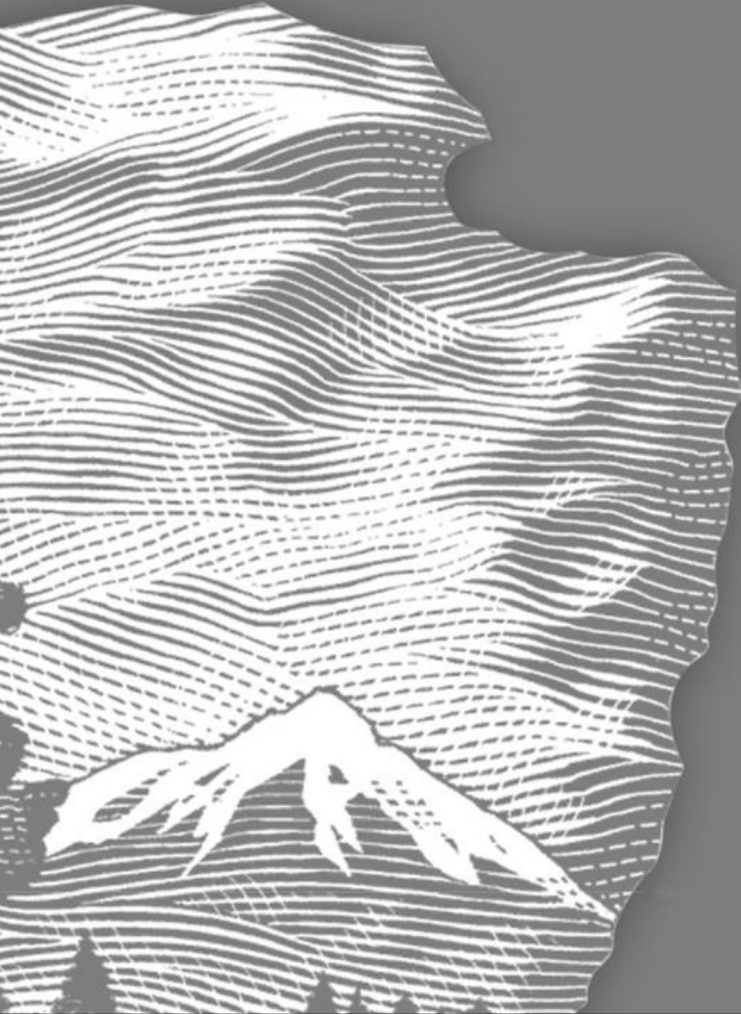


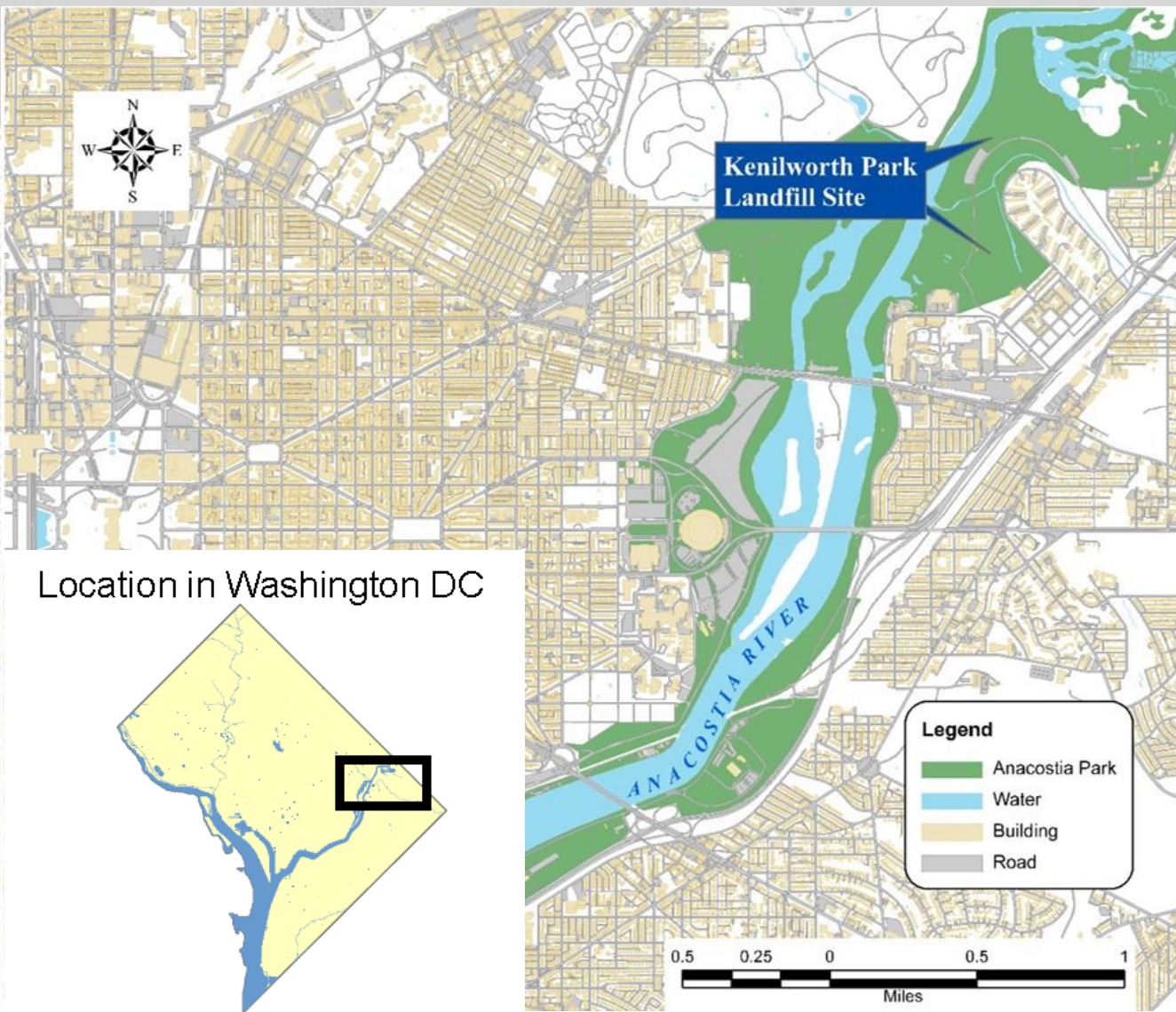
Kenilworth Park Landfill RI/FS Update



June 14, 2018



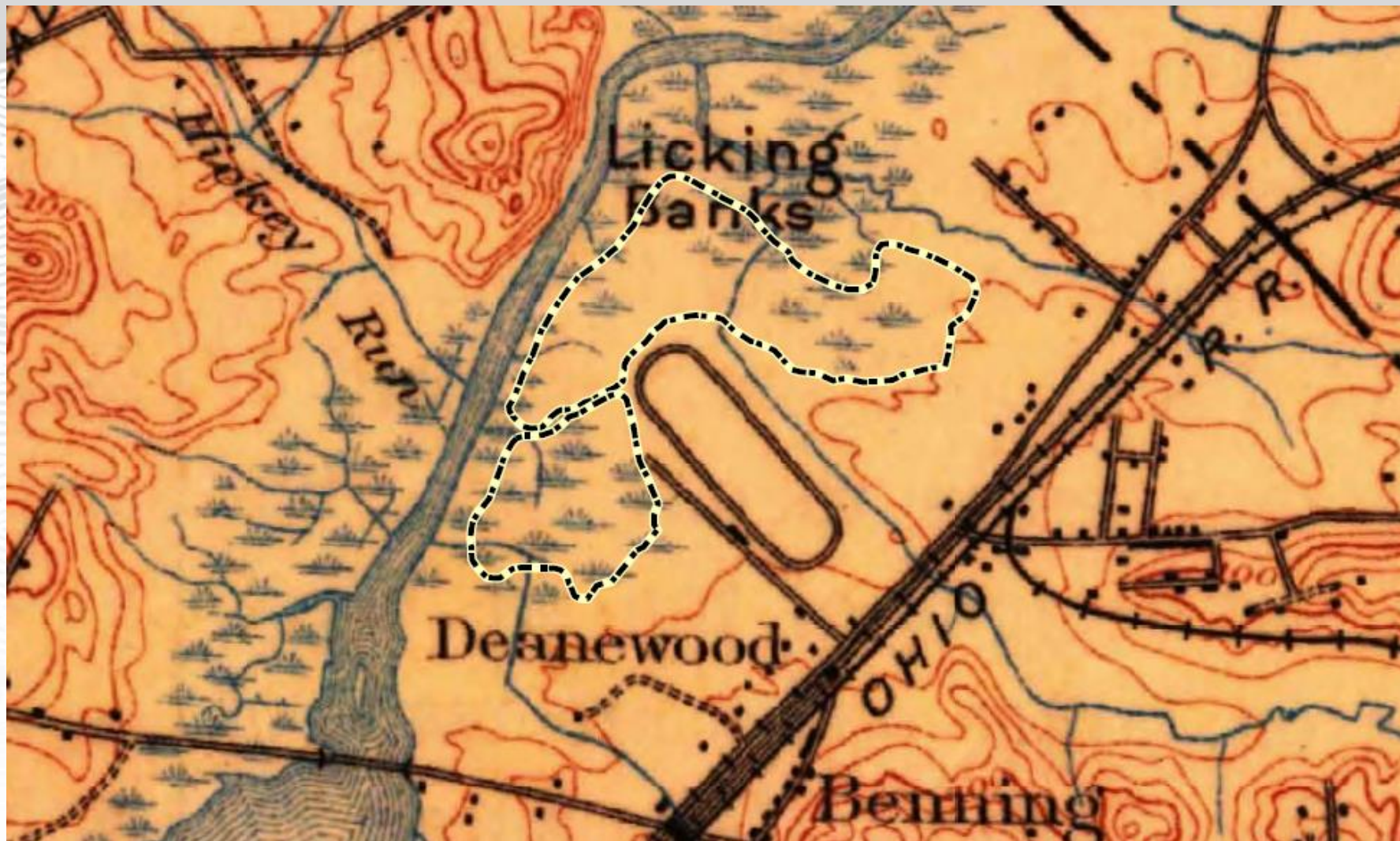
Site Locus



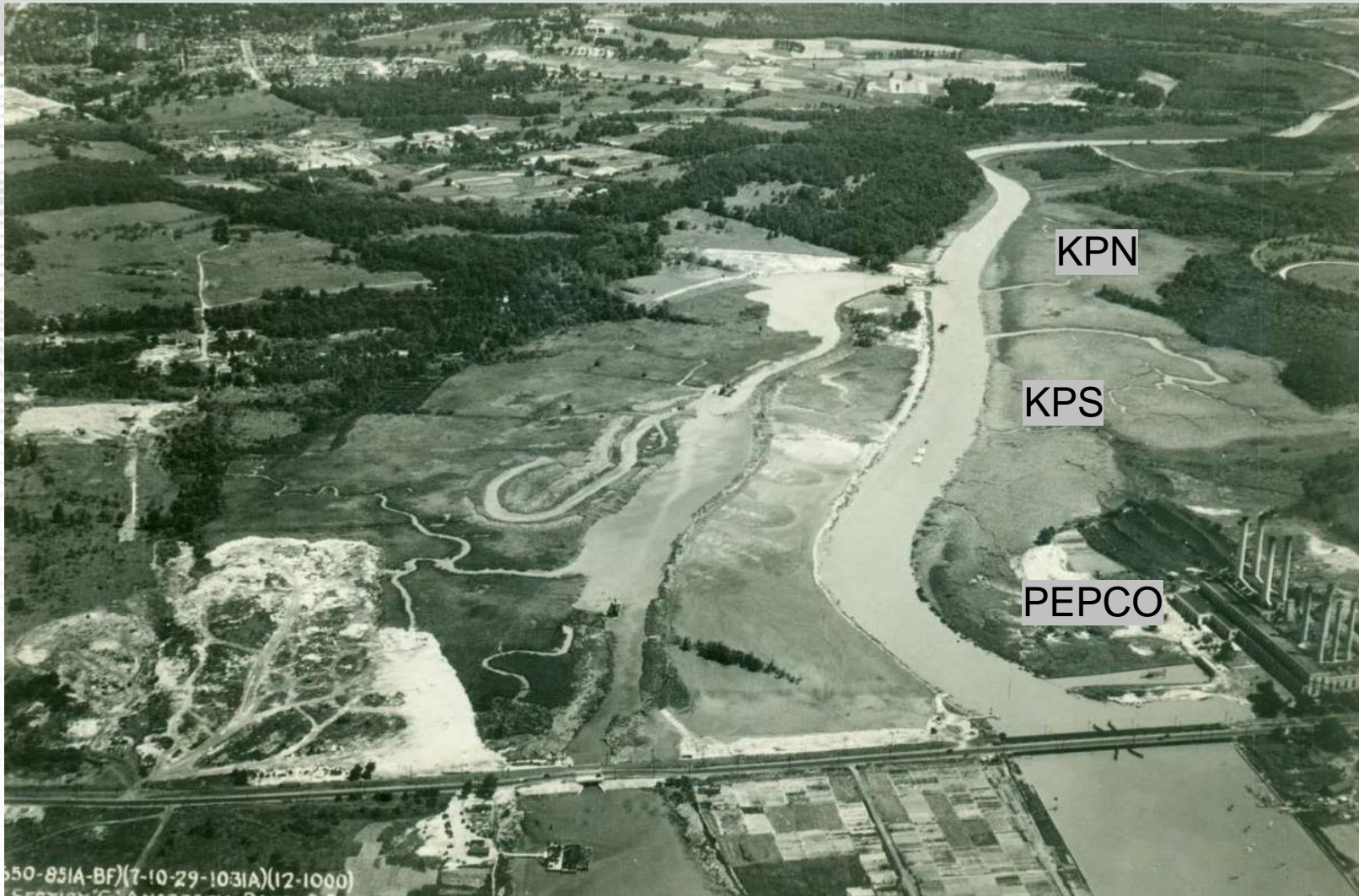
Site Orientation



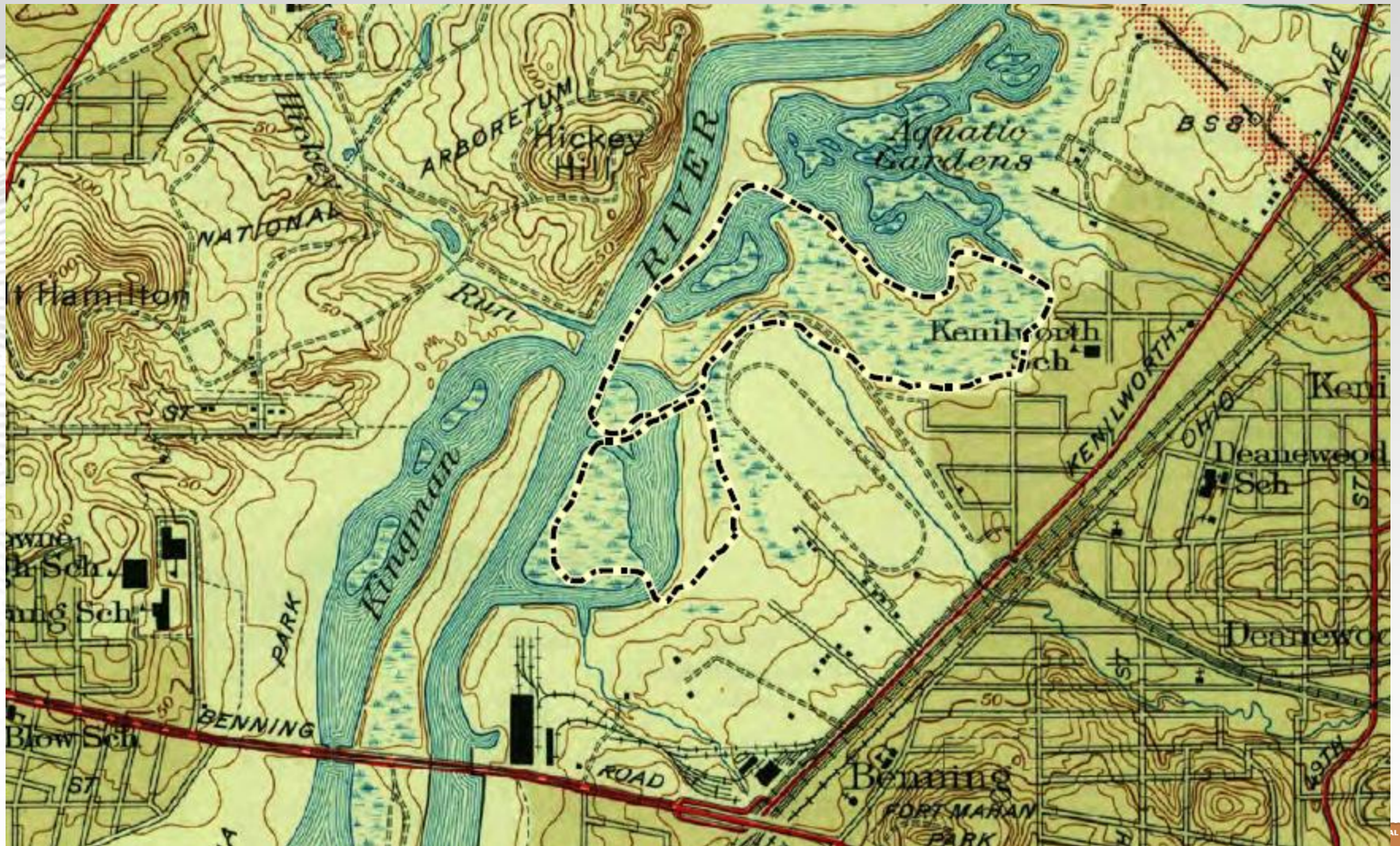
1900 USGS Map; Predevelopment



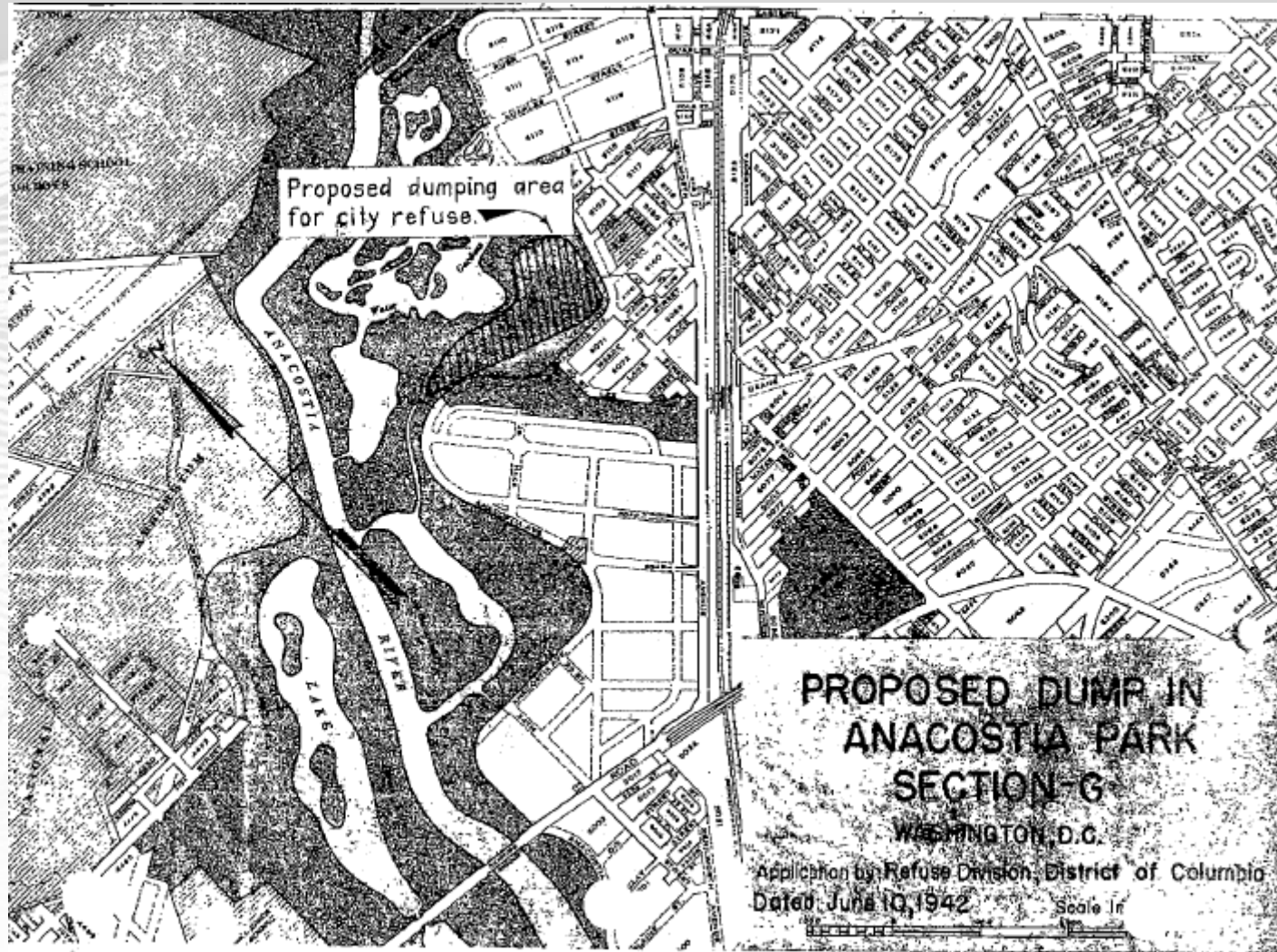
1929 Aerial Photo; Predevelopment



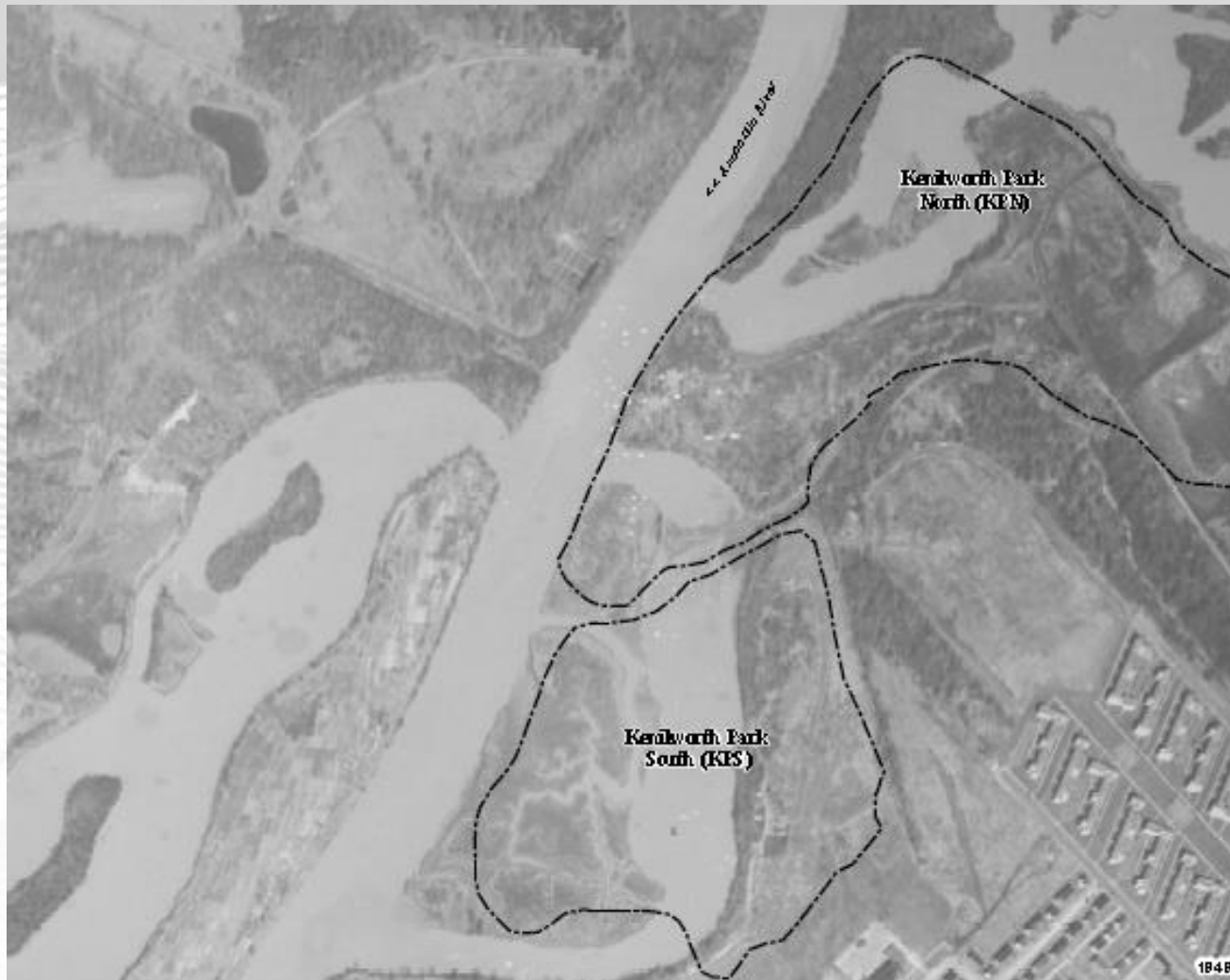
1945 USGS Map; Recreational Lakes



1942 Dump Application (KPN – East Side)



1949 Aerial Photo; Fill Progression



1957 Aerial Photo: Fill Progression



1963 Aerial Photo; Fill Progression



1970 Aerial Photo; Landfill Closure

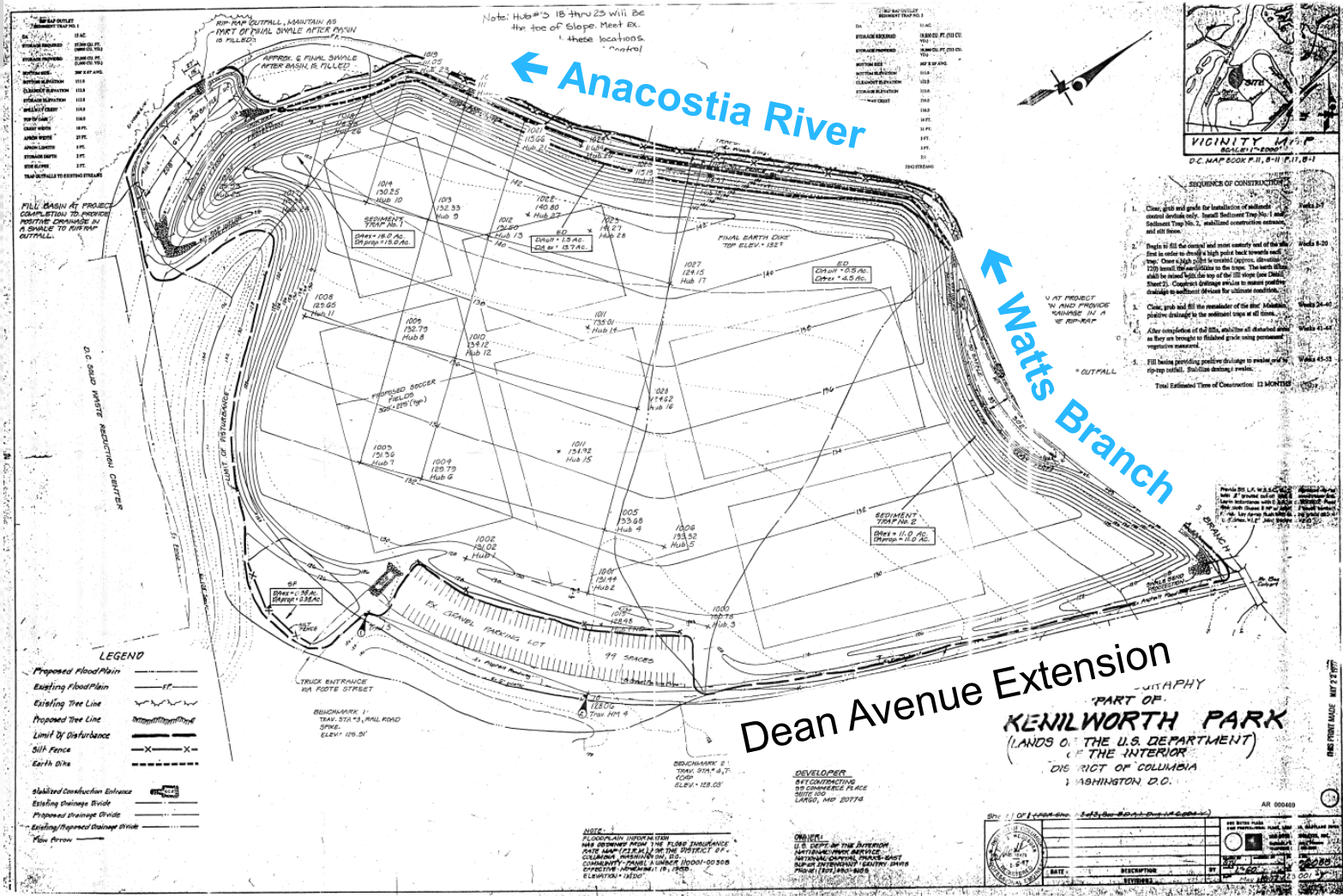


Fill Material

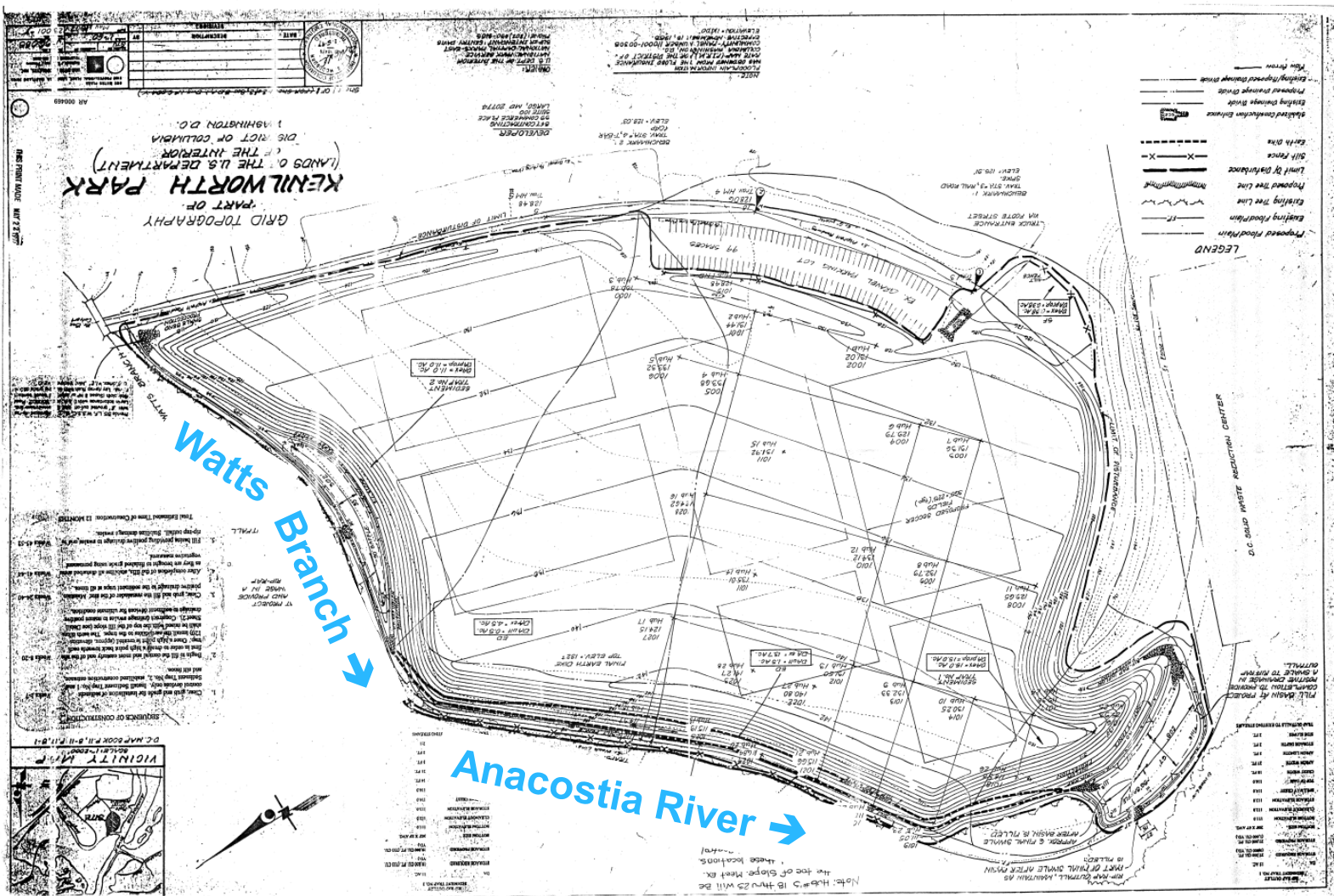
- **No detailed records of waste disposal**
- **Refuse from open burning (1942 to 1968)**
- **Incinerator ash (1942 to 1970)**
- **Raw municipal solid waste (1968 to 1970)**
- **Soil cover**



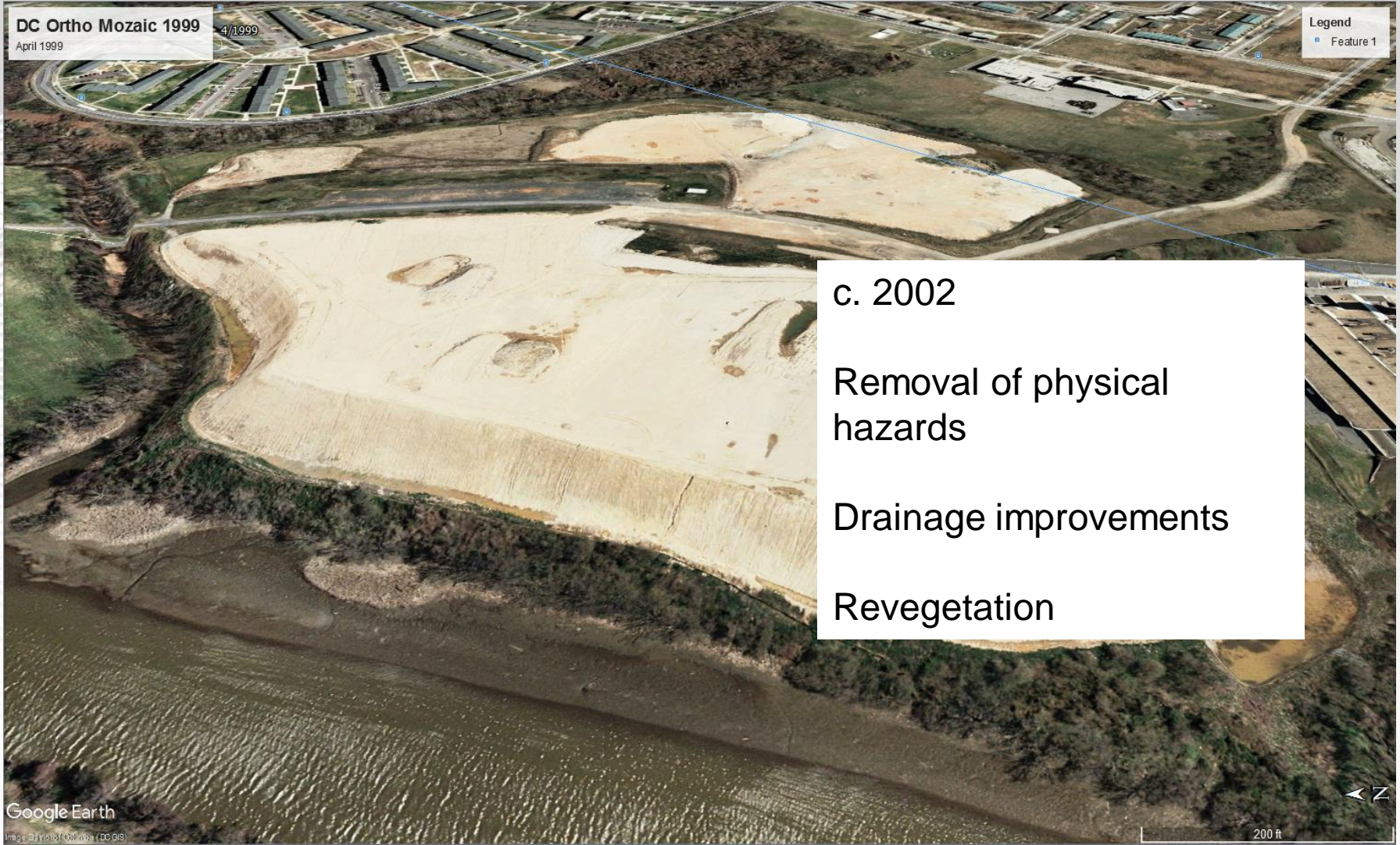
1996 KPS Grading Plan



1996 KPS Grading Plan - Flipped



1999 Aerial Photo - KPS



2018 Aerial Photo – KPS



KPS Meadow April 2018



CERCLA Investigations

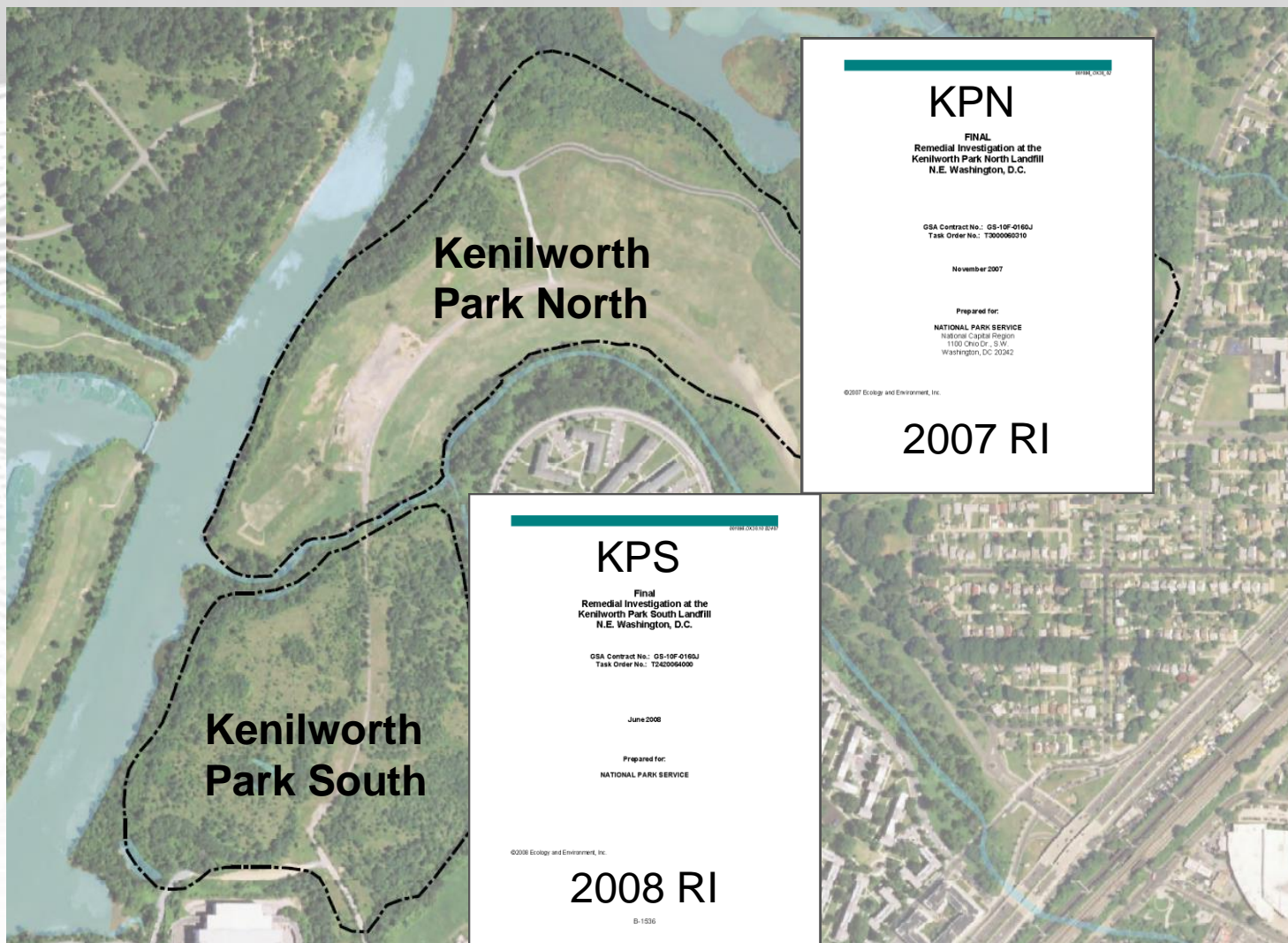


CERCLA Investigation Activities

Year	Monitoring Wells	Groundwater Samples	Subsurface Soil Samples	Surface Soil Samples	Sediment Samples	Surface Water Samples	Soil Gas Samples	Porewater Samples
1998 (KPS)	-	8	8	23	5	-	-	-
2000 (KPS)	11	18	47	34	26	4	-	-
2000 (KPN)	-	7	36	19	-	-	-	-
2002 (KPN)	8	7	10	15	5	-	-	-
2007 (KPN)	10	16	11	14	13	-	-	-
2008 (KPS)	2	13	24	14	1	-	-	-
2010 (KPS & KPN)	-	-	-	24	-	-	21	-
2013/2014	20	27	-	-	-	-	-	-
2016	-	-	-	-	-	10	-	13
2017	3	62	-	120	-	-	-	-
Totals	54 (44)	158	136	263	50	14	21	13



Remedial Investigations (KPN/KPS)

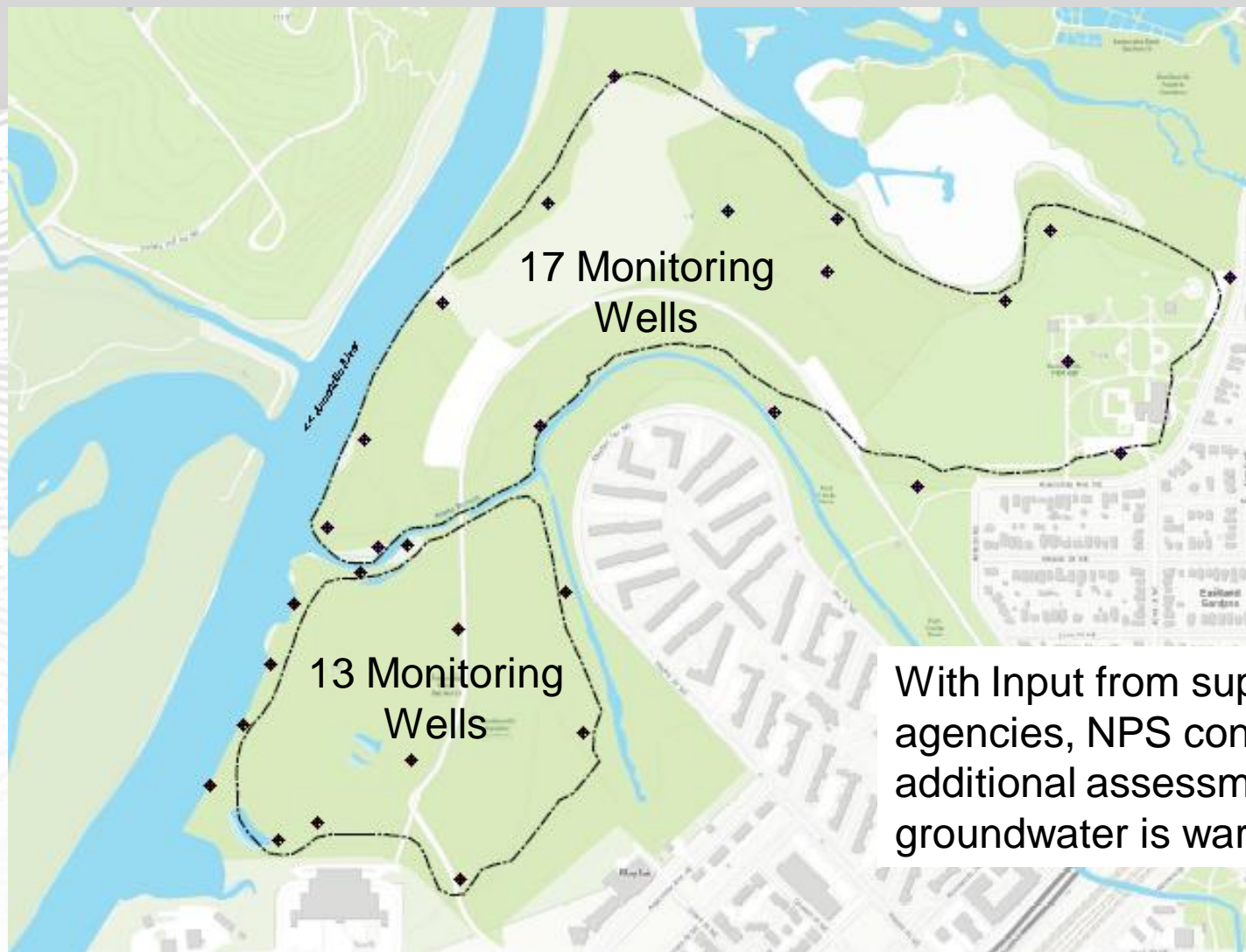


RI Findings

- **Potential Visitor Exposure Risk from Surficial Soil**
 - KPN – Primarily PCB Aroclors
 - KPS – Primarily the PAH Benzo(a)Pyrene
- **Potential Excavation Worker Exposure Risk**
 - Elevated lead concentrations in buried waste
 - Elevated methane concentrations in interior soil gas
 - Possible presence of unexploded ordnance
- **Groundwater Impacts to Surface Water Considered Unlikely**



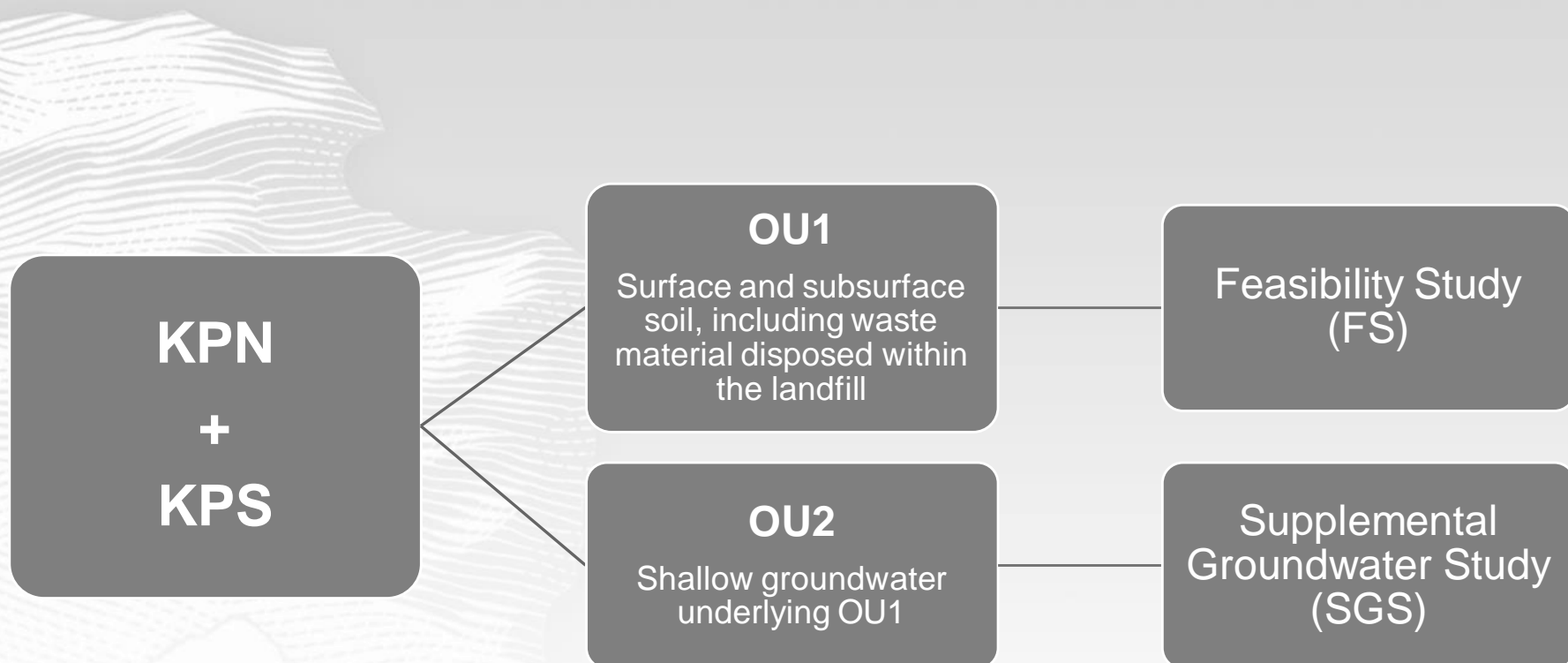
Monitoring Wells 2007/2008 RI



With Input from support agencies, NPS concludes additional assessment of groundwater is warranted



Project Restructuring (c. 2010)



2012 FS Remedial Alternatives (OU1)

1. No Action

2. Minor Grading with Institutional Controls

3. Soil Cap

a. 12-inch

b. 24-inch

4. Removal of All Waste



2013 Proposed Plan (OU1)

- **24-inch Cap over KPN and KPS**
 - Provide barrier to visitor contact with surficial soil to eliminate long-term visitor exposure risk
 - Limit infiltration of surface water consistent with RCRA Subtitle D landfill closure regulations (considered at the time to be “relevant and appropriate”)
- **Released for public comment – February 2013**
- **Presented at public meeting – April 2013**

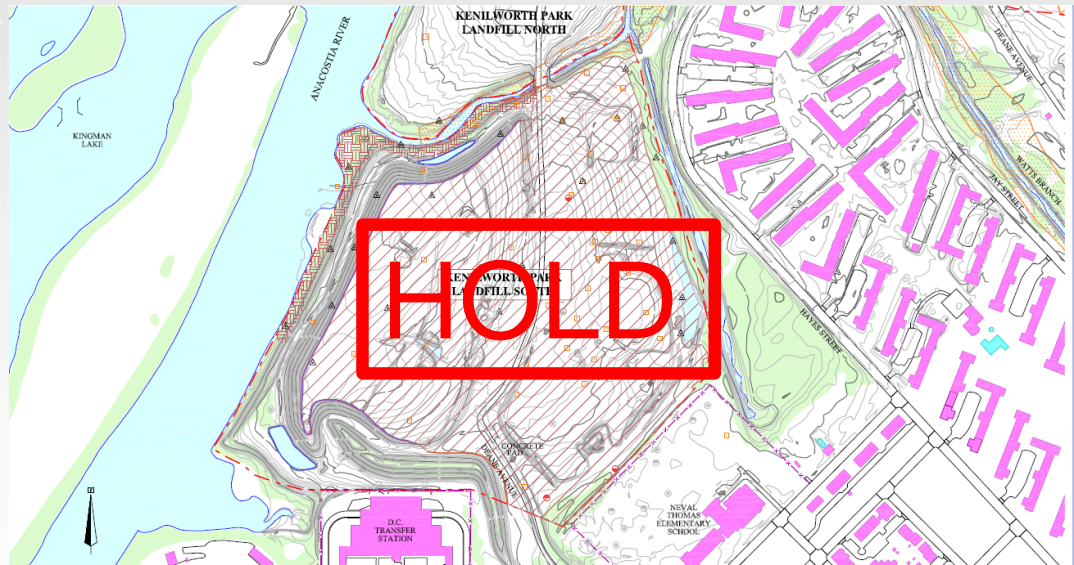
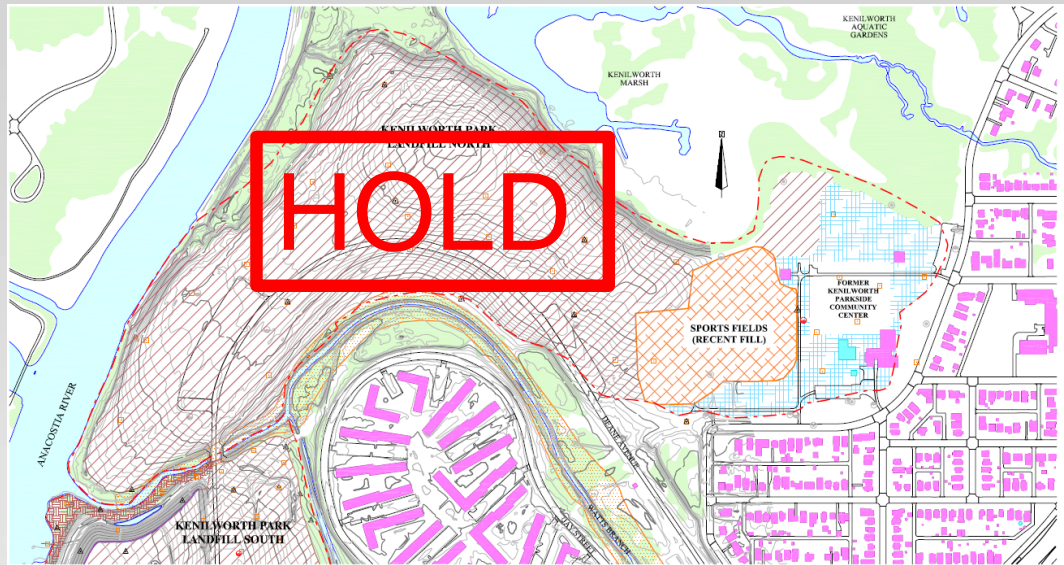


OU1 Proposed Plan: 24-inch Clean Soil Cap over KPN and KPS

Public Comments

Reconsideration of capping requirements

Deferred until after additional groundwater investigations are complete



2013/2014 SGS



20 New Monitoring Wells

11 Locations

5 Replacement Wells

9 Shallow and Deep “Couplet” Wells

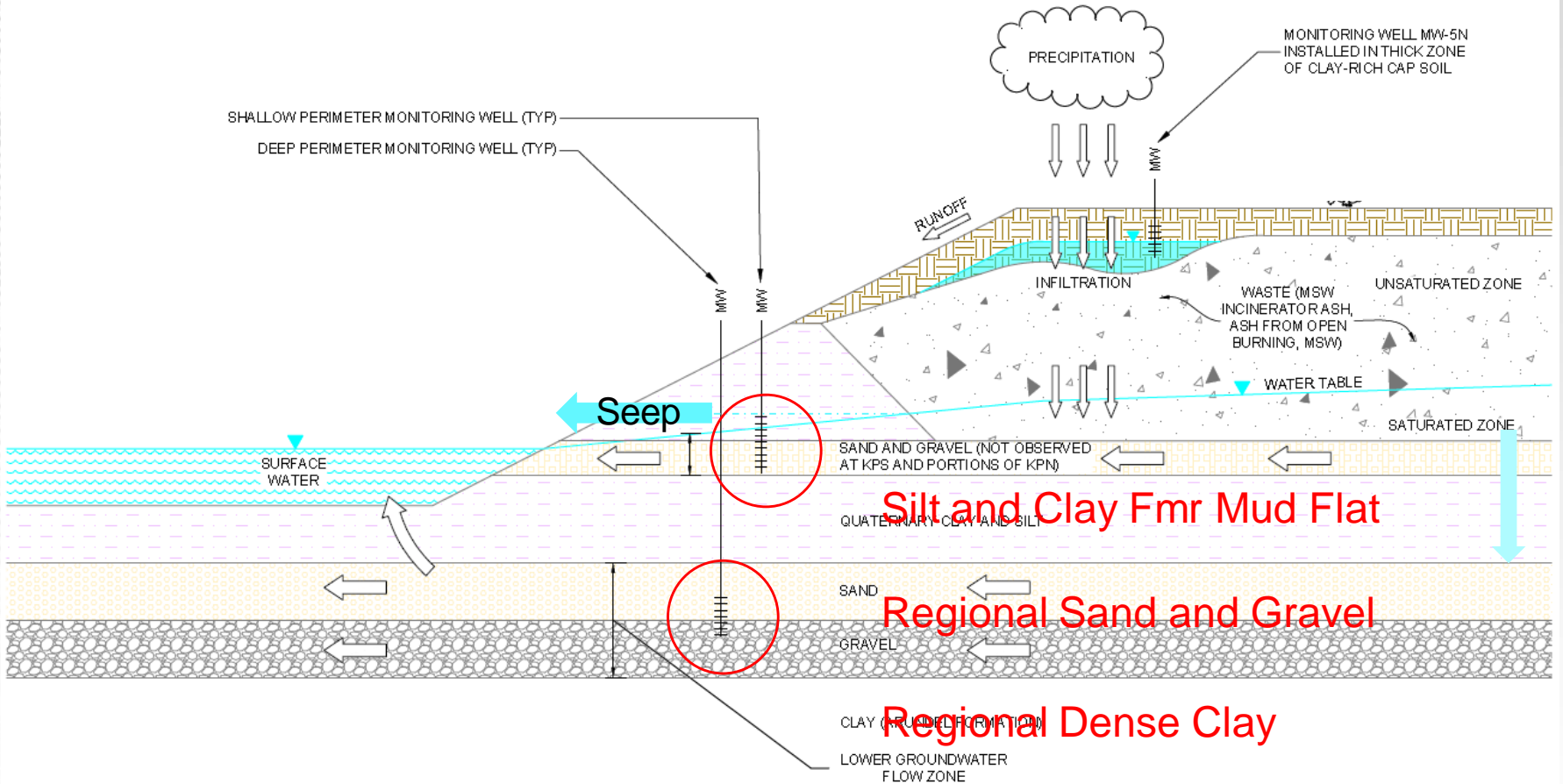
5 Shallow and Deep Couplet Piezometers

Enhanced Understanding of Site Geology and Hydrogeology



Graphical CSM – Not to Scale

KPN = KENILWORTH PARK NORTH LANDFILL AREA
KPS = KENILWORTH PARK SOUTH LANDFILL AREA

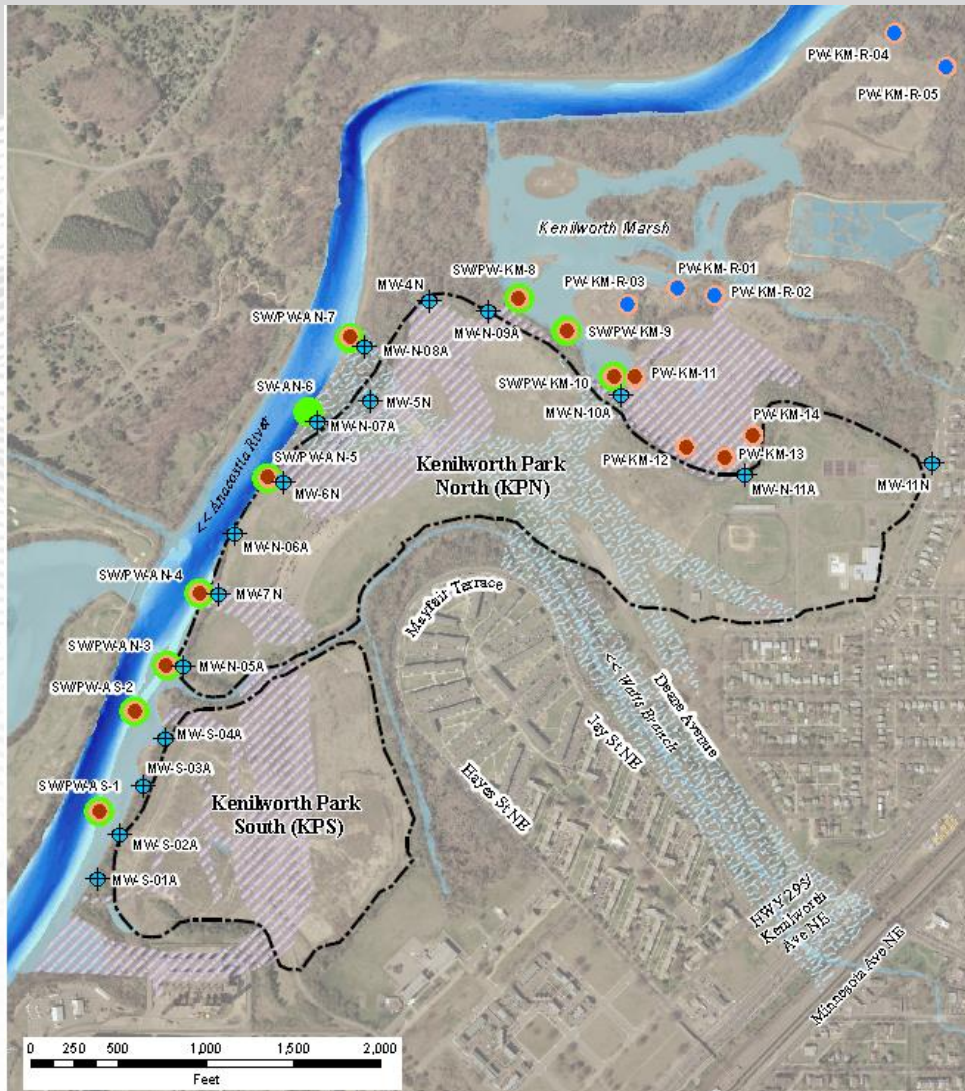


2013/2014 SGS Findings

- **No PCBs detected**
- **Relatively low concentrations of a few VOCs, PAHs, and dioxins in a small subset of wells**
- **No evidence of concentrated contaminant plume or source zone**
- **VOCs, PAHs, dioxins not considered a significant migration threat**
- **Several metals detected above screening levels in multiple locations**
- **Further assessment of metals in porewater recommended**



2016/2017 Porewater Study



13 Porewater samples

10 Surface water samples

5 Background porewater samples

Analysis for metals

No evidence of metals impacts from groundwater migration except possibly for iron and manganese

Are the iron and manganese concentrations a background condition?



Input from DOEE Technical Team

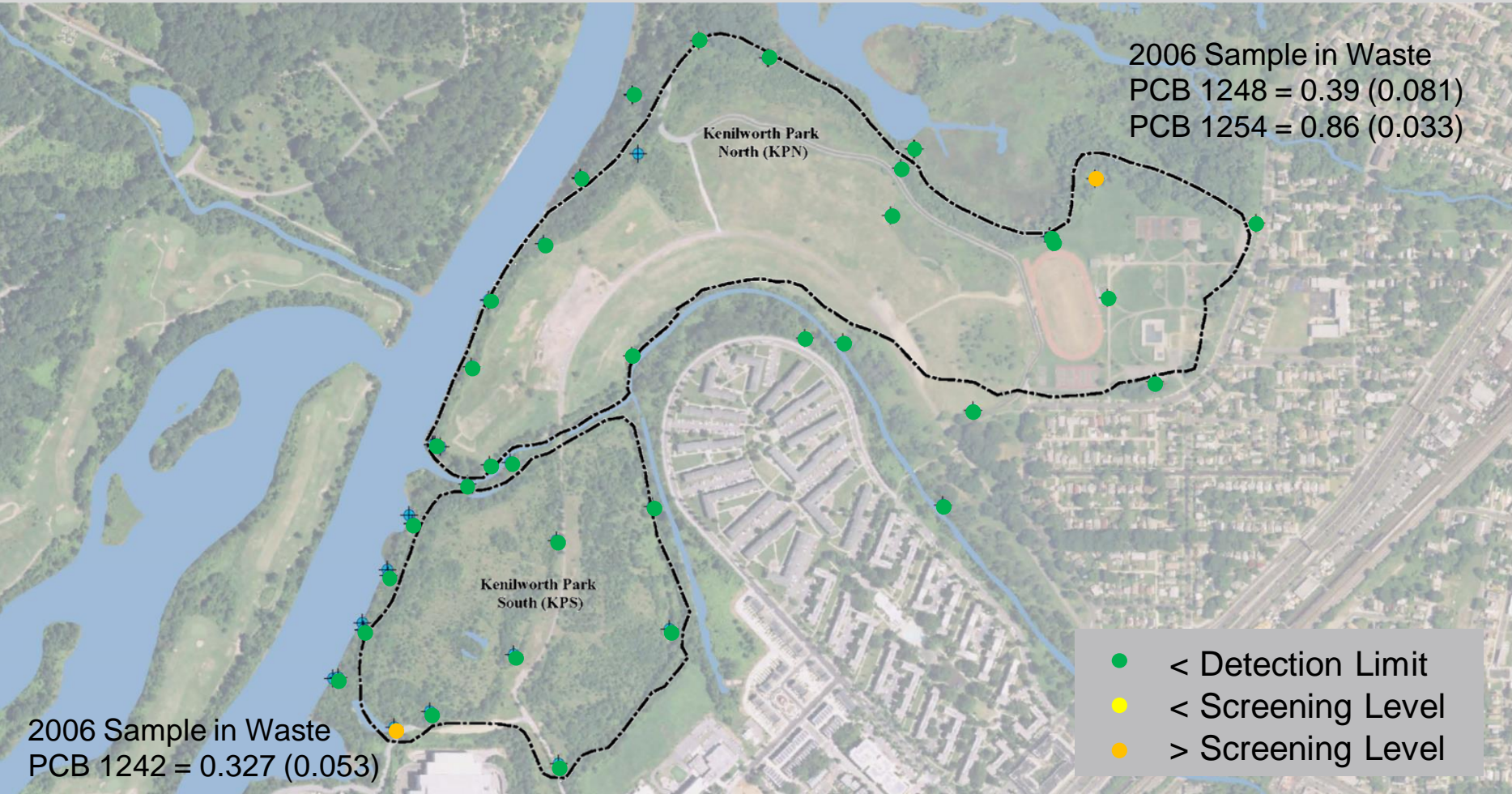
- **Suggested confirmatory rounds of groundwater sampling – completed in 2017**
- **Suggested broader assessment of dioxins – completed in 2017**
- **Suggested aerial infrared thermographic survey as a check on potential preferential pathways and a line of evidence to confirm monitoring network is representative – completed in 2018**
- **Suggested conducting a groundwater seep sampling program – sampling complete, final results pending**
- **Suggested incorporating Pepco background groundwater study into RI analysis – ongoing**



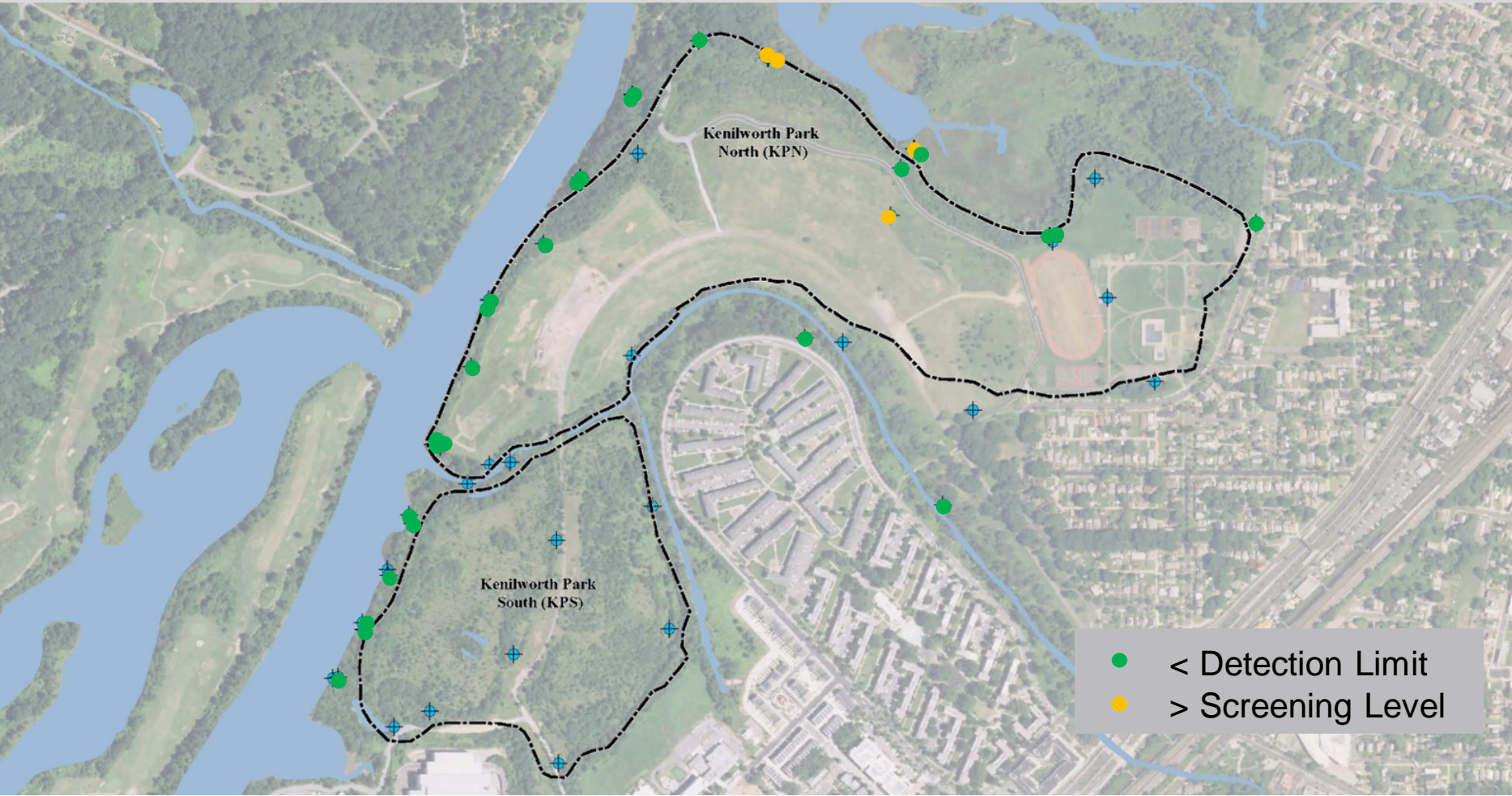
Updated Groundwater Quality Data



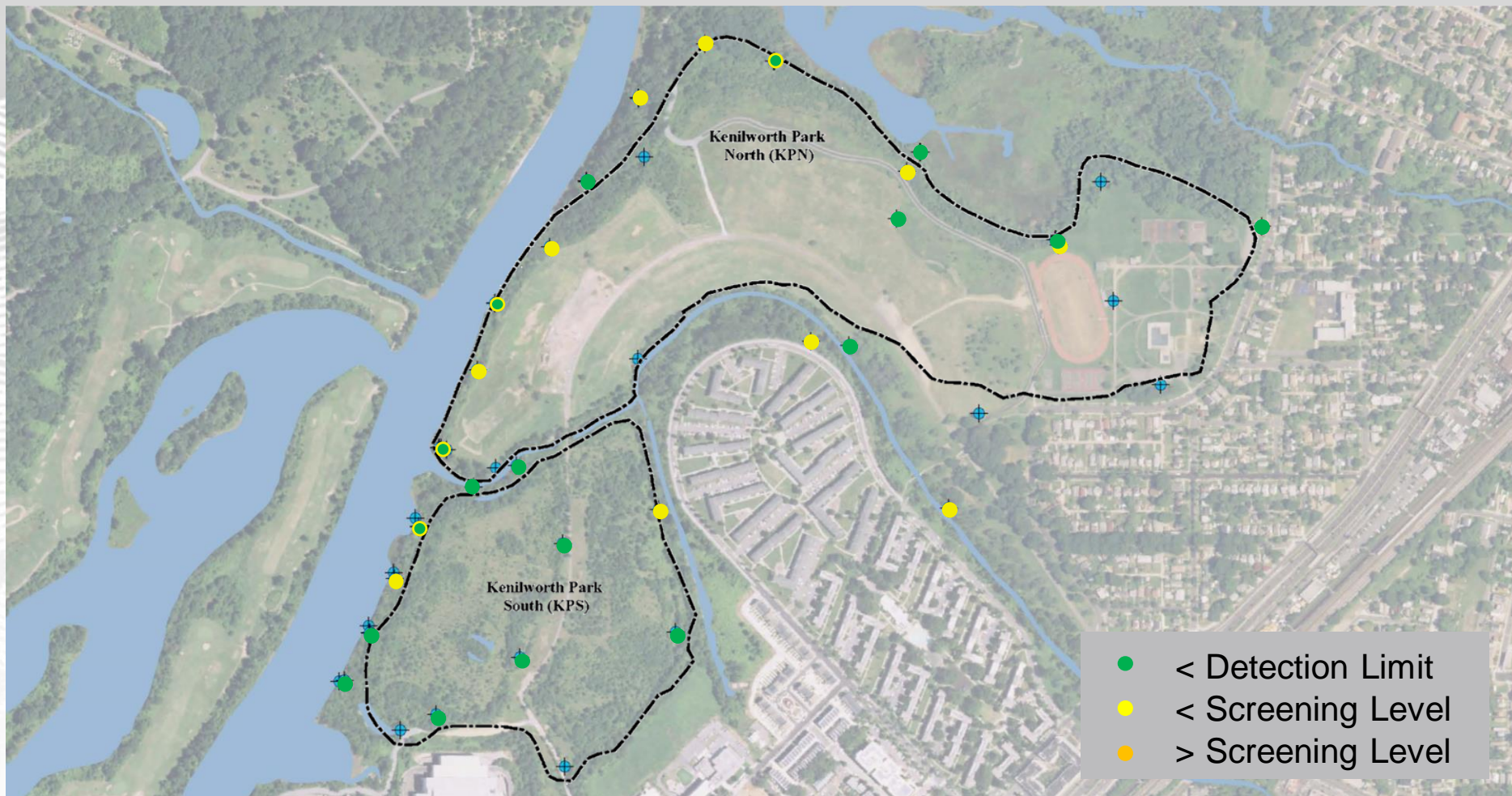
PCBs in Groundwater



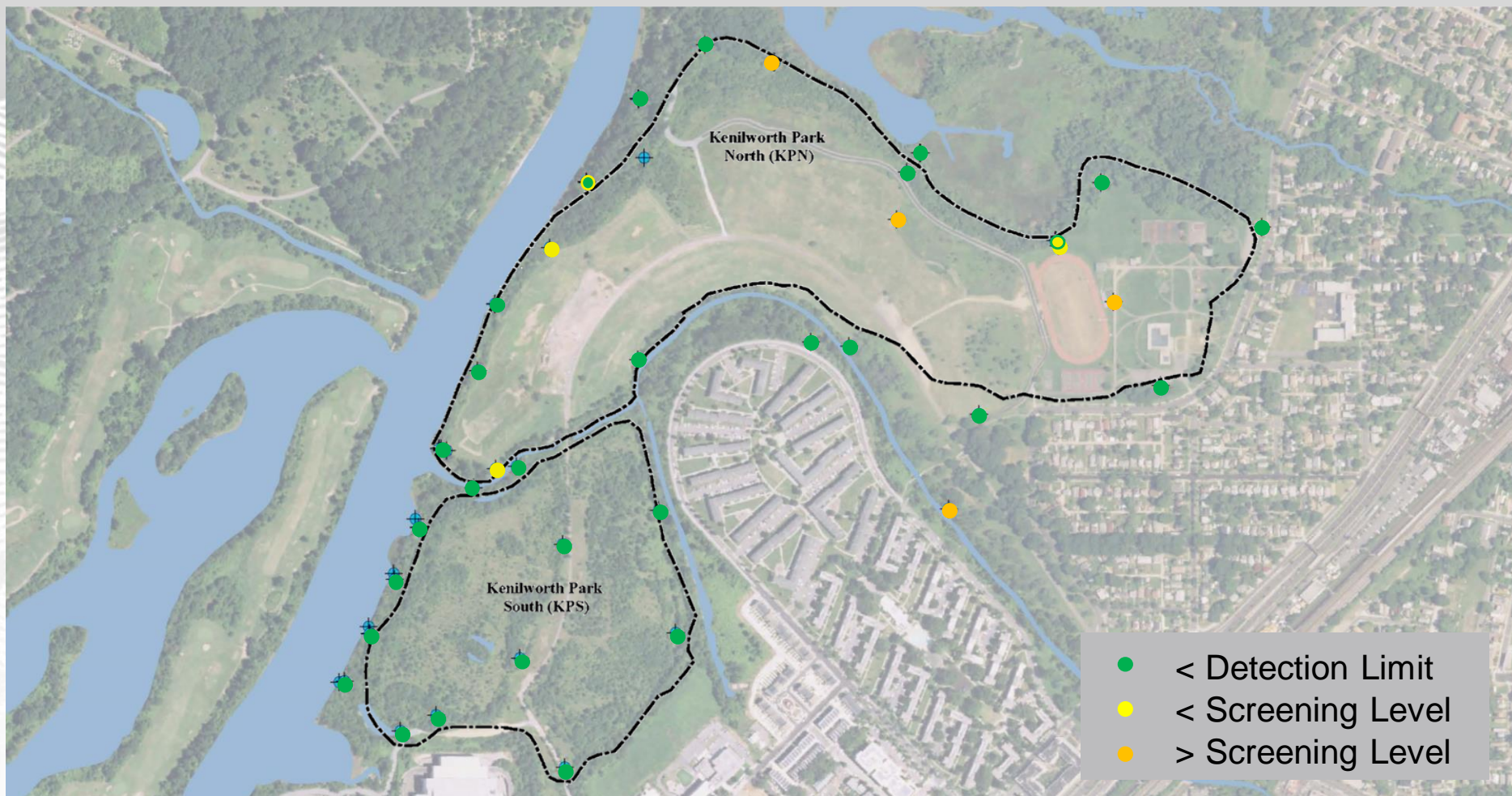
Dioxins/Furans in Groundwater



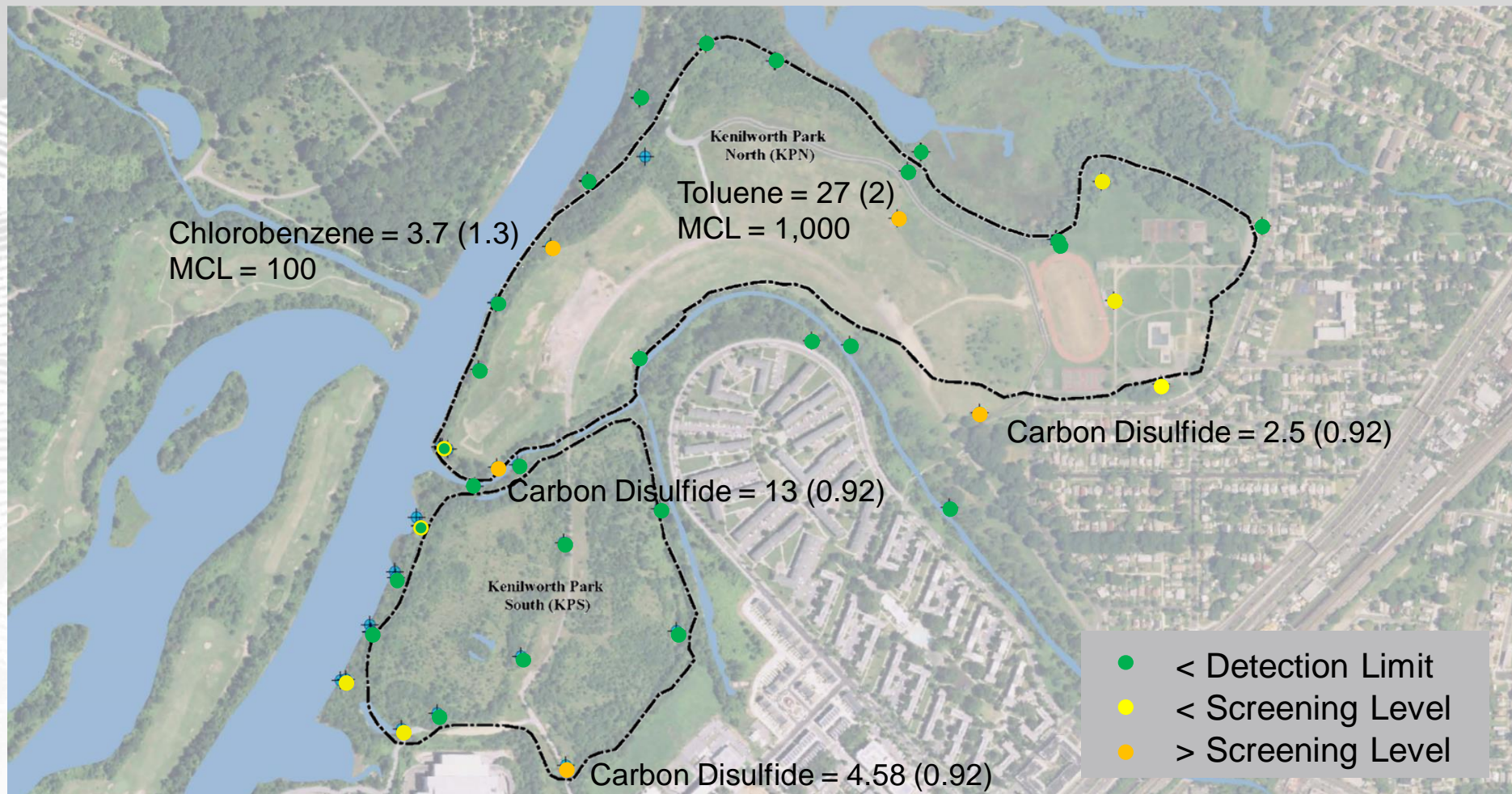
Pesticides in Groundwater



PAHs in Groundwater



VOCs in Groundwater



Groundwater Assessment Status

- **Reviewing DOEE seep sampling results**
- **Comparing seep data to groundwater data**
- **Incorporating new groundwater and seep data into an updated ecological risk assessment**
- **Comparing groundwater and seep data to background**
- **Evaluating need for remedial measures**



Revisit OU1 FS and Proposed Plan



Current and Future Use - KPN

- **Grass is mowed over a large portion of KPN.**
- **There are multiple foot paths that lead down to the river bank**
- **Soccer fields are located along the western portion near the River**
- **Administrative jurisdiction of KPN and some adjacent areas of the Park is legislated to be transferred to the District (PL 108-335 § 334) to be used “for the provision of public recreational facilities, open space, or public outdoor recreational opportunities.”**



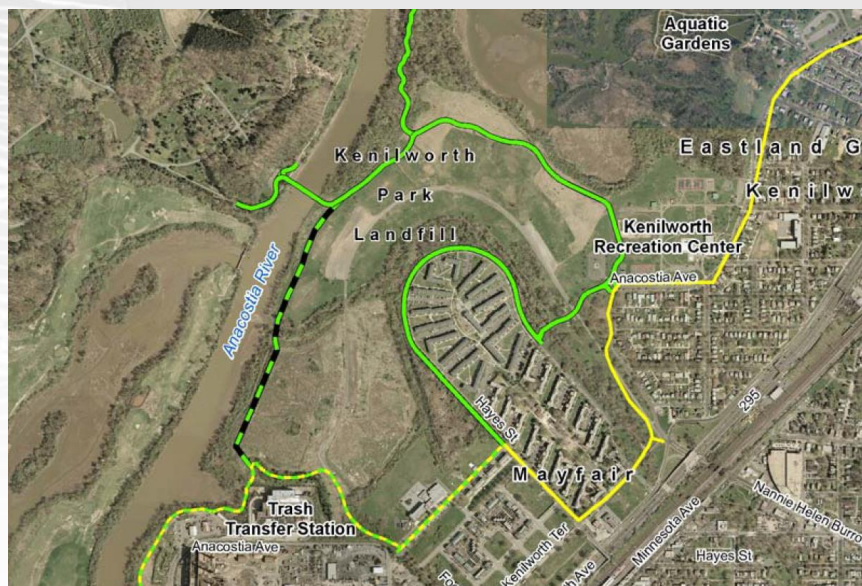
Surficial Soil Exposure Risk - KPN

- **Assumed exposure scenario consistent with residential use**
- **Primary chemicals leading to elevated potential human health risk are PCB Aroclors**
- **Reconsidering Alternatives 2 and 3**
 - Minor Grading with Institutional Controls
 - Soil Cap (12-inch rather than 24-inch)
 - Combination of the two



Current and Future Use - KPS

- “Natural Resource Recreation Zone” (2017 Anacostia Park Management Plan)
- Phase II Realignment (2011 Environmental Assessment, Anacostia Riverwalk Trail Section 3 Realignment)



Surficial Soil Exposure Risk - KPS

- **Considering lower intensity use such as a birder, walker, or cyclist**
- **Primary chemicals leading to elevated potential human health risk are PAHs (relatively ubiquitous in urban areas)**
- **The need for and extent of remedial measures are under consideration and range from institutional controls (e.g., maintain in current densely vegetated state, no picnic or higher intensity uses) to installation of a clean soil barrier**



Next Steps

- **Finish Remedial Investigation Addendum**
 - Documentation of seep sampling program
 - Documentation of updated risk assessments
 - Compilation of studies from 2013 through 2018
- **Prepare Feasibility Study Addendum**
 - Updated evaluation of the same four alternatives
- **Prepare Proposed Plan**
- **Prepare Record of Decision (ROD) – Targeting to be ready for signature in Q1 2019**



Public Outreach

- **Update the Community Involvement Plan – In progress**
- **Hold a public meeting in July 2018 to provide a similar update on the project as today**
- **Update the Administrative Record – In progress**
- **Release RI/FS and Proposed Plan for Public Comment as required under CERCLA (expected October 2018)**
- **Hold second public meeting (expected November 2018)**
- **Respond to public comments**



Questions?

