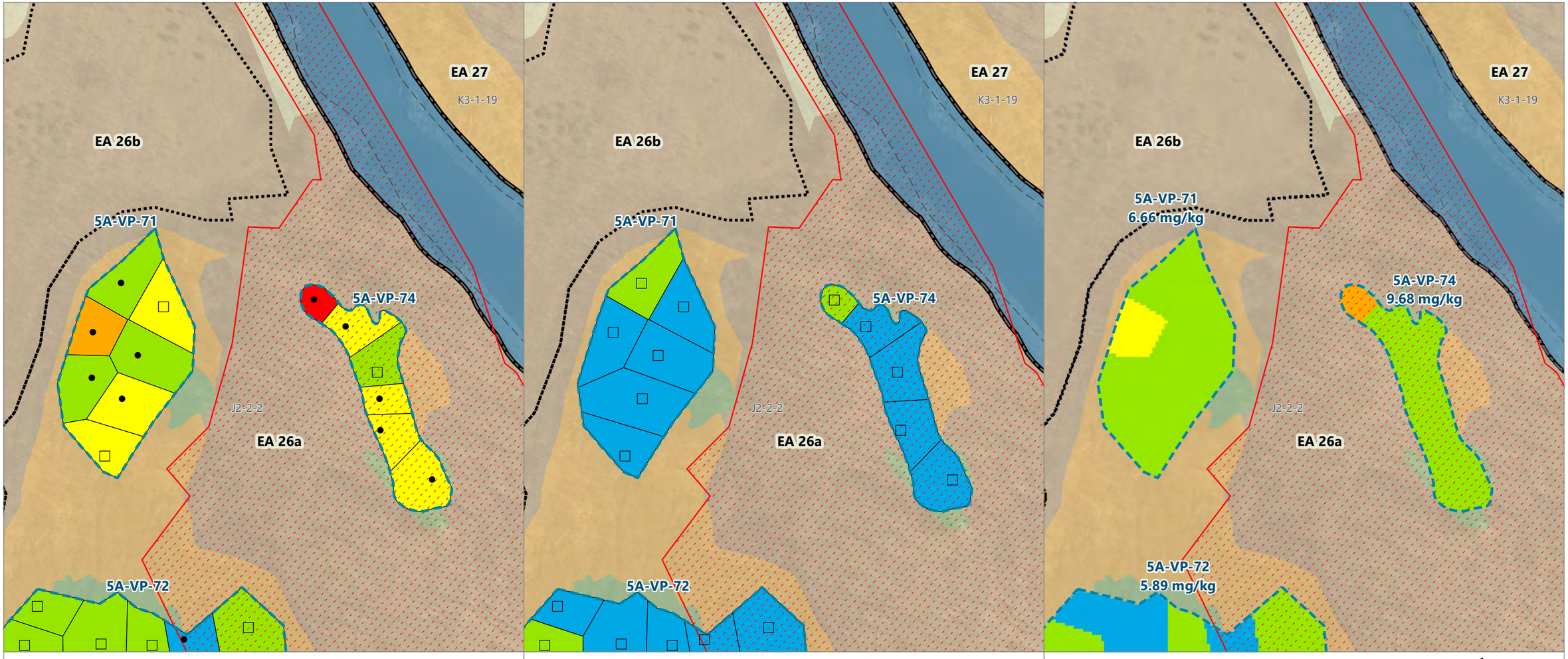
0 100
Feet



Publish Date: 2022/11/22, 12:00 PM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

Figure 14b
Vernal Pools in EA 26
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches) | **Total PCB (6 to 12 inches)** | **Total PCB (Interpolated 0 to 12 inches)[1]**

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)
- Core Area 1 Habitat

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

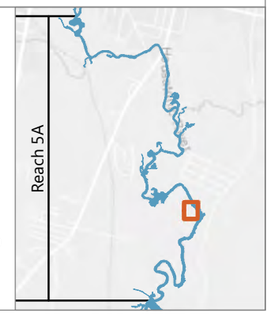
- Non-Residential PDI Sampling Locations (2022)
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

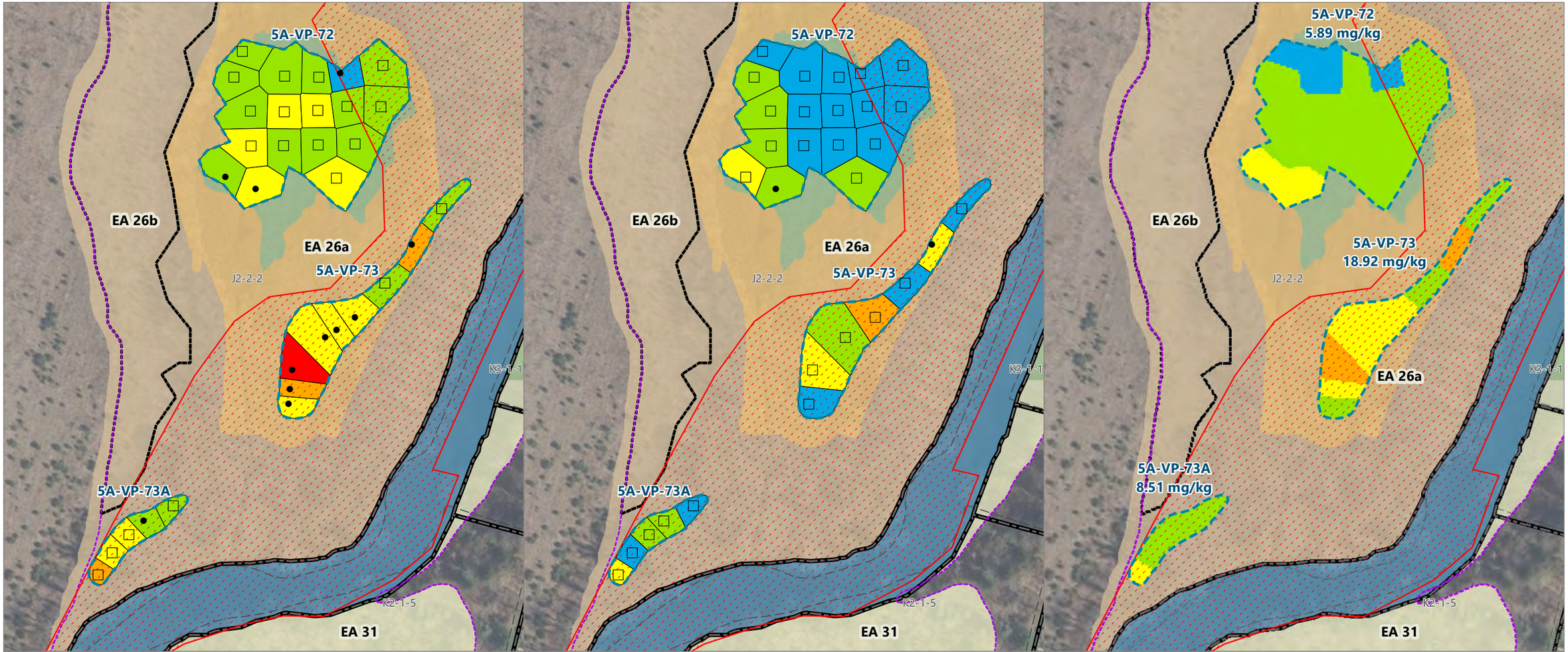
0 100
Feet



Publish Date: 2022/11/22, 12:00 PM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

Figure 14c
Vernal Pools in EA 26
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches) | **Total PCB (6 to 12 inches)** | **Total PCB (Interpolated 0 to 12 inches)[1]**

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)
- Core Area 1 Habitat

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

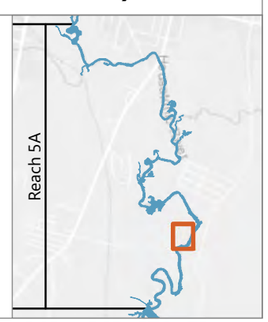
- Non-Residential PDI Sampling Locations (2022)
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

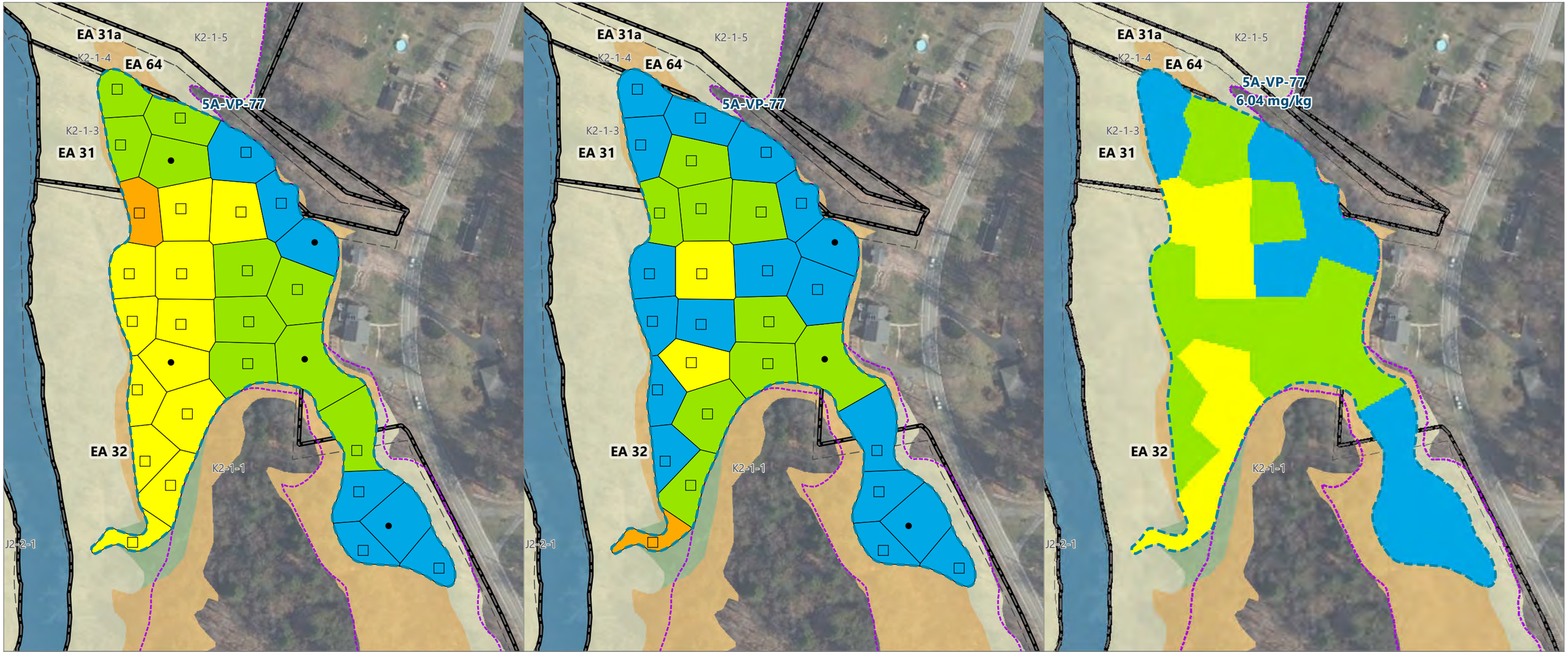
0 150
Feet



Publish Date: 2022/11/22, 12:00 PM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

Figure 14d
Vernal Pools in EA 26
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches) | **Total PCB (6 to 12 inches)** | **Total PCB (Interpolated 0 to 12 inches)[1]**

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

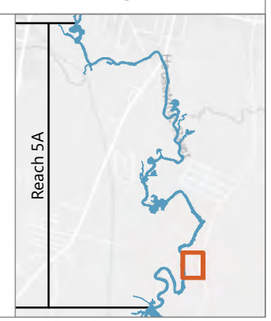
- Non-Residential PDI Sampling Locations (2022)
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

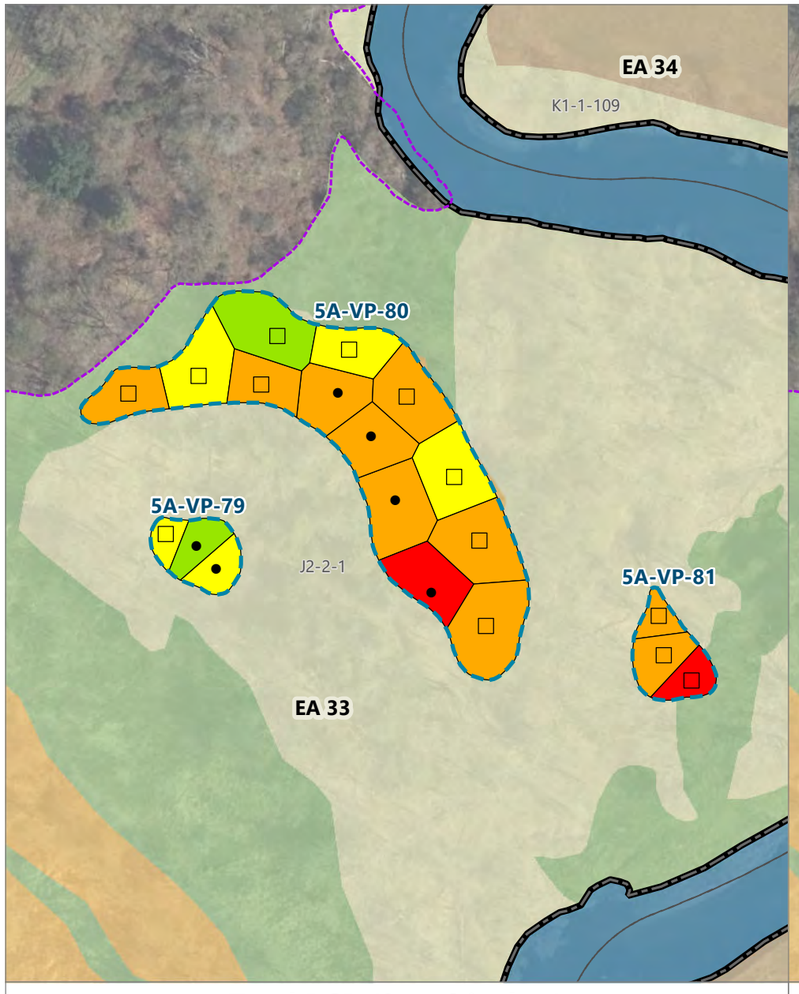
0 150
Feet



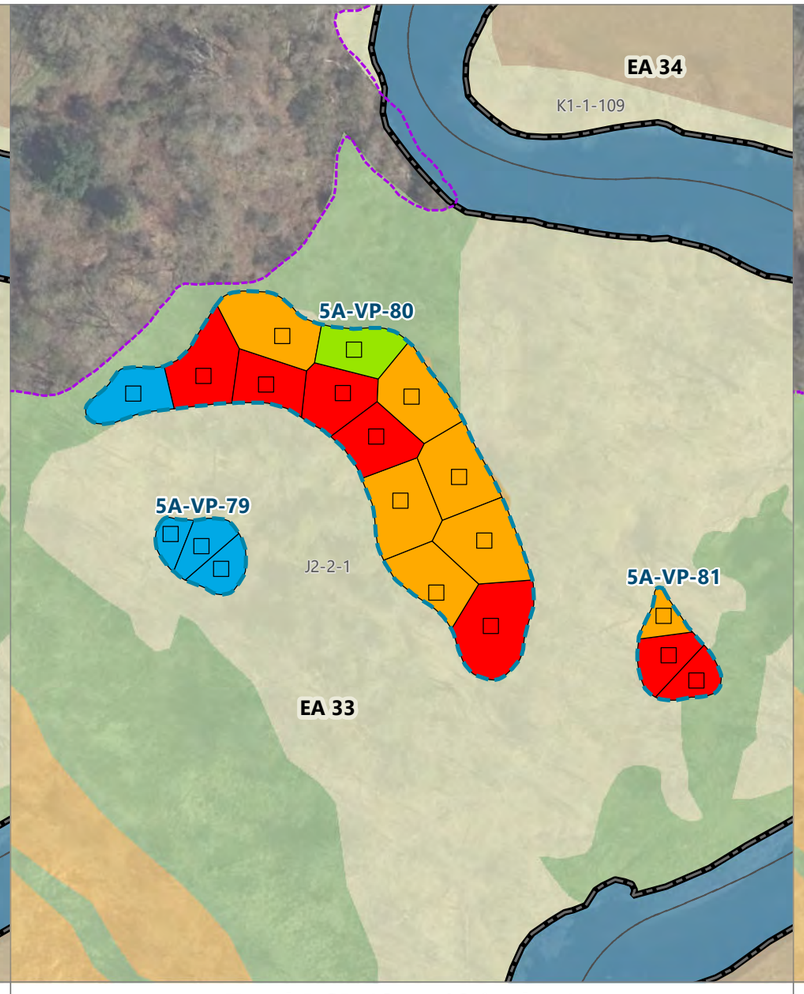
Publish Date: 2022/11/22, 12:00 PM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

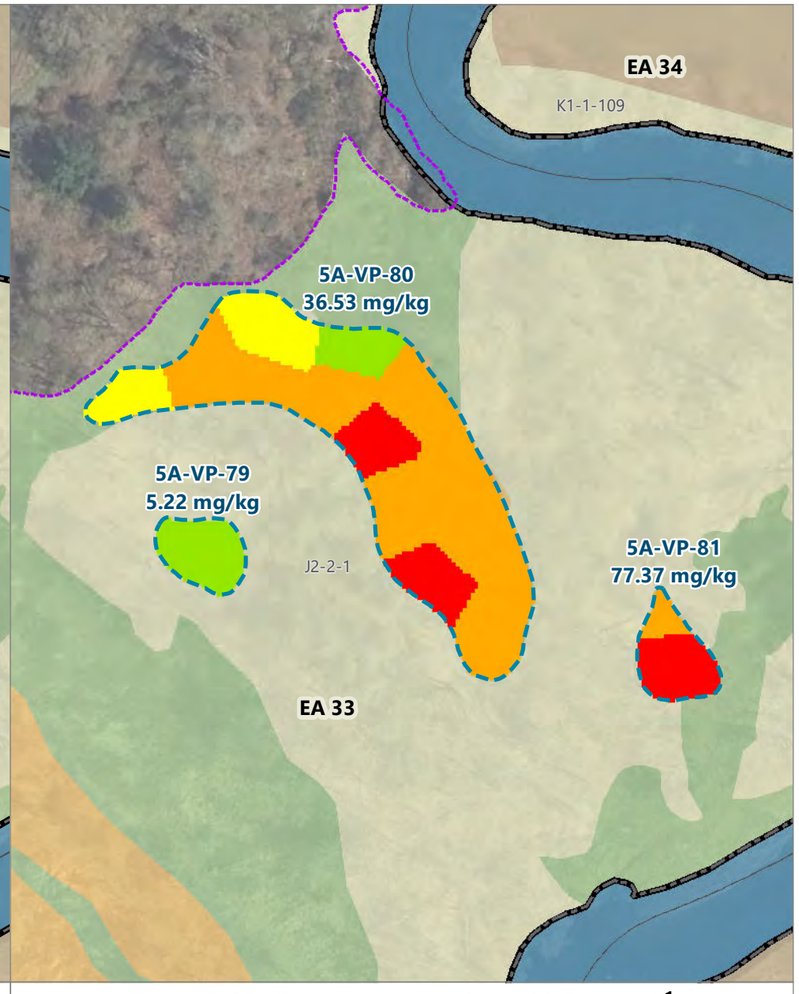
Figure 15
Vernal Pool in EA 31 and 32
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches)



Total PCB (6 to 12 inches)



Total PCB (Interpolated 0 to 12 inches)[1]

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

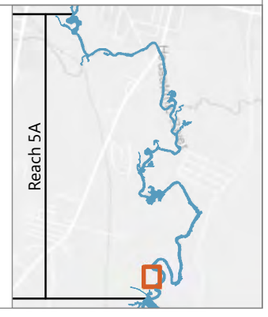
- Non-Residential PDI Sampling Locations (2022)
- Historical Sampling Locations

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

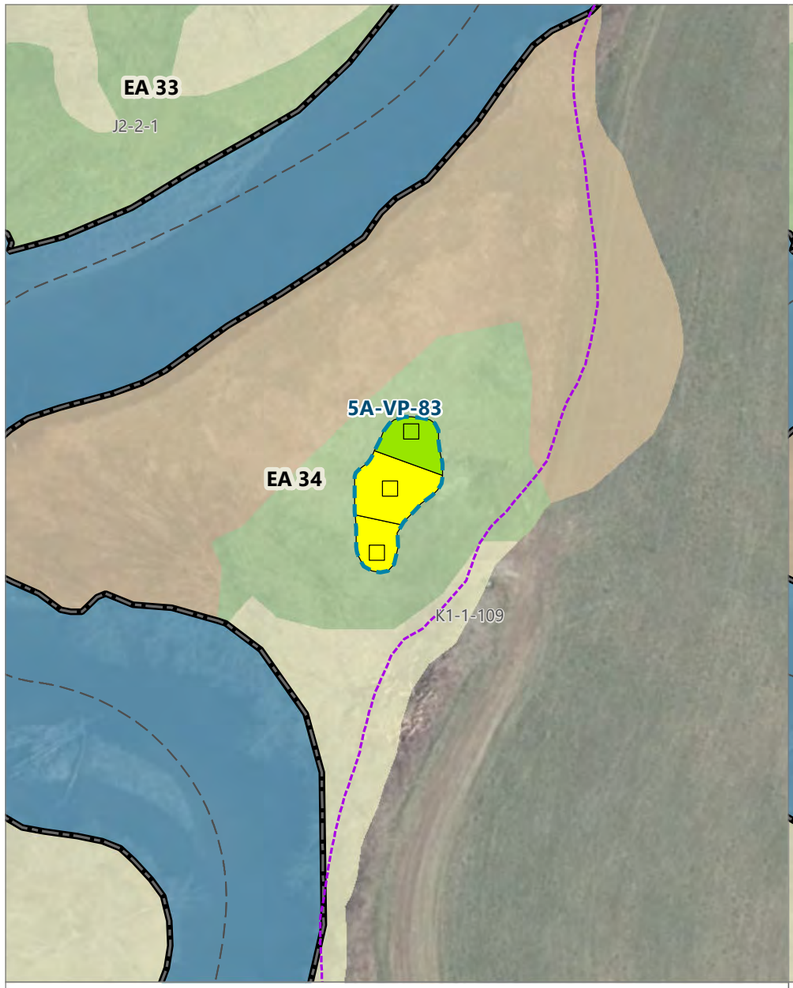
0 130
Feet



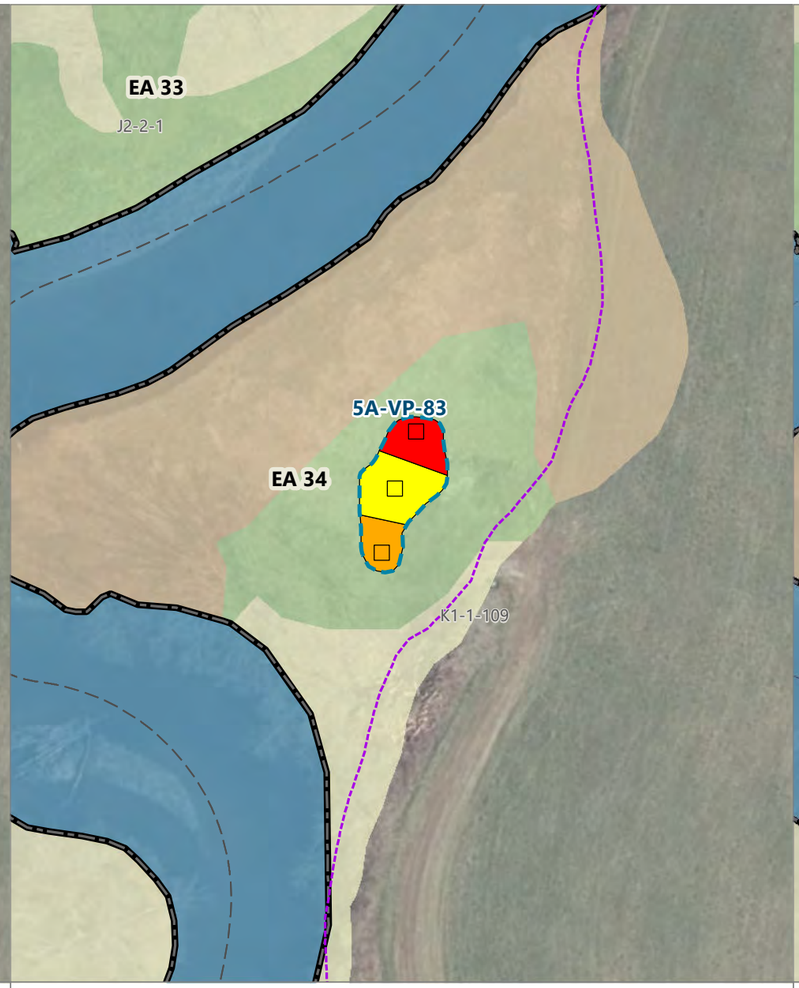
Publish Date: 2022/11/22, 12:01 PM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

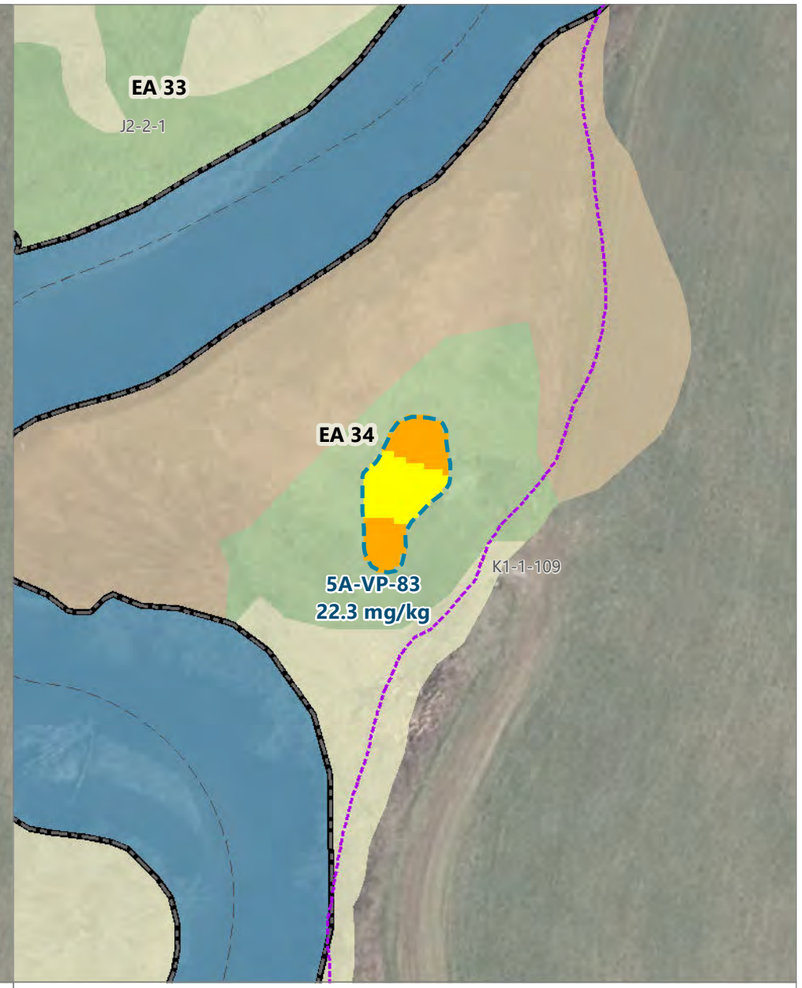
Figure 16
Vernal Pools in EA 33
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Total PCB (0 to 6 inches)



Total PCB (6 to 12 inches)



Total PCB (Interpolated 0 to 12 inches)[1]

LEGEND:

- Exposure Area Boundary
- Exposure Subarea Boundary
- Tax Parcel Boundaries
- 1 mg/kg PCB Isopleth
- Vernal Pools (AECOM 2020)

Super Habitats (AECOM and Anchor QEA 2020)

- Emergent marsh and wet meadow
- Transitional floodplain forest
- Hardwood forest, agricultural field
- Shrub swamp
- Stream
- Lake/Pond

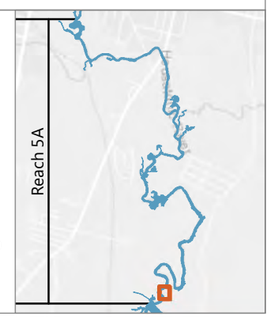
- Non-Residential PDI Sampling Locations (2022)

PCB Concentrations (mg/kg)

- ≤ 2
- 2.1 - 10
- 10.1 - 25
- 25.1 - 50
- > 50

NOTES:
1. PCB concentrations represent the spatially weighted average concentration in the top 0 to 12 inches of soil.
2. Aerial imagery from MassGIS 2021.

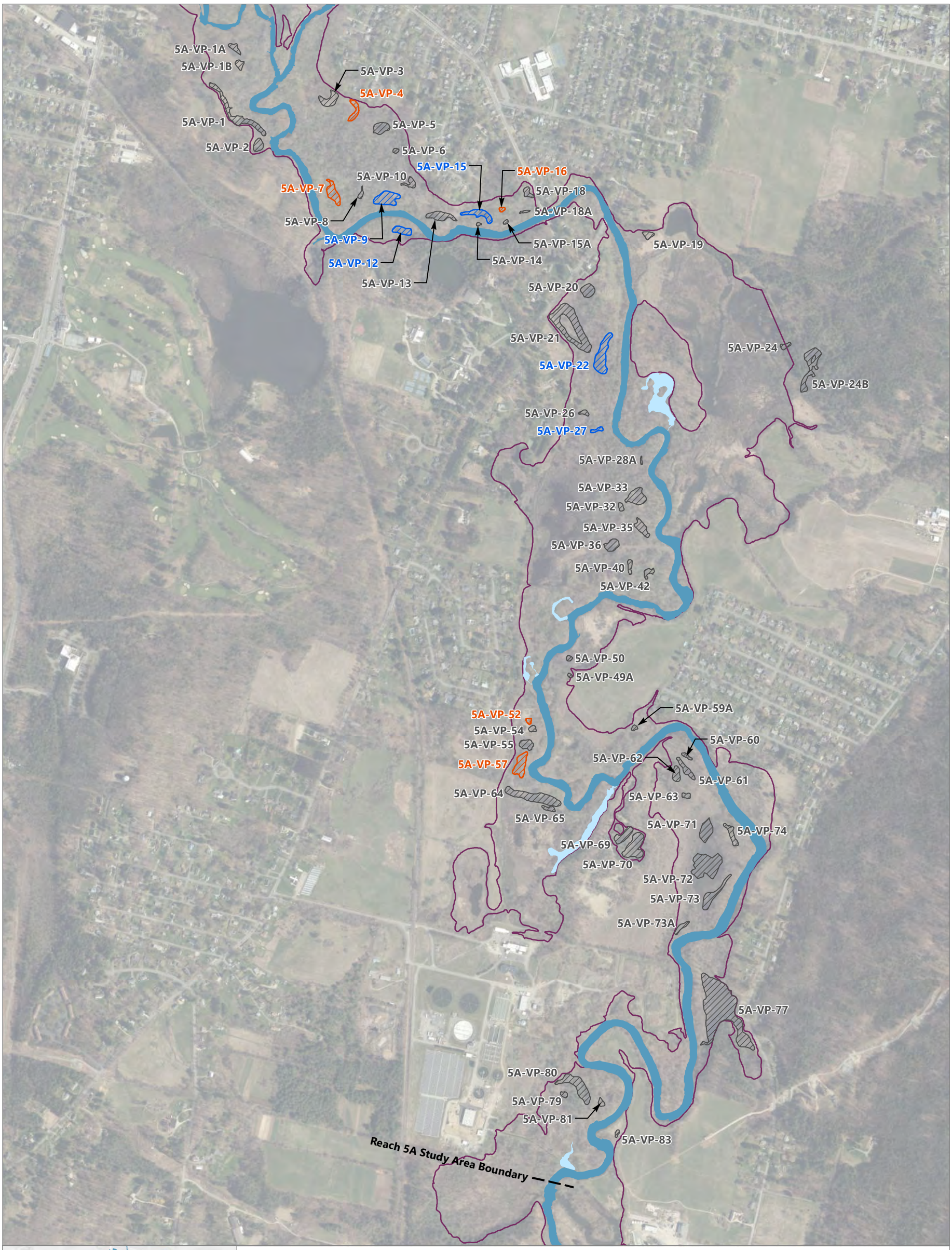
0 80
Feet



Publish Date: 2022/11/22, 12:01 PM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig1to17_VernalPoolThiessens.mxd

ANCHOR QEA

Figure 17
Vernal Pool in EA 34
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River



Publish Date: 2022/11/21, 4:31 PM | User: eiverson
Filepath: \\orcas\GIS\Jobs\GE_0469\HousatonicRiver\Maps\Reports\VernalPools\PilotStudy\AQ_VPPS_Fig18_VernalPoolTech.mxd

ANCHOR QEA

Figure 18
Summary of Vernal Pools Selected for Pilot Study
Vernal Pool Pilot Study Selection Proposal
Housatonic River – Rest of River

Attachment 1
Vernal Pool Evaluation and Selection Matrix

Attachment 1
Vernal Pool Evaluation and Selection Matrix

Exposure Area	Vernal Pool ID	PCB SWAC (0-1 foot; mg/kg)	Area (acres)	Selection Criteria								Recommendation for 10 Selected Pools	Notes, or Reason for Not Selecting
				PCB SWAC >3.3 mg/kg	Size (+/- 50% of Average)	Pool Is Reasonably Accessible	Sensitive Habitat Surrounding Pool	Located Within Core Habitat	Known Species	Vegetative Cover Within Pool	Hydrology		
1	5A-VP-1	6.4	0.82	Yes	Large	No	Yes	No	13 SS, 1 WF, FS few	SS/SEM	Wet	No	Poor accessibility
1	5A-VP-1A	0.6	0.15	No	Small	No	Yes	No	1 WF, FS, 1 SS	SS/SEM	Dry	No	SWAC < 3.3
1	5A-VP-1B	2.6	0.13	No	Small	No	Yes	No	4 SS, 3 WF	SS/SEM	Dry	No	SWAC < 3.3
1	5A-VP-2	3.3	0.23	No	Average	No	Yes	No	25 SS, 13 WF		Normal	No	SWAC < 3.3
2	5A-VP-3	18	0.39	Yes	Average	Yes	Mod	No	WF, few larvae	WS	Dry	No	Poor hydrology
2	5A-VP-4	15	0.23	Yes	Average	Yes	Mod	No	SS, 10 WF, FS	WS	Dry	YES	Poor hydrology
2	5A-VP-5	2.7	0.33	No	Average	No	Mod	No	SS, 300 WF, FS, many	WS	Normal	No	SWAC < 3.3
2	5A-VP-6	4.7	0.05	Yes	Small	No	Mod	No	6 WF, FS few	WS	Normal	No	Difficult access; low WF numbers, small pool in large PFO
2	5A-VP-7	34	0.41	Yes	Average	Yes	No	No	50 WF, 2 SS	WS, SS	Normal	YES	---
2	5A-VP-8	13	0.07	Yes	Small	Yes	Mod	No	15 WF, FS few	WF, SS	Normal	No	In same network as VP-7 and VP-9
2	5A-VP-9	45	0.60	Yes	Large	Yes	Mod	No	30 WF, FS	SS/SEM/WS	Normal	YES	Most of pool is shallow with dense shrub layer; good for amendment
2	5A-VP-10	6.5	0.17	Yes	Small	Yes	Mod	No	100 WF, FS	SS/WS	Normal	No	Not a discrete basin
6	5A-VP-12	25	0.27	Yes	Average	No	Yes	No	23 WF, 1SS	WS	Normal	YES	Located on Miss Halls Property
7	5A-VP-13	24	0.40	Yes	Average	Yes	No	No	13 WF	DEM, WS	Wet	No	Consistently wet hydrology
7	5A-VP-14	8.6	0.03	Yes	Small	Yes	No	No	WF larvae	SS/WS	Normal	No	Only WF larvae
7	5A-VP-15	28	0.37	Yes	Average	Yes	No	No	25 WF, FS	DEM/SEM/WS	Normal	YES	---
7	5A-VP-15A	21	0.04	Yes	Small	Yes	No	No	FS, 3 WF	WS	Normal	No	Low WF numbers
7	5A-VP-16	6.8	0.04	Yes	Small	Yes	No	No	FS, 25 WF	WS	Normal	YES	---
7	5A-VP-18	0.5	0.15	No	Small	Yes	No	No	9 WF	WS/SS/SEM	Normal	No	SWAC < 3.3
7	5A-VP-18A	29	0.04	Yes	Small	Yes	No	No	WF larvae	DEN/WS	Normal	No	Only WF Larvae
10	5A-VP-19	5.4	0.14	Yes	Small	Yes	Yes	No	5 WF	SEM		No	Low WF Numbers; too visible in Canoe Meadows
15	5A-VP-20	4.4	0.33	Yes	Average	Yes	Yes	No	7 WF, FS	SEM/SS/WS	Normal	No	Low SWAC
14	5A-VP-21	3.1	1.65	No	Large	Yes	Yes	No	300 WF, SS, FS	SEM/SS/WS	Wet	No	SWAC < 3.3
13	5A-VP-22	6.3	0.82	Yes	Large	Yes	Yes	No	170 WF, FS	DEM/SS/WS	Normal	YES	Large pool with lower SWAC; good for amendment
10	5A-VP-24	0.12	0.10	No	Small			No				No	SWAC < 3.3
10	5A-VP-24B	0.08	0.76	No	Large			No				No	SWAC < 3.3
16	5A-VP-26	3.4	0.08	Yes	Small	Yes	Yes	No	FS	SS/WS	Dry	No	Only FS
16	5A-VP-27	7.7	0.08	Yes	Small	Yes	Yes	No	FS	WS	Dry	YES	Only FS
17	5A-VP-28A	35	0.03	Yes	Small	No	Yes	Yes	2 WF	SS/WS	Dry	No	Core Area 1
19	5A-VP-32	35	0.08	Yes	Small	No	Yes	Yes	4 WF, FS	SS, WS		No	Core Area 1
19	5A-VP-33	45	0.53	Yes	Average	No	Yes	Yes	10 WF, FS	DEM/SS/WS		No	Core Area 1
19	5A-VP-35	69	0.30	Yes	Average	No	Yes	Yes	6 WF, few FS	SS/WS	Normal	No	Core Area 1
19	5A-VP-36	12	0.30	Yes	Average	No	Yes	Yes	6 WF	SEM/SS/WS	Normal	No	Core Area 1
19	5A-VP-40	75	0.12	Yes	Small	No	Yes	Yes	1 WF, FS	WS	Normal	No	Core Area 1
19	5A-VP-42	32	0.13	Yes	Small	No	Yes	Yes	5 WF	SEM/WS	Normal	No	Core Area 1
22	5A-VP-49A	11	0.03	Yes	Small	Yes	No	No	1 WF	WS	Normal	No	Low WF numbers
22	5A-VP-50	4.8	0.06	Yes	Small	Yes	No	No	1 WF	SEM/WS	Normal	No	Low WF numbers
24	5A-VP-52	40	0.06	Yes	Small	Yes	Yes	No	1 WF	SEM/WS	Normal	YES	Low WF numbers
24	5A-VP-54	43	0.09	Yes	Small	Yes	Yes	No	1 WF	SEM/SS/WS	Normal	No	Low WF numbers
24	5A-VP-55	25	0.25	Yes	Average	Yes	Yes	No	2 WF	SEM/SS	Normal	No	Low WF numbers
24	5A-VP-57	30	0.49	Yes	Average	Yes	Yes	No	20 WF	WS	Normal	YES	Good access; could improve on hydroperiod during restoration
22	5A-VP-59A	13	0.06	Yes	Small	Yes	Yes	No	3 WF	WS	Normal	No	Low WF numbers

Attachment 1
Vernal Pool Evaluation and Selection Matrix

Exposure Area	Vernal Pool ID	PCB SWAC (0-1 foot; mg/kg)	Area (acres)	Selection Criteria								Recommendation for 10 Selected Pools	Notes, or Reason for Not Selecting
				PCB SWAC >3.3 mg/kg	Size (+/- 50% of Average)	Pool Is Reasonably Accessible	Sensitive Habitat Surrounding Pool	Located Within Core Habitat	Known Species	Vegetative Cover Within Pool	Hydrology		
26a	5A-VP-60	4.6	0.08	Yes	Small	No	Yes	Yes	9 WF, FS	WS	Normal	No	Difficult access: low SWAC, Core Area 1
26a	5A-VP-61	2.1	0.26	No	Average			Yes				No	SWAC < 3.3, Core Area 1
26a	5A-VP-62	1.4	0.22	No	Average			Yes				No	SWAC < 3.3, Core Area 1
26a	5A-VP-63	2.6	0.09	No	Small			No				No	SWAC < 3.3
24	5A-VP-64	28	1.00	Yes	Large	Yes	Yes	No	4 WF/FAC only	SEM/SS	Variable	No	Low WF numbers
24	5A-VP-65	27	0.11	Yes	Small	No	Yes	No	6 WF	SEM	Normal	No	Difficult access
26a	5A-VP-69	0.11	0.34	No	Average			No				No	SWAC < 3.3
26a	5A-VP-70	0.12	0.78	No	Large			No				No	SWAC < 3.3
26a	5A-VP-71	6.7	0.47	Yes	Average	No	Yes	No	6 WF, 2 SS	DEM/SEM/SS	Very Wet	No	Influenced by Beaver Impoundment
26a	5A-VP-72	5.9	1.26	Yes	Large	No	Yes	Yes	6 SS, 1 WF	POW/DEM/SEM	Very Wet	No	Influenced by Beaver Impoundment, partially in Core Area 1
26a	5A-VP-73	19	0.48	Yes	Average	Yes	Yes	Yes	200 WF, 13 SS	SS/WS	Normal	No	Core Area 1
26a	5A-VP-73A	8.5	0.15	Yes	Small	Yes	Yes	Yes	5 WF, FS	SS/WS	Normal	No	Core Area 1
26a	5A-VP-74	10	0.26	Yes	Average	Yes	Yes	Yes	23 WF, FS, SS	WS	Normal	No	Core Area 1
32	5A-VP-77	6.0	3.93	Yes	Large	No	Yes	No	6 WF, 16 SS	SEM/SS/WS	Swamp	No	Difficult access; poor hydrology
33	5A-VP-79	5.2	0.08	Yes	Small	No	Yes	No	FS	SS/WS	Normal	No	Only FS, difficult access
33	5A-VP-80	37	0.83	Yes	Large	No	Yes	No	FS	SS/WS	Normal	No	Only FS, difficult access
33	5A-VP-81	77	0.09	Yes	Small	No	Yes	No	FS	WS	Normal	No	Only FS, difficult access
34	5A-VP-83	22	0.05	Yes	Small	Yes	No	No	WF larvae	SEM	Normal	No	Only WF larvae

Notes:
DEM: deep marsh
FAC: facultative
FS: fairy shrimp
kg: kilogram
mg: milligram
PCB: polychlorinated biphenyl
PFO: palustrine forested wetland
POW: open water
SEM: shallow marsh
SS: spotted salamander
SS: shrub swamp
SWAC: spatially weighted average concentration
WF: wood frog
WS: wooded swamp