Conceptual Design Report
Parker Mill Pond Dam Removal

City of Wareham
Wareham, Massachusetts

November 2023



FUSS & O'NEILL

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Appendices **End of Report**

A Memorandum – Existing Conditions Evaluation – June 30, 2022
B NHESP Rare and Endangered Species and Habitat, MassDEP wetland delineations, and NRCS Web Soil Survey Report
C HEC-RAS Hydraulic Model Summary Results
D Advisory Committee and Public Meeting Sign-In Sheets

1 Executive Summary

The Town of Wareham engaged the services of Fuss & O'Neill to assess alternatives for removal of the Parker Mill Pond Dam. In addition to the many ecological benefits that will be realized due to this project, the project presents a unique opportunity to support a vibrant development center that preserves the rich history of Wareham and supports revitalization of the Nail Factory property and the surrounding neighborhoods.

This project is funded by a grant received from the EEA and will develop an Alternatives Assessment that weighs the impacts and benefits associated with removal of the Parker Mills Dam. The Town of Wareham wishes to consider partial and full removal of the dam spillway and fishway.

The project goals include improved fish passage and restoration of natural riverine processes, maintenance of or reduced flood risk, complementary to future development envisioned for the Tremont Nail Factory, and improved recreational opportunities, and minimization of impacts to adjacent infrastructure.

The Parker Mills Pond Dam (MA #00150) is an earthen embankment structure with vertical stone masonry. The earthen embankment portion of the dam supports Elm Street; a functioning fishway for anadromous species passage is located adjacent to the existing spillway. The dam is classified as a Significant Hazard structure, and is in poor repair. Elm Street is closed to vehicular traffic due to structural stability concerns, and significant seepage occurs into the Tremont Nail Factory Building.

Three alternatives were analyzed:

- Partial Vertical Removal – Nature Like Fishway
- Full Vertical Removal
- Partial Vertical Removal – Hybrid

A series of public and Technical Advisory Committee meetings were held to present the alternatives. Based on the information presented, the project partners chose to move forward with Full Dam Removal. This alternative consists of:

- Repair Elm Street.
- Replace the existing spillways and fish ladder with a new bridge structure.
- Lower the channel beneath Elm Street to El. 0 NGVD88.
- Replace Tihonet Road culvert.
- Install piles or other scour countermeasures at Route 28.
- Manage sediment to form channel.
- Install channel bedform features upstream of dam.
- Install scour countermeasures at Route 25 Wankico River bridge.
- Replace Route 25 Harlow Brook culvert.

The Full Dam Removal alternative will Full Dam Removal will provide the greatest level of flood protection for the area, will increase resiliency for the coastal riverine ecosystem, allows for migration of anadromous species, compliments future development proposed for the area, encourages public access and recreations, removes liability and maintenance associated with the dam, and beautifies the surrounding area.

2 Introduction

2.1 Background

The Town of Wareham engaged the services of Fuss & O'Neill to assess alternatives for removal of the Parker Mill Pond Dam. In addition to the many ecological benefits that will be realized due to this project, the project presents a unique opportunity to support a vibrant development center that preserves the rich history of Wareham and supports revitalization of the Nail Factory property and the surrounding neighborhoods. The project will maintain the combination of urban and natural elements at the site that are enjoyed by so many in the community.

This project is funded by a grant received from the EEA and will develop an Alternatives Assessment that weighs the impacts and benefits associated with removal of the Parker Mills Dam. The Town of Wareham wishes to consider partial and full removal of the dam spillway and fishway, as compared to retaining the existing structure.

The project goals include improved fish passage and restoration of natural riverine processes, maintenance of or reduced flood risk, complementary to future development envisioned for the Tremont Nail Factory, and improved recreational opportunities, and minimization of impacts to adjacent infrastructure.



The report presents a summary of the evaluation completed to date. The following elements were completed as part of this phase of analysis:

- Stakeholder Engagement
- Data Collection and Site Investigations
- Hydrologic and Hydraulic Analysis
- Sediment Management
- Alternatives Analysis
- Conceptual Design

3 Existing Conditions

To evaluate removal of the Parker Mill Pond Dam, it is necessary to understand what the impact may be to the upstream ecosystem and surrounding infrastructure. Fuss & O'Neill completed an Existing Conditions Evaluation of the habitat and infrastructure that may be impacted following dam removal. These Evaluation Areas are depicted on *Figure 1*. A detailed description of the observed Existing Conditions is described in the memorandum Existing Conditions Evaluation dated June 30, 2022, included as *Appendix A* with this report. A summary of Existing Conditions is provided herein.

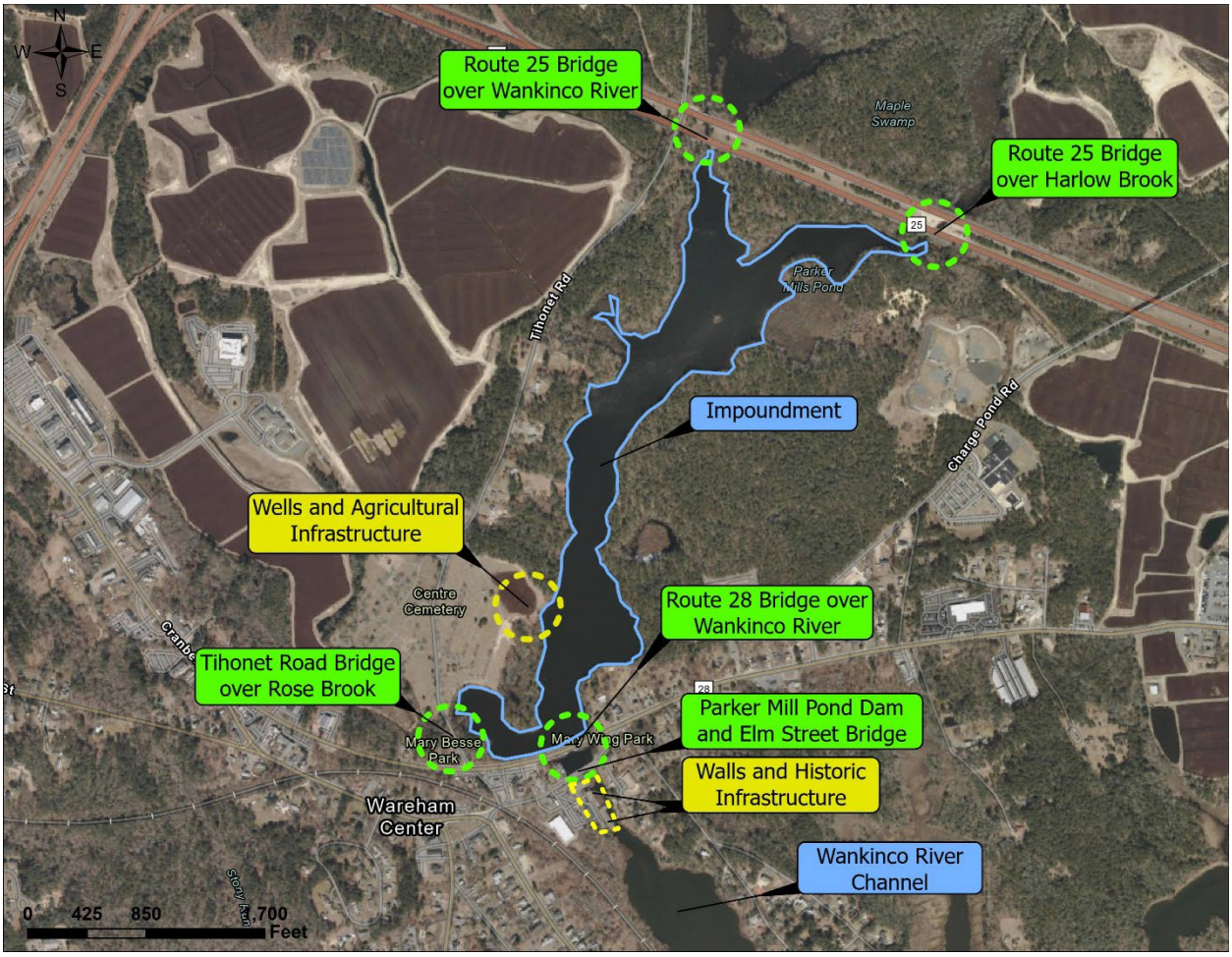


Figure 1: Evaluation Areas

3.1 Parker Mill Pond Dam and Impoundment

Fuss & O'Neill, Inc. completed a visual assessment of the Parker Mills Pond Dam (MA #00150), impoundment, and upstream bridges on April 13, 2022. The purpose of this assessment was to determine the existing conditions of the dam and to inspect the bridges for scour susceptibility.

Parker Mills Pond Dam

Parker Mills Pond Dam supports Elm Street immediately upstream of the historic Tremont Nail Factory building. The pond is adjacent to commercial and municipal infrastructure, including the functioning General Store whose parking lot is supported by a wooden bulkhead in the pond. The dam is an earthen embankment structure with vertical stone masonry on the upstream and downstream face. The dam crest is a bituminous concrete roadway. The dam has a maximum structural height of approximately 19-feet, a minimum width of 10-feet, and length of 400-feet (including the spillways).

The dam includes two spillways. The primary spillway is a 9.6-foot wide concrete stoplog structure that discharges to a stone masonry channel (*Figure 1*). The secondary spillway is also a concrete stoplog structure measuring 10.8-feet wide that discharges to a concrete attraction flow channel and fish ladder (*Figure 2*).



Figure 2: Right (primary) Spillway

The Buzzards Bay Coalition and the MA Division of Marine fisheries conduct spawning run fish counts with a Smith-Root electronic fish counter within the secondary spillway. Additionally, American eel young-of-year are counted by MA DMF at the eel ramp within the secondary spillway. The project goals are to sustain species health and improve current population numbers. Recent fish and eel counts at Wankinco Dam are presented in *Table 1* below.

Table 1: Diadromous Fish Counts at the Tremont Nail Factory Dam
Wankinco River, Wareham

Year	Herring	Eel
	(No.)	(No.)
2007	2,788	
2008	8,246	
2009	6,539	5,902
2010	10,665	2,989
2011	10,442	3,634
2012	24,764	13,927
2013	8,734	15,317
2014	18,625	25,377
2015	14,170	31,234
2016	15,026	2,032
2017	24,762	3,383
2018	18,957	72,732
2019	14,055	41,034
2020	23,709	1,345
2021	11,095	713
2022	6,482	



Figure 3: Left Spillway and Fish Ladder

Based on a visual inspection, the dam appears to be in fair to poor condition. The main deficiencies noted during the inspection are: erosion and exposed aggregate below the water line in the spillways, loose and displaced masonry walls, and erosion along the crest and dam faces, and trees and brush located within 20-feet of the dam crest and toe.

In accordance with Department of Conservation and Recreation Office of Dam Safety classification, under Commonwealth of Massachusetts dam safety rules and regulations stated in 302 CMR 10.00 as amended by Chapter 330 of the Acts of 2002, Parker Mills Pond Dam is considered to be an Intermediate size High Hazard structure. It should be noted that the

Impoundment

The perimeter of the impoundment was observed by boat to determine the presence of agricultural, stormwater, or other infrastructure that may be impacted by dam removal. One agricultural intake was observed at a cranberry bog next to the St. Patrick's Cemetery (western edge of the impoundment). The intake appeared to be flowing during the inspection. A second potential intake was observed during the desktop screening adjacent to the Harlow Brook Route 25 crossing. However, access to the intake was not possible during the inspection, and the intake was not observed.



Figure 4: Detail of Intake Structure on Western Edge of Impoundment

3.2 Summary

Based on the visual observations and review of exiting bridge plans, the following scour vulnerability was determined:

- ***Route 25 over the Wankinco River*** – moderate vulnerability. The bridge is supported on piles with existing armoring. Unarmored fine sand channel substrate will be susceptible to scouring.

- ***Route 25 over Harlow Brook*** – *high vulnerability. The culvert is supported on shallow spread footings. Additional data is required to confirm scour vulnerability.*

- ***Route 28 crossing*** – *high vulnerability. The bridge structure is constructed on shallow spread footings that would be undermined by dam removal. Unarmored fine sand channel substrate will be susceptible to scouring.*

- ***Elm Street (Parker Mills Pond Dam)*** – *N/A. This structure will be replaced during dam removal.*

- ***Tihonet Road over the tributary Rose Brook*** - *high vulnerability. The bridge structure is constructed on shallow spread footings that would be undermined by dam removal. Unarmored fine sand channel substrate will be susceptible to scouring.*

3.3 Bridge Evaluation

The bridge and culvert structures surrounding the impoundment were assessed to determine susceptibility to scour following dam removal. The following bridges were assessed during the site visit on April 13, 2022:

- Route 25 over the Wankinco River
- Route 25 over Harlow Brook
- Route 28 crossing, the
- Elm Street (Parker Mills Pond Dam)
- Tihonet Road over the tributary Rose Brook

The bridge structures were accessed by boat for visual observation on April 13, 2022. These observations are described below.

Route 25 over Wankinco River

The eastbound and westbound Route 25 bridge crossings over the Wankinco River have the same design, which consists of three spans supported on left and right concrete abutments and timber pile bents *(Figure 5*). Large stone armoring extends from below the water line to six feet above the water surface. Where armoring was not present, the channel bottom substrate was observed to be coarse sand or finer, and has limited ability to resist scouring.



Figure 5: Route 25 Bridges (northbound and southbound)

Route 25 over Wankinco River

To the northeast side of the impoundment, a second set of eastbound and westbound bridges on Route 25 crosses over Harlow Brook (*Figure 6*). The crossings were observed to consist of concrete open bottom box culverts. Visual observation of the structure was not possible do to shallow water levels; historic design plans for the structure are not available. During future phases of the project, it will be necessary to obtain a more detailed survey of this crossing so that scour susceptibility can be analyzed.



Figure 6: Route 25 Bridge (northeast side of impoundment)

Tihonet Road over Rose Brook

On the southwest side of the impoundment, the Rose Brook Tributary enters the Parker Mills impoundment via the Tihonet Road bridge crossing. This crossing consists of an eight-foot wide, three-sided, open bottom stone masonry structure (*Figure 7*).

The upstream channel bottom was observed to be composed of medium to coarse sand. The downstream channel is lined with stone. It is unknown if the stone was placed on the channel bottom for scour protection, or if the stone was exposed as part of a natural armoring process.



Figure 7: Tihonet Road Bridge (southwest side of impoundment)

Near the center of the impoundment along the western edge, there is a second Tihonet Road crossing. This crossing consists of twin concrete three-sided, open bottom box culverts (*Figure 8*). Based on visual observations, the channel substrate consisted of coarse sand with limited larger stones.



Figure 8: Tihonet Road Bridge (second crossing by cranberry bog)

Route 28 over Wankinco River

The furthest downstream bridge before Parker Mills Pond Dam is the Route 28 (Cranberry Highway) crossing (*Figure 9*). The crossing is a 30-foot wide, three-sided, open bottom concrete bridge with cast-in-place concrete wingwalls.

The bridge is supported by spread footings which are susceptible to being undermined due to scour. As this bridge is located directly upstream from the dam (approximately 130-feet upstream), scour countermeasures will be necessary at this crossing as a result of dam removal.



Figure 9: Route 28 (Cranberry Highway) Bridge (southern edge of impoundment)

3.4 Structural Evaluation

Fuss & O'Neill, Inc. (F&O) conducted a visual assessment of the configuration and condition of the existing Tremont Nail Factory and General Store, and the stacked granite embankment walls along the Wareham River downstream of Elm Street on April 7th, 2022. The purpose of this assessment was to determine the impact that floodwater currently has on the structures, to recommend repairs or further investigation as needed, and to assess the need for additional protection following dam removal. The assessment was limited to the foundation elements of the buildings that could be directly impacted by floodwater and lowering of water surface elevations due to dam removal. The findings for each existing structure consist of the following:

Tremont Nail Factory

The building structure was observed to be in fair condition. The building consists of primarily timber framing, with limited miscellaneous steel and/or cast-iron members. The building sits on a concrete slab that is largely slab-on-grade. The concrete slab spans across the stacked stone channel and foundation of the waterway adjacent to the dam and fish ladder.

There are a few conditions within the Nail Factory that may require repair or strengthening. Most notably, there is moderate water seepage through the stone wall on the north side of the building, through the dam embankment. The stone's mortar has seemingly failed and water is seeping through the joints. The concrete floor slab is not level and permits water to puddle in several locations within the building. This puddling on the slab could either be from ground water seepage (through the slab or foundation walls) or from a roof leak. It is our understanding that the roof membrane was recently repaired and is believed to be, generally, watertight.

The former penstock runs the entire length of the Nail Factory building below the concrete slab, and outlets into the Wareham River. The opening is about 6' wide and approximately 4' tall from the bottom of the channel. This stone masonry and concrete channel appears to be in good condition and relatively clear.

General Store

The General Store, across the street from the Tremont Nail Factory, consists of wood framing, with the front half of the building that is closest to Elm Street sitting on a concrete slab, and the rear portion of the store, elevated above the water, supported on masonry piers.

Overall, the building is in fair condition with no obvious indications of deterioration or structural distress; however, the masonry piers supporting the back (north) portion of the building is an area that requires additional investigation. From the parking lot, the tops of the existing masonry piers appear to be out of plumb and showed some degree of deterioration. Evidence of potential structural deterioration was present inside the store, above the pier supported portion of the building, where it was obvious that the existing wood floor was unlevel with noticeable deflections in areas of stored material.

Granite Stone Walls Downstream of Dam

The walls downstream of the dam consist of large, dry stacked, granite stones. The walls appear to be in fair to good condition. There is no obvious evidence of wall failures such as overturning or sliding occurring along either embankment. The stones all appear to be in good condition maintaining an acceptable degree of slope stabilization.

There is evidence on surrounding structures that the water level frequently rises above the stones, indicating that the current height of the wall may not be sufficient to contain a higher water levels. While there was a recent storm event just prior to our evaluation of the channel walls and the water level was close to the top of the existing stone embankment walls, it is our understanding that the water elevation was typical for the season.

3.4.1 Recommendations

Tremont Nail Factory

For the longevity of the Nail Factory and to preserve its structural integrity, we recommend sealing and abandoning the former penstock. This will divert water away from the building foundation. Flowable fill or controlled low strength material could be used to seal the opening.

The seepage emanating from the northern foundation wall should be addressed to prevent the continued flow of water into the structure. This could be accomplished by repointing the masonry along this wall or applying a waterproofing product to its surface. Additional investigation may be required to determine the full extent of seepage and the potential effects from removing the adjacent dam structure.

General Store

From what could be observed within the General Store, the only area of concern is the back portion of the building supported on masonry piers. Recommendations for this area include conducting a more detailed assessment to better observe the condition and configuration of the masonry piers. This will support decision making regarding the need for modification of these piers as part of the project activities.

Granite Channel Walls Downstream of Dam

The embankment walls appear to be in good condition and do not appear to require any significant repairs or restoration; however, an increase in water level may overwhelm the existing stone walls and require reinforcement; or increasing their retained height may protect neighboring structures from storm and floodwater. Mortar could be added to the dry stacked stone to increase the structural integrity and longevity of the walls. If an increase in wall height is required, further detailed analysis will be necessary to adequately assess potential stability issues.

3.5 Wetland Assessment

Fuss & O'Neill performed a wetland resource area field inspection and delineation of the project area on March 29, 2022, including Parker Mills Pond between Route 28 and Elm Street, the Wareham River extending 500 feet downstream from Elm Street, and associated regulated resource areas near the Parker Mills Pond Dam. The purpose of the delineation was to locate the jurisdictional limits of areas regulated under the Wetlands Protection Act (M.G.L. c. 131 sec. 40) and associated Wetlands Protection Act Regulations (310 CMR 10).

The following inland wetland resource areas were identified and delineated at the site during the field and desktop investigation: Bordering Vegetated Wetland (BVW), Inland Bank, Land Under Water Bodies and Waterways (LUWW), and Bordering Land Subject to Flooding (BLSF). Refer to Sketch Map of Resource Areas in *Figure 10* below. Consecutively numbered flags were placed in the field to demarcate the boundaries of resource areas, and flags were then located via sub-meter GPS.

Downstream of the dam, the following coastal resource areas were identified and delineated: Banks of or Land under the Ocean, Ponds, Streams, Rivers, Lakes, or Creeks that Underlie an Anadromous/Catadromous Fish Run; and Salt Marsh. State-regulated Riverfront Area is measured horizontally from Mean Annual High Water identified and delineated, and state-regulated Buffer Zone is measured horizontally from the boundaries of BVW or Bank identified at the Site. The Town of Wareham Wetland Protection Protective By-Law builds upon the Buffer Zone to include a 100-foot buffer zone around "any freshwater or coastal wetlands; marshes; wet meadows; bogs; swamps; vernal pools; banks; reservoirs; lakes; ponds of any size; intermittent streams; creeks; beaches; dunes; estuaries; the ocean; lands under water bodies; and, land containing shellfish". In the By-Law, the term freshwater wetlands

"include[s], without limitation, those areas within which saturated or inundated conditions exist other than salt marshes." In addition to BVW, a small, isolated wetland was identified at the Site (flag series B200-B203).

Banks of the southern end of Parker Mills Pond (south of Cranberry Highway/SR28) have been significantly modified by bank armoring/stabilization and the constructions of adjacent roads and buildings. Non-landscaped vegetation is limited to the segments of the eastern and western banks between Cranberry Highway and Elm Street and includes [common name (scientific name), wetland indicator status]: black locust (Robinia pseudoacacia), FACU; red maple (*Acer rubrum*) FAC; Tatarian honeysuckle (*Lonicera tatarica*), FACU; sweet pepperbush (*Clethra alnifolia*), FAC; multiflora rose (*Rosa multiflora*), FACU; mugwort (*Artemisia vulgaris*), UPL; and oriental bittersweet (*Celastrus orbiculatus*), UPL.

The NHESP Rare and Endangered Species and Habitat, MassDEP wetland delineations, and NRCS Web Soil Survey report for the site location are included in *Appendix B*.

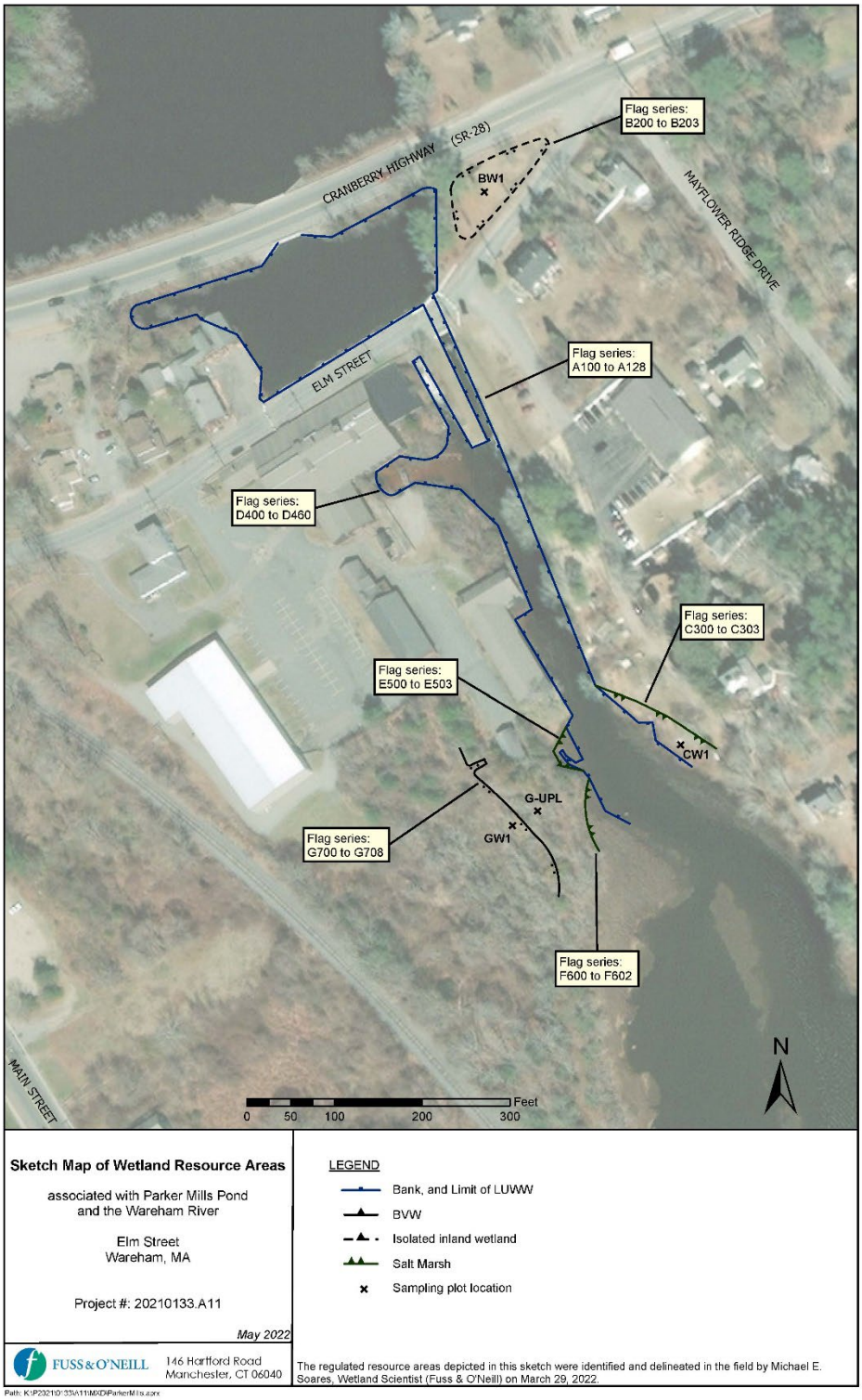


Figure 10: Sketch Map of Resource Areas

3.6 Sediment Assessment

A field investigation of the pond sediment was conducted on April 14 and 15, 2022. Detailed findings from this assessment are discussed in the *Parker Mills Pond Dam Removal Feasibility Study Sediment Quality and Depth Assessment by Fuss & O'Neill* dated June 17, 2022. The findings from this analysis are presented herein.

The general subsurface conditions as observed in the borings included organic silt and clay which was observed to be underlain by a native horizon consisting of sandy silt and/or fine sands. Fuss & O'Neill developed the following conclusions with regard to the sediment conditions:

- Sediment accumulation in Parker Mills Pond was observed along a horizon which ranged from approximately 1.2 feet to 4.9 feet in thickness.
- The total concentrations of detected analytes were below applicable MACLs for reuse at a lined landfill.
- The total concentrations of detected analytes were below applicable PECs.
- The total concentrations of detected analytes were below applicable MCP RCS-1 Reportable Concentrations.

Table 2: Sediment Average Grain Size

Section (River Station)	Section Description	Grain Size (D50, mm)
9251	Route 25 WB	1 mm (coarse sand)
9104	Route 25 EB	1 mm (coarse sand)
4390	Route 28	1 mm (coarse sand)
4188/4168	Elm Street	100 mm (cobble)

3.7 Reference Reach Evaluation

To identify an appropriate reference reach, a desktop screening was performed for nearby watersheds that have similar characteristics to the Parker Mills Pond Dam watershed. The watershed with the most similar characteristics was the USGS 01105870 Jones River Gage at Kingston, MA. The Paskamanset River watershed was also evaluated, but the watershed characteristics did not match the Parker Mills Dam watershed as well as the Jones River. The basin characteristics show good agreement between the two watersheds; the Jones River watershed has a somewhat shallower slope than the watershed area contributing to the Parker Mill Pond. *Table 3* provides a comparison of Basin Characteristics for the contributing watersheds to the Parker Mills dam and the two locations evaluated as reference reaches.

Table 3: Reference Reach Basin Characteristics

	Parker Mills Dam	Reference Reach - Jones River	Paskamanset River
Drainage Area (sq mi)	20.5	20.1	20
Basin Slope (mean)	5.45%	0.95%	3.81%
Percent Forest	77.3%	63.54%	40.77%
Percent Wetland	11.69%	21.71%	23.65%
Longest Flow Path (mi)	11.4	9.6	12.1
Bankfull Width (ft)	53.1	44.4	43.8
Bankful Depth (ft)	2.66	2.09	2.07
Bankfull Cross Sectional Area (ft^2)	144	92.2	90.2
Area of stratified drift per unit of stream length (square mile/mile)	0.47	0.41	0.23

A field investigation was performed by Fuss & O'Neill staff on May 5, 2022 to measure the reference reach channel geometry. The river was measured to be 3 to four feet deep and 40 feet wide at the riffles.

4 Engineering Methods

4.1 Hydrologic Analysis

The most recent effective Flood Insurance Study (FIS) released by FEMA is dated July 6th, 2021 and includes all communities in Plymouth County. However, no detailed flood studies were completed for Rose Brook, Harlow Brook or Wankinco River. Instead, these watercourses were modeled using drainage area to discharge ratios from USGS stream gage #01105870 (Jones River at Kingston, Massachusetts). As a result, there are no published discharge values at the location of the dam. Additionally, multiple FEMA Flood Insurance Study (FIS) background data download requests were completed, however no existing hydraulic modeling files could be located within the study region near Parker Mills Pond Dam.

The stream gage transfer process was recreated and applied to the selected reference reach to determine the necessary input stream flows at Parker Mills Dam, and at the upstream Wankinco River and Harlow Brook. The calculated peak flood discharges are summarized in *Table 4*.

Table 4: Computed Peak Discharges

Frequency (% annual exceedance probability) (Year Flood)	Flow (cfs) Parker Mills Pond Dam	Flow (cfs) Wankinco River @ Route 25 West	Flow (cfs) Harlow Brook @ Route 25 East
50 (2-year)	210	157	82
10 (10-year)	394	260	136
2 (50-year)	472	351	183
1 (100-year)	524	391	204

Additionally, the Jones River Reach USGS Gauge Station was analyzed to determine equivalent design stream low flows during fish passage season within the project area. A design stream low flow of 19 cfs was selected based on 95% exceedance design criteria[1] from observed river flows at the Jones River USGS Gauge Station during Fish Passage Season (March 15 to June 15) from 1967 to 2022.

4.1.1 Watershed Characteristics

The drainage area for Parker Mill Dam on Wankinco river is approximately 20.4 square miles as determined by USGS StreamStats online software tools, and extends through the communities of Wareham, Carver, and Plymouth Massachusetts. The upper watershed has steeper slopes, while the lower watershed and the area surrounding the lake are characterized by mild to moderate slopes. The primary land use for the watershed is a mix of dense forest, agricultural cranberry bogs, and a mix of low density and medium density, development. A watershed map is depicted in *Figure 11*.

[1] USFWS (U.S. Fish and Wildlife Service). 2017. Fish Passage Engineering Design Criteria. USFWS, Northeast Region R5, Hadley, Massachusetts.

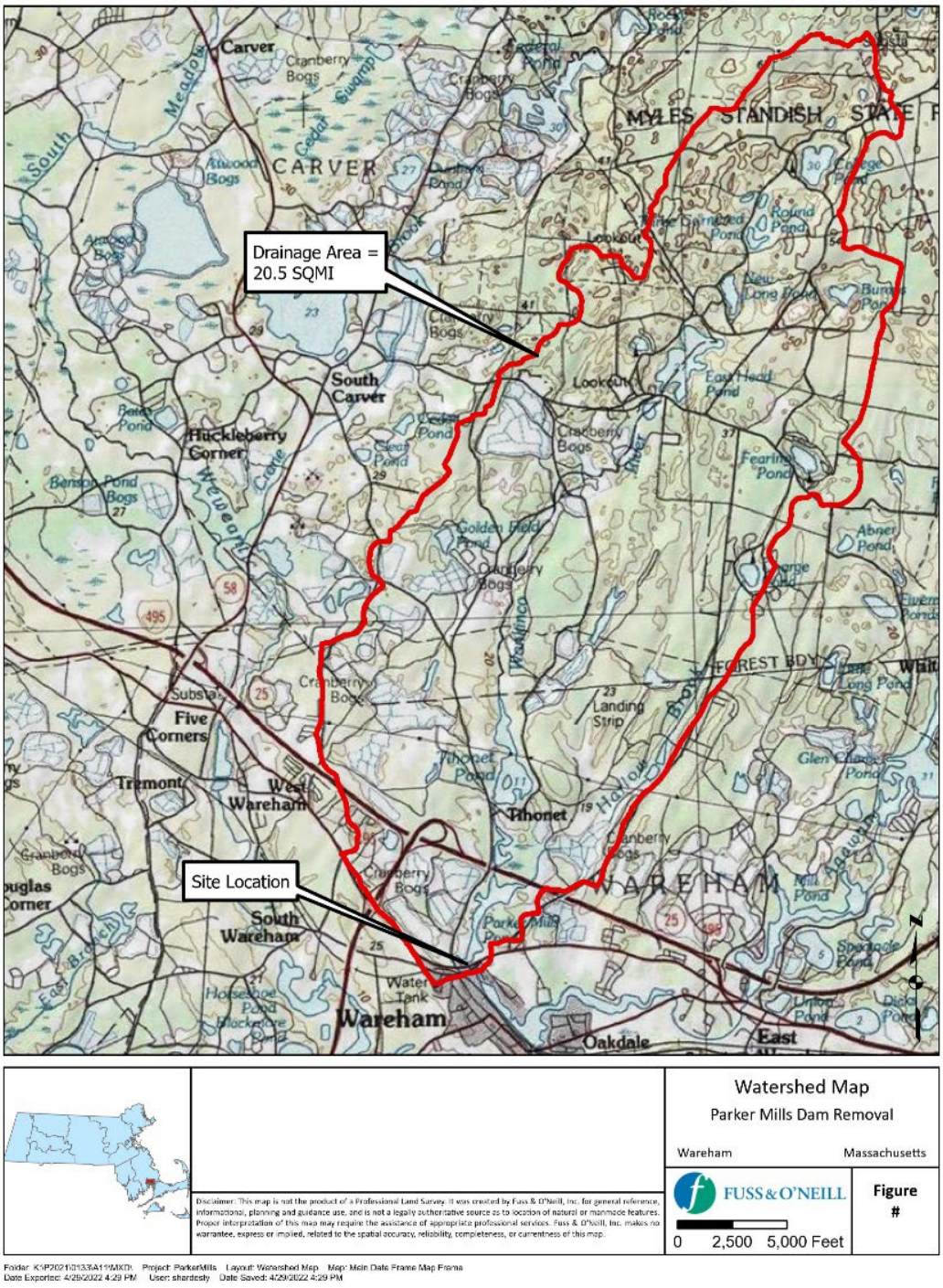


Figure 11: Watershed Map

4.2 Hydraulic Analysis

To analyze the hydraulic impacts of the existing dam and proposed dam removal scenarios at Parker Mill Pond dam, a one-dimensional (1D) HEC-RAS model (version 6.1) was developed. Detailed cross sections for the 1D model were created using survey data for main channel geometry and LiDAR data for overbank geometry. There are no FEMA cross sections within the project area because the watercourses were not studied by detailed methods. Instead, HEC-RAS model cross-section locations were extended by linear interpolation through the project area; geometry at these locations is based on existing LiDAR. Manning's n values for the main channel and overbank areas were determined through photographs taken by Fuss and O'Neill during an initial site investigation and desktop GIS analysis. The HEC-RAS model extends from 3000 feet downstream of the spillway (confluence of Wareham River and Wankinco River) to approximately 7500 feet upstream of the spillway (Tihonet Pond). Normal depth was used as the downstream boundary conditions for both existing and proposed conditions. A summary report of the HEC-RAS hydraulic model is included in *Appendix C*.

Contraction and Expansion Coefficients

The coefficients applied to the existing and proposed condition models have been updated to be 0.3 and 0.5 at bridge crossings, and 0.1 and 0.3 at other cross sections. These updated coefficients are in accordance with the current guidance provided in the HEC-RAS Hydraulic Reference Manual.

Roughness (n) Values

Roughness (n) values applied to the HEC-RAS analysis 0.09 for overbank areas and 0.03 within the channel banks. These values were found to be valid based upon a comparison of the roughness values currently suggested in the HEC-RAS Hydraulic Reference Manual, a review of aerial photography to identify current land use, and field observations. The roughness values were not revised between the existing and proposed conditions models.

Bridge Modeling Approach

The bridge modeling approach high flows (i.e. the upstream water surface elevation is greater than the low chord) was energy only for both the existing and proposed conditions. The bridge modeling approach for low flows was based on the energy equation as well.

Boundary Conditions - Starting Floodplain WSEs

A known water surface elevation (WSE) was used as the downstream boundary condition in the HEC-RAS model. This water surface elevation was selected based on the Mean Tide Level (MTL) at NOAA Tidal Station #8447930 at Woods Hole, Massachusetts. The MTL at this tide gauge is -0.33 NAVD88.

4.2.1 Existing Conditions Results

Table 5 shows existing HEC-RAS computed water surface elevation (WSEL) values within Parker Mill Pond and Elm Street Impoundments, and at Elm Street, Route 28, and Route 25 bridges for the 1-, 10-, and 100-year storm events.

Table 6 shows existing HEC-RAS computed channel velocities within Parker Mill Pond and Elm Street Impoundments, and at Elm Street, Route 28, and Route 25 bridges for the 1-, 10-, and 100-year storm events.

Table5: Existing Conditions Water Surface Elevations (ft)

Section (River Station)	Section Description	Storm Event		
		2-Year WSE	10-Year WSE	100-Year WSE
9104	Route 25 EB	14.82	15.79	16.85
4541	Parker Mill Pond	14.78	15.76	16.83
4390	Route 28	14.77	15.74	16.80
4272	Elm Street Impoundment	14.77	15.73	16.78
4188/4168	Elm Street	14.77	15.73	16.78

Table 6: Existing Condition Channel Velocities (ft/s)

Section (River Station)	Section Description	Storm Event		
		2-Year Velocity	10-Year Velocity	100-Year Velocity
9104	Route 25 EB	1.83	2.16	2.40
4541	Parker Mill Pond	0.07	0.09	0.12
4390	Route 28	0.82	1.22	1.65
4272	Elm Street Impoundment	0.11	0.16	0.20
4188/4168	Elm Street	0.15	0.21	0.28

4.3 Scour Analysis

To gain an understanding of scour potential at the potentially impacted bridges, D50 was estimated from visual observation of grain size. The Maximum Permissible Velocity and Maximum Permissible Shear for the D50 was determined from Fischenich[2] (2001). Predicted velocity and shear were computed using HEC-RAS for existing and proposed conditions. The Maximum Permissible Velocity and Maximum Permissible Shear were compared to the predicted velocity and shear stress at the bridge locations for each alternative. *Table 7* provides the predicted velocity at each bridge location for Existing Conditions. Proposed Conditions results are provided for each alternative.

[2] Fischenich, C. (2001). "Stability Thresholds for Stream Restoration Materials," EMRRP Technical Notes Collection (ERDC TNEMRRP-SR-29), U.S. Army Engineer Research and Development Center, Vicksburg, MS. www.wes.army.mil/el/emrrp

Table 7: Existing Condition Channel Variables

Section (River Station)	Section Description	Predicted Velocity (ft/s)			Predicted Shear (lb/sqft)		
		2-Year	10-Year	100-Year	2-Year	10-Year	100-Year
9251	Route 25 WB	1.48	1.67	1.81	0.05	0.05	0.06
9104	Route 25 EB	1.83	2.16	2.40	0.07	0.09	0.10
4390	Route 28	0.62	0.93	1.27	0.00	0.01	0.02
4188/4168	Elm Street	0.15	0.21	0.28	0.00	0.00	0.00

These velocities and shear values would support the substrate that was observed at the individual locations.

5 Alternatives Analysis

5.1 Alternatives Analysis

In coordination with the project partners, Technical Advisory Committee, and the public, the project goals were distilled to project evaluation criteria. These criteria are listed below. Three alternatives were ranked by low, medium, and high according to how well they achieved the following evaluation criteria:

- Permittable
- Restores Riverine Function
- Reduced Flood Risk
- Improves Aesthetics
- Complements Development
- Improves Public Access
- Improves Recreation
- Minimizes Impacts to Infrastructure
- Minimizes Impacts to Ecosystem
- Cost

The three alternatives chosen for analysis were determined through consensus of the Town, Technical Advisory Committee, and the public, based on the viable and feasible alternatives identified for the site. The following three alternatives were advanced for further analysis:

- ALT. 1 Partial Vertical Removal – Nature Like Fishway
- ALT. 2 Full Vertical Removal
- ALT. 3 Partial Vertical Removal – Hybrid

5.1.1 Partial Vertical Removal – Nature Like Fishway

Under the Partial Vertical Removal – Nature Like Fishway Alternative, the crest of the existing spillway would be lowered and supported by a Nature Like Fishway (NLF) extending in the downstream direction. Nature Like Fishways are engineered structures that use natural materials and mimic natural systems to provide fish passage to a wide range of species. NLFs can be engineered to have a channel slope up to 5%,

and can therefore help to overcome grade change at an existing obstruction. When designed and constructed properly, NLFs do not appear engineered, but rather have a natural appearance that is undiscernible from its surroundings. The following graphic depicts an example of a nature-like fishway, as well as what an NLF Feature could look like at the Parker Mill Dam.



Figure 12: Partial Vertical Removal - Nature-like Fishway

The Partial Vertical Removal – Nature Like Fishway Alternative consists of the following elements:

- Repair Elm Street.
- Replace the existing spillway and fishladder with a new bridge structure.
- Raise the channel elevation at Elm Street to 0.0 feet; maintain the elevation at Route 28 at 6.0 feet.
- Install a 150' Nature Like Fishway structure extending from Route 28 to approximately 50 feet downstream of Elm Street.
- Provide scour countermeasures at Route 25 and Tihonet Road

A discussion of the benefits and challenges for the Partial Vertical Removal – Nature Like Fishway Alternative follows.

Riverine Function: Fish passage will be improved at the dam for resident and anadromous species. Low-flows may be challenging as the NLF is steep and flows may become excessively shallow. The structure will be primarily inundated at high tide. Much of the pond will be retained, although several feet shallower. This may encourage increased aquatic vegetation and sedimentation. The pond will retain warm-water fisheries, with potential carp, bass, and pickerel.

Flooding: Reduction in water levels in the pond upstream of Elm Street will reduce the potential for seepage through the embankment, and into the Tremont Nail Factory Building. Freshwater and combined flood events will be less severe due to lower normal water surface elevations and additional storage capacity in the impoundment.

Aesthetics: The appearance of the pond and channel at the dam will change upstream, at, and immediately downstream of the of the dam structure. Upstream of the dam, the pond will remain, although it will be shallower and narrower. Based on the impoundment bathymetry, the pond is expected to sustain fringe scrub-shrub wetlands, similar to those observed on the nearby Jones River. The outer edge of the impoundment would become forested floodplain. At the dam, the normal water levels are predicted to be four (4) to six (6) feet lower. The Wankinco River would be ponded upstream of Route 28, and would be a single-thread channel as it made its way under Elm Street. Immediately downstream of Elm Street, the NLF would appear to be a channel with cascading flow over varied boulders and rocks. The NLF would transition to the natural channel approximately 120 feet downstream of Elm Street. The aesthetics will not be impacted downstream of the NLF.

Recreation/Access Upstream: Flat water kayaking will continue to be possible upstream of the dam, although under shallower conditions. Access points may change as the impoundment shrinks in horizontal extent. The NLF would generally not be passable by kayak, although this may be achievable at high tide. Downstream recreation and access would remain the same.

Structural Impact: This alternative will have minimal impacts to the Route 25, Route 28, and Tihonet Road bridges culverts. The predicted velocity of 6.6 feet per second at the Route 28 bridge can be mitigated with placement of stone scour-countermeasures and placement of bedform features to slow the flow. The large boulder, cobble, and packed sand and gravel material used to construct the rock ramp would provide further support for the bridge foundations.

The moderate velocities of six feet per second under heavy flood conditions at the Route 25 crossings can likewise be mitigated through placement of stone or other scour countermeasures. As Route 28 and Route 25 are state routes, any modifications to the bridge crossings will need to be approved by MA DOT. Coordination with DOT should be included in the next phase of design.

Water surface elevations at the Tihonet Road culvert are predicted to drop by over six feet. This would eventually cause the culvert's shallow spread footings to be undermined. The Tihonet Road culvert should be replaced, in conjunction with the Town's Climate Resilience Plan.

Tables 8 and 9 gives the erosive potential of the channel substrate material based on the predicted velocity and shear as compared to the Maximum Permissible Velocity and Shear for the given channel substrate material.

Table 8: Erosive Potential of Channel Substrate Based on Velocity Alternative 1 Partial Vertical Removal

Section (River Station)	Section Description	Modeled Velocity (ft/s)	Max Permissible Velocity (ft/s)	Erosive Potential
9251	Route 25 WB	3.37	1.5[3]	HIGH
9104	Route 25 EB	5.85	1.5	HIGH
4390	Route 28	8.25	1.5	HIGH
4188/4168	Elm Street	5.2	4.0 – 7.5	MODERATE

Table 9: Erosive Potential of Channel Substrate Based on Shear Stress Alternative 1 Partial Vertical Removal

Section (River Station)	Section Description	Modeled Channel Shear (lb/sqft)	Max Permissible Shear (lb/sqft)	Erosive Potential
9251	Route 25 WB	0.23	0.025	HIGH
9104	Route 25 EB	0.72	0.025	HIGH
4390	Route 28	0.76	0.025	HIGH
4188/4168	Elm Street	2.44	2.0	LOW

Cost: This alternative is the least expensive as it requires minimal bridge protection, and has only minimal sediment management requirements.

[3] Fischenich, C. (2001). "Stability Threshold for Stream Restoration Materials," EMRRP Technical Notes Collection (ERDC TN-RMRRP-SR-29), U.S. Army Engineer Research and Development Center, Vicksburg, MS.


25
28
LEGEND
PROTECT ROUTE 25 CROSSING OVER THE WANKINCO RIVER AND HARLOW BROOK
SCRUB-SHURB MEADOW
FORESTED FLOODPLAIN
SMALLER POND
PROTECT ROUTE 28 BRIDGE
REPLACE TIHONET ROAD CULVERT
NATURE LIKE FISHWAY AT ELM STREET
KAYAK LAUNCH
PARTIAL VERTICAL REMOVAL (NATURE - LIKE FISHWAY)
FUSS & O'NEILL

Figure 13

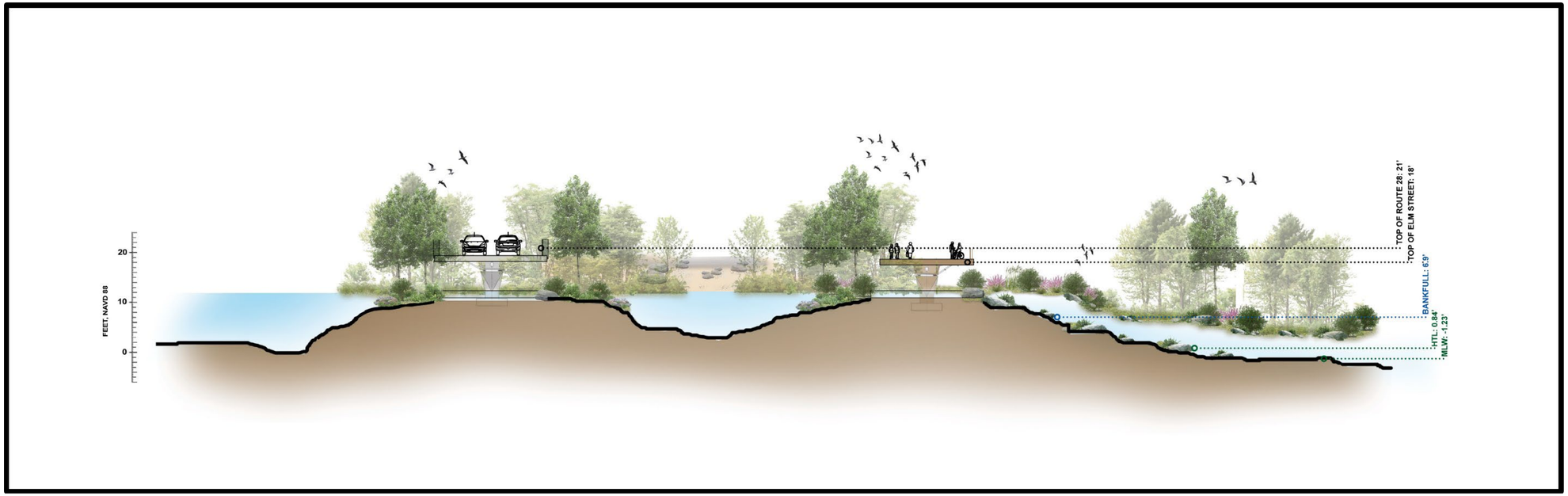


Figure 14: Alternate 1 - Nature Like Fishway

Table 10: Proposed Condition Water Surface Elevation (ft) – Partial Vertical Removal

Section (River Station)	Section Description	Existing Conditions WSE (NAVD 88)			Alternative 1: Partial Removal (NAVD 88)		
		2-Year	10-Year	100-Year	2-Year	10-Year	100-Year
9104	Route 25 EB	14.82	15.79	16.85	13.22 *(-1.60)*	13.85 *(-1.94)*	14.47 *(-2.38)*
4541	Parker Mill Pond	14.78	15.76	16.83	8.23 *(-6.55)*	9.06 *(-6.70)*	9.95 *(-6.88)*
4390	Route 28	14.77	15.74	16.80	8.14 *(-6.63)*	8.9 *(-6.84)*	9.72 *(-7.08)*
4272	Elm Street Impoundment	14.77	15.73	16.78	6.84 *(-7.93)*	7.57 *(-8.16)*	8.34 *(-8.44)*
4188/4168	Elm Street	14.77	15.73	16.78	6.58 *(-8.19)*	7.19 *(-8.54)*	7.8 *(-8.98)*

Table 11: Proposed Condition Channel Velocity (ft/s) – Partial Vertical Removal Flood Flows

Section (River Station)	Section Description	Existing Conditions			Alternative 1: Partial Removal		
		2-Y Velocity	10-Y Velocity	100-Y Velocity	2-Y Velocity	10-Y Velocity	100-Y Velocity
9104	Route 25 EB	1.83	2.16	2.40	4.17 *(+2.34)*	5.03 *(+2.87)*	5.85 *(+3.45)*
4541	Parker Mill Pond	0.07	0.09	0.12	0.22 *(+0.15)*	0.29 *(+0.20)*	0.35 *(+0.23)*
4390	Route 28	0.82	1.22	1.65	6.08 *(+5.26)*	7.21 *(+5.99)*	8.25 *(+6.60)*
4272	Elm Street Impoundment	0.11	0.16	0.20	0.88 *(+0.77)*	0.95- *(+0.79)*	1.00 *(+0.80)*
4188/4168	Elm Street	0.15	0.21	0.28	3.47 *(+3.32)*	4.34 *(+4.13)*	5.2 *(+4.92)*

Table 12: Proposed Condition Channel Velocity (ft/s) – Partial Vertical Removal Fish Passage Flows

Section (River Station)	Section Description	Existing Conditions		Alternative 1: Partial Removal	
		Fish WSE	Fish Velocity	Fish WSE	Fish Velocity
9104	Route 25 EB	12.75	0.55	11.49 *(-1.26)*	1.86 *(+1.31)*
4541	Parker Mill Pond	12.74	0.01	6.57 *(-6.17)*	0.04 *(+0.03)*
4390	Route 28	12.74	0.09	6.57 *(-6.17)*	2.45 *(+2.36)*
4272	Elm Street Impoundment	12.74	0.01	5.04 *(-7.70)*	2.08 *(+2.07)*
4188/4168	Elm Street	12.74	0.02	4.03 *(-8.71)*	3.90 *(+3.88)*

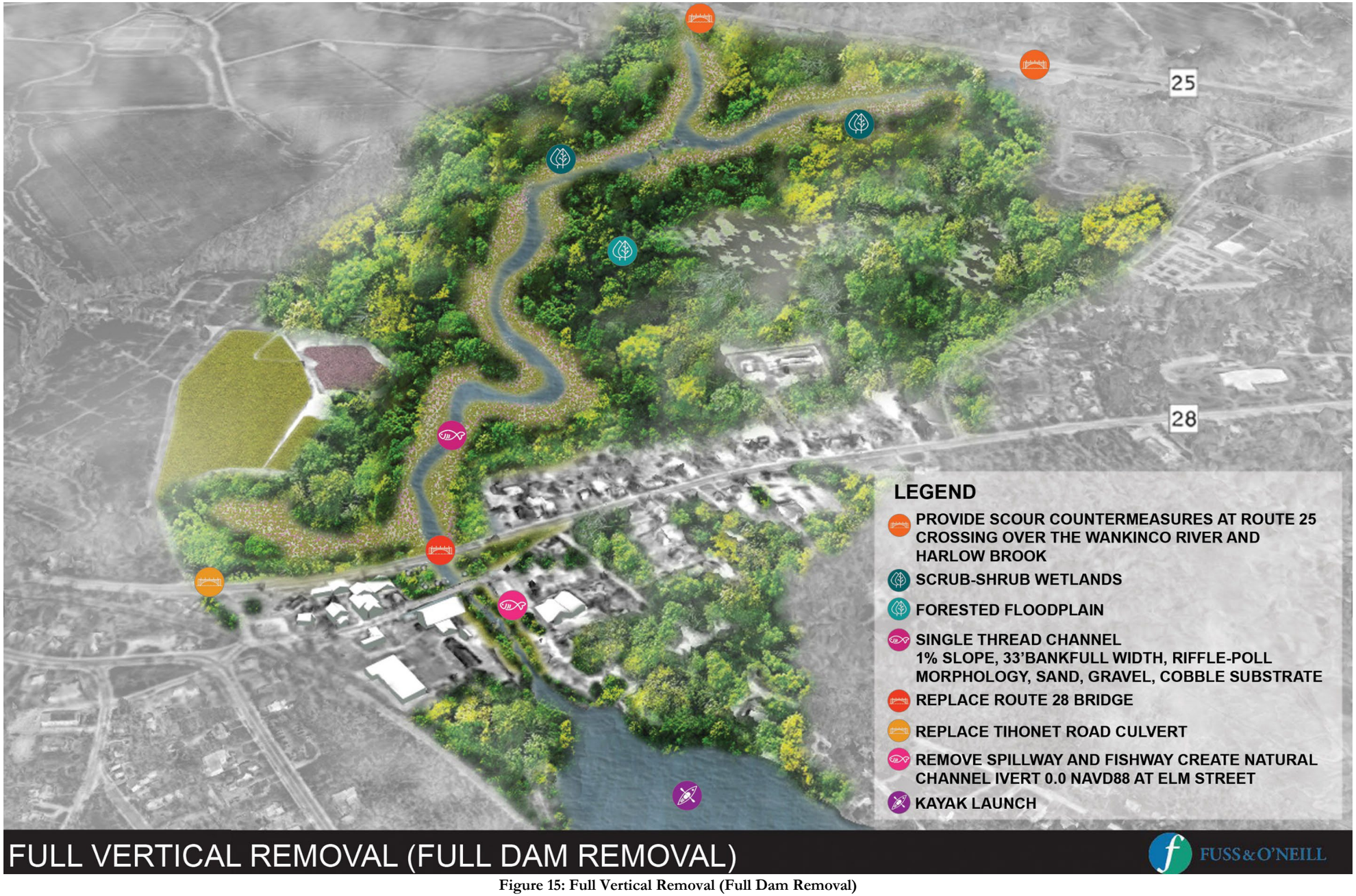


Figure 15: Full Vertical Removal (Full Dam Removal)

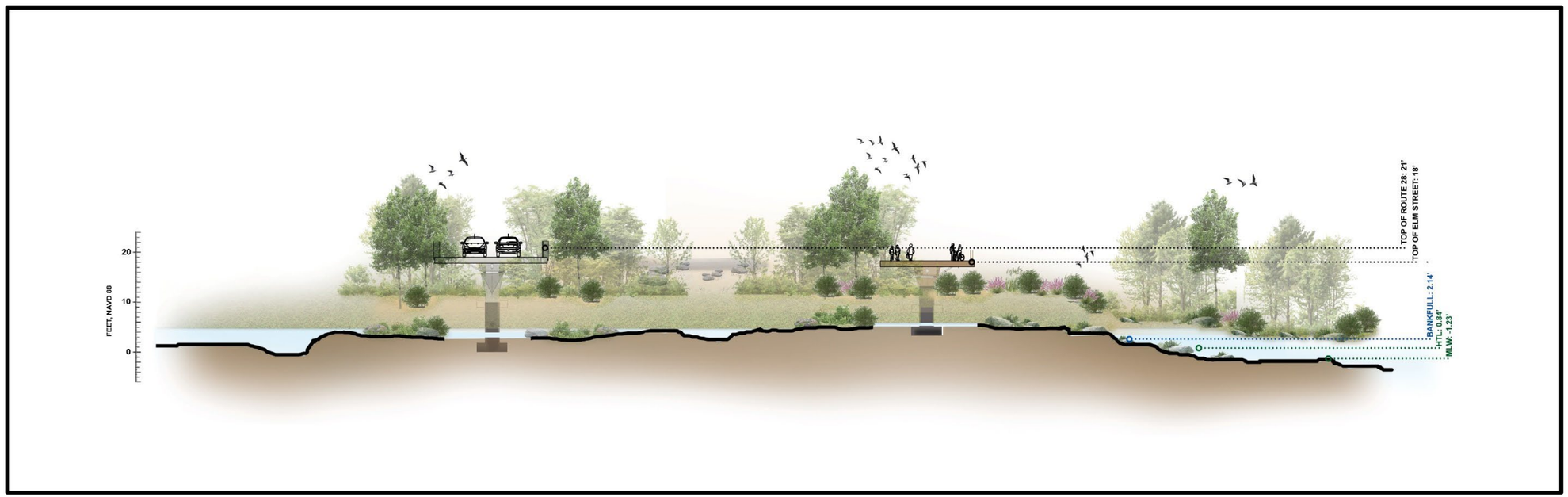


Figure 16: Alternate 2 -Full Dam Removal

5.1.2 Full Vertical Removal

The Full Vertical Removal Alternative consists of removing the existing spillway and fish passage structures to the pre-dam channel invert. This alternative restores natural riverine function and sediment distribution, improving both habitat and fish migration. Currently, tens of thousands of alewife and blueback herring struggle to make their way past the dam. This alternative would remove the obstruction, ensuring a stronger migration. The channel invert at Route 28 would be significantly lowered necessitating replacement of both the Route 28 bridge and the Tihonet Road culvert. The impoundment would transition to a single-thread channel with adjacent scrub-shrub and emergent wetlands.



The Full Vertical Removal Alternative consists of the following elements:

- Repair Elm Street.
- Replace the existing spillways and fishladder with a new bridge structure.
- Maintain the channel elevation at Elm Street at -1.5 feet; lower the channel elevation at Route 28 to -1.0 feet.
- Replace the Tihonet Road culvert.
- Install piles or other scour countermeasures at Route 28.
- Manage sediment to form channel.
- Create habitat and install channel habitat upstream of dam.
- Install scour countermeasures at Route 25 Wankico River bridge.
- Replace Route 25 Harlow Brook culvert.

A discussion of the benefits and challenges for the Full Vertical Removal Alternative follows.

Riverine Function: Fish passage will be greatly improved at the dam for resident and anadromous species. Low-flows may be challenging as the NLF is steep and flows may become excessively shallow. The Wankico River will convert to a cold-water coastal fishery, and may support species such as dace, darter, trout, and migrating alewife, blueback herring, and other anadromous species. The Wankinco River will become a single-thread river through the impoundment, and will experience appropriate sediment dynamics that will deliver material from upstream to downstream tidal wetlands. This allows for aggradation of tidal wetland areas that will mitigate rising sea levels.

Flooding: Reduction in water levels in the pond upstream of Elm Street will reduce the potential for seepage through the embankment and into the Tremont Nail Factory Building. Freshwater and combined flood events will be much less severe due to lower normal water surface elevations and additional storage capacity in the impoundment.

Aesthetics: The appearance of the pond and channel at the dam will significantly change at and upstream of the dam structure. Based on the impoundment bathymetry, the pond is expected to sustain fringe scrub-shrub wetlands, similar to those observed on the nearby Jones River. The outer edge of the impoundment would become forested floodplain. At the dam, the normal water levels would be ten to twelve feet lower than observed under existing conditions. The Wankinco River would be a single-thread channel as it made its way through the impoundment and under Elm Street. The aesthetics will not be impacted downstream of Elm Street.

Recreation/Access Upstream: River water kayaking will be possible upstream of the dam. Access points will change as the impoundment shrinks in horizontal extent and transitions from a pond to a river. Downstream recreation and access would remain the same.

Structural Impact: This alternative will have a significant impact on the Route 28 and Route 25 bridges, as well as the Tihonet Road culvert. Following dam removal, lower water surface elevations and higher velocities will put these structures at risk. Impacts to the Route 25 crossings can be mitigated by installation of moderate channel bedform features as grade control, combined with minimal scour countermeasures at the crossings. Significant mitigation measures will be required at the Route 28 bridge and Tihonet Road culvert, as water surface elevations will be lowered by over twelve feet, which would undermine the shallow spread footings. Refer to *Tables 13 and 14* for existing and proposed water surface elevations.

Table 13: Erosive Potential of Channel Substrate
Based on Velocity
1% Annual Chance Event
Alternative 2 Full Vertical Removal

Section (River Station)	Section Description	Modeled Velocity (ft/s)	Max Permissible Velocity (ft/s)	Erosive Potential
9251	Route 25 WB	3.37	1.5[4]	HIGH
9104	Route 25 EB	5.85	1.5	HIGH
4390	Route 28	2.86	1.5	MODERATE
4188/4168	Elm Street	3.94	4.0 – 7.5	MODERATE

Table 14: Erosive Potential of Channel Substrate
Based on Shear Stress
1 % Annual Chance Event
Alternative 2 Full Vertical Removal

Section (River Station)	Section Description	Modeled Channel Shear (lb/sqft)	Max Permissible Shear (lb/sqft)	Erosive Potential
9251	Route 25 WB	0.23	0.025	HIGH
9104	Route 25 EB	0.72	0.025	HIGH
4390	Route 28	0.76	0.025	HIGH
4188/4168	Elm Street	2.44	2.0	LOW

Cost: This alternative is the most expensive as it requires the highest degree of mitigation at the bridges, and requires the greatest extent of sediment management.

[4] Fischenich, C. (2001). "Stability Threshold for Stream Restoration Materials," EMRRP Technical Notes Collection (ERDC TN-RMRRP-SR-29), U.S. Army Engineer Research and Development Center, Vicksburg, MS.

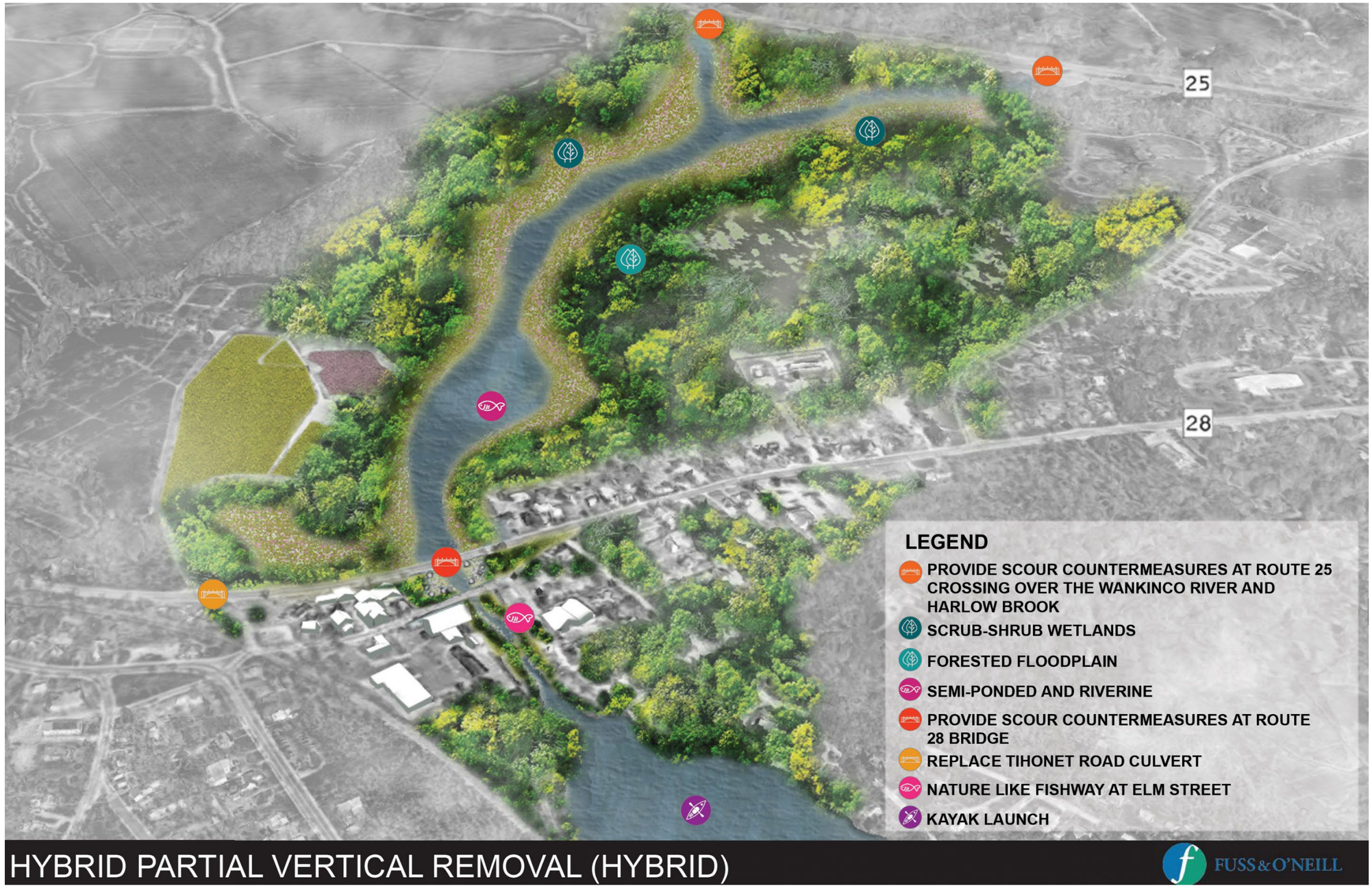

25
28
LEGEND
PROVIDE SCOUR COUNTERMEASURES AT ROUTE 25 CROSSING OVER THE WANKINCO RIVER AND HARLOW BROOK
SCRUB-SHRUB WETLANDS
FORESTED FLOODPLAIN
SEMI-PONDED AND RIVERINE
PROVIDE SCOUR COUNTERMEASURES AT ROUTE 28 BRIDGE
REPLACE TIHONET ROAD CULVERT
NATURE LIKE FISHWAY AT ELM STREET
KAYAK LAUNCH
HYBRID PARTIAL VERTICAL REMOVAL (HYBRID)
FUSS&O'NEILL

Figure 17

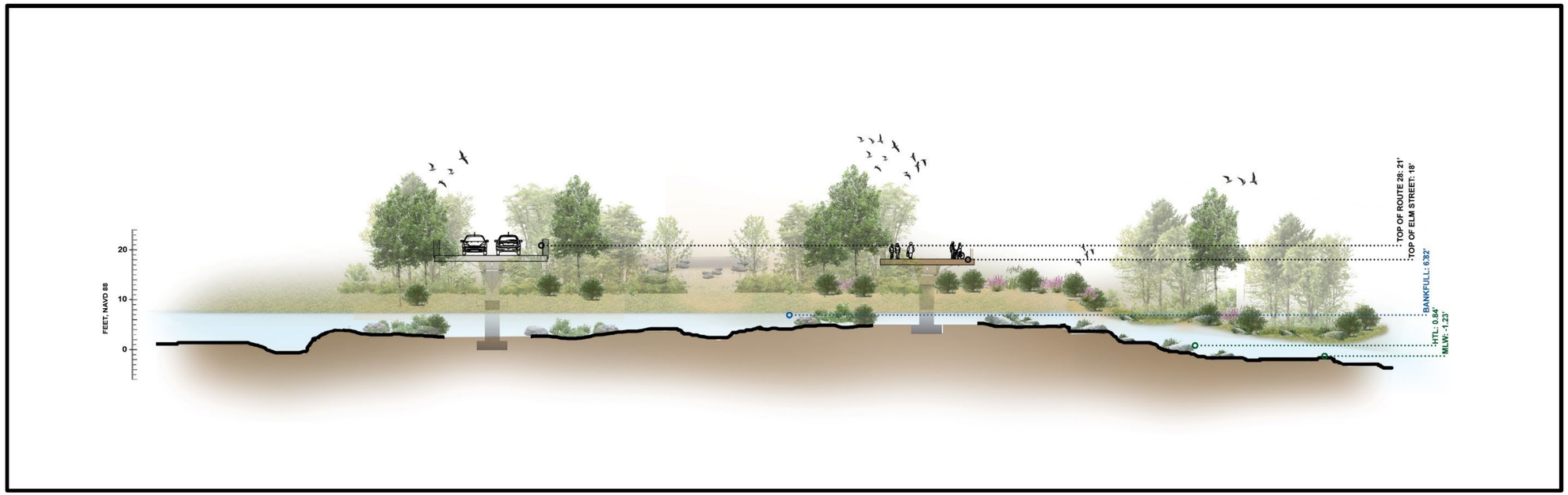


Figure 18: Alternate 3 - Hybrid

Table 15: Proposed Condition Water Surface Elevation (ft) – Full Vertical Removal

Section (River Station)	Section Description	Existing Conditions			Alternative 2: Full Removal		
		2-Year WSE	10-Year WSE	100-Year WSE	2-Year WSE	10-Year WSE	100-Year WSE
9104	Route 25 EB	14.82	15.79	16.85	13.42 *(-1.40)*	14.1 *(-1.65)*	14.85 *(-2.00)*
4541	Parker Mill Pond	14.78	15.76	16.83	4.81 *(-9.97)*	5.34 *(-9.44)*	5.78 *(-9.00)*
4390	Route 28	14.77	15.74	16.80	2.30 *(-12.47)*	3.60 *(-12.14)*	4.73 *(-12.07)*
4272	Elm Street Impoundment	14.77	15.73	16.78	2.74 *-(12.03)*	3.80 *(-10.97)*	4.92 *(-9.85)*
4188/4168	Elm Street	14.77	15.73	16.78	2.14 *(-12.63)*	3.17 *(-12.56)*	4.28 *(-12.50)*

Table 16: Proposed Condition Velocity (ft/s) – Full Vertical Removal Flood Flows

Section (River Station)	Section Description	Existing Conditions			Alternative 2: Full Removal		
		2-Y Velocity	10-Y Velocity	100-Y Velocity	2-Y Velocity	10-Y Velocity	100-Y Velocity
9104	Route 25 EB	1.83	2.16	2.40	4.17 *+(2.34)*	5.03 *(+2.87)*	5.85 *(+3.45)*
4541	Parker Mill Pond	0.07	0.09	0.12	1.96 *(+3.12)*	2.08 *(+3.28)*	2.18 *(+3.31)*
4390	Route 28	0.82	1.22	1.65	1.73 *(+0.91)*	2.31 *(+1.09)*	2.86 *(+1.21)*
4272	Elm Street Impoundment	0.11	0.16	0.20	2.60 *(+2.49)*	2.95 *(+2.79)*	3.16 *(+2.96)*
4188/4168	Elm Street	0.15	0.21	0.28	3.22 *(+3.07)*	3.60 *(+3.39)*	3.94 *(+2.80)*

Table 17: Proposed Condition Velocity (ft/s) – Full Vertical Removal Fish Passage Flows

Section (River Station)	Section Description	Existing Conditions		Alternative 2: Full Removal	
		Fish WSE	Fish Velocity	Fish WSE	Fish Velocity
9104	Route 25 EB	12.75	0.55	11.59 *(-1.16)*	1.86 *(+1.31)*
4541	Parker Mill Pond	12.74	0.01	2.12 *(-10.62)*	1.17 *(+1.16)*
4390	Route 28	12.74	0.09	-0.09 *(-12.83)*	0.38 *(+0.29)*
4272	Elm Street Impoundment	12.74	0.01	-0.04 *(-12.78)*	1.14 *(+1.13)*
4188/4168	Elm Street	12.74	0.02	-0.26 *(-13.00)*	1.28 *(+1.26)*

5.1.3 Partial Vertical Removal – Hybrid

The Partial Vertical Removal Alternative represents an approach that provides many of the benefits of Full Dam Removal, but is more protective of the existing bridge structures. This alternative consists of removing the existing spillway and fish passage structures to elevation 3.0 feet, several feet above the existing channel invert at Elm Street of -1.5 feet. This alternative improves natural riverine function and sediment distribution, improving both habitat and fish migration. The channel invert at Route 28 would be significantly lowered necessitating extensive scour measures at both Route 28 and the Tihonet Road culvert. The impoundment would support a greater extent of wetland habitat; the channel through the impoundment would generally be shallower than under the full dam removal alternative.

The Partial Vertical Removal -Hybrid Alternative consists of the following elements:

- Repair Elm Street.
- Replace the existing spillways and fish ladder with a new bridge structure.
- Lower the channel beneath Elm Street to El. 3.0 NGVD88; lower the channel invert below Route 28 by up to three feet.
- Replace the Tihonet Road culvert.
- Install piles or other scour countermeasures at Route 28.
- Manage sediment to form channel.
- Install channel bedform features upstream of dam.
- Install scour countermeasures at Route 25 Wankico River bridge.
- Replace Route 25 Harlow Brook culvert.

A discussion of the benefits and challenges for the Partial Vertical Removal - Hybrid Alternative follows.

Riverine Function: Fish passage will be greatly improved at the dam for resident and anadromous species. Low-flows may be challenging as the Nature-like fishway will be steep, and flows may become prohibitively shallow during low-flow events. The Wankico River will convert to a combination of cold-water coastal fisheries at the upstream end of the project, transitioning to a ponded condition near Route 28. , and may support species such as dace, darter, trout, and migrating alewife, blueback herring, and other anadromous species. The Wankinco River will become a single-thread river through most of the impoundment, and will experience appropriate sediment dynamics that will deliver material from upstream to downstream tidal wetlands. This allows for aggradation of tidal wetland areas that will mitigate rising sea levels.

Flooding: Reduction in water levels in the pond upstream of Elm Street will reduce the potential for seepage through the embankment and into the Tremont Nail Factory Building. Freshwater and combined flood events will be less severe due to lower normal water surface elevations and additional storage capacity in the impoundment.

Aesthetics: The appearance of the pond and channel at the dam will significantly change at and upstream of the dam structure. Similar to the Full-Vertical Removal alternative, the pond is expected to sustain fringe scrub-shrub wetlands, similar to those observed on the nearby Jones River. The outer edge of the impoundment would become forested floodplain. At the dam, the normal water levels would be six (6) to seven (7) feet lower than observed under existing conditions. The Wankinco River will be a single-thread

channel as it made its way through the northern end of the impoundment and under Elm Street. Under normal conditions, a ponded condition will extend upstream of Route 28 for 1,500 to 2,000 feet. The aesthetics will not be impacted downstream of Elm Street.

Recreation/Access Upstream: Kayaking will be possible both upstream and downstream of the dam. The steep channel slope at and immediately downstream of the dam that will be created by the partial vertical removal will make it extremely challenging to kayak from downstream of Elm Street to upstream of Route 28. Access points will change as the impoundment shrinks in horizontal extent and transitions from a pond to a river. Downstream recreation and access will remain the same.

Structural Impact: This alternative will have moderate impacts to the Route 25 bridge. The potential for scour can be mitigated by installation of moderate levels of channel bedform features as grade control, combined with minimal scour countermeasures at the crossings. Significant mitigation measures will be required at the Route 28 bridge and Tihonet Road culvert, as water surface elevations will be lowered approximately three feet. Refer to *Tables 18 and 19*.

Cost: This alternative is moderately expensive, as it requires the mitigation at a number of bridges, and requires a moderate amount of sediment management.

Table 18: Proposed Condition Water Surface Elevation (ft) – Hybrid Removal

Section (River Station)	Section Description	Existing Conditions			Alternative 3: Hybrid Removal		
		2-Year WSE	10-Year WSE	100-Year WSE	2-Year WSE	10-Year WSE	100-Year WSE
9104	Route 25 EB	14.82	15.79	16.85	13.22 *(-1.60)*	13.85 *(-1.94)*	14.47 *(-2.38)*
4541	Parker Mill Pond	14.78	15.76	16.83	7.26 *(-7.52)*	8.05 *(-7.71)*	8.92 *(-7.91)*
4390	Route 28	14.77	15.74	16.80	7.14 *(-7.63)*	7.85 *(-7.89)*	8.64 *(-8.16)*
4272	Elm Street Impoundment	14.77	15.73	16.78	7.02 *(-7.75)*	7.76 *(-7.97)*	8.54 *(-8.24)*
4188/4168	Elm Street	14.77	15.73	16.78	6.82 *(-7.95)*	7.45 *(-8.28)*	8.09 *(-8.69)*

Table 19: Proposed Condition Velocity (ft/s) – Hybrid Removal
Flood Flows

Section (River Station)	Section Description	Existing Conditions			Alternative 3: Hybrid Removal		
		2-Y Velocity	10-Y Velocity	100-Y Velocity	2-Y Velocity	10-Y Velocity	100-Y Velocity
9104	Route 25 EB	1.83	2.16	2.40	4.17 *(+2.34)*	5.03 *(+2.87)*	5.85 *(+3.45)*
4541	Parker Mill Pond	0.07	0.09	0.12	0.32 *(+0.25)*	0.39 *(+0.30)*	0.45 *(+0.33)*
4390	Route 28	0.82	1.22	1.65	2.02 *(+1.20)*	2.81 *(+1.59)*	3.57 *(+1.92)*
4272	Elm Street Impoundment	0.11	0.16	0.20	0.74 *(+0.63)*	0.84 *(+0.68)*	0.92 *(+0.72)*
4188/4168	Elm Street	0.15	0.21	0.28	3.05 *(+2.90)*	3.9 *(+3.69)*	4.73 *(+4.45)*

Table 20: Proposed Condition Velocity (ft/s) – Hybrid Removal Fish Passage Flows

Section (River Station)	Section Description	Existing Conditions		Alternative 3: Hybrid Removal	
		Fish WSE	Fish Velocity	Fish WSE	Fish Velocity
9104	Route 25 EB	12.75	0.55	11.49 *(-1.26)*	1.86 *(+1.31)*
4541	Parker Mill Pond	12.74	0.01	5.02 *(-7.72)*	0.19 *(+0.18)*
4390	Route 28	12.74	0.09	4.98 *(-7.76)*	0.43 *(+0.34)*
4272	Elm Street Impoundment	12.74	0.01	4.75 *(-7.99)*	1.12 *(+1.11)*
4188/4168	Elm Street	12.74	0.02	3.99 *(-8.75)*	3.97 *(+3.95)*

	Regulatory	Restore	Improve	Compliment		Provide		Avoid Impacts		Maintain	Cost
	PERMITTING	RIVERINE FUNCTION	CLIMATE RESILIENCY / FLOODING	AESTHETICS	COMPLIMENTS DEVELOPMENT	PUBLIC ACCESS	RECREATION	MINIMIZE IMPACTS TO INFRASTRUCTURE	MINIMIZE IMPACTS TO ECOSYSTEM	MINIMIZE LIFE-CYCLE COSTS	MINIMIZE CONSTRUCTION COST
PARTIAL VERTICAL REMOVAL	Will benefit from coordination with DMF; limited sediment management	Improves fish passage at dam; creates ponded and warm water fisheries conditions upstream	Somewhat reduces flooding potential at Elm Street / Route 28	Natural Channel Appearance; waterfall/rapids	Maintains the natural feel and historic character of the site; somewhat reduces seepage through Elm Street; provides significant protection for Tremont Nail Factory foundation and granite walls	Additional kayak access can be provided upstream and downstream; Potential for passive, river-side access	Nature-like fishway will be challenging to not passable by kayak	Minimum impact to bridges. Does not require replacement of any bridges. Requires scour countermeasures at all upstream crossings; provides significant protection for foundation of Tremont Nail Factory	May require limited upstream channel work; limited excavation of sediment between Elm Street and Route 28	Minimal long-term costs; fishway increases construction cost	**$15 Million (5 - 10 years)**
FULL VERTICAL REMOVAL	Significant sediment management	Restores fish passage at dam; may require upstream channel modifications; cold-water stream through impoundment	Significantly reduces flooding potential at Elm Street / Route 28; Natural Channel Appearance	Natural Channel Appearance; stream	Maintains the natural feel and historic character of the site; eliminates seepage through Elm Street; provides no additional downstream channel protection for the Tremont Nail Factory and granite walls	Additional kayak access can be provided downstream; channel access and trails can be provided upstream; Potential for passive, river-side access	Route 28 to downstream of Elm Street will be navigable by kayak; easier to navigate at high tide	Maximum impact to bridges. Requires replacement of . Requires substantial support of Route 25 over the Wankinco River; does not provide additional protection for Tremont Nail Factory	Requires upstream channel work to stabilize channel; requires significant sediment management	Eliminates dam maintenance costs	**$30 Million (5 - 15 years, depending on DOT and funding)**
HYBRID PARTIAL VERTICAL REMOVAL	Will benefit from coordination with DMF; moderate sediment management	Restores fish passage at dam; can vary the extent of warm water/cold water fisheries through the pond	Moderate reduction in flooding potential at Elm Street / Route 28	Natural Channel Appearance	Maintains the natural feel and historic character of the site; reduces seepage through Elm Street; provides limited downstream protection for Tremont Nail Factory foundation and granite walls	Additional kayak access provided downstream; flexibility regarding upstream access based on design; Potential for passive, river-side access	Kayak passage can be maximized through design of the reach. More challenging than full dam removal, less challenging than the Nature-Like Fishway	Varied impact to bridges; provides limited protection for Tremont Nail Factory foundation and granite walls	Requires upstream channel work to stabilize channel; requires some sediment management	Minimal long-term maintenance	**Varies**
				KEY	BEST	MODERATE	POOR				

Figure 19: Matrix

5.2 Recommended Alternative

Based on the outcome of the public outreach, feedback from the Technical Advisory Committee and the Town, and supported by the decision-making matrix, Full Dam Removal is advanced as the recommended alternative.

Full Dam Removal will:

- provide the greatest flood protection,
- create resiliency for the coastal and riverine ecosystems
- create wildlife and aquatic habitat
- encourage public access and recreation
- remove maintenance and liability associated with dam
- compliment future development
- beautify the surrounding area

5.3 Sediment Management

The conclusions developed from this feasibility study may be used to further assist with the decision-making process for sediment management alternatives. Evaluation of the scour potential of these sediments is being undertaken concurrently as part of this feasibility study. The scour potential of these sediments and the approximate volumes of scour prone sediments will assist in determining the most appropriate sediment management measure or combination of measures to be recommended for this project. Based upon current knowledge of sediment quality, it is our recommendation that any sediment that needs to be dredged and/or excavated based on the forthcoming scour analysis be reused as fill material in an upland portion of the site. With the approval of permitting agencies, non-hazardous sediments can also often be allowed to redistribute naturally downstream. These alternatives greatly reduce any costs associated with transportation or disposal of the sediment, and reduce the overall complexity of the dam removal process.

5.4 Ecological Benefits

The Full Dam Removal alternative will have significant economic benefits for the Wankinco River, migrating anadromous and diadromous fish, and the surrounding wetland areas. Following dam removal, we can expect the following positive ecological benefits:

- Improved riverine function
- Restored sediment transport dynamics
- Increased wetland habitat
- Improved fish passage

Following dam removal, the existing land under water will transition to scrub-shrub and forested floodplain wetland areas. Scrub-shrub wetland areas are characterized by woody shrub vegetation with limited tree covers. This wetland type develops in areas that are too wet to support forested floodplain, yet too dry to become a marsh. Scrub-shrub wetlands are often considered transitional or successional between these two

habitat types. This wetland type is characterized by a hummock landscape and highly organic soils, and will often contain species such as alder, elderberry, and high-bush blueberry.

The Coastal Forest / Woodland Floodplain that will develop around the exterior of the former impoundment will be dominated by predominantly deciduous species with canopies between 30 to 60 feet high. The forest type is related to the Oak-Hemlock-White Pine forest commonly found throughout New England, but adapted the more moist and warmer winter climate of the coastal area surrounding Wareham. Common species that can be expected to colonize the area include scarlet, black, white, and chestnut oak; holly, black gum; and sassafras, which are too tender for the cooler inland climates; red maples, black cherry and beeches; and shrubs including sweet pepperbush and low-bush blueberry.

The majority of the former impoundment will be undevelopable due to wetland conditions. The best use for this area is as an open space for future resiliency from coastal storms.

5.5 Community Co-Benefits

The project provides numerous co-benefits to the community, including:

- Reduced flood risk
- Improved waterfront access
- Improved water quality

6 Public Engagement and Outreach

A series of Technical Advisory Committee and Public Outreach meetings were held to engage potentially impacted parties and to encourage community involvement and feedback. The following Technical Advisory Committee Meetings were held:

Advisory Committee Meeting #1 – This kickoff meeting was held on February 7, 2022. Topics discussed include project overview, milestones, schedule and public engagement roles were discussed as well as project vision and objectives.

Advisory Committee Meeting #2 – This meeting was held on March 22, 2022. Topics discussed include field investigations, status of Elm Street Bridge Design, Project Website and Social Media.

Advisory Committee Meeting #3 – This meeting was held on May 5, 2022. Topics discussed include ongoing field investigations, scheduling of future meetings, outstanding data needs and project schedule were discussed.

The following public meetings were held:

Public Meeting #1: Existing Conditions – This meeting was held virtually on June 7th, 2022. The intention of this meeting was to introduce the community members to the project and provide project background and

Existing Conditions information, and to gather feedback from the public regarding what they would like to see for the project.

Public Meeting #2: Alternatives Analysis – This meeting was held in person on September 15th, 2022. The purpose of this meeting was to provide information to the public regarding potential benefits and impacts of various alternatives, and to gather feedback and reaction to potential project impacts. The meeting sign-in sheets is provided in *Appendix D*.

Public Meeting #3: Concept Design – This meeting was held virtually on December 15, 2022. The Conceptual Design plan for the proposed Parker Mill Dam removal was presented to members of the public.

7 Anticipated Permits

The following permits/authorizations are generally required for dam removal projects and would likely be required for the Parker Mill Pond Dam removal given our understanding of the proposed project elements.

- *Clean Water Act Section 404 Pre-Construction Notification* – A Pre-Construction Notification (PCN) under the Army Corps of Engineers Massachusetts General Permit is required for projects in navigable waters and projects which result in discharging dredged or fill material in waters of the United States, within the Commonwealth. A PCN is anticipated due to dam removal activities.

- *National Pollutant Discharge Elimination System (NPDES) Construction General Permit*: A Notice of Intent (NOI) for coverage under the EPA's National Pollutant Discharge Elimination System (NPDES) Program 2022 Construction General Permit (CGP) is required along with the development of a Stormwater Pollution Prevention Plan (SWPPP), for projects will result in a site disturbance of greater than one acre. Preparation of a NOI and SWPPP is anticipated for the full and partial dam removal alternatives. This application is typically prepared by the selected contractor near the time of construction.

- *Project Notification Form* – Submittal of a PNF to Massachusetts Historic Commission, Massachusetts Board of Underwater Archaeological Resources, and relevant Tribal Historic Preservation Officers is required for projects that require state or federal action. Because a PCN is anticipated, a PNF would required. The PNF would be submitted and reviewed for compliance with Section 106 of the National Historic Preservation Act and state regulations which are intended to identify, protect, or minimize/mitigate impacts to historic properties.

- *Coastal Zone Management Federal Consistency Determination* – Federal consistency review is required under pursuant to NOAA's Federal Consistency Regulations. This determination is issued by the Ma Office of Coastal Zone Management and required for projects that may affect land or water in the coastal zone Required for projects that may affect land or water in the coastal zone.

- *National Marine Fisheries Service (NMFS), Massachusetts Division of Marine Fisheries U.S. Fish (MADMF), and Wildlife Service (USFWS) Review* – Coordination with and review by the NMFS, MA DMF, and USFWS is proposed to determine potential impacts and time of year restrictions for species occurring in the Wareham River and potential impacts to federal listed endangered species in the project area.

- *401 Water Quality Certification* – A 401 Water Quality Certificate (WQC) application is required to be submitted to the Massachusetts Department of Environmental Protection (MassDEP) for projects requiring the filing of a federal permit if the project results in a temporary or permanent loss of 5,000 square feet cumulatively of Bordering or Isolated Vegetated Wetlands and/or Land Under Water or Water Bodies, the amount of any proposed dredging is greater than 100 cubic yards, or if any of the other thresholds listed in 314 CMR 9.04 are met. Dam removal projects may be exempt from submission of a 401 WQC if less than 100 cubic yards of dredging is proposed. Downstream migration of sediment greater than 100 cubic yards is considered dredging under 314 CMR 9.00.

- *Chapter 91 Waterways License and Dredge Permit* – Projects located in, on, over any non-tidal rivers and streams, navigable river or stream on which public funds have been expended either upstream or downstream within the river basin require submission of a Chapter 91 License/Permit to MassDEP. It is assumed that the project falls under Chapter 91 jurisdiction and a Ch 91 License/permit application would be required for full or partial dam removal alternatives.

- *Fishway Construction Permit* – Projects that alter passage for saltwater fish coming into fresh water to spawn, including repairing or constructing fishways, require submittal of the Fishway Construction Permit to Massachusetts Division of Marine Fisheries. A Fishway Construction Permit is anticipated for full or partial dam removal alternatives.

  Massachusetts Environmental Protection Act – MEPA review is required for projects that 1) include a state action (e.g., receiving a state permit or state funding) and 2) exceed a MEPA threshold. The proposed project is anticipated to require state action and exceed multiple thresholds for wetlands and waterways. New MEPA regulations promulgated in January 1, 2023 state that full Ecological Restoration Projects which meet the eligibility criteria in the Massachusetts Wetlands Protection Act (310 CMR 11.00) may file a Notice of Ecological Restoration Project to the MEPA office to be published in the Environmental Monitor in lieu of the traditional MEPA submittals. This notice includes a 2-page form with figures or plans. The full vertical removal alternative may qualify as a full Ecological Restoration Project and therefore the reduced effort for the Notice of Ecological Restoration Project is anticipated. The Partial vertical removal alternatives are not anticipated to meet criteria as a full Ecological Restoration project, and therefore, more traditional MEPA review would be anticipated. The partial vertical removal alternatives would require submittal of an Expanded Environmental Notification Form (ENF) and Environmental Impact Report (EIR). As the partial vertical removal alternatives may be considered an Ecological Restoration Limited Project, submittals may be prepared for review under the streamlined Rollover EIR process which expedites the review timeline. Environmental Justice (EJ) populations are mapped within 1 mile of the project area. Therefore, additional EJ requirements, including outreach, are required as part of the MEPA review process.

- *Massachusetts Chapter 253 Dam Safety Permit* – A Chapter 253 Dam Safety Permit Application (Part B) submitted to the Massachusetts Department of Conservation and Recreation (DCR) Office of Dam Safety is required for projects that construct, repair, materially alter, breach or remove a dam. A Chapter 253 Dam Safety permit is anticipated for full or vertical dam removal alternatives.

  Notice of Intent – A Notice of Intent (NOI) is required for any activity undertaken that will remove, fill, dredge, or alter wetlands, waters of the Commonwealth, or other Areas Subject to Protection. Impacts are anticipated to multiple wetland resources areas including, but not limited to Land Under Water Bodies and Waterways and Bank. Impacts may extend into Natural Heritage and Endangered Species Program (NHESP) Estimated Habitat of Rare Wildlife and therefore, a NOI would be submitted to the Town of Wareham Conservation Commission, MassDEP Division of Wetlands Waterways, and NHESP for streamlined review under the MA Wetlands Protection Act, MA Endangered Species Act, and Wareham Wetland Protection Bylaw. Depending on the alternative selected, the project is anticipated to be reviewed as an Ecological Restoration Limited Project, or full Ecological Restoration Project.

Appendix A

Memorandum – Existing Conditions Evaluation – June 30, 2022

FUSS & O'NEILL

MEMORANDUM

TO: Mr. Kenneth Buckland
Director of Planning and Community Development
Town of Wareham
54 Marion Road
Wareham, MA 02571

FROM: Elsa Loehmann, PE
Fuss & O'Neill, Inc.
Associate

DATE: June 30, 2022

RE: Existing Conditions Evaluation

This memorandum summarizes the findings from the existing conditions exploration for the Wareham Parker Mills Dam Assessment. Under this task, visual inspections were performed for the Parker Mills Pond Dam, impoundment, upstream bridges, historic walls and buildings. Wetland delineations, sediment sampling, and site topographic survey were completed.

The dam and impoundment investigations are visual inspections to assess the current conditions and surrounding area. The bridges were visually assessed for scour susceptibility, estimated size, structure type, and conformance with existing design plans. The critical historic walls and buildings which were identified as the Tremont Nail Factory, the General Store, and the granite channel walls downstream of the dam were assessed for foundation information, potential for impact to the structures based on current floodwaters, potential recommend improvements, and to determine if additional considerations are necessary prior to proceeding forward to dam removal alternatives. A wetland delineation was performed to locate the jurisdictional limits of areas regulated under the Wetlands Protection Act (M.G.L. c. 131 sec. 40) and associated Wetlands Protection Act Regulations (310 CMR 10). The sediment sampling was conducted to evaluate the quantity and quality of the impounded sediments that would be potentially mobilized as a result of a dam removal. A reference reach was observed as part of the field assessment. The findings from each of these evaluations are presented below.

Dam and Bridge Evaluation

Fuss & O'Neill, Inc. (F&O) was on site April 13, 2022, to complete a visual assessment of the Parker Mills Pond Dam (MA #00150), impoundment, and immediate upstream bridges. The purpose of this assessment was to determine the existing conditions of the dam and to inspect the bridges for scour susceptibility. The bridges that were assessed during this site visit are the two Route 25 over the Parker Mill Pond tributaries Wankinco River and Harlow Brook, the Route 28 crossing, the Elm Street (Parker Mills Pond Dam), and Tihonet Road over the tributary Rose Brook.

Parker Mills Pond Dam

Parker Mills Pond Dam is an earthen embankment that supports Elm Street. The roadway and dam are located immediately upstream of the historic Tremont Nail Factory building. The Parker Mills Pond is adjacent to functioning General Store. The Wankinco River joins the Agawam River at the historic head-of-tide, discharging first to the Wareham River estuary located 3,000 feet downstream, and then together to Buzzards Bay. The dam contains vertical stone-masonry walls on the upstream and downstream side. The majority of the crest is composed of a bituminous concrete roadway (Elm Street). The dam has a maximum structural height of approximately 19-feet, a minimum width of 10-feet, and length of 400-feet (including the spillways).

The dam includes two spillways. The primary spillway is a 9.6-foot wide concrete stoplog structure that discharges to a stone masonry channel (Figure 1). The secondary spillway is also a concrete stoplog structure measuring 10.8-feet wide that discharges to a concrete attraction flow channel and fish ladder (Figure 2).



Figure 1 – Right (primary) spillway



Figure 2 – Left spillway and fish ladder

Based on a visual inspection, the dam appears to be in fair to poor condition. The main deficiencies noted during the inspection are: erosion and exposed aggregate below the water line in the spillways, loose and displaced masonry walls, and erosion along the crest and dam faces, and trees and brush located within 20-feet of the dam crest and toe,.

Based upon current state classifications, Parker Mills Pond Dam is considered to be an Intermediate size High Hazard structure. The spillway design flood (SDF) for a High Hazard dam is the ½ PMF. The most recent hydraulic analysis was completed as part of the 1981 Phase 1 Inspection Report completed by USACE as part of the National Dam Inspection Program. At the time of the 1981 study, it was concluded that the combined spillways could only convey 50% of the flow during the SDF, with expected overtopping of up to 1.2 feet.

Impoundment

The area surrounding the impoundment was observed to be mostly wooded, with limited residential buildings (Figure 3). Access to the impoundment via boat is limited to a dirt path off Elm Street heading towards the Route 28 crossing. During observation of the perimeter of the impoundment, one agricultural intake was observed at a cranberry bog next to the St. Patrick's Cemetery (western edge of the impoundment). The intake appeared to be flowing during the inspection. A second potential intake was observed during the desktop screening adjacent to the Harlow Brook Route 25 crossing. However, access to the intake was not possible during the inspection, and the intake was not observed.



Figure 3 – View of impoundment looking west toward intake structure.



Figure 4 – Detail of intake structure on western edge of impoundment.

Figure 4 – Detail of intake structure on western edge of impoundment.

Bridges

The bridge structures were accessed by boat for visual observation. The eastbound and westbound Route 25 bridge crossings over the Wankinco River have the same design, which consists of three spans supported on left and right concrete abutments and timber pile bents (Figure 5). The visible portions of the abutments and timber piles were observed to be in good condition. Large stone armoring extends from the concrete abutments to below the water line. The average stone size (D50) is estimated to be greater than 24 inches and extend approximately six feet above the water surface. It was unclear based on field observations if the armoring extends across the channel bottom. If the armor does not extend across the channel bottom, scour countermeasures may be recommended as part of the dam removal design. Based on field observations, the channel bottom substrate is coarse sand or finer, and has limited ability to resist scouring.



Figure 5 - Route 25 Bridges (northbound and southbound)

To the northeast side of the impoundment, a second set of eastbound and westbound bridges on Route 25 crosses over Harlow Brook (Figure 6). The downstream face of the eastbound bridge was accessed by boat. The interior of the bridges was not accessible due to limited clearance between the structure low-chord and the water surface on the day of observation. Clearance was less than 2 feet on the day of observation.

Based on limited observation, tthe crossings appear to consist of concrete open bottom box culverts. Fuss & O'Neill was unable to get close enough to the bridge face to observe the channel bottom inside of the bridge due to shallow water conditions near the structure that were not navigable by boat. Additionally, there are no design plans available for this bridge. During future phases of the project, it will be necessary to obtain a more detailed survey of this crossing so that scour susceptibility can be analyzed. Potential scour countermeasures for this structure as part of a dam removal project may include riprap armoring, armoring around the footings, or installation of subsurface supports below the bridge footings.



Figure 6 - Route 25 Bridge (northeast side of impoundment)

On the southwest side of the impoundment, the Rose Brook Tributary enters the Parker Mills impoundment via the Tihonet Road bridge crossing. This crossing was accessed by foot and consists of an eight-foot wide, three-sided, open bottom stone masonry structure (Figure 7). A rock lined scour hole was observed in the channel immediately downstream of the crossing. This indicates that the crossing is undersized and likely becomes surcharged during flood events, leading to excessive downstream scour. The water surface was approximately one foot below the bottom chord of the structure at the time of the inspection.

The upstream channel bottom was observed to be composed of medium to coarse sand. The downstream channel is lined with stone. It is unknown if the stone was placed on the channel bottom for scour protection, or if the stone was exposed as part of a natural armoring process. Potential scour countermeasures for this structure as part of a dam removal project may include riprap armoring at the banks and upstream channel bottom, or installation of subsurface supports below the bridge footings.



Figure 7 - Tihonet Road Bridge (southwest side of impoundment)

Near the center of the impoundment along the western edge, there is a second Tihonet Road crossing. This crossing was accessed by foot, and consists of twin concrete three-sided, open bottom box culverts (Figure 8). Each culvert opening was measured to be approximately 5.5-feet wide. The water surface was two to three feet below the bottom chord at the time of the inspection. Based on visual observations, the channel substrate consisted of coarse sand with limited larger stones. Given the open bottom of the structure and the generally fine-grained channel substrate, scour countermeasures will likely be necessary for this structure as part of a dam removal project, including placement of riprap armor or articulated concrete blocks along the banks and channel bottom. Protection of the left downstream training wall, and center support pier may also be necessary.



Figure 8 - Tihonet Road Bridge (second crossing by cranberry bog)

The furthest downstream bridge before Parker Mills Pond Dam is the Route 28 (Cranberry Highway) crossing which was accessed by boat (Figure 9). The crossing is a 30-foot wide, three-sided, open bottom concrete bridge with cast-in-place concrete wingwalls. At the time of the inspection, the water surface was approximately three feet below the low chord of the bridge.

The bridge is supported by spread footings which are susceptible to being undermined due to scour. As this bridge is directly upstream from the dam (approximately 130-feet upstream), scour countermeasures will be necessary at this crossing as a result of dam removal. The degree of countermeasure this is required depends on the design of the dam removal and channel downstream of Route 28. A significant lowering in channel grade between Route 28 and the dam will require more extensive countermeasures, such as micropiles. Limited channel lowering as a result of dam removal may only result in the need for ACBs or riprap armoring at the abutments and along the channel bottom.



Figure 9 – Route 28 (Cranberry Highway) Bridge (southern edge of impoundment)

Reference Reach Evaluation

To identify an appropriate reference reach, a desktop screening was performed for two watersheds that have similar characteristics to the Parker Mills Pond Dam watershed. The reference reach that was the best match was the USGS 01105870 Jones River Gage at Kingston, MA. The Paskamanset River watershed was also evaluated, but the watershed characteristics did not match the Parker Mills Dam watershed as well as the Jones River. The largest discrepancy between the Jones River watershed and the Parker Mills Pond Dam watershed is the average basin slope; the Jones River watershed has a somewhat shallower slope. Table 1 provides a comparison of Basin Characteristics for the contributing watersheds to the Parker Mills dam and the two locations evaluated as reference reaches.

Table 1: Reference Reach Basin Characteristics

	Parker Mills Dam	Reference Reach - Jones River	Paskamanset River
Drainage Area (sq mi)	20.4	20.1	20
Basin Slope (mean)	5.45%	0.95%	3.81%
Percent Forest	77.3%	63.54%	40.77%
Percent Wetland	11.69%	21.71%	23.65%
Longest Flow Path (mi)	11.4	9.6	12.1
Bankfull Width (ft)	53.1	44.4	43.8
Bankful Depth (ft)	2.66	2.09	2.07
Bankfull Cross Sectional Area (ft^2)	144	92.2	90.2
Area of stratified drift per unit of stream length (square mile/mile)	0.47	0.41	0.23

A field investigation was performed by Fuss & O'Neill staff on May 5, 2022. During the site visit, field measurements were taken of the reference reach bankfull widths and depths. The river channel was observed to be 3-4-feet deep at bankfull discharge. The narrowest portions of the river where large boulders are present were measured at 15-feet wide. The widest portion of the river was measured at 40-feet.

The channel bedform features included 6-9 inch tall riffles. The channel substrate was predominantly fine grain sand, however, stone sizes averaging approximately 3-inches in diameter were also present along the channel bottom. The side slopes of the channel were very steep (less than 1H:1V). It appears that the channel may have widened over time by eroding the side slopes creating a sharp drop off. The area surrounding the river channel is wetlands. On river right, is Sampson Forest and Memorial Park, and on the left is a residential abutter.

The abutter provided anecdotal information about the behavior of the river during storm events. The homeowner indicated that the Elm Street (the downstream bridge) used to be a dam and has recently

been removed (between year 2019 and 2020). The homeowner also said that during heavy rainfall, the channel will fill and spill over onto the floodplain.

Historic Walls and Buildings

Fuss & O'Neill, Inc. (F&O) was on site April 7, 2022, to complete a visual assessment of the configuration and condition of the existing Tremont Nail Factory and General Store, and the stacked stone embankment walls along the Wareham River downstream of Elm Street. The purpose of this assessment was to determine the impact that floodwater currently has on the structures and to recommend improvements/repairs/further investigation as needed, and to assess the need for additional protection following dam removal. Our assessment was limited to the foundation elements of the buildings that could be directly impacted by floodwater and lowering of water surface elevations due to dam removal.

Fuss & O'Neill investigated three (3) areas of historic significance; the Tremont Nail Factory, the General Store, and the granite channel walls downstream of the dam. The findings for each existing structure consist of the following:

Tremont Nail Factory
The structure was observed to be in fair condition. The building consists of primarily timber framing, with limited miscellaneous steel and/or cast-iron members. The building sits on a concrete slab that is largely a slab-on-grade. The concrete slab spans across the stacked stone channel and foundation of the waterway adjacent to the dam and fish ladder.

There are a few conditions within the Nail Factory that may require repair or strengthening. Most notably, there is moderate water seepage through the stone wall on the north side of the building, through the dam embankment. The stone's mortar has seemingly failed and water is seeping through the joints. The concrete floor slab is not level and permits water to puddle in several locations within the building. This puddling on the slab could either be from ground water seepage (through the slab or foundation walls) or from a roof leak. It is our understanding that the roof membrane was recently repaired and is believed to be, generally, watertight.

The former penstock runs the entire length of the Nail Factory building below the concrete slab, and outlets into the Wareham River. The opening is about 6' wide and approximately 4' tall from the bottom of the channel. This stone masonry and concrete channel appears to be in good condition and relatively clear; however, we were unable to traverse the entire structure due to space confinement. Based on our limited observations, it appears the channel is functioning adequately with no apparent blockages or failures. The water level on the day of observation on the upstream side of the dam was too high to view the upstream culvert opening.

General Store
The General Store, across the street from the Tremont Nail Factory, consists of wood framing, with the front half of the building that is closet to Elm Street sitting on a concrete slab, and the rear portion of the store, elevated above the water, supported on masonry piers.

Overall, the building is in fair condition with no obvious indications of deterioration or structural distress; however, the masonry piers supporting the back (north) portion of the building is an area that requires additional investigation. From the parking lot, the tops of the existing masonry piers appear to be out of plumb and showed some degree of deterioration. Additionally, there is large vegetation growing from the water adjacent to the underside of the back portion of the General Store. Evidence of potential structural deterioration was present inside the store, above the pier supported portion of the building, where it was obvious that the existing wood floor was unlevel with noticeable deflections in areas of stored material. We did not observe any indications of water damage to the floor framing members.

Granite Stone Walls Downstream of Dam
The walls downstream of the dam consist of large, dry stacked, granite stones. The walls appear to be in fair to good condition. There is no obvious evidence of wall failures such as overturning or sliding occurring along either embankment. The stones all appear to be in good condition maintaining an acceptable degree of slope stabilization.

There is evidence on surrounding structures that the water level frequently rises above the stones, indicating that the current height of the wall may not be sufficient to contain a higher water levels. While there was a recent storm event just prior to our evaluation of the channel walls and the water level was close to the top of the existing stone embankment walls, it is our understanding that the water elevation was typical for the season.

Recommendations:

Tremont Nail Factory
For the longevity of the Nail Factory and to preserve its structural integrity, we recommend sealing and abandoning the former penstock. This will divert water away from the building foundation. Flowable fill or controlled low strength material could be used to seal the opening.

The seepage emanating from the northern foundation wall should be addressed to prevent the continued flow of water into the structure. This could be accomplished by repointing the masonry along this wall or applying a waterproofing product to its surface. Additional investigation may be required to determine the full extent of seepage and the potential effects from removing the adjacent dam structure.

General Store
From what could be observed within the General Store, the only area of concern is the back portion of the building supported on masonry piers. Recommendations for this area include clearing the vegetation that exists on the underside of the General Store as well as conducting a more detailed assessment to better observe the condition and configuration of the masonry piers. This will support decision making regarding need for modification of these piers as part of the project activities.

Granite Channel Walls Downstream of Dam
The embankment walls appear to be in good condition and do not appear to require any significant repairs or restoration; however, an increase in water level may overwhelm the existing stone walls and require reinforcement; or increasing their retained height may protect neighboring structures from storm and floodwater. Mortar could be added to the dry stacked stone to increase the structural integrity and longevity of the walls. If an increase in wall height is required, further detailed analysis will be necessary to adequately assess potential stability issues.

Wetland Assessment

Fuss & O'Neill performed a wetland resource area field inspection and delineation of the project area on March 29, 2022, including Parker Mills Pond between Route 28 and Elm Street, the Wareham River extending 500 feet downstream from Elm Street, and associated regulated resource areas near the Parker Mills Pond Dam. The purpose of the delineation was to locate the jurisdictional limits of areas regulated under the Wetlands Protection Act (M.G.L. c. 131 sec. 40) and associated Wetlands Protection Act Regulations (310 CMR 10).

The following inland wetland resource areas were identified and delineated at the site during the field investigation: Bordering Vegetated Wetland (BVW), Bank, Land Under Water Bodies and Waterways (LUWW), and Bordering Land Subject to Flooding (BLSF). Refer to Sketch Map of Resource Areas in Figure 10 below. Consecutively numbered flags were placed in the field to demarcate the boundaries of resource areas, and flags were then located via sub-meter GPS.

Downstream of the dam, the following coastal resource areas were identified and delineated: Banks of or Land under the Ocean, Ponds, Streams, Rivers, Lakes, or Creeks that Underlie an Anadromous/Catadromous Fish Run; and Salt Marsh. State-regulated Riverfront Area is measured horizontally from Banks identified and delineated, and state-regulated Buffer Zone is measured horizontally from the boundaries of BVW identified at the Site. The Town of Wareham Wetland Protection Protective By-Law builds upon the Buffer Zone to include a 100-foot buffer zone around "any freshwater or coastal wetlands; marshes; wet meadows; bogs; swamps; vernal pools; banks; reservoirs; lakes; ponds of any size; intermittent streams; creeks; beaches; dunes; estuaries; the ocean; lands under water bodies; and, land containing shellfish". In the By-Law, the term freshwater wetlands

"include[s], without limitation, those areas within which saturated or inundated conditions exist other than salt marshes." In addition to BVW, a small, isolated wetland was identified at the Site (flag series B200-B203).

Banks of the southern end of Parker Mills Pond (south of Cranberry Highway/SR28) have been significant modified by bank armoring/stabilization and the constructions of adjacent roads and buildings. Non-landscaped vegetation is limited to the segments of the eastern and western banks between Cranberry Highway and Elm Street and includes [common name (*scientific name*), wetland indicator status]: black locust (*Robinia pseudoacacia*), FACU; red maple (*Acer rubrum*) FAC; Tatarian honeysuckle (*Lonicera tatarica*), FACU; sweet pepperbush (*Clethra alnifolia*), FAC; multiflora rose (*Rosa multiflora*), FACU; mugwort (*Artemisia vulgaris*), UPL; and oriental bittersweet (*Celastrus orbiculatus*), UPL.

The NHESP Rare and Endangered Species and Habitat, MassDEP wetland delineations, and NRCS Web Soil Survey report for the site location are included in Appendix A. A separate wetland report developed for permit submittal will be submitted separately.

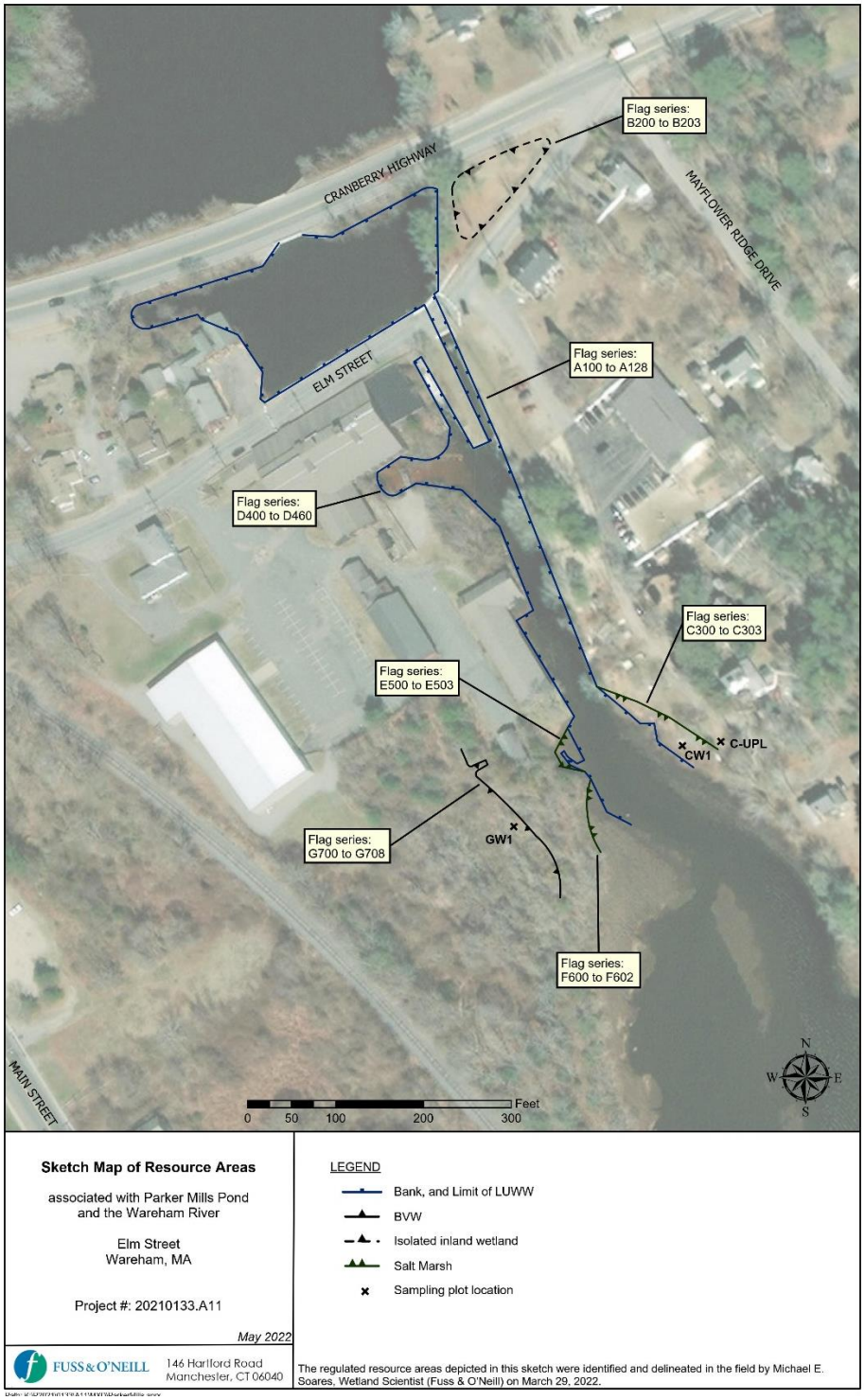


Figure 10 – Sketch Map of Resource Areas

Sediment Sampling

A sediment quality investigation was performed to physically and chemically characterize the impounded sediments that may potentially be mobilized as a result of dam removal. The Massachusetts Water Quality Standards, administered by the Massachusetts Department of Environmental Protection (MassDEP), pursuant to *314 CMR 9.00,* apply to water quality certification for the discharge of dredged or fill material, dredging, and dredged material disposal in Waters of the United States within the Commonwealth. Upland disposal of dredged material is managed per MassDEP *Interim Policy COMM-94-007*, and dredged sediment can be managed for reuse upland on-site or sent for disposal at lined landfills within the Commonwealth. Given the information above, sediment management alternatives were evaluated for the project.

A field investigation of the pond sediment was conducted on April 14 and 15, 2022, during which the sediment was measured, sampled, and observed within the context of the site. Seven (7) transect locations were designated along Parker Mills Pond, generally extending across the Pond from the eastern to western shore. At each transect location, three sediment borings (i.e., right/east, left/west, and center) were advanced by TG&B Marine Services, Inc. Borings were advanced using a slide hammer method under the supervision of Fuss & O'Neill. The sediment cores were advanced through the impounded sediment until the native substrate was identified by TG&B Marine Services based on material resistance. Fuss & O'Neill personnel logged sediment conditions, including recovery amount, texture, moisture content, color, odors, and observations of anthropogenic material. Samples at one (1) foot intervals were field screened for total organic vapors (TOV) using a photoionization detector (PID).

A total of seven (7) composite sediment samples were submitted to Pace Analytical Laboratory (Pace) in East Longmeadow, Massachusetts, and Thielsch Engineering in Braintree, Massachusetts. The sediment analytical results were compared to the MassDEP Maximum Allowable Contaminant Levels (MACLs) for Sediment Reuse at Lined Landfills (*Comm 94-007)*, the Consensus-Based Probability Effect Concentrations (PECs), and the RCS-1 Reportable Concentrations for soil established by the Massachusetts Contingency Plan (MCP, 310 CMR 40.0000). While not regulatory criteria, the PECs are "intended to identify contaminant concentrations above which harmful effects on sediment-dwelling organisms were expected to occur frequently". It was concluded that all analytical data was below applicable PECs, MACLs, and RCS-1 Reportable Concentrations.

The scour potential of these sediments and the approximate volumes of scour prone sediments will assist in determining the most appropriate sediment management measure or combination of measures to be recommended for this project.

Based upon current knowledge of sediment quality, it is our recommendation that any sediment that needs to be dredged and/or excavated be reused as fill material on an upland portion of the site. With the approval of permitting agencies, non-hazardous sediments can also be allowed to redistribute naturally downstream. These alternatives greatly reduce costs associated with transportation or disposal

of sediment, and reduces the overall complexity of the dam removal process. This recommended management strategy assumes that there is adequate suitable area within the former impoundment and the Wankinco River Watershed for placement of any dredged sediments. If there is insufficient/unsuitable space for onsite reuse, it may be necessary to relocate dredged material offsite. Additional analytical characterization of dredged sediments may be required if offsite transportation and placement/disposal is required.

The full sediment sampling report, including a transect location figure and laboratory results, is included with this memo as Appendix B.

Summary

Our observations of existing conditions have led to recommended approaches at each structure based on the chosen dam removal alternative. A brief summary of recommendations for each structure are as follows:

- Bridges Surrounding the Impoundment – Install scour countermeasures (riprap channel and bank armoring, bridge footing armoring, or installation of addition subsurface supports) depending on the design/extent of dam removal. The Route 25 bridge over the Wankinco river is the least vulnerable structure. The Tihonet Road bridges and Route 28 are the most vulnerable structures.
- Tremon Nail Factory – Seal the penstock with flowable fill or controlled low strength material and repoint or apply a waterproofing product to the northern foundation masonry wall. Investigate other sources of seepage and provide additional waterproofing.
- General Store – Clear the vegetation that exists on the underside of the General Store and conduct a more detailed assessment of the masonry piers to determine future modification plan.
- Granite Channel Walls Downstream of Dam – Add mortar to dry stacked stone to increase structural integrity and complete further detailed analysis if an increase in wall height is required.

Next Steps

Having completed the field survey and site investigations, Fuss & O'Neill will initiate hydraulic modeling. The first step is to develop a model that replicates existing conditions. Once the existing conditions model is complete, various conceptual alternatives will modeled. These conceptual alternatives will be discussed with the Advisory Committee, who will decide on three primary alternatives for advancement, based on the results of this early modeling phase and feedback from the public.

List of Appendices

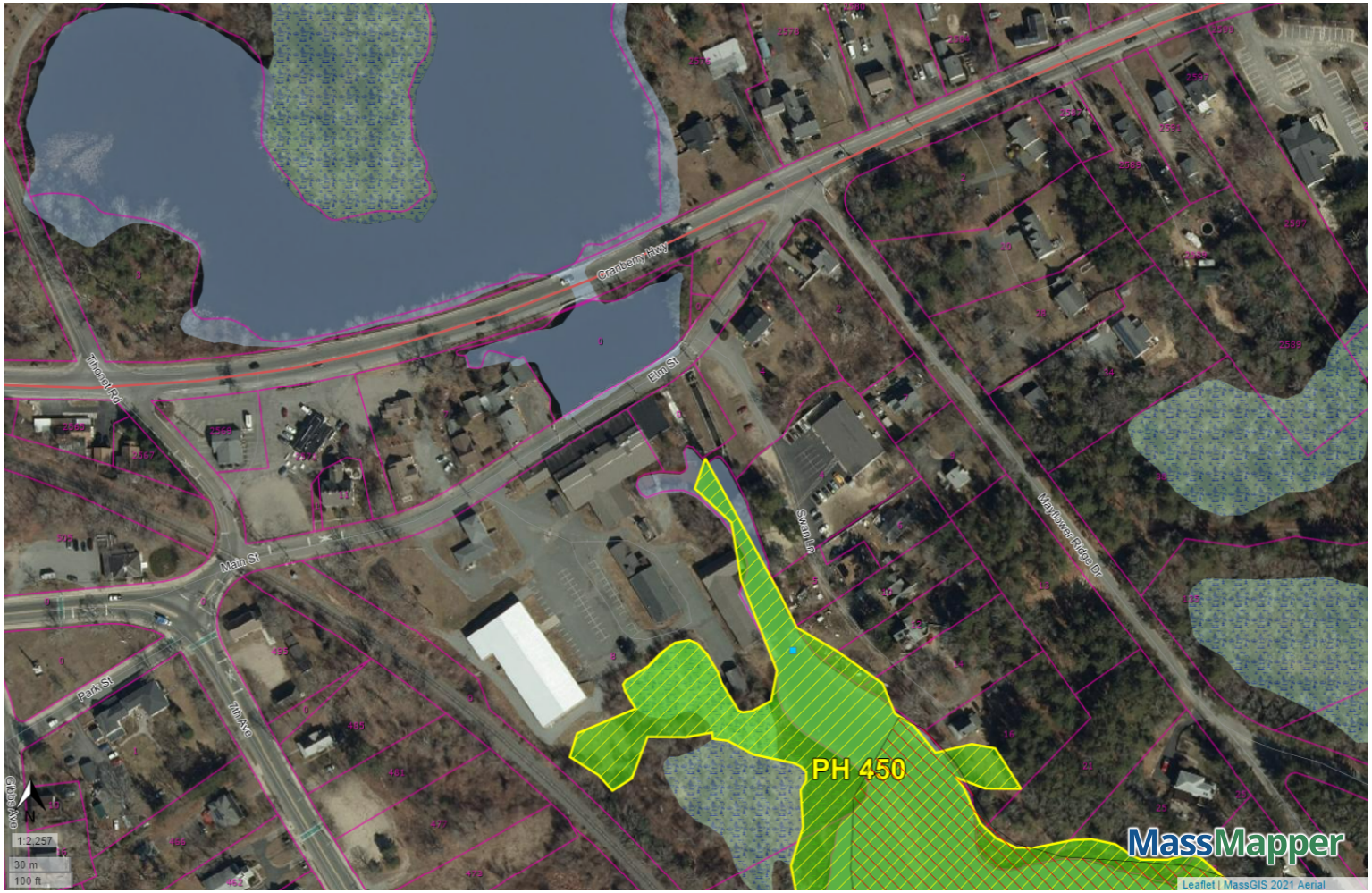
Appendix A	Natural Resource Data
Appendix B	Sediment Sampling Report
Appendix C	Existing Conditions Base Mapping

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APPENDIX A

NATURAL RESOURCE DATA

Parker Mills Dam (Wareham, MA)



Census 2010 TIGER Roads

- Primary Road
- Secondary Road
- Highway Ramp
- Local Road
- Vehicular Trail (4WD)
- Other Trails
- Interstate Shields
- U.S. Federal Shields
- State Shields

Shellfish Suitability Areas

- AMERICAN OYSTER
- BAY SCALLOP
- BLUE MUSSEL
- EUROPEAN OYSTER
- OCEAN QUAHOG
- QUAHOG
- RAZOR CLAM
- SEA SCALLOP
- SOFT-SHELLED CLAM
- SURF CLAM

Anadromous Fish Presence

NHESP Priority Habitats of Rare Species

NHESP Estimated Habitats of Rare Wildlife

Property Tax Parcels

DEP Wetlands General Categories

- MARSH/BOG
- WOODED MARSH
- CRANBERRY BOG
- SALT MARSH
- OPEN WATER
- RESERVOIR (WITH PWSID)
- TIDAL FLATS
- BEACH/DUNE

Parker Mills Dam (Elm Street, Wareham)



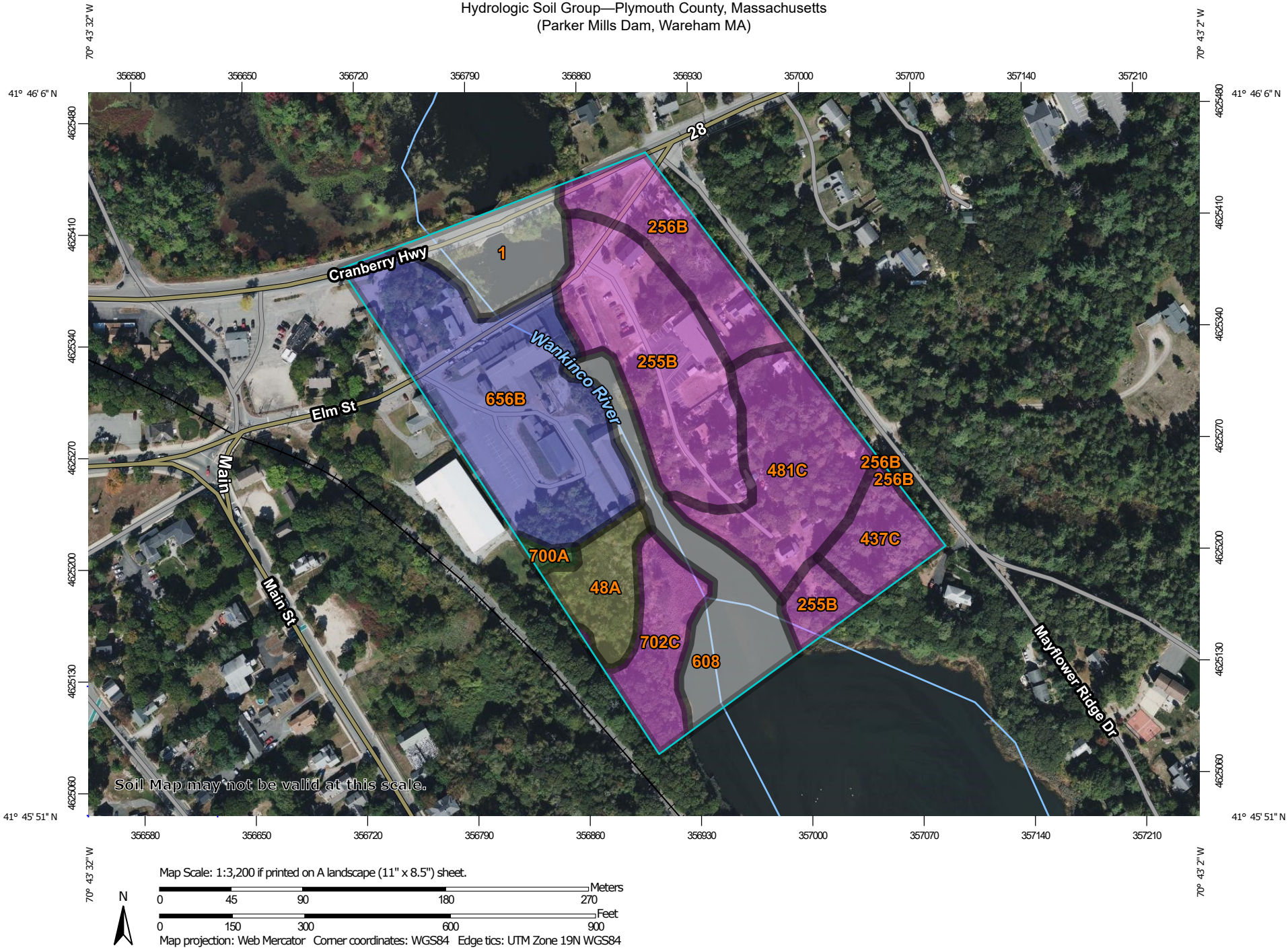
DEP Wetlands Labels

DEP Wetlands Detailed With Outlines

- Barrier Beach System
- Barrier Beach-Deep Marsh
- Barrier Beach-Wooded Swamp Mixed Trees
- Barrier Beach-Coastal Beach
- Barrier Beach-Coastal Dune
- Barrier Beach-Marsh
- Barrier Beach-Salt Marsh
- Barrier Beach-Shrub Swamp
- Barrier Beach-Wooded Swamp Coniferous
- Barrier Beach-Wooded Swamp Deciduous
- Bog
- Coastal Bank Bluff or Sea Cliff
- Coastal Beach
- Coastal Dune
- Cranberry Bog
- Deep Marsh
- Barrier Beach-Open Water
- Open Water
- Rocky Intertidal Shore
- Salt Marsh
- Shallow Marsh Meadow or Fen
- Shrub Swamp
- Tidal Flat
- Wooded Swamp Coniferous
- Wooded Swamp Deciduous
- Wooded Swamp Mixed Trees

Property Tax Parcels

Hydrologic Soil Group—Plymouth County, Massachusetts
(Parker Mills Dam, Wareham MA)



Map Scale: 1:3,200 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Plymouth County, Massachusetts
Survey Area Data: Version 14, Sep 2, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 25, 2020—Oct 9, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Water		1.2	6.8%
48A	Brockton sandy loam, 0 to 3 percent slopes, extremely stony	C/D	0.9	5.2%
255B	Windsor loamy sand, 3 to 8 percent slopes	A	3.4	19.2%
256B	Deerfield loamy fine sand, 3 to 8 percent slopes	A	1.5	8.6%
437C	Plymouth loamy coarse sand, 8 to 15 percent slopes, bouldery	A	0.9	4.9%
481C	Plymouth - Carver complex, 8 to 15 percent slopes, bouldery	A	2.4	13.8%
608	Water, ocean		1.9	10.6%
656B	Udorthents - Urban land complex, 0 to 8 percent slopes	B	4.2	23.8%
700A	Udipsamments, wet substratum, 0 to 3 percent slopes	A/D	0.1	0.6%
702C	Udipsamments, 8 to 15 percent slopes	A	1.1	6.5%
Totals for Area of Interest			**17.6**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

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APPENDIX B

SEDIMENT SAMPLING REPORT

FUSS & O'NEILL

MEMORANDUM

TO: Mr. Kenneth Buckland
Director of Planning and Community Development
Town of Wareham
54 Marion Road
Wareham, MA 02571

FROM: Elsa Loehmann, PE; Matthew Kissane MSc
Fuss & O'Neill, Inc.
1550 Main Street, Suite 400
Springfield, MA 01103

DATE: June 30, 2022

RE: Parker Mills Pond Dam Removal Feasibility Study Sediment Quality and Depth Assessment

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1 Introduction

A feasibility investigation was conducted for the removal of the Parker Mills Pond Dam and restoration of Parker Mills Pond located in Wareham, Massachusetts. This sediment quality investigation was performed to evaluate quality of the impounded sediments that would potentially be mobilized as a result of dam removal.

The Massachusetts Water Quality Standards, administered by the Massachusetts Department of Environmental Protection (MassDEP), pursuant to *314 CMR 9.00,* apply to water quality certification for the discharge of dredged or fill material, dredging, and dredged material disposal in Waters of the United States within the Commonwealth. Upland disposal of dredged material is managed per MassDEP *Interim Policy COMM-94-007*, and dredged sediment can be managed for reuse upland on-site or sent for disposal at lined landfills within the Commonwealth. Given the information above, sediment management alternatives were evaluated for the project.

2 Field Investigation

This investigation focused on Parker Mills Pond located northeast of the intersection of Route 28/Cranberry Highway and Tihonet Road in Wareham, Massachusetts. Parker Mill Pond Dam, located at the southern portion of the impoundment, outflows into the Wankinco River which runs southeast from Parker Mills Pond and outflows to the Agawam River and Wareham River. A site location map is included in *Figure 1.* Parker Mills Pond is surrounded by a mix of commercial, agricultural, residential, and open space use.

A field investigation of the pond sediment was conducted on April 14 and 15, 2022, during which the sediment was measured, sampled, and observed within the context of the site. Seven (7) transect locations (Transect #1 through Transect #7) were designated along Parker Mills Pond, generally

extending across the center of the Pond from the eastern and western shores. The location for Transects #1 through #7 were selected to provide a representative assessment of sediment quality as sediment in the pond could become mobilized as a result of increased flow velocity following dam removal.

At each transect location, three sediment borings (i.e. right/east, left/west, and center) were advanced by TG&B Marine Services, Inc. Borings were advanced using a slide hammer method under the supervision of Fuss & O'Neill. A site plan is included in *Figure 2.*

Generally, the sediment cores were advanced through the presumed ponded sediment until the native substrate was identified by TG&B Marine Services based on material resistance. Fuss & O'Neill personnel logged sediment conditions, including recovery amount, texture, moisture content, color, odors, and observations of anthropogenic material. Samples at one (1) foot intervals were field-screened for total organic vapors (TOV) using a photoionization detector (PID). Refer to sediment boring logs in *Appendix A* and site photos in *Appendix B.*

At each transect location, the three cores of recovered pond sediment were composited into one sample after a grab sample had been taken for VOC analysis from the sediment with the highest field-screened TOV readings. A total of seven (7) composite sediment samples were submitted to Pace Analytical Laboratory (Pace) in East Longmeadow, Massachusetts, and Thielsch Engineering in Braintree, Massachusetts, for the following parameters:

- Extractable petroleum hydrocarbons (EPHs) with Target Polycyclic Aromatic Hydrocarbons (PAHs) via MassDEP Method EPH rev 2.1,
- Total metals (Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, and Zinc) via United States Environmental Protection Agency (USEPA) Method 6010D/7471B[1],
- Polychlorinated biphenyls (PCBs) via USEPA Method 8082A,
- Herbicides via USEPA Method 8151A,
- Pesticides via USEPA Method 8081B,
- Volatile organic compounds (VOCs) via USEPA Method 8260C,
- Polycyclic aromatic hydrocarbons (PAHs) by the USEPA semi volatile organic compound (SVOC) method, USEPA Method 8270 D-E,
- Total organic carbon (TOC) via USEPA Method 9060A, and
- Toxicity Characteristic Leaching Procedure (TCLP) for lead via USEPA Method 6010D; if the total lead result exceeded 20 times rule
- Particle size distribution report via sieve analysis (gradation test).
- A trip blank was collected to detect and identify any VOC contamination between samples during travel to and from the laboratory.

A summary of the soil samples submitted for laboratory analysis is included below in *Table 1.*

[1] Metals list includes metals applicable to the 314 CMR 9: 401 WQC

Table 1
Summary of Soil Samples

Location	Sample Date	Soil Sample Number	Composite Sample Depth Range (fbws)*	TOV Result (ppmv)	Analysis
Transect #1	4/14/22	0414-01	5.2-12.3	ND	EPH, Total Metals, VOC, SVOC-PAH only, TOC, PCBs, Pesticides, Herbicides, Sieve
Transect #2	4/14/22	0414-02	7.6-14.0	ND	
Transect #3	4/14/22	0414-03	4.8-12.2	ND	
Transect #4	4/14/22	0414-04	5.9-10.9	ND	
Transect #5	4/15/22	0414-05	2.3-9.2	ND	
Transect #6	4/15/22	0414-06	1.9-6.6	ND	
Transect #7	4/15/22	0414-07	3.1-9.6	0.9	

Notes: Only the last six digits of the sample identification number are listed.
ppmv: parts per million by volume
fbws: feet below water surface
ND: Below equipment detection limits
* Composite Sample Depth Range is from top of sediment surface to bottom of sediment.

The general subsurface conditions as observed in the borings included organic silt and clay which was observed to be underlain by a native horizon consisting of sandy silt and/or fine sands. The borings observed at Transect #1, located on the southern end of Parker Mills Pond, just north of route 28, consisted of a horizon of sediment of approximately 2.7 feet in thickness. The borings observed at Transect #2, located on the southern end of Parker Mills Pond, north of Transect #1, consisted of a horizon of sediment of approximately 3.4 feet in thickness. The borings observed at Transect #3, located in the center of Parker Mills Pond, north of Transect #2, consisted of a horizon of sediment of approximately 2.4 feet in thickness. The borings observed at Transect #4, located in the center of Parker Mills Pond, north of Transect #3, consisted of a horizon of sediment of approximately 3.8 feet in thickness. The borings observed at Transect #5, located on the northern end of Parker Mills Pond, north of Transect #4, consisted of a horizon of sediment of approximately 3 feet in thickness. The borings observed at Transect #6, located on the northern end of Parker Mills Pond, north of Transect

#5, consisted of a horizon of sediment of approximately 2.5 feet in thickness. The borings observed at Transect #7, located in the portion of Parker Mills Pond which extends westward from the southern end of the pond, west of Transect #1, consisted of a horizon of sediment of approximately 3.3 feet in thickness. More detailed information regarding water and sediment depth can be found in the sediment boring logs in *Appendix A*. All TOV readings were below the instrument detection limit (0.1 ppmv), except for one TOV reading taken from the deepest portion of the western core along Transect #7 which recorded a TOV reading of 0.9 ppmv. Fuss & O'Neill personnel were unable to view the transect locations during sampling from their vantagepoint on the shore of Parker Mills Pond, and therefore were unable to observe the presence or absence of visible sheen or petroleum odor, or algae, at the time of investigation.

3 Sediment Analytical Results and Data Analysis

The following is a summary of the sediment conditions based on the April 14 and 15, 2022 sampling event (note that a detection above a laboratory reporting limit does not necessarily indicate the exceedance of applicable regulatory criteria, which are discussed later in this section):

- Chromium, Copper, Lead, and Zinc were detected above laboratory reporting limits in all seven (7) composite samples. Nickel was detected above laboratory reporting limits in all composite samples except in the composite sample from Transect #4. Arsenic was detected above laboratory reporting limits only in the composite sample from Transect #6. Cadmium and Mercury were not detected above laboratory reporting limits. None of the results exceeded applicable sediment standards for reuse at lined landfills.
- EPH Ranges were detected in all seven (7) transect composite samples above laboratory reporting limits. The maximum total EPH (C19-C36 aliphatics, and C11-C22 aromatics) was collected from Transect #7 with a result of 100 mg/kg. Four petroleum hydrocarbon compounds (benzo(a)anthracene, benzo(a)pyrene, benzo(g,h,i)perylene, and chrysene) were detected in the transect composite samples above laboratory reporting limits. Benzo(a)anthracene was detected in Transects #2, #5, and #6. Benzo(a)pyrene was detected in Transect #3. Benzo(g,h,i)perylene was detected in Transects #1 through #3 and #5. Chrysene was detected in Transects #5 and #6.
- TOC content was detected above laboratory reporting limits in the sediment composite samples at Transects #1 through #7 with values of 110,000 mg/kg, 320,000 mg/kg, 190,000 mg/kg, 63,000 mg/kg, 360,000 mg/kg, 190,000 mg/kg, and 270,000 mg/kg, respectively.
- One pesticide, 4-4'-DDD, was detected above laboratory reporting limits in the sediment composite sample at Transect #7.
- Total VOCs, PAHs, PCBs, Pesticides, and Herbicides were not detected above laboratory limits in the transect composite samples.
- All results for the Trip Blank collected were below the laboratory detection limits.
- Soil texture based on sieve analysis indicated that material for Transect #1 was Brown-Gray silty sand, for Transect #2 was Dark Brown sandy silt, for Transects #3 through #6 was dark brown silty sand, and for Transect #7 was Dark Brown silt with sand.

The sediment analytical results were compared to the MassDEP Maximum Allowable Contaminant Levels (MACLs) for Sediment Reuse at Lined Landfills (*Comm 94-007)*, the Consensus-Based Probability Effect Concentrations (PECs), and the RCS-1 Reportable Concentrations for soil established by the

Massachusetts Contingency Plan (MCP, 310 CMR 40.0000). While not regulatory criteria, the PECs are "intended to identify contaminant concentrations above which harmful effects on sediment-dwelling organisms were expected to occur frequently"[2]. The following summarizes the exceedances when compared to the applicable sediment standards:

- All analytical data was below applicable PECs, MACLs, and RCS-1 Reportable Concentrations.

The Pace and Thielsch Engineering laboratory analytical reports are included in *Appendix C.* Sediment analytical data is summarized in *Table 2.*

4 Conclusions

On April 14 and 15, 2022, Fuss & O'Neill performed a sediment quality analysis as part of a dam removal feasibility study for the site located at Parker Mills Pond in Wareham, MA. Fuss & O'Neill developed the following conclusions with regard to the sediment conditions:

- Sediment accumulation in Parker Mills Pond was observed along a horizon which ranged from approximately 1.2 feet to 4.9 feet in thickness.
- The total concentrations of detected analytes were below applicable MACLs for reuse at a lined landfill.
- The total concentrations of detected analytes were below applicable PECs.
- The total concentrations of detected analytes were below applicable MCP RCS-1 Reportable Concentrations.

5 Sediment Management Recommendations

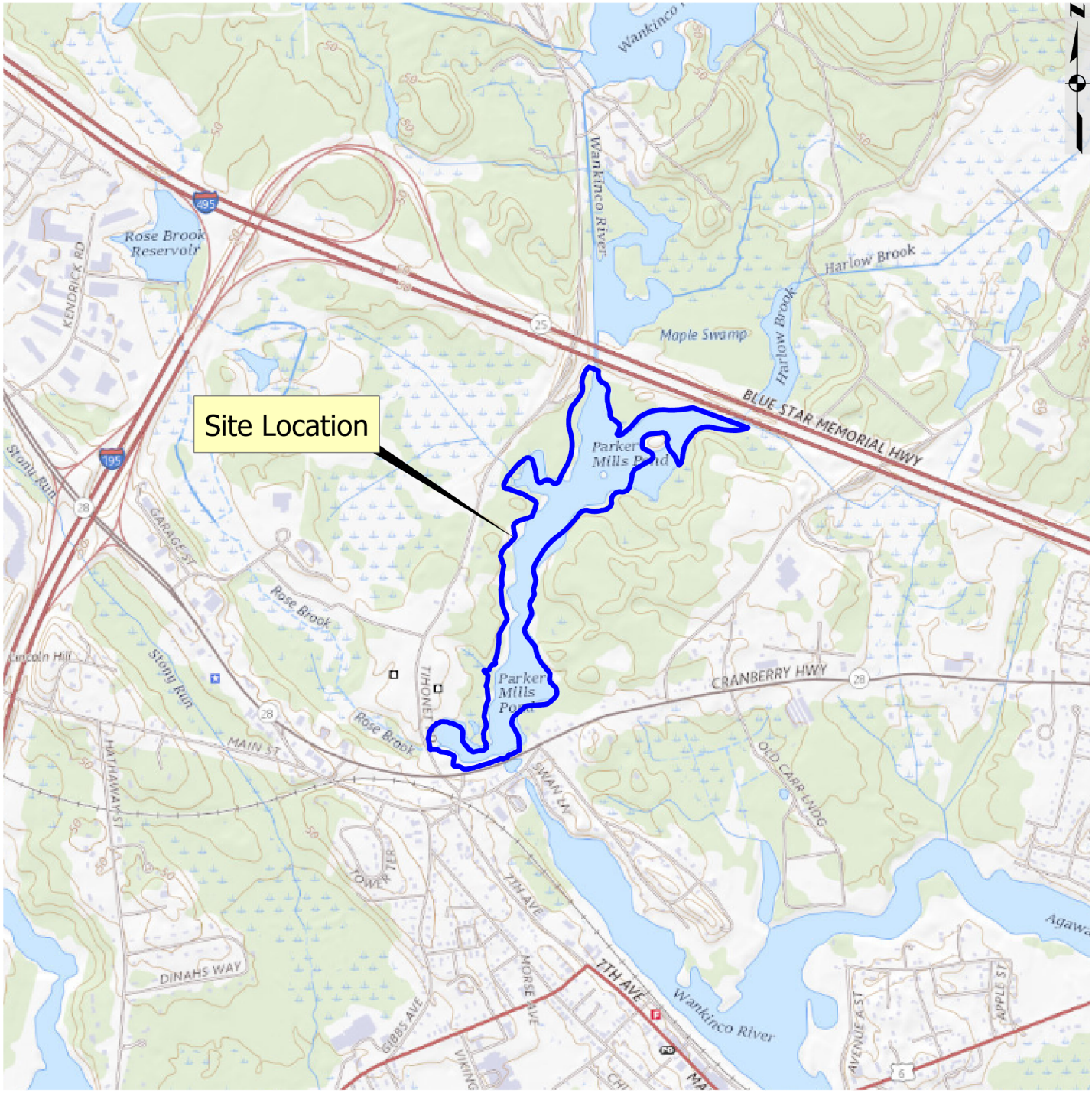
The conclusions developed from this feasibility study may be used to further assist with the decision-making process for sediment management alternatives. Evaluation of the scour potential of these sediments is being undertaken concurrently as part of this feasibility study. The scour potential of these sediments and the approximate volumes of scour prone sediments will assist in determining the most appropriate sediment management measure or combination of measures to be recommended for this project. Based upon current knowledge of sediment quality, it is our recommendation that any sediment that needs to be dredged and/or excavated based on the forthcoming scour analysis be reused as fill material in an upland portion of the site. With the approval of permitting agencies, non-hazardous sediments can also often be allowed to redistribute naturally downstream. These alternatives greatly reduce any costs associated with transportation or disposal of the sediment and reduces the overall complexity of the dam removal process.

This recommended alternative assumes that there is adequate suitable area within the Wankinco River Watershed for placement of any dredged sediments. If there is insufficient/unsuitable space for onsite reuse, it may be necessary to relocate dredged material offsite. Additional analytical characterization of dredged sediments may be required if offsite transportation and placement/disposal is required.

[2] MacDonald et al., *Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems*, 2000.

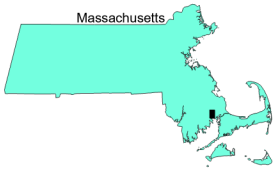
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Figures



MAP REFRENCE: USGS Topo
Accessed on : 5/9/2022
From: https://basemap.nationalmap.gov/arcgis/rest/services/USGSTopo/MapServer

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed August, 2021.



Map Reference Location

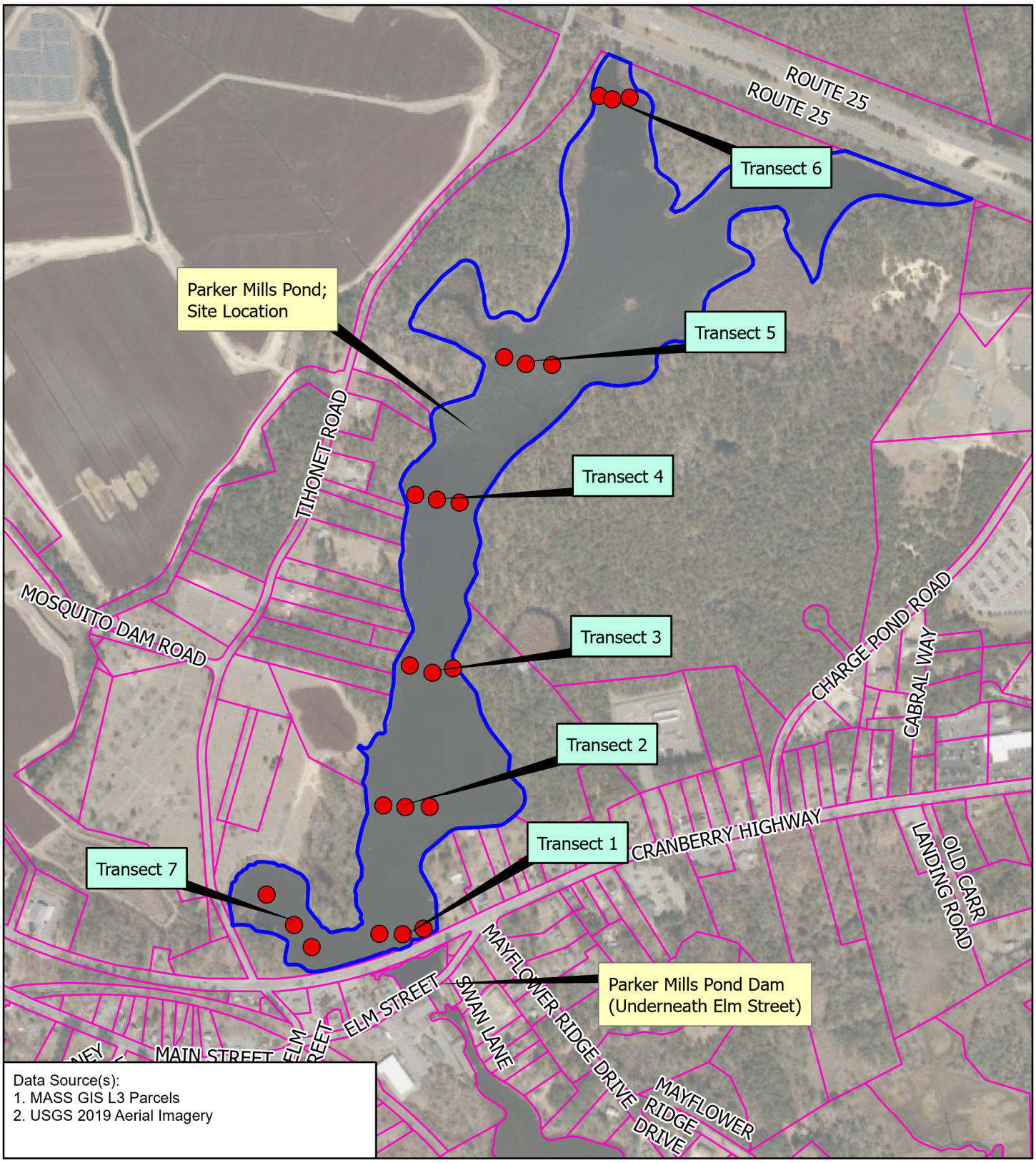
0 800 2,000
GRAPHIC SCALE
SCALE: 1" = 1,597'

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TOWN OF WAREHAM
SITE LOCATION MAP
Parker Mills Pond Dam
Sediment Investigation
Wareham Massachusetts

PROJ No.: 20210133.A11
DATE: May 2022
FIGURE 1

Folder: K:\P2021\0133\A11\MXD\ Project: SedimentSampling Layout: clsc_8.5x11_Portrait_Bottom Map: Main Data Frame Map Frame
Date Exported: 5/9/2022 5:01 PM User: Cotis Date Saved: 5/9/2022 5:00 PM





Parcel Boundary
Parker Mills Pond
Sample Locations

0 163 325 650 Feet

N

Site Plan

Parker Mills Pond Dam
Sediment Investigation

Wareham Massachusetts

Disclaimer: This map is not the product of a Professional Land Survey. It was created by Fuss & O'Neill, Inc. for general reference, informational, planning and guidance use, and is not a legally authoritative source as to location of natural or manmade features. Proper interpretation of this map may require the assistance of appropriate professional services. Fuss & O'Neill, Inc. makes no warrantee, express or implied, related to the spatial accuracy, reliability, completeness, or currentness of this map.

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Figure 2

Folder: K:\P2021\0133\A11\MXD\ Project: SedimentSampling Layout: Figure 1 Map: Main Data Frame Map Frame
Date Exported: 5/11/2022 3:28 PM User: Cotis Date Saved: 5/11/2022 3:27 PM

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Table

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Table 1
Summary of Sediment Analytical Data and Objectives

Environmental Site Assessment
Parker Mills Pond Dam Removal
Wareham, Massachusetts
April 14 and 15, 2022

		Sample Type	Composite	Composite	Composite	Composite	Composite	Composite	Composite	MCP Reportable Criteria	Sediment Standards[1]	
		Sample Location	Transect #1	Transect #2	Transect #3	Transect #4	Transect #5	Transect #6	Transect #7			
		Sample Number	0414-01	0414-02	0414-03	0414-04	0415-05	0415-06	0415-07			
		Sample Depth (fbws)	5.2-12.3	7.6-14.0	4.8-12.2	5.9-10.9	2.3-9.2	1.9-6.6	3.1-9.6	RCS-1	Maximum Allowable Contaminant Levels for Sediment Reuse at Lined Landfills[2]	Consensus-Based PEC[3]
		Headspace (ppmv)	0.0	0.0	0.0	0.0	0.0	0.0	0.9			
		Sample Date	4/14/2022	4/14/2022	4/14/2022	4/14/2022	4/15/2022	4/15/2022	4/15/2022			
Total Metals (USEPA Methods 6010/7471)												
Arsenic	mg/kg		ND<10	ND<11	ND<10	ND<6.5	ND<10	13	ND<16	20	40	33
Cadmium	mg/kg		ND<1.0	ND<1.1	ND<1.0	ND<0.65	ND<1.0	ND<0.85	ND<1.6	70	80	4.98
Chromium	mg/kg		8.4	4.1	4.4	2	6.7	5.7	7.6	100	1,000	111
Copper	mg/kg		10	6.6	11	3.4	9.2	24	24	1,000	---	---
Lead	mg/kg		21	8.5	18	3.1	13	28	21	200	2,000	128
Mercury	mg/kg		ND<0.077	ND<0.084	ND<0.080	ND<0.052	ND<0.084	ND<0.067	ND<0.12	20	10	1.06
Nickel	mg/kg		4.2	2.1	3.1	ND<1.3	2.3	4.6	3.5	600	---	48.6
Zinc	mf/kg		27	12	35	3.9	20	63	47	1000	---	459
PCBs (USEPA Method 8082A)												
Total PCBs	mg/kg		ND<0.25	ND<0.25	ND<0.25	ND<0.25	ND<0.25	ND<0.25	ND<0.25	---	<2.0	0.676
VOCs (USEPA Method 8260C)												
Total VOCs	mg/kg		ND<Various	ND<Various	ND<Various	ND<Various	ND<Various	ND<Various	ND<Various	Varies	10	---
SVOCs - PAHs Only (USEPA Method 8270D-E)												
Total PAHs	mg/kg		ND<0.54	ND<0.56	ND<0.53	ND<0.35	ND<0.56	ND<0.46	ND<0.84	Varies	100	23
EPH (MassDEP Method EPH rev 2.1)												
C19-C36 Aliphatics	mg/kg		50	48	44	ND<21	46	34	ND<50	3,000	---	---
C11-C12 Aromatics	mg/kg		38	45	41	21	52	48	100	1,000	---	---
Benzo(a)anthracene	mg/kg		ND<0.31	0.42	ND<0.31	ND<0.21	0.42	0.39	ND<0.50	7	---	1.05
Benzo(a)pyrene	mg/kg		ND<0.31	ND<0.33	1.2	ND<0.21	ND<0.33	ND<0.27	ND<0.50	2	---	1.45
Benzo(g,h,i)perylene	mg/kg		0.41	0.47	0.36	ND<0.21	0.53	ND<0.27	ND<0.50	1,000	---	---
Chrysene	mg/kg		ND<0.31	ND<0.33	ND<0.31	ND<0.21	0.50	0.47	ND<0.50	70	---	1.29
Herbicides (USEPA Method 8151A)												
Various	mg/kg		ND<Various	ND<Various	ND<Various	ND<Various	ND<Various	ND<Various	ND<Various	Varies	---	---
Pesticides (USEPA Method 8081B)												
4,4'-DDD	mg/kg		ND<0.063	ND<0.13	ND<0.062	ND<0.041	ND<0.066	ND<0.054	0.11	8	---	---
Various	mg/kg		ND<Various	ND<Various	ND<Various	ND<Various	ND<Various	ND<Various	ND<Various	Varies	---	---
Total Organic Carbon (USEPA Method 9060A)	mg/kg		110000	320000	190000	63000	360000	190000	270,000	---	---	---

Created By: CJO
Checked By: MTK

Notes:
MassDEP: Massachusetts Department of Environmental Protection
USEPA: United States Environmental Protection Agency
EPH: Extractable Petroleum Hydrocarbon
PAH: Polycyclic Aromatic Hydrocarbon
PCB: Polychlorinated Biphenyl
VOC: Volatile Organic Compound
SVOC: Semivolatile Organic Compound
ppmv: parts per million by volume
fbws: feet below water surface
mg/kg: milligrams per kilogram

---: Criteria not defined in applicable regulations
NA: Not analyzed
ND<X: Not detected above the lab reporting limits shown.
Shaded and bolded values exceed the levels for sediment reuse at lined landfills
Italicized and bolded values exceed the PEC
Only analytes at concentrations greater than the reporting limits are listed.
[1]: Parameters required by 314 CMR 9.00 in accordance wuth the approved sampling plan
[2]: Interim Policy COMM-94-007: Dredged Sediment Reuse or Disposal *Table 1*
[3]: PEC = Probably Effect Concentration, MacDonald et. al, 2000

Appendix A
Sediment Boring Logs

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BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 1-C
Sheet #: 1 of 21
Project #: 20210133.A11
Weather: overcast,

Contractor: 2GB
Operator:
F&O Representative: CO and MK
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: center, transect 1
Date Started: 4/14/2022
Date/Time Completed: 4/14/2022
Depth to Saturated Zone: 0

Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
8.2		2.1 / 2.2	8.2 - 10.3	Black SILT and CLAY (organic SILT), no odor	0.0 0.0 0.0				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID / OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

FUSS & O'NEILL

BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 1-L
Sheet #: 2 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO and MK
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: left (west) side, transect 1
Date Started: 4/14/2022
Date/Time Completed: 4/14/2022
Depth to Saturated Zone: 0
Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
5.2		2.6 / 2.7	5.2 – 6.0	Black SILT and CLAY (organic SILT), no odor	0.0				
			6.0 – 7.8	Light brown F-M SAND, some Gravel	0.0 0.0				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID/OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

FUSS & O'NEILL

BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 1-R
Sheet #: 3 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO and MK
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: right (east) side, transect 1
Date Started: 4/14/2022
Date/Time Completed: 4/14/2022
Depth to Saturated Zone: 0
Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
9.1		3.1 / 3.2	9.1 – 12.2	Black SILT and CLAY (organic SILT), no odor	0.0 0.0 0.0				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID/OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

FUSS & O'NEILL

BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 2-C
Sheet #: 4 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO and MK
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: center, transect 2
Date Started: 4/14/2022
Date/Time Completed: 4/14/2022
Depth to Saturated Zone: 0

Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
10.1		3.8 / 3.9	10.1 – 13.9	Black SILT and CLAY (organic SILT), no odor	0.0 0.0 0.0				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID / OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

FUSS & O'NEILL

BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 2-L
Sheet #: 5 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO and MK
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: left (west) side, transect 2
Date Started: 4/14/2022
Date/Time Completed: 4/14/2022
Depth to Saturated Zone: 0

Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
7.6		1.9 / 2.0	7.6 – 9.5	Black SILT and CLAY (organic SILT), no odor	0.0 0.0 0.0				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID / OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

FUSS & O'NEILL

BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 2-R
Sheet #: 6 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO and MK
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: right (east) side, transect 2
Date Started: 4/14/2022
Date/Time Completed: 4/14/2022
Depth to Saturated Zone: 0

Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
8.5		4.1 / 4.2	8.5 – 11.5	Black SILT and CLAY (organic SILT), no odor					
			11.5 – 12.4	Black SILT and CLAY (organic SILT), little Sand, no odor					
			12.4 – 12.6	F-M SAND, light brown					

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID / OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

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BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 3-C
Sheet #: 7 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: center, transect 3
Date Started: 4/14/2022
Date/Time Completed: 4/14/2022
Depth to Saturated Zone: 0

Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
8.0		4.1 / 4.2	8.0 – 12.1	Black SILT and CLAY (organic SILT), no odor	0.0 0.0 0.0				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID / OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

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BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 3-L
Sheet #: 8 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: left (west) side, transect 3
Date Started: 4/14/2022
Date/Time Completed: 4/14/2022
Depth to Saturated Zone: 0

Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
7.0		1.4 / 1.5	7.0 – 8.4	Black SILT and CLAY (organic SILT), some Gravel, no odor	0.0 0.0 0.0				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID / OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

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BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 3-R
Sheet #: 9 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: right (east) side, transect 3
Date Started: 4/14/2022
Date/Time Completed: 4/14/2022
Depth to Saturated Zone: 0
Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
4.8		1.3 / 1.4	4.8 – 5.8	Black SILT and CLAY (organic SILT), no odor	0.0 0.0				
			5.8 – 6.1	Dark brown SAND and GRAVEL	0.0				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID / OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

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BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 4-C
Sheet #: 10 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: center, transect 4
Date Started: 4/14/2022
Date/Time Completed: 4/14/2022
Depth to Saturated Zone: 0

Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
6.2		4.6 / 4.7	6.2 – 9.2	Black SILT and CLAY (organic SILT), no odor	0.0 0.0				
			9.2 – 10.2	Light brown F-M SAND, some fine Gravel	0.0				
			10.2 – 10.8	Dark brown SILT and CLAY, some Sand, organics	0.0				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID/OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

FUSS & O'NEILL

BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 4-L
Sheet #: 11 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: left (west) side, transect 4
Date Started: 4/14/2022
Date/Time Completed: 4/14/2022
Depth to Saturated Zone: 0
Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
6.5		4.1 / 4.2	6.5 – 10.2	Black SILT and CLAY (organic SILT), no odor	0.0 0.0				
			10.2 – 10.6	Light brown F-M SAND, some fine Gravel	0.0				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID / OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

FUSS & O'NEILL

BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 4-R
Sheet #: 12 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: right (east) side, transect 4
Date Started: 4/14/2022
Date/Time Completed: 4/14/2022
Depth to Saturated Zone: 0
Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
5.9		2.5 / 2.6	5.9 – 8.4	Black SILT and CLAY (organic SILT), no odor	0.0 0.0 0.0				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID / OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

FUSS & O'NEILL

BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 5-C
Sheet #: 13 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO and EK
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: center, transect 5
Date Started: 4/15/2022
Date/Time Completed: 4/15/2022
Depth to Saturated Zone: 0

Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
2.9		2.2 / 2.2	2.9 – 5.1	Black SILT and CLAY (organic SILT), no odor, little organics	0.0 0.0 0.0				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID/OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

FUSS & O'NEILL

BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 5-L
Sheet #: 14 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO and EK
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: left (west) side, transect 5
Date Started: 4/15/2022
Date/Time Completed: 4/15/2022
Depth to Saturated Zone: 0

Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
2.3		2.1 / 2.1	2.3 – 2.7	Black SILT and CLAY (organic SILT), no odor	0.0				
			2.7 – 3.7	F – M SAND, light brown	0.0				
			3.7 – 4.1	Black SILT with organics (organic SILT)	0.0				Lens of SAND between bottom two layers
			4.1 – 4.4	Black SILT and CLAY (organic SILT)	0.0				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID/OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10% Some (sm) 20 to 35%
Little (ltl) 10 to 20% And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well
Bentonite Grout/Chips		To	Completion Report
Cuttings/Native Material		To	
Other		To	

FUSS & O'NEILL

BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 5-R
Sheet #: 15 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO and EK
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: right (east) side, transect 5
Date Started: 4/15/2022
Date/Time Completed: 4/15/2022
Depth to Saturated Zone: 0

Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
4.8		4.3 / 4.6	4.8 – 7.6	Black SILT and CLAY (organic SILT), no odor	0.0 0.0				
			7.6 – 8.9	Black SILT and CLAY (organic SILT), no odor	0.0				
			8.9 – 9.1	Black SILT and CLAY (organic SILT), trace Sand, trace Gravel	0.0				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID / OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

FUSS & O'NEILL

BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 6-C
Sheet #: 16 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO and EK
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: center, transect 6
Date Started: 4/15/2022
Date/Time Completed: 4/15/2022
Depth to Saturated Zone: 0

Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
2.4		3.1 / 3.2	2.4 – 5.5	Black SILT and CLAY (organic SILT), little organics, trace M Sand, no odor	0.0 0.0 0.0				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID / OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

FUSS & O'NEILL

BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 6-L
Sheet #: 17 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO and EK
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: left (west) side, transect 6
Date Started: 4/15/2022
Date/Time Completed: 4/15/2022
Depth to Saturated Zone: 0

Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
3.5		3.1 / 3.1	3.5 – 6.6	Black SILT and CLAY (organic SILT), little organics, trace M Sand, no odor	0.0 0.0 0.0				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID / OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

FUSS & O'NEILL

BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 6-R
Sheet #: 18 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO and EK
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: right (east) side, transect 6
Date Started: 4/15/2022
Date/Time Completed: 4/15/2022
Depth to Saturated Zone: 0

Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
1.9		1.2 / 1.2	1.9 – 2.1	Black SILT and CLAY (organic SILT), little organics, trace M Sand, no odor	0.0				
			2.1 – 3.0	F – C SAND, trace Silt, trace Clay, light brown, no odor	0.0				
			3.0 – 3.1	Black SILT and CLAY (organic SILT), trace organics, trace no odor	0.0				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID / OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

FUSS & O'NEILL

BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 7-C
Sheet #: 19 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO and EK
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: center, transect 7
Date Started: 4/15/2022
Date/Time Completed: 4/15/2022
Depth to Saturated Zone: 0

Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
5.2		2.0 / 2.0	5.2 – 7.2	Black SILT and CLAY (organic SILT), little organics, no odor	0.0 0.0 0.0				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID / OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

FUSS & O'NEILL

BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 7-L
Sheet #: 20 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO and EK
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: left (west) side, transect 7
Date Started: 4/15/2022
Date/Time Completed: 4/15/2022
Depth to Saturated Zone: 0

Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
3.1		4.5 / 4.7	3.1 – 4.6	Black SILT and CLAY (organic SILT), little organics, no odor	0.0				
			4.6 – 4.7	Fine SAND and CLAY, light brown, no odor	0.0				
			4.7 – 6.7	Fine SAND and CLAY, light brown, no odor	0.0				
			6.7 – 7.6	Black SILT and CLAY (organic SILT), little organics, no odor	0.9				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID / OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

FUSS & O'NEILL

BORING LOG

Project Name: Parker Mills Pond Sediment Investigation

Project Location: Wareham, MA

Location ID: Transect 7-R
Sheet #: 21 of 21
Project #: 20210133.A11
Weather:

Contractor: 2GB
Operator:
F&O Representative: CO and EK
Drilling Method:
Sampling Method:
Hammer Weight: Hammer Fall (inches):

Location Description: right (east) side, transect 7
Date Started: 4/15/2022
Date/Time Completed: 4/15/2022
Depth to Saturated Zone: 0

Sample # Prefix:

DRILLING DETAILS			MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
START DEPTH (FT)	BLOWS 6"	REC/ PEN (IN)	DEPTH RANGE (FT)	DESCRIPTION	PID	LITHO-LOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERV.
				Parker Mills Pond					
6.3		3.2 / 3.3	6.3 – 7.7	Black SILT and CLAY (organic SILT), little organics, no odor	0.0				
			7.7 – 8.0	M – C SAND, light brown/tan, no odor	0.0				
			8.0 – 9.4	Black SILT and CLAY (organic SILT), some organics, no odor	0.0				

BORING DIAMETER	BORING METHOD	BORING DEPTH

REMARKS
Field Instrument = PID / OVM

If refusal is encountered, describe all efforts used to confirm.

Field Decon: Yes / No / Dedicated Device

PROPORTIONS USED:
Trace (tr) 0 to 10%
Little (ltl) 10 to 20%
Some (sm) 20 to 35%
And 35 to 50%

EXAMPLE DESCRIPTION:
SAND, F-M; sm F angular gravel; ltl silt; tr clay; (10R 5/4), wet at 7 ft. Loose. No odor.

Reviewed by Staff:

BACKFILL

Asphalt / Concrete		To	See Monitoring Well Completion Report
Bentonite Grout/Chips		To	
Cuttings/Native Material		To	
Other		To	

Appendix B
Site Photos



Transect #1 – center sediment core.



Transect #1 – east (top) and west (bottom) sediment cores.



Transect #2 – center sediment core.



Transect #2 – east (bottom) and west (top) sediment cores.



Transect #3 – center (bottom) and west (top) sediment cores.



Transect #3 – east sediment core.



Transect #4 – center, west, and east sediment cores (top to bottom).



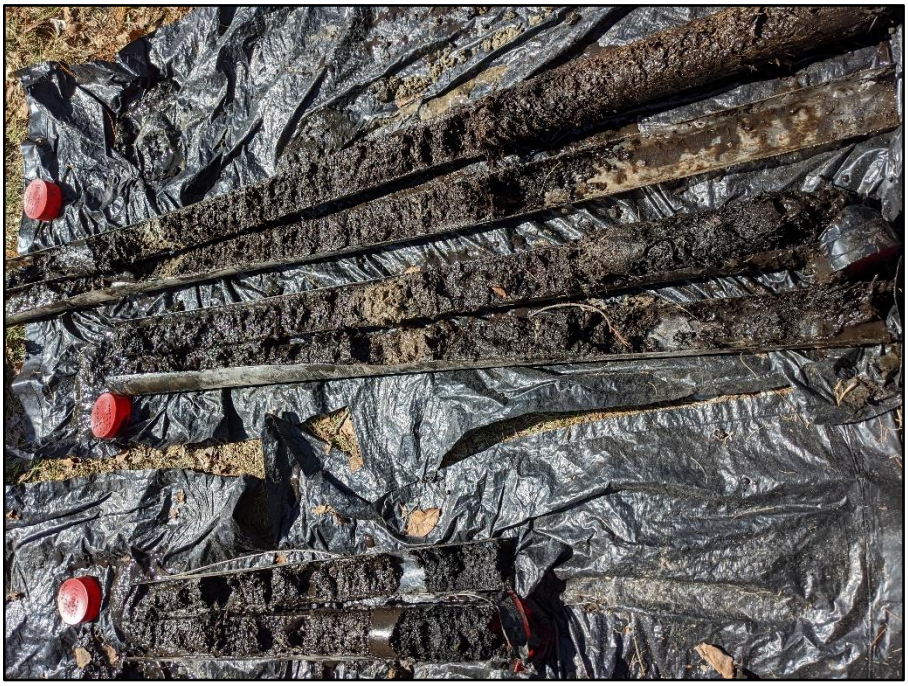
Transect #5 – east, center, and west sediment cores (top to bottom).



Transect #6 – center sediment core.



Transect #6 – east (bottom) and west (top) sediment cores.



Transect #7 – west, east, and center sediment cores (top to bottom).

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Appendix C
Laboratory Analytical Reports

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

May 5, 2022

Matthew Kissane
Fuss & O'Neill - Springfield
1550 Main Street, Suite 400
Springfield, MA 01103

Project Location: Wareham, MA
Client Job Number:
Project Number: 20210133.A11
Laboratory Work Order Number: 22D1164

Enclosed are results of analyses for samples as received by the laboratory on April 15, 2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Fuss & O'Neill - Springfield
1550 Main Street, Suite 400
Springfield, MA 01103
ATTN: Matthew Kissane

REPORT DATE: 5/5/2022

PURCHASE ORDER NUMBER: 170120210133.A11

PROJECT NUMBER: 20210133.A11

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22D1164

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: Wareham, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
1701220414-01	22D1164-01	Soil		-	
				MADEP EPH rev 2.1	
				SM 2540G	
				SW 846 9060A	
				SW-846 6010D	
				SW-846 7471B	
				SW-846 8151A	
				SW-846 8260D	
				SW-846 8270E	
1701220414-02	22D1164-02	Soil		MADEP EPH rev 2.1	
				SM 2540G	
				SW 846 9060A	
				SW-846 6010D	
				SW-846 7471B	
				SW-846 8151A	
				SW-846 8260D	
				SW-846 8270E	
1701220414-03	22D1164-03	Soil		MADEP EPH rev 2.1	
				SM 2540G	
				SW 846 9060A	
				SW-846 6010D	
				SW-846 7471B	
				SW-846 8151A	
				SW-846 8260D	
				SW-846 8270E	
1701220414-04	22D1164-04	Soil		MADEP EPH rev 2.1	
				SM 2540G	
				SW 846 9060A	
				SW-846 6010D	
				SW-846 7471B	
				SW-846 8151A	
				SW-846 8260D	
				SW-846 8270E	
1701220414-05	22D1164-05	Soil		MADEP EPH rev 2.1	
				SM 2540G	
				SW 846 9060A	
				SW-846 6010D	
				SW-846 7471B	
				SW-846 8151A	
				SW-846 8260D	
				SW-846 8270E	

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Fuss & O'Neill - Springfield
1550 Main Street, Suite 400
Springfield, MA 01103
ATTN: Matthew Kissane

REPORT DATE: 5/5/2022

PURCHASE ORDER NUMBER: 170120210133.A11

PROJECT NUMBER: 20210133.A11

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22D1164

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: Wareham, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
1701220414-06	22D1164-06	Soil		MADEP EPH rev 2.1	
				SM 2540G	
				SW 846 9060A	
				SW-846 6010D	
				SW-846 7471B	
				SW-846 8151A	
				SW-846 8260D	
				SW-846 8270E	
1701220414-07	22D1164-07	Soil		MADEP EPH rev 2.1	
				SM 2540G	
				SW 846 9060A	
				SW-846 6010D	
				SW-846 7471B	
				SW-846 8151A	
				SW-846 8260D	
				SW-846 8270E	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

REVISED REPORT 05-05-22:Herbicides reported per the COC.

For method 8270E, only PAHs were requested and reported.

For method 8151 samples -01 to -06 were derivatized on 05/02/22
For method 8151 sample -07 was derivatized on 05/04/22

For method 8151 samples analysis bracketed by LCS to monitor esterification. All recoveries in the bracketing LCS met method criteria.

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MADEP EPH rev 2.1

Qualifications:

MS-22

Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.

Analyte & Samples(s) Qualified:

2-Methylnaphthalene
B306093-MSD1

Acenaphthene
B306093-MSD1

Benzo(a)anthracene
B306093-MSD1

Benzo(b)fluoranthene
B306093-MSD1

Benzo(k)fluoranthene
B306093-MSD1

C19-C36 Aliphatics
B306093-MSD1

C9-C18 Aliphatics
B306093-MSD1

Chrysene
B306093-MSD1

Dibenz(a,h)anthracene
B306093-MSD1

Fluoranthene
B306093-MSD1

Naphthalene
B306093-MSD1

Pyrene
B306093-MSD1

Unadjusted C11-C22 Aromatics
B306093-MSD1

MS-23

Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is outside of the method specified criteria. Reduced precision anticipated for any reported result for this compound.

Analyte & Samples(s) Qualified:

Acenaphthylene
B306093-MSD1

Benzo(a)pyrene
B306093-MSD1

Benzo(g,h,i)perylene
B306093-MSD1

Indeno(1,2,3-cd)pyrene
B306093-MSD1

R-06

Matrix spike duplicate RPD is outside of control limits. Reduced precision is anticipated for reported result for this compound in this sample.

Analyte & Samples(s) Qualified:

Acenaphthylene
22D1164-02[1701220414-02], B306093-MS1

Benzo(a)pyrene
22D1164-02[1701220414-02], B306093-MS1

Benzo(g,h,i)perylene
22D1164-02[1701220414-02], B306093-MS1

Indeno(1,2,3-cd)pyrene
22D1164-02[1701220414-02], B306093-MS1

SM 2540G

Qualifications:

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R-02

Duplicate RPD is outside of control limits. Outlier can be attributed to sample non-homogeneity encountered during sample prep.

Analyte & Samples(s) Qualified:

% Solids

22D1164-01[1701220414-01], 22D1164-02[1701220414-02], 22D1164-03[1701220414-03], 22D1164-05[1701220414-05], 22D1164-06[1701220414-06], 22D1164-07[1701220414-07], B306195-DUP2, B306195-DUP3, B306195-DUP4, B306195-DUP6, B306195-DUP7, B306195-DUP8

SW 846 9060A

Qualifications:

MS-11

Matrix spike recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.

Analyte & Samples(s) Qualified:

Total Organic Carbon

22D1164-01[1701220414-01], B306334-MS1

SW-846 8151A

Qualifications:

DL-03

Elevated reporting limit due to matrix interference.

Analyte & Samples(s) Qualified:

22D1164-01[1701220414-01], 22D1164-02[1701220414-02], 22D1164-03[1701220414-03], 22D1164-04[1701220414-04], 22D1164-05[1701220414-05], 22D1164-06[1701220414-06], 22D1164-07[1701220414-07]

S-01

The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

Analyte & Samples(s) Qualified:

2,4-Dichlorophenylacetic acid

22D1164-07[1701220414-07]

2,4-Dichlorophenylacetic acid [2C]

22D1164-07[1701220414-07]

SW-846 8260D

Qualifications:

L-02

Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.

Analyte & Samples(s) Qualified:

Chloroethane

B306016-BS1, B306016-BSD1

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

1,1,2-Trichloro-1,2,2-trifluoroethan

B306016-BS1, B306016-BSD1, S070522-CCV1

1,1-Dichloroethylene

B306016-BS1, B306016-BSD1, S070522-CCV1

Chloroethane

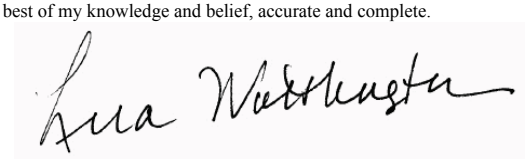
B306016-BS1, B306016-BSD1, S070522-CCV1

Chloromethane

B306016-BS1, B306016-BSD1, S070522-CCV1

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The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-01 | Sampled: 4/14/2022 10:00

Sample ID: 22D1164-01

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Acrylonitrile	ND	1.3	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Benzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Bromobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Bromochloromethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Bromodichloromethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Bromoform	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Bromomethane	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
2-Butanone (MEK)	ND	5.0	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
n-Butylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
sec-Butylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
tert-Butylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Carbon Disulfide	ND	1.3	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Carbon Tetrachloride	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Chlorobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Chlorodibromomethane	ND	0.13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Chloroethane	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Chloroform	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Chloromethane	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
2-Chlorotoluene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
4-Chlorotoluene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	1.3	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,2-Dibromoethane (EDB)	ND	0.13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Dibromomethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,2-Dichlorobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,3-Dichlorobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,4-Dichlorobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
trans-1,4-Dichloro-2-butene	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,1-Dichloroethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,2-Dichloroethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,1-Dichloroethylene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
cis-1,2-Dichloroethylene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
trans-1,2-Dichloroethylene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,2-Dichloropropane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,3-Dichloropropane	ND	0.13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
2,2-Dichloropropane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,1-Dichloropropene	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
cis-1,3-Dichloropropene	ND	0.13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
trans-1,3-Dichloropropene	ND	0.13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Diethyl Ether	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-01 | Sampled: 4/14/2022 10:00

Sample ID: 22D1164-01

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,4-Dioxane	ND	13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Ethylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Hexachlorobutadiene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
2-Hexanone (MBK)	ND	2.5	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Isopropylbenzene (Cumene)	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Methyl Acetate	ND	2.5	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Methyl Cyclohexane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Methylene Chloride	ND	1.3	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
4-Methyl-2-pentanone (MIBK)	ND	2.5	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Naphthalene	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
n-Propylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Styrene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,1,1,2-Tetrachloroethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,1,2,2-Tetrachloroethane	ND	0.13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Tetrachloroethylene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Tetrahydrofuran	ND	2.5	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Toluene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,2,3-Trichlorobenzene	ND	1.3	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,2,4-Trichlorobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,3,5-Trichlorobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,1,1-Trichloroethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,1,2-Trichloroethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Trichloroethylene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,2,3-Trichloropropane	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,2,4-Trimethylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
1,3,5-Trimethylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
Vinyl Chloride	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
m+p Xylene	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF
o-Xylene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:01	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	95.3	70-130		4/18/22 12:01
Toluene-d8	98.2	70-130		4/18/22 12:01
4-Bromofluorobenzene	96.6	70-130		4/18/22 12:01

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-01 | Sampled: 4/14/2022 10:00

Sample ID: 22D1164-01

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.54	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 18:52	BGL
Acenaphthylene	ND	0.54	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 18:52	BGL
Anthracene	ND	0.54	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 18:52	BGL
Benzo(a)anthracene	ND	0.54	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 18:52	BGL
Benzo(a)pyrene	ND	0.54	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 18:52	BGL
Benzo(b)fluoranthene	ND	0.54	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 18:52	BGL
Benzo(g,h,i)perylene	ND	0.54	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 18:52	BGL
Benzo(k)fluoranthene	ND	0.54	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 18:52	BGL
Chrysene	ND	0.54	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 18:52	BGL
Dibenz(a,h)anthracene	ND	0.54	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 18:52	BGL
Fluoranthene	ND	0.54	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 18:52	BGL
Fluorene	ND	0.54	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 18:52	BGL
Indeno(1,2,3-cd)pyrene	ND	0.54	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 18:52	BGL
2-Methylnaphthalene	ND	0.54	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 18:52	BGL
Naphthalene	ND	0.54	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 18:52	BGL
Phenanthrene	ND	0.54	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 18:52	BGL
Pyrene	ND	0.54	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 18:52	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Nitrobenzene-d5	63.9	30-130		4/20/22 18:52
2-Fluorobiphenyl	75.5	30-130		4/20/22 18:52
p-Terphenyl-d14	76.4	30-130		4/20/22 18:52

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-01 | Sampled: 4/14/2022 10:00

Sample ID: 22D1164-01

Sample Matrix: Soil

Sample Flags: DL-03

Herbicides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2,4-D [1]	ND	790	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 14:42	TG
2,4-DB [1]	ND	790	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 14:42	TG
2,4,5-TP (Silvex) [1]	ND	79	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 14:42	TG
2,4,5-T [1]	ND	79	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 14:42	TG
Dalalpon [1]	ND	2000	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 14:42	TG
Dicamba [1]	ND	79	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 14:42	TG
Dichloroprop [1]	ND	790	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 14:42	TG
Dinoseb [1]	ND	390	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 14:42	TG
MCPA [1]	ND	79000	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 14:42	TG
MCPP [1]	ND	79000	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 14:42	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,4-Dichlorophenylacetic acid [1]	120	30-150		5/3/22 14:42
2,4-Dichlorophenylacetic acid [2]	102	30-150		5/3/22 14:42

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Date Received: 4/15/2022

Field Sample #: 1701220414-01 | Sampled: 4/14/2022 10:00

Sample ID: 22D1164-01

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	ND	31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
C19-C36 Aliphatics	50	31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
Unadjusted C11-C22 Aromatics	39	31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
C11-C22 Aromatics	38	31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
Acenaphthene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
Acenaphthylene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
Anthracene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
Benzo(a)anthracene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
Benzo(a)pyrene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
Benzo(b)fluoranthene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
Benzo(g,h,i)perylene	0.41	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
Benzo(k)fluoranthene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
Chrysene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
Dibenz(a,h)anthracene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
Fluoranthene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
Fluorene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
Indeno(1,2,3-cd)pyrene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
2-Methylnaphthalene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
Naphthalene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
Phenanthrene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH
Pyrene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:03	TYH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	65.2	40-140		4/22/22 6:03
o-Terphenyl (OTP)	64.2	40-140		4/22/22 6:03
2-Bromonaphthalene	108	40-140		4/22/22 6:03
2-Fluorobiphenyl	103	40-140		4/22/22 6:03

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-01 | Sampled: 4/14/2022 10:00

Sample ID: 22D1164-01

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	10	mg/Kg dry	1		SW-846 6010D	4/28/22	4/30/22 16:22	MJH
Cadmium	ND	1.0	mg/Kg dry	1		SW-846 6010D	4/28/22	4/30/22 16:22	MJH
Chromium	8.4	2.0	mg/Kg dry	1		SW-846 6010D	4/28/22	4/30/22 16:22	MJH
Copper	10	2.0	mg/Kg dry	1		SW-846 6010D	4/28/22	4/30/22 16:22	MJH
Lead	21	1.5	mg/Kg dry	1		SW-846 6010D	4/28/22	4/30/22 16:22	MJH
Mercury	ND	0.077	mg/Kg dry	1		SW-846 7471B	4/19/22	4/20/22 11:59	TDK
Nickel	4.2	2.0	mg/Kg dry	1		SW-846 6010D	4/28/22	4/30/22 16:22	MJH
Zinc	27	2.0	mg/Kg dry	1		SW-846 6010D	4/28/22	4/30/22 16:22	MJH

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-01 | Sampled: 4/14/2022 10:00

Sample ID: 22D1164-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	31.8		% Wt	1	R-02	SM 2540G	4/19/22	4/20/22 18:01	BMB
Total Organic Carbon	110000	310	mg/Kg dry	1	MS-11	SW 846 9060A	4/21/22	4/21/22 9:46	IS

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-02 | Sampled: 4/14/2022 10:30

Sample ID: 22D1164-02

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	12	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Acrylonitrile	ND	1.2	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.12	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Benzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Bromobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Bromochloromethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Bromodichloromethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Bromoform	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Bromomethane	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
2-Butanone (MEK)	ND	5.0	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
n-Butylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
sec-Butylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
tert-Butylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.12	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Carbon Disulfide	ND	1.2	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Carbon Tetrachloride	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Chlorobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Chlorodibromomethane	ND	0.12	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Chloroethane	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Chloroform	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Chloromethane	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
2-Chlorotoluene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
4-Chlorotoluene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	1.2	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,2-Dibromoethane (EDB)	ND	0.12	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Dibromomethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,2-Dichlorobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,3-Dichlorobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,4-Dichlorobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
trans-1,4-Dichloro-2-butene	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,1-Dichloroethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,2-Dichloroethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,1-Dichloroethylene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
cis-1,2-Dichloroethylene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
trans-1,2-Dichloroethylene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,2-Dichloropropane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,3-Dichloropropane	ND	0.12	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
2,2-Dichloropropane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,1-Dichloropropene	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
cis-1,3-Dichloropropene	ND	0.12	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
trans-1,3-Dichloropropene	ND	0.12	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Diethyl Ether	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-02 | Sampled: 4/14/2022 10:30

Sample ID: 22D1164-02

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.12	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,4-Dioxane	ND	12	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Ethylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Hexachlorobutadiene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
2-Hexanone (MBK)	ND	2.5	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Isopropylbenzene (Cumene)	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Methyl Acetate	ND	2.5	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Methyl Cyclohexane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Methylene Chloride	ND	1.2	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
4-Methyl-2-pentanone (MIBK)	ND	2.5	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Naphthalene	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
n-Propylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Styrene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,1,1,2-Tetrachloroethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,1,2,2-Tetrachloroethane	ND	0.12	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Tetrachloroethylene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Tetrahydrofuran	ND	2.5	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Toluene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,2,3-Trichlorobenzene	ND	1.2	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,2,4-Trichlorobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,3,5-Trichlorobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,1,1-Trichloroethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,1,2-Trichloroethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Trichloroethylene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,2,3-Trichloropropane	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,2,4-Trimethylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
1,3,5-Trimethylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
Vinyl Chloride	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
m+p Xylene	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF
o-Xylene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:25	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	97.0	70-130		4/18/22 12:25
Toluene-d8	98.0	70-130		4/18/22 12:25
4-Bromofluorobenzene	91.6	70-130		4/18/22 12:25

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-02 | Sampled: 4/14/2022 10:30

Sample ID: 22D1164-02

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 10:03	BGL
Acenaphthylene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 10:03	BGL
Anthracene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 10:03	BGL
Benzo(a)anthracene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 10:03	BGL
Benzo(a)pyrene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 10:03	BGL
Benzo(b)fluoranthene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 10:03	BGL
Benzo(g,h,i)perylene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 10:03	BGL
Benzo(k)fluoranthene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 10:03	BGL
Chrysene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 10:03	BGL
Dibenz(a,h)anthracene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 10:03	BGL
Fluoranthene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 10:03	BGL
Fluorene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 10:03	BGL
Indeno(1,2,3-cd)pyrene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 10:03	BGL
2-Methylnaphthalene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 10:03	BGL
Naphthalene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 10:03	BGL
Phenanthrene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 10:03	BGL
Pyrene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 10:03	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Nitrobenzene-d5	74.9	30-130		4/21/22 10:03
2-Fluorobiphenyl	71.6	30-130		4/21/22 10:03
p-Terphenyl-d14	69.4	30-130		4/21/22 10:03

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-02 | Sampled: 4/14/2022 10:30

Sample ID: 22D1164-02

Sample Matrix: Soil

Sample Flags: DL-03

Herbicides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2,4-D [1]	ND	820	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 15:22	TG
2,4-DB [1]	ND	820	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 15:22	TG
2,4,5-TP (Silvex) [1]	ND	82	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 15:22	TG
2,4,5-T [1]	ND	82	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 15:22	TG
Dalalpon [1]	ND	2000	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 15:22	TG
Dicamba [1]	ND	82	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 15:22	TG
Dichloroprop [1]	ND	820	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 15:22	TG
Dinoseb [1]	ND	410	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 15:22	TG
MCPA [1]	ND	82000	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 15:22	TG
MCPP [1]	ND	82000	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 15:22	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,4-Dichlorophenylacetic acid [1]	78.2	30-150		5/3/22 15:22
2,4-Dichlorophenylacetic acid [2]	78.8	30-150		5/3/22 15:22

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-02 | Sampled: 4/14/2022 10:30

Sample ID: 22D1164-02

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	ND	33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
C19-C36 Aliphatics	48	33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
Unadjusted C11-C22 Aromatics	46	33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
C11-C22 Aromatics	45	33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
Acenaphthene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
Acenaphthylene	ND	0.33	mg/Kg dry	1	R-06	MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
Anthracene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
Benzo(a)anthracene	0.42	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
Benzo(a)pyrene	ND	0.33	mg/Kg dry	1	R-06	MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
Benzo(b)fluoranthene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
Benzo(g,h,i)perylene	0.47	0.33	mg/Kg dry	1	R-06	MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
Benzo(k)fluoranthene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
Chrysene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
Dibenz(a,h)anthracene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
Fluoranthene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
Fluorene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
Indeno(1,2,3-cd)pyrene	ND	0.33	mg/Kg dry	1	R-06	MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
2-Methylnaphthalene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
Naphthalene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
Phenanthrene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH
Pyrene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 6:24	TYH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	66.3	40-140		4/22/22 6:24
o-Terphenyl (OTP)	60.9	40-140		4/22/22 6:24
2-Bromonaphthalene	113	40-140		4/22/22 6:24
2-Fluorobiphenyl	108	40-140		4/22/22 6:24

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-02 | Sampled: 4/14/2022 10:30

Sample ID: 22D1164-02

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	11	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 16:39	MJH
Cadmium	ND	1.1	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 16:39	MJH
Chromium	4.1	2.1	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 16:39	MJH
Copper	6.6	2.1	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 16:39	MJH
Lead	8.5	1.6	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 16:39	MJH
Mercury	ND	0.084	mg/Kg dry	1		SW-846 7471B	4/19/22	4/20/22 12:05	TDK
Nickel	2.1	2.1	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 16:39	MJH
Zinc	12	2.1	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 16:39	MJH

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-02 | Sampled: 4/14/2022 10:30

Sample ID: 22D1164-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	30.6		% Wt	1	R-02	SM 2540G	4/19/22	4/20/22 18:01	BMB
Total Organic Carbon	320000	330	mg/Kg dry	1		SW 846 9060A	4/21/22	4/21/22 11:21	IS

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-03 | Sampled: 4/14/2022 11:30

Sample ID: 22D1164-03

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Acrylonitrile	ND	1.3	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Benzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Bromobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Bromochloromethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Bromodichloromethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Bromoform	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Bromomethane	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
2-Butanone (MEK)	ND	5.0	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
tert-Butyl Alcohol (TBA)	ND	5.0	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
n-Butylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
sec-Butylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
tert-Butylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Carbon Disulfide	ND	1.3	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Carbon Tetrachloride	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Chlorobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Chlorodibromomethane	ND	0.13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Chloroethane	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Chloroform	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Chloromethane	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
2-Chlorotoluene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
4-Chlorotoluene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	1.3	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,2-Dibromoethane (EDB)	ND	0.13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Dibromomethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,2-Dichlorobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,3-Dichlorobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,4-Dichlorobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
trans-1,4-Dichloro-2-butene	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,1-Dichloroethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,2-Dichloroethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,1-Dichloroethylene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
cis-1,2-Dichloroethylene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
trans-1,2-Dichloroethylene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,2-Dichloropropane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,3-Dichloropropane	ND	0.13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
2,2-Dichloropropane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,1-Dichloropropene	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
cis-1,3-Dichloropropene	ND	0.13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
trans-1,3-Dichloropropene	ND	0.13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Diethyl Ether	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-03 | Sampled: 4/14/2022 11:30

Sample ID: 22D1164-03

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,4-Dioxane	ND	13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Ethylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Hexachlorobutadiene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
2-Hexanone (MBK)	ND	2.5	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Isopropylbenzene (Cumene)	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Methyl Acetate	ND	2.5	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Methyl Cyclohexane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Methylene Chloride	ND	1.3	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
4-Methyl-2-pentanone (MIBK)	ND	2.5	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Naphthalene	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
n-Propylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Styrene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,1,1,2-Tetrachloroethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,1,2,2-Tetrachloroethane	ND	0.13	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Tetrachloroethylene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Tetrahydrofuran	ND	2.5	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Toluene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,2,3-Trichlorobenzene	ND	1.3	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,2,4-Trichlorobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,3,5-Trichlorobenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,1,1-Trichloroethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,1,2-Trichloroethane	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Trichloroethylene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,2,3-Trichloropropane	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,2,4-Trimethylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
1,3,5-Trimethylbenzene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
Vinyl Chloride	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
m+p Xylene	ND	0.50	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF
o-Xylene	ND	0.25	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 12:49	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	95.2	70-130		4/18/22 12:49
Toluene-d8	97.0	70-130		4/18/22 12:49
4-Bromofluorobenzene	95.4	70-130		4/18/22 12:49

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-03 | Sampled: 4/14/2022 11:30

Sample ID: 22D1164-03

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.53	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:30	IMR
Acenaphthylene	ND	0.53	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:30	IMR
Anthracene	ND	0.53	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:30	IMR
Benzo(a)anthracene	ND	0.53	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:30	IMR
Benzo(a)pyrene	ND	0.53	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:30	IMR
Benzo(b)fluoranthene	ND	0.53	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:30	IMR
Benzo(g,h,i)perylene	ND	0.53	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:30	IMR
Benzo(k)fluoranthene	ND	0.53	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:30	IMR
Chrysene	ND	0.53	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:30	IMR
Dibenz(a,h)anthracene	ND	0.53	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:30	IMR
Fluoranthene	ND	0.53	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:30	IMR
Fluorene	ND	0.53	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:30	IMR
Indeno(1,2,3-cd)pyrene	ND	0.53	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:30	IMR
2-Methylnaphthalene	ND	0.53	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:30	IMR
Naphthalene	ND	0.53	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:30	IMR
Phenanthrene	ND	0.53	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:30	IMR
Pyrene	ND	0.53	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:30	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Nitrobenzene-d5	42.6	30-130		4/21/22 16:30
2-Fluorobiphenyl	45.9	30-130		4/21/22 16:30
p-Terphenyl-d14	44.5	30-130		4/21/22 16:30

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-03 | Sampled: 4/14/2022 11:30

Sample ID: 22D1164-03

Sample Matrix: Soil

Sample Flags: DL-03

Herbicides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2,4-D [1]	ND	770	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:02	TG
2,4-DB [1]	ND	770	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:02	TG
2,4,5-TP (Silvex) [1]	ND	77	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:02	TG
2,4,5-T [1]	ND	77	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:02	TG
Dalalpon [1]	ND	1900	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:02	TG
Dicamba [1]	ND	77	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:02	TG
Dichloroprop [1]	ND	770	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:02	TG
Dinoseb [1]	ND	390	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:02	TG
MCPA [1]	ND	77000	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:02	TG
MCPP [1]	ND	77000	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:02	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,4-Dichlorophenylacetic acid [1]	98.1	30-150		5/3/22 16:02
2,4-Dichlorophenylacetic acid [2]	84.0	30-150		5/3/22 16:02

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-03 | Sampled: 4/14/2022 11:30

Sample ID: 22D1164-03

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	ND	31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
C19-C36 Aliphatics	44	31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
Unadjusted C11-C22 Aromatics	43	31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
C11-C22 Aromatics	41	31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
Acenaphthene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
Acenaphthylene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
Anthracene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
Benzo(a)anthracene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
Benzo(a)pyrene	1.2	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
Benzo(b)fluoranthene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
Benzo(g,h,i)perylene	0.36	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
Benzo(k)fluoranthene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
Chrysene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
Dibenz(a,h)anthracene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
Fluoranthene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
Fluorene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
Indeno(1,2,3-cd)pyrene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
2-Methylnaphthalene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
Naphthalene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
Phenanthrene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH
Pyrene	ND	0.31	mg/Kg dry	1		MADEP EPH rev 2.1	4/22/22	4/25/22 23:58	TYH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	66.7	40-140		4/25/22 23:58
o-Terphenyl (OTP)	68.4	40-140		4/25/22 23:58
2-Bromonaphthalene	104	40-140		4/25/22 23:58
2-Fluorobiphenyl	100	40-140		4/25/22 23:58

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-03 | Sampled: 4/14/2022 11:30

Sample ID: 22D1164-03

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	10	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:11	MJH
Cadmium	ND	1.0	mg/Kg dry	1		SW-846 6010D	4/19/22	4/26/22 19:21	ATP
Chromium	4.4	2.1	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:11	MJH
Copper	11	2.1	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:11	MJH
Lead	18	1.6	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:11	MJH
Mercury	ND	0.080	mg/Kg dry	1		SW-846 7471B	4/19/22	4/20/22 12:07	TDK
Nickel	3.1	2.1	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:11	MJH
Zinc	35	2.1	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:11	MJH

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-03 | Sampled: 4/14/2022 11:30

Sample ID: 22D1164-03

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	32.3		% Wt	1	R-02	SM 2540G	4/19/22	4/20/22 18:01	BMB
Total Organic Carbon	190000	310	mg/Kg dry	1		SW 846 9060A	4/21/22	4/21/22 11:59	IS

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-04 | Sampled: 4/14/2022 13:30

Sample ID: 22D1164-04

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	7.9	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Acrylonitrile	ND	0.79	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.079	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Benzene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Bromobenzene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Bromochloromethane	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Bromodichloromethane	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Bromoform	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Bromomethane	ND	0.32	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
2-Butanone (MEK)	ND	3.2	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
tert-Butyl Alcohol (TBA)	ND	3.2	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
n-Butylbenzene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
sec-Butylbenzene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
tert-Butylbenzene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.079	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Carbon Disulfide	ND	0.79	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Carbon Tetrachloride	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Chlorobenzene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Chlorodibromomethane	ND	0.079	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Chloroethane	ND	0.32	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Chloroform	ND	0.32	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Chloromethane	ND	0.32	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
2-Chlorotoluene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
4-Chlorotoluene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.79	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,2-Dibromoethane (EDB)	ND	0.079	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Dibromomethane	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,2-Dichlorobenzene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,3-Dichlorobenzene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,4-Dichlorobenzene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
trans-1,4-Dichloro-2-butene	ND	0.32	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.32	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,1-Dichloroethane	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,2-Dichloroethane	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,1-Dichloroethylene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
cis-1,2-Dichloroethylene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
trans-1,2-Dichloroethylene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,2-Dichloropropane	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,3-Dichloropropane	ND	0.079	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
2,2-Dichloropropane	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,1-Dichloropropene	ND	0.32	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
cis-1,3-Dichloropropene	ND	0.079	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
trans-1,3-Dichloropropene	ND	0.079	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Diethyl Ether	ND	0.32	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-04 | Sampled: 4/14/2022 13:30

Sample ID: 22D1164-04

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.079	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,4-Dioxane	ND	7.9	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Ethylbenzene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Hexachlorobutadiene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
2-Hexanone (MBK)	ND	1.6	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Isopropylbenzene (Cumene)	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Methyl Acetate	ND	1.6	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Methyl Cyclohexane	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Methylene Chloride	ND	0.79	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
4-Methyl-2-pentanone (MIBK)	ND	1.6	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Naphthalene	ND	0.32	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
n-Propylbenzene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Styrene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,1,1,2-Tetrachloroethane	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,1,2,2-Tetrachloroethane	ND	0.079	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Tetrachloroethylene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Tetrahydrofuran	ND	1.6	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Toluene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,2,3-Trichlorobenzene	ND	0.79	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,2,4-Trichlorobenzene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,3,5-Trichlorobenzene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,1,1-Trichloroethane	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,1,2-Trichloroethane	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Trichloroethylene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Trichlorofluoromethane (Freon 11)	ND	0.32	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,2,3-Trichloropropane	ND	0.32	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,2,4-Trimethylbenzene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
1,3,5-Trimethylbenzene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
Vinyl Chloride	ND	0.32	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
m+p Xylene	ND	0.32	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF
o-Xylene	ND	0.16	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:14	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	96.4	70-130		4/18/22 13:14
Toluene-d8	99.4	70-130		4/18/22 13:14
4-Bromofluorobenzene	96.7	70-130		4/18/22 13:14

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-04 | Sampled: 4/14/2022 13:30

Sample ID: 22D1164-04

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.35	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 20:09	BGL
Acenaphthylene	ND	0.35	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 20:09	BGL
Anthracene	ND	0.35	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 20:09	BGL
Benzo(a)anthracene	ND	0.35	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 20:09	BGL
Benzo(a)pyrene	ND	0.35	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 20:09	BGL
Benzo(b)fluoranthene	ND	0.35	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 20:09	BGL
Benzo(g,h,i)perylene	ND	0.35	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 20:09	BGL
Benzo(k)fluoranthene	ND	0.35	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 20:09	BGL
Chrysene	ND	0.35	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 20:09	BGL
Dibenz(a,h)anthracene	ND	0.35	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 20:09	BGL
Fluoranthene	ND	0.35	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 20:09	BGL
Fluorene	ND	0.35	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 20:09	BGL
Indeno(1,2,3-cd)pyrene	ND	0.35	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 20:09	BGL
2-Methylnaphthalene	ND	0.35	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 20:09	BGL
Naphthalene	ND	0.35	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 20:09	BGL
Phenanthrene	ND	0.35	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 20:09	BGL
Pyrene	ND	0.35	mg/Kg dry	1		SW-846 8270E	4/18/22	4/20/22 20:09	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Nitrobenzene-d5	67.2	30-130		4/20/22 20:09
2-Fluorobiphenyl	77.8	30-130		4/20/22 20:09
p-Terphenyl-d14	77.4	30-130		4/20/22 20:09

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-04 | Sampled: 4/14/2022 13:30

Sample ID: 22D1164-04

Sample Matrix: Soil

Sample Flags: DL-03

Herbicides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2,4-D [1]	ND	520	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:41	TG
2,4-DB [1]	ND	520	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:41	TG
2,4,5-TP (Silvex) [1]	ND	52	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:41	TG
2,4,5-T [1]	ND	52	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:41	TG
Dalalpon [1]	ND	1300	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:41	TG
Dicamba [1]	ND	52	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:41	TG
Dichloroprop [1]	ND	520	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:41	TG
Dinoseb [1]	ND	260	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:41	TG
MCPA [1]	ND	52000	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:41	TG
MCPP [1]	ND	52000	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 16:41	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,4-Dichlorophenylacetic acid [1]	97.3	30-150		5/3/22 16:41
2,4-Dichlorophenylacetic acid [2]	104	30-150		5/3/22 16:41

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-04 | Sampled: 4/14/2022 13:30

Sample ID: 22D1164-04

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	ND	21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
C19-C36 Aliphatics	ND	21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
Unadjusted C11-C22 Aromatics	21	21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
C11-C22 Aromatics	21	21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
Acenaphthene	ND	0.21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
Acenaphthylene	ND	0.21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
Anthracene	ND	0.21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
Benzo(a)anthracene	ND	0.21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
Benzo(a)pyrene	ND	0.21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
Benzo(b)fluoranthene	ND	0.21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
Benzo(g,h,i)perylene	ND	0.21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
Benzo(k)fluoranthene	ND	0.21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
Chrysene	ND	0.21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
Dibenz(a,h)anthracene	ND	0.21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
Fluoranthene	ND	0.21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
Fluorene	ND	0.21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
Indeno(1,2,3-cd)pyrene	ND	0.21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
2-Methylnaphthalene	ND	0.21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
Naphthalene	ND	0.21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
Phenanthrene	ND	0.21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH
Pyrene	ND	0.21	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 5:43	TYH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	48.9	40-140		4/22/22 5:43
o-Terphenyl (OTP)	45.2	40-140		4/22/22 5:43
2-Bromonaphthalene	106	40-140		4/22/22 5:43
2-Fluorobiphenyl	103	40-140		4/22/22 5:43

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-04 | Sampled: 4/14/2022 13:30

Sample ID: 22D1164-04

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	6.5	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:18	MJH
Cadmium	ND	0.65	mg/Kg dry	1		SW-846 6010D	4/19/22	4/26/22 19:28	ATP
Chromium	2.0	1.3	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:18	MJH
Copper	3.4	1.3	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:18	MJH
Lead	3.1	0.98	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:18	MJH
Mercury	ND	0.052	mg/Kg dry	1		SW-846 7471B	4/19/22	4/20/22 12:09	TDK
Nickel	ND	1.3	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:18	MJH
Zinc	3.9	1.3	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:18	MJH

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-04 | Sampled: 4/14/2022 13:30

Sample ID: 22D1164-04

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	48.3		% Wt	1		SM 2540G	4/19/22	4/20/22 18:01	BMB
Total Organic Carbon	63000	210	mg/Kg dry	1		SW 846 9060A	4/21/22	4/21/22 12:44	IS

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-05 | Sampled: 4/15/2022 08:00

Sample ID: 22D1164-05

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	14	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Acrylonitrile	ND	1.4	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.14	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Benzene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Bromobenzene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Bromochloromethane	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Bromodichloromethane	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Bromoform	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Bromomethane	ND	0.55	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
2-Butanone (MEK)	ND	5.5	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
tert-Butyl Alcohol (TBA)	ND	5.5	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
n-Butylbenzene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
sec-Butylbenzene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
tert-Butylbenzene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.14	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Carbon Disulfide	ND	1.4	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Carbon Tetrachloride	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Chlorobenzene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Chlorodibromomethane	ND	0.14	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Chloroethane	ND	0.55	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Chloroform	ND	0.55	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Chloromethane	ND	0.55	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
2-Chlorotoluene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
4-Chlorotoluene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	1.4	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,2-Dibromoethane (EDB)	ND	0.14	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Dibromomethane	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,2-Dichlorobenzene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,3-Dichlorobenzene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,4-Dichlorobenzene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
trans-1,4-Dichloro-2-butene	ND	0.55	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.55	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,1-Dichloroethane	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,2-Dichloroethane	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,1-Dichloroethylene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
cis-1,2-Dichloroethylene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
trans-1,2-Dichloroethylene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,2-Dichloropropane	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,3-Dichloropropane	ND	0.14	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
2,2-Dichloropropane	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,1-Dichloropropene	ND	0.55	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
cis-1,3-Dichloropropene	ND	0.14	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
trans-1,3-Dichloropropene	ND	0.14	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Diethyl Ether	ND	0.55	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-05 | Sampled: 4/15/2022 08:00

Sample ID: 22D1164-05

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.14	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,4-Dioxane	ND	14	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Ethylbenzene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Hexachlorobutadiene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
2-Hexanone (MBK)	ND	2.8	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Isopropylbenzene (Cumene)	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Methyl Acetate	ND	2.8	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Methyl Cyclohexane	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Methylene Chloride	ND	1.4	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
4-Methyl-2-pentanone (MIBK)	ND	2.8	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Naphthalene	ND	0.55	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
n-Propylbenzene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Styrene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,1,1,2-Tetrachloroethane	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,1,2,2-Tetrachloroethane	ND	0.14	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Tetrachloroethylene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Tetrahydrofuran	ND	2.8	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Toluene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,2,3-Trichlorobenzene	ND	1.4	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,2,4-Trichlorobenzene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,3,5-Trichlorobenzene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,1,1-Trichloroethane	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,1,2-Trichloroethane	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Trichloroethylene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Trichlorofluoromethane (Freon 11)	ND	0.55	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,2,3-Trichloropropane	ND	0.55	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,2,4-Trimethylbenzene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
1,3,5-Trimethylbenzene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
Vinyl Chloride	ND	0.55	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
m+p Xylene	ND	0.55	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF
o-Xylene	ND	0.28	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 13:38	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	95.6	70-130		4/18/22 13:38
Toluene-d8	98.5	70-130		4/18/22 13:38
4-Bromofluorobenzene	93.9	70-130		4/18/22 13:38

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-05 | Sampled: 4/15/2022 08:00

Sample ID: 22D1164-05

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:56	IMR
Acenaphthylene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:56	IMR
Anthracene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:56	IMR
Benzo(a)anthracene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:56	IMR
Benzo(a)pyrene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:56	IMR
Benzo(b)fluoranthene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:56	IMR
Benzo(g,h,i)perylene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:56	IMR
Benzo(k)fluoranthene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:56	IMR
Chrysene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:56	IMR
Dibenz(a,h)anthracene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:56	IMR
Fluoranthene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:56	IMR
Fluorene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:56	IMR
Indeno(1,2,3-cd)pyrene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:56	IMR
2-Methylnaphthalene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:56	IMR
Naphthalene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:56	IMR
Phenanthrene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:56	IMR
Pyrene	ND	0.56	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 16:56	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Nitrobenzene-d5	57.0	30-130		4/21/22 16:56
2-Fluorobiphenyl	60.1	30-130		4/21/22 16:56
p-Terphenyl-d14	59.0	30-130		4/21/22 16:56

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-05 | Sampled: 4/15/2022 08:00

Sample ID: 22D1164-05

Sample Matrix: Soil

Sample Flags: DL-03

Herbicides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2,4-D [1]	ND	820	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 17:21	TG
2,4-DB [1]	ND	820	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 17:21	TG
2,4,5-TP (Silvex) [1]	ND	82	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 17:21	TG
2,4,5-T [1]	ND	82	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 17:21	TG
Dalalpon [1]	ND	2000	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 17:21	TG
Dicamba [1]	ND	82	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 17:21	TG
Dichloroprop [1]	ND	820	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 17:21	TG
Dinoseb [1]	ND	410	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 17:21	TG
MCPA [1]	ND	82000	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 17:21	TG
MCPP [1]	ND	82000	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 17:21	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,4-Dichlorophenylacetic acid [1]	35.2	30-150		5/3/22 17:21
2,4-Dichlorophenylacetic acid [2]	41.9	30-150		5/3/22 17:21

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-05 | Sampled: 4/15/2022 08:00

Sample ID: 22D1164-05

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	ND	33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
C19-C36 Aliphatics	46	33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
Unadjusted C11-C22 Aromatics	54	33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
C11-C22 Aromatics	52	33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
Acenaphthene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
Acenaphthylene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
Anthracene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
Benzo(a)anthracene	0.42	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
Benzo(a)pyrene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
Benzo(b)fluoranthene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
Benzo(g,h,i)perylene	0.53	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
Benzo(k)fluoranthene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
Chrysene	0.50	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
Dibenz(a,h)anthracene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
Fluoranthene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
Fluorene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
Indeno(1,2,3-cd)pyrene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
2-Methylnaphthalene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
Naphthalene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
Phenanthrene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH
Pyrene	ND	0.33	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:26	TYH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	42.6	40-140		4/22/22 7:26
o-Terphenyl (OTP)	40.5	40-140		4/22/22 7:26
2-Bromonaphthalene	103	40-140		4/22/22 7:26
2-Fluorobiphenyl	99.4	40-140		4/22/22 7:26

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-05 | Sampled: 4/15/2022 08:00

Sample ID: 22D1164-05

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	10	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:22	MJH
Cadmium	ND	1.0	mg/Kg dry	1		SW-846 6010D	4/19/22	4/26/22 19:35	ATP
Chromium	6.7	2.1	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:22	MJH
Copper	9.2	2.1	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:22	MJH
Lead	13	1.6	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:22	MJH
Mercury	ND	0.084	mg/Kg dry	1		SW-846 7471B	4/19/22	4/20/22 12:11	TDK
Nickel	2.3	2.1	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:22	MJH
Zinc	20	2.1	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:22	MJH

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-05 | Sampled: 4/15/2022 08:00

Sample ID: 22D1164-05

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	30.5		% Wt	1	R-02	SM 2540G	4/19/22	4/20/22 18:01	BMB
Total Organic Carbon	360000	330	mg/Kg dry	1		SW 846 9060A	4/21/22	4/21/22 13:42	IS

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-06 | Sampled: 4/15/2022 08:45

Sample ID: 22D1164-06

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	9.0	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Acrylonitrile	ND	0.90	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.090	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Benzene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Bromobenzene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Bromochloromethane	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Bromodichloromethane	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Bromoform	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Bromomethane	ND	0.36	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
2-Butanone (MEK)	ND	3.6	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
tert-Butyl Alcohol (TBA)	ND	3.6	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
n-Butylbenzene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
sec-Butylbenzene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
tert-Butylbenzene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.090	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Carbon Disulfide	ND	0.90	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Carbon Tetrachloride	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Chlorobenzene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Chlorodibromomethane	ND	0.090	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Chloroethane	ND	0.36	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Chloroform	ND	0.36	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Chloromethane	ND	0.36	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
2-Chlorotoluene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
4-Chlorotoluene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.90	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,2-Dibromoethane (EDB)	ND	0.090	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Dibromomethane	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,2-Dichlorobenzene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,3-Dichlorobenzene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,4-Dichlorobenzene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
trans-1,4-Dichloro-2-butene	ND	0.36	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.36	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,1-Dichloroethane	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,2-Dichloroethane	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,1-Dichloroethylene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
cis-1,2-Dichloroethylene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
trans-1,2-Dichloroethylene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,2-Dichloropropane	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,3-Dichloropropane	ND	0.090	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
2,2-Dichloropropane	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,1-Dichloropropene	ND	0.36	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
cis-1,3-Dichloropropene	ND	0.090	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
trans-1,3-Dichloropropene	ND	0.090	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Diethyl Ether	ND	0.36	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-06 | Sampled: 4/15/2022 08:45

Sample ID: 22D1164-06

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.090	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,4-Dioxane	ND	9.0	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Ethylbenzene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Hexachlorobutadiene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
2-Hexanone (MBK)	ND	1.8	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Isopropylbenzene (Cumene)	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Methyl Acetate	ND	1.8	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Methyl Cyclohexane	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Methylene Chloride	ND	0.90	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
4-Methyl-2-pentanone (MIBK)	ND	1.8	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Naphthalene	ND	0.36	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
n-Propylbenzene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Styrene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,1,1,2-Tetrachloroethane	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,1,2,2-Tetrachloroethane	ND	0.090	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Tetrachloroethylene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Tetrahydrofuran	ND	1.8	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Toluene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,2,3-Trichlorobenzene	ND	0.90	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,2,4-Trichlorobenzene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,3,5-Trichlorobenzene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,1,1-Trichloroethane	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,1,2-Trichloroethane	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Trichloroethylene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Trichlorofluoromethane (Freon 11)	ND	0.36	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,2,3-Trichloropropane	ND	0.36	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,2,4-Trimethylbenzene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
1,3,5-Trimethylbenzene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
Vinyl Chloride	ND	0.36	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
m+p Xylene	ND	0.36	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF
o-Xylene	ND	0.18	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:02	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	95.4	70-130		4/18/22 14:02
Toluene-d8	98.9	70-130		4/18/22 14:02
4-Bromofluorobenzene	97.8	70-130		4/18/22 14:02

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-06 | Sampled: 4/15/2022 08:45

Sample ID: 22D1164-06

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.46	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:21	IMR
Acenaphthylene	ND	0.46	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:21	IMR
Anthracene	ND	0.46	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:21	IMR
Benzo(a)anthracene	ND	0.46	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:21	IMR
Benzo(a)pyrene	ND	0.46	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:21	IMR
Benzo(b)fluoranthene	ND	0.46	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:21	IMR
Benzo(g,h,i)perylene	ND	0.46	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:21	IMR
Benzo(k)fluoranthene	ND	0.46	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:21	IMR
Chrysene	ND	0.46	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:21	IMR
Dibenz(a,h)anthracene	ND	0.46	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:21	IMR
Fluoranthene	ND	0.46	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:21	IMR
Fluorene	ND	0.46	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:21	IMR
Indeno(1,2,3-cd)pyrene	ND	0.46	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:21	IMR
2-Methylnaphthalene	ND	0.46	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:21	IMR
Naphthalene	ND	0.46	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:21	IMR
Phenanthrene	ND	0.46	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:21	IMR
Pyrene	ND	0.46	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:21	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Nitrobenzene-d5	57.7	30-130		4/21/22 17:21
2-Fluorobiphenyl	66.0	30-130		4/21/22 17:21
p-Terphenyl-d14	62.3	30-130		4/21/22 17:21

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-06 | Sampled: 4/15/2022 08:45

Sample ID: 22D1164-06

Sample Matrix: Soil

Sample Flags: DL-03

Herbicides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2,4-D [1]	ND	670	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 18:00	TG
2,4-DB [1]	ND	670	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 18:00	TG
2,4,5-TP (Silvex) [1]	ND	67	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 18:00	TG
2,4,5-T [1]	ND	67	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 18:00	TG
Dalalpon [1]	ND	1700	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 18:00	TG
Dicamba [1]	ND	67	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 18:00	TG
Dichloroprop [1]	ND	670	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 18:00	TG
Dinoseb [1]	ND	340	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 18:00	TG
MCPA [1]	ND	67000	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 18:00	TG
MCPP [1]	ND	67000	µg/kg dry	10		SW-846 8151A	4/26/22	5/3/22 18:00	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,4-Dichlorophenylacetic acid [1]	115	30-150		5/3/22 18:00
2,4-Dichlorophenylacetic acid [2]	104	30-150		5/3/22 18:00

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-06 | Sampled: 4/15/2022 08:45

Sample ID: 22D1164-06

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	ND	27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
C19-C36 Aliphatics	34	27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
Unadjusted C11-C22 Aromatics	49	27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
C11-C22 Aromatics	48	27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
Acenaphthene	ND	0.27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
Acenaphthylene	ND	0.27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
Anthracene	ND	0.27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
Benzo(a)anthracene	0.39	0.27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
Benzo(a)pyrene	ND	0.27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
Benzo(b)fluoranthene	ND	0.27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
Benzo(g,h,i)perylene	ND	0.27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
Benzo(k)fluoranthene	ND	0.27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
Chrysene	0.47	0.27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
Dibenz(a,h)anthracene	ND	0.27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
Fluoranthene	ND	0.27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
Fluorene	ND	0.27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
Indeno(1,2,3-cd)pyrene	ND	0.27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
2-Methylnaphthalene	ND	0.27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
Naphthalene	ND	0.27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
Phenanthrene	ND	0.27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH
Pyrene	ND	0.27	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 7:47	TYH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	42.6	40-140		4/22/22 7:47
o-Terphenyl (OTP)	43.5	40-140		4/22/22 7:47
2-Bromonaphthalene	110	40-140		4/22/22 7:47
2-Fluorobiphenyl	105	40-140		4/22/22 7:47

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-06 | Sampled: 4/15/2022 08:45

Sample ID: 22D1164-06

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	13	8.5	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:29	MJH
Cadmium	ND	0.85	mg/Kg dry	1		SW-846 6010D	4/19/22	4/26/22 19:42	ATP
Chromium	5.7	1.7	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:29	MJH
Copper	24	1.7	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:29	MJH
Lead	28	1.3	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:29	MJH
Mercury	ND	0.067	mg/Kg dry	1		SW-846 7471B	4/19/22	4/20/22 12:13	TDK
Nickel	4.6	1.7	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:29	MJH
Zinc	63	1.7	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:29	MJH

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-06 | Sampled: 4/15/2022 08:45

Sample ID: 22D1164-06

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	36.8		% Wt	1	R-02	SM 2540G	4/19/22	4/20/22 18:01	BMB
Total Organic Carbon	190000	270	mg/Kg dry	1		SW 846 9060A	4/21/22	4/21/22 14:14	IS

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-07 | Sampled: 4/15/2022 09:30

Sample ID: 22D1164-07

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	21	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Acrylonitrile	ND	2.1	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.21	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Benzene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Bromobenzene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Bromochloromethane	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Bromodichloromethane	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Bromoform	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Bromomethane	ND	0.84	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
2-Butanone (MEK)	ND	8.4	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
tert-Butyl Alcohol (TBA)	ND	8.4	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
n-Butylbenzene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
sec-Butylbenzene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
tert-Butylbenzene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.21	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Carbon Disulfide	ND	2.1	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Carbon Tetrachloride	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Chlorobenzene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Chlorodibromomethane	ND	0.21	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Chloroethane	ND	0.84	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Chloroform	ND	0.84	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Chloromethane	ND	0.84	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
2-Chlorotoluene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
4-Chlorotoluene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.1	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,2-Dibromoethane (EDB)	ND	0.21	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Dibromomethane	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,2-Dichlorobenzene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,3-Dichlorobenzene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,4-Dichlorobenzene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
trans-1,4-Dichloro-2-butene	ND	0.84	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.84	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,1-Dichloroethane	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,2-Dichloroethane	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,1-Dichloroethylene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
cis-1,2-Dichloroethylene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
trans-1,2-Dichloroethylene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,2-Dichloropropane	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,3-Dichloropropane	ND	0.21	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
2,2-Dichloropropane	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,1-Dichloropropene	ND	0.84	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
cis-1,3-Dichloropropene	ND	0.21	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
trans-1,3-Dichloropropene	ND	0.21	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Diethyl Ether	ND	0.84	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-07 | Sampled: 4/15/2022 09:30

Sample ID: 22D1164-07

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.21	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,4-Dioxane	ND	21	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Ethylbenzene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Hexachlorobutadiene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
2-Hexanone (MBK)	ND	4.2	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Isopropylbenzene (Cumene)	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Methyl Acetate	ND	4.2	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Methyl Cyclohexane	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Methylene Chloride	ND	2.1	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
4-Methyl-2-pentanone (MIBK)	ND	4.2	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Naphthalene	ND	0.84	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
n-Propylbenzene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Styrene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,1,1,2-Tetrachloroethane	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,1,2,2-Tetrachloroethane	ND	0.21	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Tetrachloroethylene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Tetrahydrofuran	ND	4.2	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Toluene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,2,3-Trichlorobenzene	ND	2.1	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,2,4-Trichlorobenzene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,3,5-Trichlorobenzene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,1,1-Trichloroethane	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,1,2-Trichloroethane	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Trichloroethylene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Trichlorofluoromethane (Freon 11)	ND	0.84	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,2,3-Trichloropropane	ND	0.84	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,2,4-Trimethylbenzene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
1,3,5-Trimethylbenzene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
Vinyl Chloride	ND	0.84	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
m+p Xylene	ND	0.84	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF
o-Xylene	ND	0.42	mg/Kg dry	1		SW-846 8260D	4/18/22	4/18/22 14:26	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	94.4	70-130		4/18/22 14:26
Toluene-d8	97.5	70-130		4/18/22 14:26
4-Bromofluorobenzene	95.5	70-130		4/18/22 14:26

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-07 | Sampled: 4/15/2022 09:30

Sample ID: 22D1164-07

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.84	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:47	IMR
Acenaphthylene	ND	0.84	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:47	IMR
Anthracene	ND	0.84	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:47	IMR
Benzo(a)anthracene	ND	0.84	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:47	IMR
Benzo(a)pyrene	ND	0.84	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:47	IMR
Benzo(b)fluoranthene	ND	0.84	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:47	IMR
Benzo(g,h,i)perylene	ND	0.84	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:47	IMR
Benzo(k)fluoranthene	ND	0.84	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:47	IMR
Chrysene	ND	0.84	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:47	IMR
Dibenz(a,h)anthracene	ND	0.84	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:47	IMR
Fluoranthene	ND	0.84	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:47	IMR
Fluorene	ND	0.84	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:47	IMR
Indeno(1,2,3-cd)pyrene	ND	0.84	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:47	IMR
2-Methylnaphthalene	ND	0.84	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:47	IMR
Naphthalene	ND	0.84	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:47	IMR
Phenanthrene	ND	0.84	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:47	IMR
Pyrene	ND	0.84	mg/Kg dry	1		SW-846 8270E	4/18/22	4/21/22 17:47	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Nitrobenzene-d5	58.9	30-130		4/21/22 17:47
2-Fluorobiphenyl	62.8	30-130		4/21/22 17:47
p-Terphenyl-d14	58.6	30-130		4/21/22 17:47

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-07 | Sampled: 4/15/2022 09:30

Sample ID: 22D1164-07

Sample Matrix: Soil

Sample Flags: DL-03

Herbicides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2,4-D [1]	ND	1300	µg/kg dry	10		SW-846 8151A	4/26/22	5/5/22 10:51	TG
2,4-DB [1]	ND	1300	µg/kg dry	10		SW-846 8151A	4/26/22	5/5/22 10:51	TG
2,4,5-TP (Silvex) [1]	ND	130	µg/kg dry	10		SW-846 8151A	4/26/22	5/5/22 10:51	TG
2,4,5-T [1]	ND	130	µg/kg dry	10		SW-846 8151A	4/26/22	5/5/22 10:51	TG
Dalalpon [1]	ND	3100	µg/kg dry	10		SW-846 8151A	4/26/22	5/5/22 10:51	TG
Dicamba [1]	ND	130	µg/kg dry	10		SW-846 8151A	4/26/22	5/5/22 10:51	TG
Dichloroprop [1]	ND	1300	µg/kg dry	10		SW-846 8151A	4/26/22	5/5/22 10:51	TG
Dinoseb [1]	ND	630	µg/kg dry	10		SW-846 8151A	4/26/22	5/5/22 10:51	TG
MCPA [1]	ND	130000	µg/kg dry	10		SW-846 8151A	4/26/22	5/5/22 10:51	TG
MCPP [1]	ND	130000	µg/kg dry	10		SW-846 8151A	4/26/22	5/5/22 10:51	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2,4-Dichlorophenylacetic acid [1]	*	30-150	S-01	5/5/22 10:51
2,4-Dichlorophenylacetic acid [2]	*	30-150	S-01	5/5/22 10:51

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-07 | Sampled: 4/15/2022 09:30

Sample ID: 22D1164-07

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	ND	50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
C19-C36 Aliphatics	ND	50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
Unadjusted C11-C22 Aromatics	100	50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
C11-C22 Aromatics	100	50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
Acenaphthene	ND	0.50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
Acenaphthylene	ND	0.50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
Anthracene	ND	0.50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
Benzo(a)anthracene	ND	0.50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
Benzo(a)pyrene	ND	0.50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
Benzo(b)fluoranthene	ND	0.50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
Benzo(g,h,i)perylene	ND	0.50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
Benzo(k)fluoranthene	ND	0.50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
Chrysene	ND	0.50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
Dibenz(a,h)anthracene	ND	0.50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
Fluoranthene	ND	0.50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
Fluorene	ND	0.50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
Indeno(1,2,3-cd)pyrene	ND	0.50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
2-Methylnaphthalene	ND	0.50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
Naphthalene	ND	0.50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
Phenanthrene	ND	0.50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH
Pyrene	ND	0.50	mg/Kg dry	1		MADEP EPH rev 2.1	4/18/22	4/22/22 8:07	TYH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	47.0	40-140		4/22/22 8:07
o-Terphenyl (OTP)	43.3	40-140		4/22/22 8:07
2-Bromonaphthalene	109	40-140		4/22/22 8:07
2-Fluorobiphenyl	105	40-140		4/22/22 8:07

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-07 | Sampled: 4/15/2022 09:30

Sample ID: 22D1164-07

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	16	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:36	MJH
Cadmium	ND	1.6	mg/Kg dry	1		SW-846 6010D	4/19/22	4/26/22 19:49	ATP
Chromium	7.6	3.1	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:36	MJH
Copper	24	3.1	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:36	MJH
Lead	21	2.3	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:36	MJH
Mercury	ND	0.12	mg/Kg dry	1		SW-846 7471B	4/19/22	4/20/22 12:14	TDK
Nickel	3.5	3.1	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:36	MJH
Zinc	47	3.1	mg/Kg dry	1		SW-846 6010D	4/19/22	4/21/22 21:36	MJH

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D1164

Date Received: 4/15/2022

Field Sample #: 1701220414-07 | Sampled: 4/15/2022 09:30

Sample ID: 22D1164-07

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	20.1		% Wt	1	R-02	SM 2540G	4/19/22	4/20/22 18:01	BMB
Total Organic Carbon	270000	500	mg/Kg dry	1		SW 846 9060A	4/21/22	4/21/22 14:52	IS

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Sample Extraction Data

Prep Method: SW-846 3546 **Analytical Method: MADEP EPH rev 2.1**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22D1164-01 [1701220414-01]	B306093	20.0	2.00	04/18/22
22D1164-02 [1701220414-02]	B306093	20.0	2.00	04/18/22
22D1164-04 [1701220414-04]	B306093	20.0	2.00	04/18/22
22D1164-05 [1701220414-05]	B306093	20.0	2.00	04/18/22
22D1164-06 [1701220414-06]	B306093	20.0	2.00	04/18/22
22D1164-07 [1701220414-07]	B306093	20.0	2.00	04/18/22

Prep Method: SW-846 3546 **Analytical Method: MADEP EPH rev 2.1**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22D1164-03RE1 [1701220414-03]	B306528	20.0	2.00	04/22/22

Prep Method: % Solids **Analytical Method: SM 2540G**

Lab Number [Field ID]	Batch	Date
22D1164-01 [1701220414-01]	B306195	04/19/22
22D1164-02 [1701220414-02]	B306195	04/19/22
22D1164-03 [1701220414-03]	B306195	04/19/22
22D1164-04 [1701220414-04]	B306195	04/19/22
22D1164-05 [1701220414-05]	B306195	04/19/22
22D1164-06 [1701220414-06]	B306195	04/19/22
22D1164-07 [1701220414-07]	B306195	04/19/22

SW 846 9060A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22D1164-01 [1701220414-01]	B306334	1.00	1.00	04/21/22
22D1164-02 [1701220414-02]	B306334	1.00	1.00	04/21/22
22D1164-03 [1701220414-03]	B306334	1.00	1.00	04/21/22
22D1164-04 [1701220414-04]	B306334	1.00	1.00	04/21/22
22D1164-05 [1701220414-05]	B306334	1.00	1.00	04/21/22
22D1164-06 [1701220414-06]	B306334	1.00	1.00	04/21/22
22D1164-07 [1701220414-07]	B306334	1.00	1.00	04/21/22

Prep Method: SW-846 3050B **Analytical Method: SW-846 6010D**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22D1164-02 [1701220414-02]	B306138	1.53	50.0	04/19/22
22D1164-03 [1701220414-03]	B306138	1.50	50.0	04/19/22
22D1164-04 [1701220414-04]	B306138	1.58	50.0	04/19/22
22D1164-05 [1701220414-05]	B306138	1.57	50.0	04/19/22
22D1164-06 [1701220414-06]	B306138	1.61	50.0	04/19/22
22D1164-07 [1701220414-07]	B306138	1.60	50.0	04/19/22

Prep Method: SW-846 3050B **Analytical Method: SW-846 6010D**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22D1164-01RE1 [1701220414-01]	B307085	1.55	50.0	04/28/22

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Sample Extraction Data

Prep Method: SW-846 7471 **Analytical Method: SW-846 7471B**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22D1164-01 [1701220414-01]	B306174	0.613	50.0	04/19/22
22D1164-02 [1701220414-02]	B306174	0.586	50.0	04/19/22
22D1164-03 [1701220414-03]	B306174	0.583	50.0	04/19/22
22D1164-04 [1701220414-04]	B306174	0.595	50.0	04/19/22
22D1164-05 [1701220414-05]	B306174	0.584	50.0	04/19/22
22D1164-06 [1701220414-06]	B306174	0.610	50.0	04/19/22
22D1164-07 [1701220414-07]	B306174	0.618	50.0	04/19/22

Prep Method: SW-846 8151 **Analytical Method: SW-846 8151A**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22D1164-01 [1701220414-01]	B306829	20.0	5.00	04/26/22
22D1164-02 [1701220414-02]	B306829	20.0	5.00	04/26/22
22D1164-03 [1701220414-03]	B306829	20.1	5.00	04/26/22
22D1164-04 [1701220414-04]	B306829	20.0	5.00	04/26/22
22D1164-05 [1701220414-05]	B306829	20.0	5.00	04/26/22
22D1164-06 [1701220414-06]	B306829	20.2	5.00	04/26/22
22D1164-07 [1701220414-07]	B306829	19.8	5.00	04/26/22

Prep Method: SW-846 5035 **Analytical Method: SW-846 8260D**

Lab Number [Field ID]	Batch	Sample Amount(g)	Methanol Volume(mL)	Methanol Aliquot(mL)	Final Volume(mL)	Date
22D1164-01 [1701220414-01]	B306016	5.49	8.74	1	50	04/18/22
22D1164-02 [1701220414-02]	B306016	6.09	9.23	1	50	04/18/22
22D1164-03 [1701220414-03]	B306016	5.26	8.56	1	50	04/18/22
22D1164-04 [1701220414-04]	B306016	4.94	7.55	1	50	04/18/22
22D1164-05 [1701220414-05]	B306016	5.08	8.53	1	50	04/18/22
22D1164-06 [1701220414-06]	B306016	7.29	9.61	1	50	04/18/22
22D1164-07 [1701220414-07]	B306016	5.63	9.50	1	50	04/18/22

Prep Method: SW-846 3546 **Analytical Method: SW-846 8270E**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22D1164-01 [1701220414-01]	B306023	30.0	1.00	04/18/22
22D1164-02 [1701220414-02]	B306023	30.0	1.00	04/18/22
22D1164-03 [1701220414-03]	B306023	30.0	1.00	04/18/22
22D1164-04 [1701220414-04]	B306023	30.0	1.00	04/18/22
22D1164-05 [1701220414-05]	B306023	30.0	1.00	04/18/22
22D1164-06 [1701220414-06]	B306023	30.0	1.00	04/18/22
22D1164-07 [1701220414-07]	B306023	30.0	1.00	04/18/22

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B306016 - SW-846 5035										
Blank (B306016-BLK1)				Prepared & Analyzed: 04/18/22						
Acetone	ND	2.5	mg/Kg wet							
Acrylonitrile	ND	0.25	mg/Kg wet							
tert-Amyl Methyl Ether (TAME)	ND	0.025	mg/Kg wet							
Benzene	ND	0.050	mg/Kg wet							
Bromobenzene	ND	0.050	mg/Kg wet							
Bromochloromethane	ND	0.050	mg/Kg wet							
Bromodichloromethane	ND	0.050	mg/Kg wet							
Bromoform	ND	0.050	mg/Kg wet							
Bromomethane	ND	0.10	mg/Kg wet							
2-Butanone (MEK)	ND	1.0	mg/Kg wet							
tert-Butyl Alcohol (TBA)	ND	1.0	mg/Kg wet							
n-Butylbenzene	ND	0.050	mg/Kg wet							
sec-Butylbenzene	ND	0.050	mg/Kg wet							
tert-Butylbenzene	ND	0.050	mg/Kg wet							
tert-Butyl Ethyl Ether (TBEE)	ND	0.025	mg/Kg wet							
Carbon Disulfide	ND	0.25	mg/Kg wet							
Carbon Tetrachloride	ND	0.050	mg/Kg wet							
Chlorobenzene	ND	0.050	mg/Kg wet							
Chlorodibromomethane	ND	0.025	mg/Kg wet							
Chloroethane	ND	0.10	mg/Kg wet							
Chloroform	ND	0.10	mg/Kg wet							
Chloromethane	ND	0.10	mg/Kg wet							
2-Chlorotoluene	ND	0.050	mg/Kg wet							
4-Chlorotoluene	ND	0.050	mg/Kg wet							
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.25	mg/Kg wet							
1,2-Dibromoethane (EDB)	ND	0.025	mg/Kg wet							
Dibromomethane	ND	0.050	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.050	mg/Kg wet							
1,3-Dichlorobenzene	ND	0.050	mg/Kg wet							
1,4-Dichlorobenzene	ND	0.050	mg/Kg wet							
trans-1,4-Dichloro-2-butene	ND	0.10	mg/Kg wet							
Dichlorodifluoromethane (Freon 12)	ND	0.10	mg/Kg wet							
1,1-Dichloroethane	ND	0.050	mg/Kg wet							
1,2-Dichloroethane	ND	0.050	mg/Kg wet							
1,1-Dichloroethylene	ND	0.050	mg/Kg wet							
cis-1,2-Dichloroethylene	ND	0.050	mg/Kg wet							
trans-1,2-Dichloroethylene	ND	0.050	mg/Kg wet							
Dichlorofluoromethane (Freon 21)	ND	0.050	mg/Kg wet							
1,2-Dichloropropane	ND	0.050	mg/Kg wet							
1,3-Dichloropropane	ND	0.025	mg/Kg wet							
2,2-Dichloropropane	ND	0.050	mg/Kg wet							
1,1-Dichloropropene	ND	0.10	mg/Kg wet							
cis-1,3-Dichloropropene	ND	0.025	mg/Kg wet							
trans-1,3-Dichloropropene	ND	0.025	mg/Kg wet							
Diethyl Ether	ND	0.10	mg/Kg wet							
Difluorochloromethane (Freon 22)	ND	0.050	mg/Kg wet							
Diisopropyl Ether (DIPE)	ND	0.025	mg/Kg wet							
1,4-Dioxane	ND	2.5	mg/Kg wet							
Ethylbenzene	ND	0.050	mg/Kg wet							
Hexachlorobutadiene	ND	0.050	mg/Kg wet							
2-Hexanone (MBK)	ND	0.50	mg/Kg wet							
Isopropylbenzene (Cumene)	ND	0.050	mg/Kg wet							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B306016 - SW-846 5035										
Blank (B306016-BLK1)				Prepared & Analyzed: 04/18/22						
p-Isopropyltoluene (p-Cymene)	ND	0.050	mg/Kg wet							
Methyl Acetate	ND	0.50	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.050	mg/Kg wet							
Methyl Cyclohexane	ND	0.050	mg/Kg wet							
Methylene Chloride	ND	0.25	mg/Kg wet							
4-Methyl-2-pentanone (MIBK)	ND	0.50	mg/Kg wet							
Naphthalene	ND	0.10	mg/Kg wet							
n-Propylbenzene	ND	0.050	mg/Kg wet							
Styrene	ND	0.050	mg/Kg wet							
1,1,1,2-Tetrachloroethane	ND	0.050	mg/Kg wet							
1,1,2,2-Tetrachloroethane	ND	0.025	mg/Kg wet							
Tetrachloroethylene	ND	0.050	mg/Kg wet							
Tetrahydrofuran	ND	0.50	mg/Kg wet							
Toluene	ND	0.050	mg/Kg wet							
1,2,3-Trichlorobenzene	ND	0.25	mg/Kg wet							
1,2,4-Trichlorobenzene	ND	0.050	mg/Kg wet							
1,3,5-Trichlorobenzene	ND	0.050	mg/Kg wet							
1,1,1-Trichloroethane	ND	0.050	mg/Kg wet							
1,1,2-Trichloroethane	ND	0.050	mg/Kg wet							
Trichloroethylene	ND	0.050	mg/Kg wet							
Trichlorofluoromethane (Freon 11)	ND	0.10	mg/Kg wet							
1,2,3-Trichloropropane	ND	0.10	mg/Kg wet							
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.050	mg/Kg wet							
1,2,4-Trimethylbenzene	ND	0.050	mg/Kg wet							
1,3,5-Trimethylbenzene	ND	0.050	mg/Kg wet							
Vinyl Chloride	ND	0.10	mg/Kg wet							
m+p Xylene	ND	0.10	mg/Kg wet							
o-Xylene	ND	0.050	mg/Kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0240*		mg/Kg wet	0.0250		95.8	70-130			
Surrogate: Toluene-d8	*0.0244*		mg/Kg wet	0.0250		97.8	70-130			
Surrogate: 4-Bromofluorobenzene	*0.0239*		mg/Kg wet	0.0250		95.5	70-130			
LCS (B306016-BS1)				Prepared & Analyzed: 04/18/22						
Acetone	0.109	0.057	mg/Kg wet	0.113		96.2	70-160			†
Acrylonitrile	0.0114	0.0057	mg/Kg wet	0.0113		100	70-130			
tert-Amyl Methyl Ether (TAME)	0.0128	0.00057	mg/Kg wet	0.0113		113	70-130			
Benzene	0.0128	0.0011	mg/Kg wet	0.0113		113	70-130			
Bromobenzene	0.0114	0.0011	mg/Kg wet	0.0113		100	70-130			
Bromochloromethane	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130			
Bromodichloromethane	0.0123	0.0011	mg/Kg wet	0.0113		109	70-130			
Bromoform	0.0113	0.0011	mg/Kg wet	0.0113		99.5	70-130			
Bromomethane	0.0133	0.0023	mg/Kg wet	0.0113		117	40-130			†
2-Butanone (MEK)	0.106	0.023	mg/Kg wet	0.113		93.6	70-160			†
tert-Butyl Alcohol (TBA)	0.116	0.023	mg/Kg wet	0.113		102	40-130			†
n-Butylbenzene	0.0116	0.0011	mg/Kg wet	0.0113		102	70-130			
sec-Butylbenzene	0.0123	0.0011	mg/Kg wet	0.0113		109	70-130			
tert-Butylbenzene	0.0125	0.0011	mg/Kg wet	0.0113		110	70-160			†
tert-Butyl Ethyl Ether (TBEE)	0.0121	0.00057	mg/Kg wet	0.0113		106	70-130			
Carbon Disulfide	0.128	0.0057	mg/Kg wet	0.113		113	70-130			
Carbon Tetrachloride	0.0127	0.0011	mg/Kg wet	0.0113		112	70-130			
Chlorobenzene	0.0128	0.0011	mg/Kg wet	0.0113		113	70-130			
Chlorodibromomethane	0.0118	0.00057	mg/Kg wet	0.0113		104	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B306016 - SW-846 5035												
LCS (B306016-BS1)				Prepared & Analyzed: 04/18/22								
Chloroethane	0.0155	0.0023	mg/Kg wet	0.0113		**136**	*	70-130			L-02, V-20	
Chloroform	0.0127	0.0023	mg/Kg wet	0.0113		112		70-130				
Chloromethane	0.0127	0.0023	mg/Kg wet	0.0113		112		70-130			V-20	
2-Chlorotoluene	0.0115	0.0011	mg/Kg wet	0.0113		101		70-130				
4-Chlorotoluene	0.0119	0.0011	mg/Kg wet	0.0113		105		70-130				
1,2-Dibromo-3-chloropropane (DBCP)	0.0106	0.0057	mg/Kg wet	0.0113		93.9		70-130				
1,2-Dibromoethane (EDB)	0.0116	0.00057	mg/Kg wet	0.0113		103		70-130				
Dibromomethane	0.0122	0.0011	mg/Kg wet	0.0113		108		70-130				
1,2-Dichlorobenzene	0.0126	0.0011	mg/Kg wet	0.0113		111		70-130				
1,3-Dichlorobenzene	0.0124	0.0011	mg/Kg wet	0.0113		109		70-130				
1,4-Dichlorobenzene	0.0119	0.0011	mg/Kg wet	0.0113		105		70-130				
trans-1,4-Dichloro-2-butene	0.0104	0.0023	mg/Kg wet	0.0113		91.8		70-130				
Dichlorodifluoromethane (Freon 12)	0.0108	0.0023	mg/Kg wet	0.0113		94.9		40-160				†
1,1-Dichloroethane	0.0127	0.0011	mg/Kg wet	0.0113		112		70-130				
1,2-Dichloroethane	0.0115	0.0011	mg/Kg wet	0.0113		101		70-130				
1,1-Dichloroethylene	0.0136	0.0011	mg/Kg wet	0.0113		120		70-130			V-20	
cis-1,2-Dichloroethylene	0.0127	0.0011	mg/Kg wet	0.0113		112		70-130				
trans-1,2-Dichloroethylene	0.0129	0.0011	mg/Kg wet	0.0113		114		70-130				
Dichlorofluoromethane (Freon 21)	0.0120	0.0011	mg/Kg wet	0.0113		106		70-130				
1,2-Dichloropropane	0.0122	0.0011	mg/Kg wet	0.0113		108		70-130				
1,3-Dichloropropane	0.0118	0.00057	mg/Kg wet	0.0113		104		70-130				
2,2-Dichloropropane	0.0130	0.0011	mg/Kg wet	0.0113		114		70-130				
1,1-Dichloropropene	0.0125	0.0023	mg/Kg wet	0.0113		110		70-130				
cis-1,3-Dichloropropene	0.0121	0.00057	mg/Kg wet	0.0113		106		70-130				
trans-1,3-Dichloropropene	0.0110	0.00057	mg/Kg wet	0.0113		97.2		70-130				
Diethyl Ether	0.0119	0.0023	mg/Kg wet	0.0113		105		70-130				
Difluorochloromethane (Freon 22)	0.00962	0.0011	mg/Kg wet	0.0113		84.9		70-130				
Diisopropyl Ether (DIPE)	0.0116	0.00057	mg/Kg wet	0.0113		102		70-130				
1,4-Dioxane	0.0985	0.057	mg/Kg wet	0.113		86.9		40-160				†
Ethylbenzene	0.0123	0.0011	mg/Kg wet	0.0113		109		70-130				
Hexachlorobutadiene	0.0117	0.0011	mg/Kg wet	0.0113		104		70-160				
2-Hexanone (MBK)	0.0989	0.011	mg/Kg wet	0.113		87.3		70-160				†
Isopropylbenzene (Cumene)	0.0126	0.0011	mg/Kg wet	0.0113		111		70-130				
p-Isopropyltoluene (p-Cymene)	0.0120	0.0011	mg/Kg wet	0.0113		106		70-130				
Methyl Acetate	0.0121	0.011	mg/Kg wet	0.0113		107		70-130				
Methyl tert-Butyl Ether (MTBE)	0.0129	0.0011	mg/Kg wet	0.0113		114		70-130				
Methyl Cyclohexane	0.0116	0.0011	mg/Kg wet	0.0113		102		70-130				
Methylene Chloride	0.0129	0.0057	mg/Kg wet	0.0113		113		40-160				†
4-Methyl-2-pentanone (MIBK)	0.106	0.011	mg/Kg wet	0.113		93.7		70-160				†
Naphthalene	0.00938	0.0023	mg/Kg wet	0.0113		82.8		40-130				†
n-Propylbenzene	0.0119	0.0011	mg/Kg wet	0.0113		105		70-130				
Styrene	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130				
1,1,1,2-Tetrachloroethane	0.0126	0.0011	mg/Kg wet	0.0113		111		70-130				
1,1,2,2-Tetrachloroethane	0.0119	0.00057	mg/Kg wet	0.0113		105		70-130				
Tetrachloroethylene	0.0125	0.0011	mg/Kg wet	0.0113		111		70-130				
Tetrahydrofuran	0.0115	0.011	mg/Kg wet	0.0113		101		70-130				
Toluene	0.0125	0.0011	mg/Kg wet	0.0113		111		70-130				
1,2,3-Trichlorobenzene	0.0103	0.0057	mg/Kg wet	0.0113		91.0		70-130				
1,2,4-Trichlorobenzene	0.0103	0.0011	mg/Kg wet	0.0113		90.9		70-130				
1,3,5-Trichlorobenzene	0.0110	0.0011	mg/Kg wet	0.0113		96.9		70-130				
1,1,1-Trichloroethane	0.0130	0.0011	mg/Kg wet	0.0113		114		70-130				
1,1,2-Trichloroethane	0.0125	0.0011	mg/Kg wet	0.0113		110		70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B306016 - SW-846 5035												
LCS (B306016-BS1)				Prepared & Analyzed: 04/18/22								
Trichloroethylene	0.0131	0.0011	mg/Kg wet	0.0113		115		70-130				
Trichlorofluoromethane (Freon 11)	0.0129	0.0023	mg/Kg wet	0.0113		114		70-130				
1,2,3-Trichloropropane	0.0101	0.0023	mg/Kg wet	0.0113		89.5		70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.0141	0.0011	mg/Kg wet	0.0113		124		70-130			V-20	
1,2,4-Trimethylbenzene	0.0118	0.0011	mg/Kg wet	0.0113		104		70-130				
1,3,5-Trimethylbenzene	0.0118	0.0011	mg/Kg wet	0.0113		104		70-130				
Vinyl Chloride	0.0127	0.0023	mg/Kg wet	0.0113		112		40-130				†
m+p Xylene	0.0244	0.0023	mg/Kg wet	0.0227		107		70-130				
o-Xylene	0.0121	0.0011	mg/Kg wet	0.0113		107		70-130				
Surrogate: 1,2-Dichloroethane-d4	*0.0271*		mg/Kg wet	0.0283		95.6		70-130				
Surrogate: Toluene-d8	*0.0282*		mg/Kg wet	0.0283		99.6		70-130				
Surrogate: 4-Bromofluorobenzene	*0.0267*		mg/Kg wet	0.0283		94.1		70-130				
LCS Dup (B306016-BSD1)				Prepared & Analyzed: 04/18/22								
Acetone	0.114	0.057	mg/Kg wet	0.113		101		70-160	4.76	25		†
Acrylonitrile	0.0116	0.0057	mg/Kg wet	0.0113		102		70-130	1.58	25		
tert-Amyl Methyl Ether (TAME)	0.0135	0.00057	mg/Kg wet	0.0113		119		70-130	5.44	25		
Benzene	0.0129	0.0011	mg/Kg wet	0.0113		113		70-130	0.0882	25		
Bromobenzene	0.0116	0.0011	mg/Kg wet	0.0113		103		70-130	2.26	25		
Bromochloromethane	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130	0.264	25		
Bromodichloromethane	0.0126	0.0011	mg/Kg wet	0.0113		111		70-130	2.36	25		
Bromoform	0.0115	0.0011	mg/Kg wet	0.0113		102		70-130	2.38	25		
Bromomethane	0.0137	0.0023	mg/Kg wet	0.0113		121		40-130	2.69	25		†
2-Butanone (MEK)	0.110	0.023	mg/Kg wet	0.113		97.2		70-160	3.71	25		†
tert-Butyl Alcohol (TBA)	0.122	0.023	mg/Kg wet	0.113		107		40-130	5.12	25		†
n-Butylbenzene	0.0117	0.0011	mg/Kg wet	0.0113		104		70-130	1.56	25		
sec-Butylbenzene	0.0124	0.0011	mg/Kg wet	0.0113		109		70-130	0.458	25		
tert-Butylbenzene	0.0125	0.0011	mg/Kg wet	0.0113		110		70-160	0.00	25		†
tert-Butyl Ethyl Ether (TBEE)	0.0122	0.00057	mg/Kg wet	0.0113		107		70-130	0.842	25		
Carbon Disulfide	0.127	0.0057	mg/Kg wet	0.113		112		70-130	0.650	25		
Carbon Tetrachloride	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130	0.890	25		
Chlorobenzene	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130	0.177	25		
Chlorodibromomethane	0.0121	0.00057	mg/Kg wet	0.0113		107		70-130	2.66	25		
Chloroethane	0.0149	0.0023	mg/Kg wet	0.0113		**132**	*	70-130	3.66	25	L-02, V-20	
Chloroform	0.0128	0.0023	mg/Kg wet	0.0113		113		70-130	0.533	25		
Chloromethane	0.0121	0.0023	mg/Kg wet	0.0113		107		70-130	4.49	25	V-20	
2-Chlorotoluene	0.0117	0.0011	mg/Kg wet	0.0113		103		70-130	1.76	25		
4-Chlorotoluene	0.0118	0.0011	mg/Kg wet	0.0113		104		70-130	0.287	25		
1,2-Dibromo-3-chloropropane (DBCP)	0.0107	0.0057	mg/Kg wet	0.0113		94.5		70-130	0.637	25		
1,2-Dibromoethane (EDB)	0.0118	0.00057	mg/Kg wet	0.0113		104		70-130	1.16	25		
Dibromomethane	0.0122	0.0011	mg/Kg wet	0.0113		107		70-130	0.186	25		
1,2-Dichlorobenzene	0.0125	0.0011	mg/Kg wet	0.0113		110		70-130	0.905	25		
1,3-Dichlorobenzene	0.0126	0.0011	mg/Kg wet	0.0113		111		70-130	1.45	25		
1,4-Dichlorobenzene	0.0121	0.0011	mg/Kg wet	0.0113		107		70-130	2.07	25		
trans-1,4-Dichloro-2-butene	0.0109	0.0023	mg/Kg wet	0.0113		96.2		70-130	4.68	25		
Dichlorodifluoromethane (Freon 12)	0.0108	0.0023	mg/Kg wet	0.0113		95.5		40-160	0.630	25		†
1,1-Dichloroethane	0.0126	0.0011	mg/Kg wet	0.0113		112		70-130	0.268	25		
1,2-Dichloroethane	0.0117	0.0011	mg/Kg wet	0.0113		104		70-130	2.05	25		
1,1-Dichloroethylene	0.0137	0.0011	mg/Kg wet	0.0113		121		70-130	0.911	25	V-20	
cis-1,2-Dichloroethylene	0.0129	0.0011	mg/Kg wet	0.0113		114		70-130	1.15	25		
trans-1,2-Dichloroethylene	0.0128	0.0011	mg/Kg wet	0.0113		113		70-130	0.795	25		
Dichlorofluoromethane (Freon 21)	0.0120	0.0011	mg/Kg wet	0.0113		106		70-130	0.284	25		

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B306016 - SW-846 5035											
LCS Dup (B306016-BSD1)				Prepared & Analyzed: 04/18/22							
1,2-Dichloropropane	0.0126	0.0011	mg/Kg wet	0.0113		111	70-130	2.83	25		
1,3-Dichloropropane	0.0124	0.00057	mg/Kg wet	0.0113		109	70-130	4.68	25		
2,2-Dichloropropane	0.0128	0.0011	mg/Kg wet	0.0113		113	70-130	1.06	25		
1,1-Dichloropropene	0.0127	0.0023	mg/Kg wet	0.0113		112	70-130	1.89	25		
cis-1,3-Dichloropropene	0.0119	0.00057	mg/Kg wet	0.0113		105	70-130	1.23	25		
trans-1,3-Dichloropropene	0.0113	0.00057	mg/Kg wet	0.0113		99.7	70-130	2.54	25		
Diethyl Ether	0.0121	0.0023	mg/Kg wet	0.0113		107	70-130	2.36	25		
Difluorochloromethane (Freon 22)	0.00953	0.0011	mg/Kg wet	0.0113		84.1	70-130	0.947	25		
Diisopropyl Ether (DIPE)	0.0114	0.00057	mg/Kg wet	0.0113		101	70-130	1.28	25		
1,4-Dioxane	0.101	0.057	mg/Kg wet	0.113		88.9	40-160	2.31	50		† ‡
Ethylbenzene	0.0125	0.0011	mg/Kg wet	0.0113		110	70-130	1.46	25		
Hexachlorobutadiene	0.0120	0.0011	mg/Kg wet	0.0113		106	70-160	2.10	25		
2-Hexanone (MBK)	0.106	0.011	mg/Kg wet	0.113		93.1	70-160	6.51	25		†
Isopropylbenzene (Cumene)	0.0126	0.0011	mg/Kg wet	0.0113		111	70-130	0.180	25		
p-Isopropyltoluene (p-Cymene)	0.0123	0.0011	mg/Kg wet	0.0113		109	70-130	2.33	25		
Methyl Acetate	0.0129	0.011	mg/Kg wet	0.0113		114	70-130	6.15	25		
Methyl tert-Butyl Ether (MTBE)	0.0130	0.0011	mg/Kg wet	0.0113		115	70-130	0.437	25		
Methyl Cyclohexane	0.0113	0.0011	mg/Kg wet	0.0113		100	70-130	2.08	25		
Methylene Chloride	0.0130	0.0057	mg/Kg wet	0.0113		115	40-160	1.05	25		†
4-Methyl-2-pentanone (MIBK)	0.111	0.011	mg/Kg wet	0.113		97.9	70-160	4.35	25		†
Naphthalene	0.00952	0.0023	mg/Kg wet	0.0113		84.0	40-130	1.44	25		†
n-Propylbenzene	0.0121	0.0011	mg/Kg wet	0.0113		107	70-130	1.61	25		
Styrene	0.0129	0.0011	mg/Kg wet	0.0113		114	70-130	1.23	25		
1,1,1,2-Tetrachloroethane	0.0125	0.0011	mg/Kg wet	0.0113		111	70-130	0.451	25		
1,1,2,2-Tetrachloroethane	0.0124	0.00057	mg/Kg wet	0.0113		109	70-130	4.12	25		
Tetrachloroethylene	0.0124	0.0011	mg/Kg wet	0.0113		109	70-130	1.09	25		
Tetrahydrofuran	0.0118	0.011	mg/Kg wet	0.0113		104	70-130	2.92	25		
Toluene	0.0126	0.0011	mg/Kg wet	0.0113		111	70-130	0.630	25		
1,2,3-Trichlorobenzene	0.0103	0.0057	mg/Kg wet	0.0113		90.5	70-130	0.551	25		
1,2,4-Trichlorobenzene	0.0104	0.0011	mg/Kg wet	0.0113		92.2	70-130	1.42	25		
1,3,5-Trichlorobenzene	0.0112	0.0011	mg/Kg wet	0.0113		98.6	70-130	1.74	25		
1,1,1-Trichloroethane	0.0130	0.0011	mg/Kg wet	0.0113		115	70-130	0.349	25		
1,1,2-Trichloroethane	0.0124	0.0011	mg/Kg wet	0.0113		109	70-130	1.27	25		
Trichloroethylene	0.0127	0.0011	mg/Kg wet	0.0113		112	70-130	2.82	25		
Trichlorofluoromethane (Freon 11)	0.0128	0.0023	mg/Kg wet	0.0113		113	70-130	0.791	25		
1,2,3-Trichloropropane	0.0110	0.0023	mg/Kg wet	0.0113		96.7	70-130	7.73	25		
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.0140	0.0011	mg/Kg wet	0.0113		123	70-130	0.727	25	V-20	
1,2,4-Trimethylbenzene	0.0122	0.0011	mg/Kg wet	0.0113		108	70-130	3.30	25		
1,3,5-Trimethylbenzene	0.0122	0.0011	mg/Kg wet	0.0113		107	70-130	3.32	25		
Vinyl Chloride	0.0125	0.0023	mg/Kg wet	0.0113		111	40-130	1.61	25		†
m+p Xylene	0.0250	0.0023	mg/Kg wet	0.0227		110	70-130	2.48	25		
o-Xylene	0.0126	0.0011	mg/Kg wet	0.0113		111	70-130	3.95	25		
Surrogate: 1,2-Dichloroethane-d4	*0.0269*		mg/Kg wet	0.0283		95.0	70-130				
Surrogate: Toluene-d8	*0.0283*		mg/Kg wet	0.0283		100	70-130				
Surrogate: 4-Bromofluorobenzene	*0.0265*		mg/Kg wet	0.0283		93.7	70-130				

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B306023 - SW-846 3546										
Blank (B306023-BLK1)				Prepared: 04/18/22 Analyzed: 04/20/22						
Acenaphthene	ND	0.17	mg/Kg wet							
Acenaphthylene	ND	0.17	mg/Kg wet							
Anthracene	ND	0.17	mg/Kg wet							
Benzo(a)anthracene	ND	0.17	mg/Kg wet							
Benzo(a)pyrene	ND	0.17	mg/Kg wet							
Benzo(b)fluoranthene	ND	0.17	mg/Kg wet							
Benzo(g,h,i)perylene	ND	0.17	mg/Kg wet							
Benzo(k)fluoranthene	ND	0.17	mg/Kg wet							
Chrysene	ND	0.17	mg/Kg wet							
Dibenz(a,h)anthracene	ND	0.17	mg/Kg wet							
Fluoranthene	ND	0.17	mg/Kg wet							
Fluorene	ND	0.17	mg/Kg wet							
Indeno(1,2,3-cd)pyrene	ND	0.17	mg/Kg wet							
2-Methylnaphthalene	ND	0.17	mg/Kg wet							
Naphthalene	ND	0.17	mg/Kg wet							
Phenanthrene	ND	0.17	mg/Kg wet							
Pyrene	ND	0.17	mg/Kg wet							
Surrogate: Nitrobenzene-d5	*3.03*		mg/Kg wet	3.33		91.0	30-130			
Surrogate: 2-Fluorobiphenyl	*3.33*		mg/Kg wet	3.33		100	30-130			
Surrogate: p-Terphenyl-d14	*3.79*		mg/Kg wet	3.33		114	30-130			
LCS (B306023-BS1)				Prepared: 04/18/22 Analyzed: 04/20/22						
Acenaphthene	1.22	0.17	mg/Kg wet	1.67		73.2	40-140			
Acenaphthylene	1.36	0.17	mg/Kg wet	1.67		81.7	40-140			
Anthracene	1.36	0.17	mg/Kg wet	1.67		81.6	40-140			
Benzo(a)anthracene	1.42	0.17	mg/Kg wet	1.67		85.1	40-140			
Benzo(a)pyrene	1.52	0.17	mg/Kg wet	1.67		91.0	40-140			
Benzo(b)fluoranthene	1.39	0.17	mg/Kg wet	1.67		83.6	40-140			
Benzo(g,h,i)perylene	1.33	0.17	mg/Kg wet	1.67		79.9	40-140			
Benzo(k)fluoranthene	1.48	0.17	mg/Kg wet	1.67		89.0	40-140			
Chrysene	1.31	0.17	mg/Kg wet	1.67		78.6	40-140			
Dibenz(a,h)anthracene	1.41	0.17	mg/Kg wet	1.67		84.4	40-140			
Fluoranthene	1.31	0.17	mg/Kg wet	1.67		78.7	40-140			
Fluorene	1.37	0.17	mg/Kg wet	1.67		82.3	40-140			
Indeno(1,2,3-cd)pyrene	1.27	0.17	mg/Kg wet	1.67		76.2	40-140			
2-Methylnaphthalene	1.40	0.17	mg/Kg wet	1.67		83.7	40-140			
Naphthalene	1.23	0.17	mg/Kg wet	1.67		73.7	40-140			
Phenanthrene	1.38	0.17	mg/Kg wet	1.67		83.1	40-140			
Pyrene	1.54	0.17	mg/Kg wet	1.67		92.6	40-140			
Surrogate: Nitrobenzene-d5	*2.59*		mg/Kg wet	3.33		77.6	30-130			
Surrogate: 2-Fluorobiphenyl	*3.02*		mg/Kg wet	3.33		90.6	30-130			
Surrogate: p-Terphenyl-d14	*3.19*		mg/Kg wet	3.33		95.8	30-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B306023 - SW-846 3546										
LCS Dup (B306023-BSD1)				Prepared: 04/18/22 Analyzed: 04/20/22						
Acenaphthene	1.14	0.17	mg/Kg wet	1.67		68.5	40-140	6.61	30	
Acenaphthylene	1.27	0.17	mg/Kg wet	1.67		76.0	40-140	7.18	30	
Anthracene	1.29	0.17	mg/Kg wet	1.67		77.4	40-140	5.29	30	
Benzo(a)anthracene	1.31	0.17	mg/Kg wet	1.67		78.7	40-140	7.89	30	
Benzo(a)pyrene	1.40	0.17	mg/Kg wet	1.67		84.1	40-140	7.93	30	
Benzo(b)fluoranthene	1.29	0.17	mg/Kg wet	1.67		77.6	40-140	7.37	30	
Benzo(g,h,i)perylene	1.26	0.17	mg/Kg wet	1.67		75.5	40-140	5.66	30	
Benzo(k)fluoranthene	1.39	0.17	mg/Kg wet	1.67		83.1	40-140	6.81	30	
Chrysene	1.22	0.17	mg/Kg wet	1.67		73.2	40-140	7.19	30	
Dibenz(a,h)anthracene	1.31	0.17	mg/Kg wet	1.67		78.8	40-140	6.91	30	
Fluoranthene	1.22	0.17	mg/Kg wet	1.67		73.3	40-140	7.05	30	
Fluorene	1.27	0.17	mg/Kg wet	1.67		76.2	40-140	7.65	30	
Indeno(1,2,3-cd)pyrene	1.30	0.17	mg/Kg wet	1.67		78.0	40-140	2.28	30	
2-Methylnaphthalene	1.32	0.17	mg/Kg wet	1.67		79.4	40-140	5.27	30	
Naphthalene	1.17	0.17	mg/Kg wet	1.67		70.4	40-140	4.52	30	
Phenanthrene	1.31	0.17	mg/Kg wet	1.67		78.5	40-140	5.64	30	
Pyrene	1.42	0.17	mg/Kg wet	1.67		85.1	40-140	8.39	30	
Surrogate: Nitrobenzene-d5	*2.45*		mg/Kg wet	3.33		73.4	30-130			
Surrogate: 2-Fluorobiphenyl	*2.78*		mg/Kg wet	3.33		83.4	30-130			
Surrogate: p-Terphenyl-d14	*2.96*		mg/Kg wet	3.33		88.8	30-130			
Matrix Spike (B306023-MS1)		**Source: 22D1164-01**		Prepared: 04/18/22 Analyzed: 04/21/22						
Acenaphthene	3.12	0.54	mg/Kg dry	5.25	ND	59.4	40-140			
Acenaphthylene	3.17	0.54	mg/Kg dry	5.25	ND	60.4	40-140			
Anthracene	3.16	0.54	mg/Kg dry	5.25	ND	60.3	40-140			
Benzo(a)anthracene	3.22	0.54	mg/Kg dry	5.25	ND	61.4	40-140			
Benzo(a)pyrene	3.37	0.54	mg/Kg dry	5.25	ND	64.3	40-140			
Benzo(b)fluoranthene	3.48	0.54	mg/Kg dry	5.25	ND	66.3	40-140			
Benzo(g,h,i)perylene	3.25	0.54	mg/Kg dry	5.25	ND	61.9	40-140			
Benzo(k)fluoranthene	3.63	0.54	mg/Kg dry	5.25	ND	69.1	40-140			
Chrysene	3.07	0.54	mg/Kg dry	5.25	ND	58.5	40-140			
Dibenz(a,h)anthracene	3.40	0.54	mg/Kg dry	5.25	ND	64.8	40-140			
Fluoranthene	3.04	0.54	mg/Kg dry	5.25	ND	57.9	40-140			
Fluorene	3.28	0.54	mg/Kg dry	5.25	ND	62.6	40-140			
Indeno(1,2,3-cd)pyrene	3.96	0.54	mg/Kg dry	5.25	ND	75.4	40-140			
2-Methylnaphthalene	3.47	0.54	mg/Kg dry	5.25	ND	66.2	40-140			
Naphthalene	3.14	0.54	mg/Kg dry	5.25	ND	59.8	40-140			
Phenanthrene	3.34	0.54	mg/Kg dry	5.25	ND	63.6	40-140			
Pyrene	3.61	0.54	mg/Kg dry	5.25	ND	68.9	40-140			
Surrogate: Nitrobenzene-d5	*6.72*		mg/Kg dry	10.5		64.0	30-130			
Surrogate: 2-Fluorobiphenyl	*7.35*		mg/Kg dry	10.5		70.0	30-130			
Surrogate: p-Terphenyl-d14	*7.24*		mg/Kg dry	10.5		68.9	30-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B306023 - SW-846 3546										
Matrix Spike Dup (B306023-MSD1)	**Source: 22D1164-01**			Prepared: 04/18/22 Analyzed: 04/21/22						
Acenaphthene	3.17	0.54	mg/Kg dry	5.25	ND	60.4	40-140	1.67	30	
Acenaphthylene	3.22	0.54	mg/Kg dry	5.25	ND	61.4	40-140	1.51	30	
Anthracene	3.11	0.54	mg/Kg dry	5.25	ND	59.3	40-140	1.64	30	
Benzo(a)anthracene	3.26	0.54	mg/Kg dry	5.25	ND	62.1	40-140	1.20	30	
Benzo(a)pyrene	3.40	0.54	mg/Kg dry	5.25	ND	64.8	40-140	0.805	30	
Benzo(b)fluoranthene	3.41	0.54	mg/Kg dry	5.25	ND	64.9	40-140	2.10	30	
Benzo(g,h,i)perylene	3.34	0.54	mg/Kg dry	5.25	ND	63.6	40-140	2.77	30	
Benzo(k)fluoranthene	3.59	0.54	mg/Kg dry	5.25	ND	68.4	40-140	0.989	30	
Chrysene	3.12	0.54	mg/Kg dry	5.25	ND	59.5	40-140	1.66	30	
Dibenz(a,h)anthracene	3.42	0.54	mg/Kg dry	5.25	ND	65.2	40-140	0.554	30	
Fluoranthene	3.01	0.54	mg/Kg dry	5.25	ND	57.3	40-140	1.08	30	
Fluorene	3.33	0.54	mg/Kg dry	5.25	ND	63.4	40-140	1.30	30	
Indeno(1,2,3-cd)pyrene	3.97	0.54	mg/Kg dry	5.25	ND	75.7	40-140	0.397	30	
2-Methylnaphthalene	3.56	0.54	mg/Kg dry	5.25	ND	67.9	40-140	2.45	30	
Naphthalene	3.29	0.54	mg/Kg dry	5.25	ND	62.6	40-140	4.57	30	
Phenanthrene	3.31	0.54	mg/Kg dry	5.25	ND	63.1	40-140	0.726	30	
Pyrene	3.66	0.54	mg/Kg dry	5.25	ND	69.8	40-140	1.36	30	
Surrogate: Nitrobenzene-d5	*7.03*		mg/Kg dry	10.5		67.0	30-130			
Surrogate: 2-Fluorobiphenyl	*7.65*		mg/Kg dry	10.5		73.0	30-130			
Surrogate: p-Terphenyl-d14	*7.53*		mg/Kg dry	10.5		71.7	30-130			

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QUALITY CONTROL

Herbicides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B306829 - SW-846 8151										
Blank (B306829-BLK1)				Prepared: 04/26/22 Analyzed: 05/03/22						
2,4-D	ND	24	µg/kg wet							
2,4-D [2C]	ND	24	µg/kg wet							
2,4-DB	ND	24	µg/kg wet							
2,4-DB [2C]	ND	24	µg/kg wet							
2,4,5-TP (Silvex)	ND	2.4	µg/kg wet							
2,4,5-TP (Silvex) [2C]	ND	2.4	µg/kg wet							
2,4,5-T	ND	2.4	µg/kg wet							
2,4,5-T [2C]	ND	2.4	µg/kg wet							
Dalapon	ND	60	µg/kg wet							
Dalapon [2C]	ND	60	µg/kg wet							
Dicamba	ND	2.4	µg/kg wet							
Dicamba [2C]	ND	2.4	µg/kg wet							
Dichloroprop	ND	24	µg/kg wet							
Dichloroprop [2C]	ND	24	µg/kg wet							
Dinoseb	ND	12	µg/kg wet							
Dinoseb [2C]	ND	12	µg/kg wet							
MCPA	ND	2400	µg/kg wet							
MCPA [2C]	ND	2400	µg/kg wet							
MCPP	ND	2400	µg/kg wet							
MCPP [2C]	ND	2400	µg/kg wet							
Surrogate: 2,4-Dichlorophenylacetic acid	*64.4*		µg/kg wet	95.2		67.7	30-150			
Surrogate: 2,4-Dichlorophenylacetic acid [2C]	*73.1*		µg/kg wet	95.2		76.7	30-150			
LCS (B306829-BS1)				Prepared: 04/26/22 Analyzed: 05/03/22						
2,4-D	93.7	25	µg/kg wet	125		74.9	40-140			
2,4-D [2C]	111	25	µg/kg wet	125		89.2	40-140			
2,4-DB	80.5	25	µg/kg wet	125		64.4	40-140			
2,4-DB [2C]	81.3	25	µg/kg wet	125		65.1	40-140			
2,4,5-TP (Silvex)	9.68	2.5	µg/kg wet	12.5		77.4	40-140			
2,4,5-TP (Silvex) [2C]	11.1	2.5	µg/kg wet	12.5		89.1	40-140			
2,4,5-T	9.30	2.5	µg/kg wet	12.5		74.4	40-140			
2,4,5-T [2C]	10.4	2.5	µg/kg wet	12.5		83.5	40-140			
Dalapon	180	62	µg/kg wet	312		57.6	40-140			
Dalapon [2C]	189	62	µg/kg wet	312		60.4	40-140			
Dicamba	8.64	2.5	µg/kg wet	12.5		69.2	40-140			
Dicamba [2C]	10.7	2.5	µg/kg wet	12.5		85.6	40-140			
Dichloroprop	101	25	µg/kg wet	125		81.1	40-140			
Dichloroprop [2C]	113	25	µg/kg wet	125		90.3	40-140			
Dinoseb	7.38	12	µg/kg wet	62.5		11.8	2.28-30.2			
Dinoseb [2C]	8.53	12	µg/kg wet	62.5		13.7	2.56-33.2			
MCPA	9090	2500	µg/kg wet	12500		72.7	40-140			
MCPA [2C]	9890	2500	µg/kg wet	12500		79.1	40-140			
MCPP	11000	2500	µg/kg wet	12500		88.0	40-140			
MCPP [2C]	10400	2500	µg/kg wet	12500		83.5	40-140			
Surrogate: 2,4-Dichlorophenylacetic acid	*73.6*		µg/kg wet	100		73.6	30-150			
Surrogate: 2,4-Dichlorophenylacetic acid [2C]	*85.2*		µg/kg wet	100		85.2	30-150			

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QUALITY CONTROL

Herbicides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B306829 - SW-846 8151										
LCS Dup (B306829-BSD1)				Prepared: 04/26/22 Analyzed: 05/03/22						
2,4-D	90.9	25	µg/kg wet	125		72.8	40-140	2.93	30	
2,4-D [2C]	108	25	µg/kg wet	125		86.4	40-140	3.19	30	
2,4-DB	81.0	25	µg/kg wet	125		64.8	40-140	0.619	30	
2,4-DB [2C]	79.9	25	µg/kg wet	125		63.9	40-140	1.81	30	
2,4,5-TP (Silvex)	9.40	2.5	µg/kg wet	12.5		75.2	40-140	2.87	30	
2,4,5-TP (Silvex) [2C]	10.7	2.5	µg/kg wet	12.5		85.8	40-140	3.71	30	
2,4,5-T	9.06	2.5	µg/kg wet	12.5		72.5	40-140	2.64	30	
2,4,5-T [2C]	10.3	2.5	µg/kg wet	12.5		82.6	40-140	1.12	30	
Dalapon	165	62	µg/kg wet	312		52.8	40-140	8.60	30	
Dalapon [2C]	175	62	µg/kg wet	312		56.0	40-140	7.58	30	
Dicamba	8.63	2.5	µg/kg wet	12.5		69.1	40-140	0.139	30	
Dicamba [2C]	10.5	2.5	µg/kg wet	12.5		84.1	40-140	1.69	30	
Dichloroprop	99.2	25	µg/kg wet	125		79.3	40-140	2.17	30	
Dichloroprop [2C]	110	25	µg/kg wet	125		88.4	40-140	2.14	30	
Dinoseb	7.14	12	µg/kg wet	62.5		11.4	2.28-30.2	3.22	30	
Dinoseb [2C]	8.66	12	µg/kg wet	62.5		13.9	2.56-33.2	1.45	30	
MCPA	8990	2500	µg/kg wet	12500		71.9	40-140	1.09	30	
MCPA [2C]	9660	2500	µg/kg wet	12500		77.3	40-140	2.33	30	
MCPP	10500	2500	µg/kg wet	12500		83.9	40-140	4.75	30	
MCPP [2C]	10200	2500	µg/kg wet	12500		81.6	40-140	2.28	30	
Surrogate: 2,4-Dichlorophenylacetic acid	*69.7*		µg/kg wet	100		69.7	30-150			
Surrogate: 2,4-Dichlorophenylacetic acid [2C]	*77.5*		µg/kg wet	100		77.5	30-150			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B306093 - SW-846 3546										
Blank (B306093-BLK1)				Prepared: 04/18/22 Analyzed: 04/22/22						
C9-C18 Aliphatics	ND	10	mg/Kg wet							
C19-C36 Aliphatics	ND	10	mg/Kg wet							
Unadjusted C11-C22 Aromatics	ND	10	mg/Kg wet							
C11-C22 Aromatics	ND	10	mg/Kg wet							
Acenaphthene	ND	0.10	mg/Kg wet							
Acenaphthylene	ND	0.10	mg/Kg wet							
Anthracene	ND	0.10	mg/Kg wet							
Benzo(a)anthracene	ND	0.10	mg/Kg wet							
Benzo(a)pyrene	ND	0.10	mg/Kg wet							
Benzo(b)fluoranthene	ND	0.10	mg/Kg wet							
Benzo(g,h,i)perylene	ND	0.10	mg/Kg wet							
Benzo(k)fluoranthene	ND	0.10	mg/Kg wet							
Chrysene	ND	0.10	mg/Kg wet							
Dibenz(a,h)anthracene	ND	0.10	mg/Kg wet							
Fluoranthene	ND	0.10	mg/Kg wet							
Fluorene	ND	0.10	mg/Kg wet							
Indeno(1,2,3-cd)pyrene	ND	0.10	mg/Kg wet							
2-Methylnaphthalene	ND	0.10	mg/Kg wet							
Naphthalene	ND	0.10	mg/Kg wet							
Phenanthrene	ND	0.10	mg/Kg wet							
Pyrene	ND	0.10	mg/Kg wet							
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							
Surrogate: Chlorooctadecane (COD)	*4.42*		mg/Kg wet	5.00		88.3	40-140			
Surrogate: o-Terphenyl (OTP)	*4.25*		mg/Kg wet	5.00		84.9	40-140			
Surrogate: 2-Bromonaphthalene	*5.32*		mg/Kg wet	5.00		106	40-140			
Surrogate: 2-Fluorobiphenyl	*5.10*		mg/Kg wet	5.00		102	40-140			
LCS (B306093-BS1)				Prepared: 04/18/22 Analyzed: 04/22/22						
C9-C18 Aliphatics	23.1	10	mg/Kg wet	30.0		77.0	40-140			
C19-C36 Aliphatics	35.1	10	mg/Kg wet	40.0		87.8	40-140			
Unadjusted C11-C22 Aromatics	74.2	10	mg/Kg wet	85.0		87.3	40-140			
Acenaphthene	3.93	0.10	mg/Kg wet	5.00		78.5	40-140			
Acenaphthylene	3.75	0.10	mg/Kg wet	5.00		75.0	40-140			
Anthracene	4.19	0.10	mg/Kg wet	5.00		83.8	40-140			
Benzo(a)anthracene	4.58	0.10	mg/Kg wet	5.00		91.6	40-140			
Benzo(a)pyrene	4.31	0.10	mg/Kg wet	5.00		86.2	40-140			
Benzo(b)fluoranthene	4.18	0.10	mg/Kg wet	5.00		83.6	40-140			
Benzo(g,h,i)perylene	3.91	0.10	mg/Kg wet	5.00		78.3	40-140			
Benzo(k)fluoranthene	4.04	0.10	mg/Kg wet	5.00		80.8	40-140			
Chrysene	4.26	0.10	mg/Kg wet	5.00		85.2	40-140			
Dibenz(a,h)anthracene	4.26	0.10	mg/Kg wet	5.00		85.2	40-140			
Fluoranthene	4.23	0.10	mg/Kg wet	5.00		84.5	40-140			
Fluorene	4.26	0.10	mg/Kg wet	5.00		85.1	40-140			
Indeno(1,2,3-cd)pyrene	4.13	0.10	mg/Kg wet	5.00		82.6	40-140			
2-Methylnaphthalene	3.80	0.10	mg/Kg wet	5.00		76.1	40-140			
Naphthalene	3.60	0.10	mg/Kg wet	5.00		72.0	40-140			
Phenanthrene	4.27	0.10	mg/Kg wet	5.00		85.3	40-140			
Pyrene	4.24	0.10	mg/Kg wet	5.00		84.8	40-140			
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
Surrogate: Chlorooctadecane (COD)	*4.46*		mg/Kg wet	5.00		89.2	40-140			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B306093 - SW-846 3546										
LCS (B306093-BS1)				Prepared: 04/18/22 Analyzed: 04/22/22						
Surrogate: o-Terphenyl (OTP)	*4.02*		mg/Kg wet	5.00		80.3	40-140			
Surrogate: 2-Bromonaphthalene	*5.28*		mg/Kg wet	5.00		106	40-140			
Surrogate: 2-Fluorobiphenyl	*5.08*		mg/Kg wet	5.00		102	40-140			
LCS Dup (B306093-BSD1)				Prepared: 04/18/22 Analyzed: 04/22/22						
C9-C18 Aliphatics	23.5	10	mg/Kg wet	30.0		78.4	40-140	1.83	25	
C19-C36 Aliphatics	36.0	10	mg/Kg wet	40.0		90.0	40-140	2.42	25	
Unadjusted C11-C22 Aromatics	77.4	10	mg/Kg wet	85.0		91.1	40-140	4.26	25	
Acenaphthene	4.08	0.10	mg/Kg wet	5.00		81.7	40-140	3.97	25	
Acenaphthylene	3.90	0.10	mg/Kg wet	5.00		77.9	40-140	3.89	25	
Anthracene	4.39	0.10	mg/Kg wet	5.00		87.8	40-140	4.76	25	
Benzo(a)anthracene	4.78	0.10	mg/Kg wet	5.00		95.6	40-140	4.36	25	
Benzo(a)pyrene	4.49	0.10	mg/Kg wet	5.00		89.9	40-140	4.17	25	
Benzo(b)fluoranthene	4.36	0.10	mg/Kg wet	5.00		87.2	40-140	4.19	25	
Benzo(g,h,i)perylene	4.07	0.10	mg/Kg wet	5.00		81.4	40-140	3.93	25	
Benzo(k)fluoranthene	4.21	0.10	mg/Kg wet	5.00		84.2	40-140	4.13	25	
Chrysene	4.44	0.10	mg/Kg wet	5.00		88.7	40-140	4.02	25	
Dibenz(a,h)anthracene	4.41	0.10	mg/Kg wet	5.00		88.3	40-140	3.62	25	
Fluoranthene	4.43	0.10	mg/Kg wet	5.00		88.5	40-140	4.60	25	
Fluorene	4.46	0.10	mg/Kg wet	5.00		89.3	40-140	4.78	25	
Indeno(1,2,3-cd)pyrene	4.30	0.10	mg/Kg wet	5.00		86.0	40-140	4.02	25	
2-Methylnaphthalene	3.94	0.10	mg/Kg wet	5.00		78.8	40-140	3.51	25	
Naphthalene	3.73	0.10	mg/Kg wet	5.00		74.6	40-140	3.59	25	
Phenanthrene	4.48	0.10	mg/Kg wet	5.00		89.7	40-140	4.94	25	
Pyrene	4.44	0.10	mg/Kg wet	5.00		88.9	40-140	4.65	25	
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
Surrogate: Chlorooctadecane (COD)	*4.52*		mg/Kg wet	5.00		90.5	40-140			
Surrogate: o-Terphenyl (OTP)	*4.17*		mg/Kg wet	5.00		83.4	40-140			
Surrogate: 2-Bromonaphthalene	*5.45*		mg/Kg wet	5.00		109	40-140			
Surrogate: 2-Fluorobiphenyl	*5.24*		mg/Kg wet	5.00		105	40-140			
Matrix Spike (B306093-MS1)	**Source: 22D1164-02**			Prepared: 04/18/22 Analyzed: 04/22/22						
C9-C18 Aliphatics	53.7	33	mg/Kg dry	98.1	ND	54.8	40-140			
C19-C36 Aliphatics	122	33	mg/Kg dry	131	48.3	56.4	40-140			
Unadjusted C11-C22 Aromatics	216	33	mg/Kg dry	278	45.9	61.2	40-140			
Acenaphthene	9.93	0.33	mg/Kg dry	16.3	ND	60.7	40-140			
Acenaphthylene	8.27	0.33	mg/Kg dry	16.3	ND	50.6	40-140			R-06
Anthracene	10.2	0.33	mg/Kg dry	16.3	ND	62.5	40-140			
Benzo(a)anthracene	10.8	0.33	mg/Kg dry	16.3	0.416	63.6	40-140			
Benzo(a)pyrene	8.82	0.33	mg/Kg dry	16.3	ND	54.0	40-140			R-06
Benzo(b)fluoranthene	8.97	0.33	mg/Kg dry	16.3	ND	54.8	40-140			
Benzo(g,h,i)perylene	7.35	0.33	mg/Kg dry	16.3	0.471	42.1	40-140			R-06
Benzo(k)fluoranthene	8.70	0.33	mg/Kg dry	16.3	ND	53.2	40-140			
Chrysene	9.75	0.33	mg/Kg dry	16.3	ND	59.7	40-140			
Dibenz(a,h)anthracene	8.53	0.33	mg/Kg dry	16.3	ND	52.2	40-140			
Fluoranthene	10.1	0.33	mg/Kg dry	16.3	ND	62.0	40-140			
Fluorene	10.8	0.33	mg/Kg dry	16.3	ND	66.2	40-140			
Indeno(1,2,3-cd)pyrene	7.82	0.33	mg/Kg dry	16.3	ND	47.8	40-140			R-06
2-Methylnaphthalene	8.49	0.33	mg/Kg dry	16.3	ND	51.9	40-140			
Naphthalene	6.98	0.33	mg/Kg dry	16.3	ND	42.7	40-140			
Phenanthrene	10.6	0.33	mg/Kg dry	16.3	ND	65.0	40-140			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD		RPD Limit	Notes
Batch B306093 - SW-846 3546												
Matrix Spike (B306093-MS1)	**Source: 22D1164-02**			Prepared: 04/18/22 Analyzed: 04/22/22								
Pyrene	10.0	0.33	mg/Kg dry	16.3	ND	61.4		40-140				
Surrogate: Chlorooctadecane (COD)	*10.1*		mg/Kg dry	16.3		61.6		40-140				
Surrogate: o-Terphenyl (OTP)	*10.1*		mg/Kg dry	16.3		61.6		40-140				
Surrogate: 2-Bromonaphthalene	*18.1*		mg/Kg dry	16.3		111		40-140				
Surrogate: 2-Fluorobiphenyl	*17.5*		mg/Kg dry	16.3		107		40-140				
Matrix Spike Dup (B306093-MSD1)	**Source: 22D1164-02**			Prepared: 04/18/22 Analyzed: 04/22/22								
C9-C18 Aliphatics	39.0	33	mg/Kg dry	98.1	ND	**39.7**	*	40-140	31.9		50	MS-22
C19-C36 Aliphatics	74.0	33	mg/Kg dry	131	48.3	**19.6**	*	40-140	49.0		50	MS-22
Unadjusted C11-C22 Aromatics	138	33	mg/Kg dry	278	45.9	**33.1**	*	40-140	44.1		50	MS-22
Acenaphthene	6.54	0.33	mg/Kg dry	16.3	ND	40.0		40-140	41.2		50	MS-22
Acenaphthylene	4.13	0.33	mg/Kg dry	16.3	ND	**25.3**	*	40-140	**66.7**	*	50	MS-23
Anthracene	6.57	0.33	mg/Kg dry	16.3	ND	40.2		40-140	43.6		50	
Benzo(a)anthracene	6.83	0.33	mg/Kg dry	16.3	0.416	**39.3**	*	40-140	45.2		50	MS-22
Benzo(a)pyrene	5.01	0.33	mg/Kg dry	16.3	ND	**30.7**	*	40-140	**55.1**	*	50	MS-23
Benzo(b)fluoranthene	5.41	0.33	mg/Kg dry	16.3	ND	**33.1**	*	40-140	49.4		50	MS-22
Benzo(g,h,i)perylene	4.10	0.33	mg/Kg dry	16.3	0.471	**22.2**	*	40-140	**56.8**	*	50	MS-23
Benzo(k)fluoranthene	5.29	0.33	mg/Kg dry	16.3	ND	**32.3**	*	40-140	48.8		50	MS-22
Chrysene	6.13	0.33	mg/Kg dry	16.3	ND	**37.5**	*	40-140	45.6		50	MS-22
Dibenz(a,h)anthracene	5.15	0.33	mg/Kg dry	16.3	ND	**31.5**	*	40-140	49.4		50	MS-22
Fluoranthene	6.53	0.33	mg/Kg dry	16.3	ND	**39.9**	*	40-140	43.3		50	MS-22
Fluorene	7.12	0.33	mg/Kg dry	16.3	ND	43.5		40-140	41.4		50	
Indeno(1,2,3-cd)pyrene	4.27	0.33	mg/Kg dry	16.3	ND	**26.1**	*	40-140	**58.7**	*	50	MS-23
2-Methylnaphthalene	5.64	0.33	mg/Kg dry	16.3	ND	**34.5**	*	40-140	40.3		50	MS-22
Naphthalene	4.80	0.33	mg/Kg dry	16.3	ND	**29.4**	*	40-140	36.9		50	MS-22
Phenanthrene	6.96	0.33	mg/Kg dry	16.3	ND	42.6		40-140	41.6		50	
Pyrene	6.37	0.33	mg/Kg dry	16.3	ND	**39.0**	*	40-140	44.7		50	MS-22
Surrogate: Chlorooctadecane (COD)	*7.36*		mg/Kg dry	16.3		45.0		40-140				
Surrogate: o-Terphenyl (OTP)	*6.87*		mg/Kg dry	16.3		42.0		40-140				
Surrogate: 2-Bromonaphthalene	*16.6*		mg/Kg dry	16.3		101		40-140				
Surrogate: 2-Fluorobiphenyl	*16.0*		mg/Kg dry	16.3		97.7		40-140				
Batch B306528 - SW-846 3546												
Blank (B306528-BLK1)				Prepared: 04/22/22 Analyzed: 04/25/22								
C9-C18 Aliphatics	ND	10	mg/Kg wet									
C19-C36 Aliphatics	ND	10	mg/Kg wet									
Unadjusted C11-C22 Aromatics	ND	10	mg/Kg wet									
C11-C22 Aromatics	ND	10	mg/Kg wet									
Acenaphthene	ND	0.10	mg/Kg wet									
Acenaphthylene	ND	0.10	mg/Kg wet									
Anthracene	ND	0.10	mg/Kg wet									
Benzo(a)anthracene	ND	0.10	mg/Kg wet									
Benzo(a)pyrene	ND	0.10	mg/Kg wet									
Benzo(b)fluoranthene	ND	0.10	mg/Kg wet									
Benzo(g,h,i)perylene	ND	0.10	mg/Kg wet									
Benzo(k)fluoranthene	ND	0.10	mg/Kg wet									
Chrysene	ND	0.10	mg/Kg wet									
Dibenz(a,h)anthracene	ND	0.10	mg/Kg wet									
Fluoranthene	ND	0.10	mg/Kg wet									
Fluorene	ND	0.10	mg/Kg wet									
Indeno(1,2,3-cd)pyrene	ND	0.10	mg/Kg wet									
2-Methylnaphthalene	ND	0.10	mg/Kg wet									

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B306528 - SW-846 3546										
Blank (B306528-BLK1)				Prepared: 04/22/22 Analyzed: 04/25/22						
Naphthalene	ND	0.10	mg/Kg wet							
Phenanthrene	ND	0.10	mg/Kg wet							
Pyrene	ND	0.10	mg/Kg wet							
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							
Surrogate: Chlorooctadecane (COD)	*3.81*		mg/Kg wet	5.00		76.2	40-140			
Surrogate: o-Terphenyl (OTP)	*3.62*		mg/Kg wet	5.00		72.4	40-140			
Surrogate: 2-Bromonaphthalene	*4.71*		mg/Kg wet	5.00		94.1	40-140			
Surrogate: 2-Fluorobiphenyl	*4.33*		mg/Kg wet	5.00		86.6	40-140			
LCS (B306528-BS1)				Prepared: 04/22/22 Analyzed: 04/25/22						
C9-C18 Aliphatics	22.7	10	mg/Kg wet	30.0		75.7	40-140			
C19-C36 Aliphatics	34.3	10	mg/Kg wet	40.0		85.8	40-140			
Unadjusted C11-C22 Aromatics	71.7	10	mg/Kg wet	85.0		84.3	40-140			
Acenaphthene	3.47	0.10	mg/Kg wet	5.00		69.4	40-140			
Acenaphthylene	3.26	0.10	mg/Kg wet	5.00		65.3	40-140			
Anthracene	3.91	0.10	mg/Kg wet	5.00		78.2	40-140			
Benzo(a)anthracene	4.47	0.10	mg/Kg wet	5.00		89.4	40-140			
Benzo(a)pyrene	4.26	0.10	mg/Kg wet	5.00		85.2	40-140			
Benzo(b)fluoranthene	4.13	0.10	mg/Kg wet	5.00		82.6	40-140			
Benzo(g,h,i)perylene	3.81	0.10	mg/Kg wet	5.00		76.2	40-140			
Benzo(k)fluoranthene	4.01	0.10	mg/Kg wet	5.00		80.2	40-140			
Chrysene	4.20	0.10	mg/Kg wet	5.00		83.9	40-140			
Dibenz(a,h)anthracene	4.17	0.10	mg/Kg wet	5.00		83.4	40-140			
Fluoranthene	4.03	0.10	mg/Kg wet	5.00		80.5	40-140			
Fluorene	3.83	0.10	mg/Kg wet	5.00		76.6	40-140			
Indeno(1,2,3-cd)pyrene	4.04	0.10	mg/Kg wet	5.00		80.8	40-140			
2-Methylnaphthalene	3.24	0.10	mg/Kg wet	5.00		64.8	40-140			
Naphthalene	3.09	0.10	mg/Kg wet	5.00		61.9	40-140			
Phenanthrene	3.96	0.10	mg/Kg wet	5.00		79.3	40-140			
Pyrene	4.05	0.10	mg/Kg wet	5.00		81.1	40-140			
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
Surrogate: Chlorooctadecane (COD)	*4.11*		mg/Kg wet	5.00		82.2	40-140			
Surrogate: o-Terphenyl (OTP)	*3.82*		mg/Kg wet	5.00		76.5	40-140			
Surrogate: 2-Bromonaphthalene	*4.71*		mg/Kg wet	5.00		94.2	40-140			
Surrogate: 2-Fluorobiphenyl	*4.37*		mg/Kg wet	5.00		87.3	40-140			
LCS Dup (B306528-BSD1)				Prepared: 04/22/22 Analyzed: 04/25/22						
C9-C18 Aliphatics	21.6	10	mg/Kg wet	30.0		72.0	40-140	4.96	25	
C19-C36 Aliphatics	34.6	10	mg/Kg wet	40.0		86.4	40-140	0.718	25	
Unadjusted C11-C22 Aromatics	71.8	10	mg/Kg wet	85.0		84.5	40-140	0.153	25	
Acenaphthene	3.40	0.10	mg/Kg wet	5.00		68.0	40-140	1.99	25	
Acenaphthylene	3.16	0.10	mg/Kg wet	5.00		63.3	40-140	3.10	25	
Anthracene	3.99	0.10	mg/Kg wet	5.00		79.7	40-140	1.88	25	
Benzo(a)anthracene	4.58	0.10	mg/Kg wet	5.00		91.7	40-140	2.52	25	
Benzo(a)pyrene	4.35	0.10	mg/Kg wet	5.00		87.1	40-140	2.22	25	
Benzo(b)fluoranthene	4.24	0.10	mg/Kg wet	5.00		84.8	40-140	2.59	25	
Benzo(g,h,i)perylene	3.90	0.10	mg/Kg wet	5.00		78.0	40-140	2.36	25	
Benzo(k)fluoranthene	4.09	0.10	mg/Kg wet	5.00		81.8	40-140	2.04	25	
Chrysene	4.28	0.10	mg/Kg wet	5.00		85.5	40-140	1.87	25	
Dibenz(a,h)anthracene	4.24	0.10	mg/Kg wet	5.00		84.8	40-140	1.62	25	

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B306528 - SW-846 3546										
LCS Dup (B306528-BSD1)				Prepared: 04/22/22 Analyzed: 04/25/22						
Fluoranthene	4.13	0.10	mg/Kg wet	5.00		82.7	40-140	2.67	25	
Fluorene	3.83	0.10	mg/Kg wet	5.00		76.6	40-140	0.0470	25	
Indeno(1,2,3-cd)pyrene	4.14	0.10	mg/Kg wet	5.00		82.8	40-140	2.43	25	
2-Methylnaphthalene	2.98	0.10	mg/Kg wet	5.00		59.7	40-140	8.25	25	
Naphthalene	2.69	0.10	mg/Kg wet	5.00		53.9	40-140	13.8	25	
Phenanthrene	4.02	0.10	mg/Kg wet	5.00		80.5	40-140	1.54	25	
Pyrene	4.16	0.10	mg/Kg wet	5.00		83.3	40-140	2.64	25	
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	5.00			0-5			
Surrogate: Chlorooctadecane (COD)	*4.07*		mg/Kg wet	5.00		81.4	40-140			
Surrogate: o-Terphenyl (OTP)	*3.91*		mg/Kg wet	5.00		78.2	40-140			
Surrogate: 2-Bromonaphthalene	*4.64*		mg/Kg wet	5.00		92.8	40-140			
Surrogate: 2-Fluorobiphenyl	*4.30*		mg/Kg wet	5.00		86.0	40-140			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B306138 - SW-846 3050B											
Blank (B306138-BLK1)				Prepared: 04/19/22 Analyzed: 04/21/22							
Arsenic	ND	3.3	mg/Kg wet								
Cadmium	ND	0.33	mg/Kg wet								
Chromium	ND	0.66	mg/Kg wet								
Copper	ND	0.66	mg/Kg wet								
Lead	ND	0.49	mg/Kg wet								
Nickel	ND	0.66	mg/Kg wet								
Zinc	ND	0.66	mg/Kg wet								
LCS (B306138-BS1)				Prepared: 04/19/22 Analyzed: 04/21/22							
Arsenic	121	9.1	mg/Kg wet	140		86.1		82.9-117.9			
Cadmium	91.5	0.91	mg/Kg wet	97.9		93.4		80-119.5			
Chromium	61.2	1.8	mg/Kg wet	60.4		101		80.3-119.7			
Copper	116	1.8	mg/Kg wet	122		95.3		82.8-117.2			
Lead	50.7	1.4	mg/Kg wet	56.7		89.4		82.9-116.9			
Nickel	150	1.8	mg/Kg wet	151		99.5		79.5-121.2			
Zinc	175	1.8	mg/Kg wet	186		93.9		79-121			
LCS Dup (B306138-BSD1)				Prepared: 04/19/22 Analyzed: 04/21/22							
Arsenic	134	9.7	mg/Kg wet	140		95.4		82.9-117.9	10.2	30	
Cadmium	92.4	0.97	mg/Kg wet	97.9		94.4		80-119.5	1.02	20	
Chromium	58.9	1.9	mg/Kg wet	60.4		97.6		80.3-119.7	3.75	30	
Copper	126	1.9	mg/Kg wet	122		103		82.8-117.2	7.70	30	
Lead	56.0	1.5	mg/Kg wet	56.7		98.8		82.9-116.9	10.0	30	
Nickel	151	1.9	mg/Kg wet	151		99.8		79.5-121.2	0.233	30	
Zinc	182	1.9	mg/Kg wet	186		97.7		79-121	3.97	30	
Duplicate (B306138-DUP1)	**Source: 22D1164-01**			Prepared: 04/19/22 Analyzed: 04/27/22							
Arsenic	60.2	9.9	mg/Kg dry		ND				NC	35	
Cadmium	ND	0.99	mg/Kg dry		ND				NC	35	
Chromium	38.2	2.0	mg/Kg dry		8.41				**128**	* 35	
Copper	18.2	2.0	mg/Kg dry		10.4				**53.9**	* 35	
Lead	35.2	1.5	mg/Kg dry		20.9				**51.0**	* 35	
Nickel	29.0	2.0	mg/Kg dry		4.21				**149**	* 35	
Zinc	86.0	2.0	mg/Kg dry		27.0				**104**	* 35	
Matrix Spike (B306138-MS1)	**Source: 22D1164-01**			Prepared: 04/19/22 Analyzed: 04/27/22							
Arsenic	95.1	10	mg/Kg dry	50.4	9.63	**169**	*	75-125			
Cadmium	46.9	1.0	mg/Kg dry	50.4	0.378	92.2		75-125			
Chromium	95.4	2.0	mg/Kg dry	50.4	8.41	**173**	*	75-125			
Copper	126	2.0	mg/Kg dry	101	10.4	114		75-125			
Lead	67.7	1.5	mg/Kg dry	50.4	20.9	92.9		75-125			
Nickel	86.0	2.0	mg/Kg dry	50.4	4.21	**162**	*	75-125			
Zinc	181	2.0	mg/Kg dry	101	27.0	**153**	*	75-125			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B306138 - SW-846 3050B										
Reference (B306138-SRM1) MRL CHECK				Prepared: 04/19/22 Analyzed: 04/21/22						
Lead	0.488	0.50	mg/Kg wet	0.496		98.5	80-120			
Batch B306174 - SW-846 7471										
Blank (B306174-BLK1)				Prepared: 04/19/22 Analyzed: 04/20/22						
Mercury	ND	0.025	mg/Kg wet							
LCS (B306174-BS1)				Prepared: 04/19/22 Analyzed: 04/20/22						
Mercury	14.9	0.74	mg/Kg wet	16.5		90.1	74.5-124.8			
LCS Dup (B306174-BSD1)				Prepared: 04/19/22 Analyzed: 04/20/22						
Mercury	15.3	0.77	mg/Kg wet	16.5		93.0	74.5-124.8	3.16	20	
Batch B307085 - SW-846 3050B										
Blank (B307085-BLK1)				Prepared: 04/28/22 Analyzed: 04/30/22						
Arsenic	ND	3.3	mg/Kg wet							
Cadmium	ND	0.33	mg/Kg wet							
Chromium	ND	0.67	mg/Kg wet							
Copper	ND	0.67	mg/Kg wet							
Lead	ND	0.50	mg/Kg wet							
Nickel	ND	0.67	mg/Kg wet							
Zinc	ND	0.67	mg/Kg wet							
LCS (B307085-BS1)				Prepared: 04/28/22 Analyzed: 04/30/22						
Arsenic	118	10	mg/Kg wet	140		84.5	82.9-117.9			
Cadmium	85.9	1.0	mg/Kg wet	97.9		87.7	80-119.5			
Chromium	51.0	2.0	mg/Kg wet	60.4		84.4	80.3-119.7			
Copper	109	2.0	mg/Kg wet	122		89.7	82.8-117.2			
Lead	48.0	1.5	mg/Kg wet	56.7		84.7	82.9-116.9			
Nickel	133	2.0	mg/Kg wet	151		88.0	79.5-121.2			
Zinc	159	2.0	mg/Kg wet	186		85.4	79-121			
LCS Dup (B307085-BSD1)				Prepared: 04/28/22 Analyzed: 05/02/22						
Arsenic	129	10	mg/Kg wet	140		91.9	82.9-117.9	8.42	30	
Cadmium	96.3	1.0	mg/Kg wet	97.9		98.4	80-119.5	11.5	20	
Chromium	59.5	2.0	mg/Kg wet	60.4		98.6	80.3-119.7	15.5	30	
Copper	118	2.0	mg/Kg wet	122		97.0	82.8-117.2	7.88	30	
Lead	55.0	1.5	mg/Kg wet	56.7		97.0	82.9-116.9	13.6	30	
Nickel	150	2.0	mg/Kg wet	151		99.5	79.5-121.2	12.3	30	
Zinc	176	2.0	mg/Kg wet	186		94.8	79-121	10.4	30	

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B307085 - SW-846 3050B										
Duplicate (B307085-DUP1)	**Source: 22D1164-01RE1**			Prepared: 04/28/22 Analyzed: 04/30/22						
Arsenic	ND	10	mg/Kg dry		ND			NC	35	
Cadmium	ND	1.0	mg/Kg dry		ND			NC	35	
Chromium	7.68	2.1	mg/Kg dry		8.41			9.09	35	
Copper	10.2	2.1	mg/Kg dry		10.4			1.91	35	
Lead	19.6	1.5	mg/Kg dry		20.9			6.17	35	
Nickel	3.75	2.1	mg/Kg dry		4.21			11.5	35	
Zinc	25.1	2.1	mg/Kg dry		27.0			7.19	35	
Matrix Spike (B307085-MS1)	**Source: 22D1164-01RE1**			Prepared: 04/28/22 Analyzed: 04/30/22						
Arsenic	51.9	10	mg/Kg dry	50.4	9.63	83.9	75-125			
Cadmium	44.2	1.0	mg/Kg dry	50.4	0.378	86.8	75-125			
Chromium	54.4	2.0	mg/Kg dry	50.4	8.41	91.2	75-125			
Copper	107	2.0	mg/Kg dry	101	10.4	95.4	75-125			
Lead	68.3	1.5	mg/Kg dry	50.4	20.9	93.9	75-125			
Nickel	49.5	2.0	mg/Kg dry	50.4	4.21	89.7	75-125			
Zinc	122	2.0	mg/Kg dry	101	27.0	94.2	75-125			
Reference (B307085-SRM1) MRL CHECK				Prepared: 04/28/22 Analyzed: 04/30/22						
Lead	0.540	0.50	mg/Kg wet	0.497		108	80-120			

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD		RPD Limit	Notes
Batch B306195 - % Solids												
Duplicate (B306195-DUP2)	**Source: 22D1164-01**			Prepared: 04/19/22 Analyzed: 04/20/22								
% Solids	29.8		% Wt		31.8				**6.55**	*	5	R-02
Duplicate (B306195-DUP3)	**Source: 22D1164-02**			Prepared: 04/19/22 Analyzed: 04/20/22								
% Solids	28.4		% Wt		30.6				**7.57**	*	5	R-02
Duplicate (B306195-DUP4)	**Source: 22D1164-03**			Prepared: 04/19/22 Analyzed: 04/20/22								
% Solids	28.9		% Wt		32.3				**11.0**	*	5	R-02
Duplicate (B306195-DUP5)	**Source: 22D1164-04**			Prepared: 04/19/22 Analyzed: 04/20/22								
% Solids	48.8		% Wt		48.3				0.995		5	
Duplicate (B306195-DUP6)	**Source: 22D1164-05**			Prepared: 04/19/22 Analyzed: 04/20/22								
% Solids	32.4		% Wt		30.5				**6.07**	*	5	R-02
Duplicate (B306195-DUP7)	**Source: 22D1164-06**			Prepared: 04/19/22 Analyzed: 04/20/22								
% Solids	34.7		% Wt		36.8				**5.70**	*	5	R-02
Duplicate (B306195-DUP8)	**Source: 22D1164-07**			Prepared: 04/19/22 Analyzed: 04/20/22								
% Solids	21.4		% Wt		20.1				**5.98**	*	5	R-02
Batch B306334 - SW 846 9060A												
Blank (B306334-BLK1)				Prepared & Analyzed: 04/21/22								
Total Organic Carbon	ND	100	mg/Kg wet									
LCS (B306334-BS1)				Prepared & Analyzed: 04/21/22								
Total Organic Carbon	650	100	mg/Kg wet	750		86.7		73.7-110				
LCS Dup (B306334-BSD1)				Prepared & Analyzed: 04/21/22								
Total Organic Carbon	677	100	mg/Kg wet	750		90.2		73.7-110	3.95		18.6	
Duplicate (B306334-DUP1)	**Source: 22D1164-01**			Prepared & Analyzed: 04/21/22								
Total Organic Carbon	145000	310	mg/Kg dry		115000				23.5		57.4	
Matrix Spike (B306334-MS1)	**Source: 22D1164-01**			Prepared & Analyzed: 04/21/22								
Total Organic Carbon	152000	310	mg/Kg dry	2360	115000	**1560**	*	85-115				MS-11

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8151A

LCS

Lab Sample ID: B306829-BS1

Date(s) Analyzed: 05/03/2022 05/03/2022

Instrument ID (1): ECD 8

Instrument ID (2): ECD 8

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
2,4,5-T	1	17.312	0.000	0.000	9.30	
	2	17.144	0.000	0.000	10.4	11.2
2,4,5-TP (Silvex)	1	17.085	0.000	0.000	9.68	
	2	16.771	0.000	0.000	11.1	13.5
2,4-D	1	15.645	0.000	0.000	93.7	
	2	15.056	0.000	0.000	111	16.6
2,4-DB	1	17.667	0.000	0.000	80.5	
	2	17.495	0.000	0.000	81.3	0.4
Dalapon	1	5.466	0.000	0.000	180	
	2	4.916	0.000	0.000	189	4.9
Dicamba	1	13.388	0.000	0.000	8.64	
	2	12.727	0.000	0.000	10.7	21.8
Dichloroprop	1	15.109	0.000	0.000	101	
	2	14.344	0.000	0.000	113	12.2
Dinoseb	1	18.199	0.000	0.000	7.38	
	2	17.668	0.000	0.000	8.53	14.2
MCPA	1	14.255	0.000	0.000	9090	
	2	13.603	0.000	0.000	9890	8.3
MCPP	1	13.899	0.000	0.000	11000	
	2	13.073	0.000	0.000	10400	5.6

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8151A

LCS Dup

Lab Sample ID: B306829-BSD1 Date(s) Analyzed: 05/03/2022 05/03/2022

Instrument ID (1): ECD 8 Instrument ID (2): ECD 8

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
2,4,5-T	1	17.309	0.000	0.000	9.06	
	2	17.143	0.000	0.000	10.3	12.4
2,4,5-TP (Silvex)	1	17.083	0.000	0.000	9.40	
	2	16.772	0.000	0.000	10.7	12.9
2,4-D	1	15.643	0.000	0.000	90.9	
	2	15.057	0.000	0.000	108	17.1
2,4-DB	1	17.663	0.000	0.000	81.0	
	2	17.492	0.000	0.000	79.9	1.4
Dalapon	1	5.468	0.000	0.000	165	
	2	4.920	0.000	0.000	175	2.9
Dicamba	1	13.387	0.000	0.000	8.63	
	2	12.728	0.000	0.000	10.5	19.9
Dichloroprop	1	15.108	0.000	0.000	99.2	
	2	14.346	0.000	0.000	110	10.5
Dinoseb	1	18.192	0.000	0.000	7.14	
	2	17.664	0.000	0.000	8.66	19.8
MCPA	1	14.253	0.000	0.000	8990	
	2	13.604	0.000	0.000	9660	7.1
MCPP	1	13.898	0.000	0.000	10500	
	2	13.074	0.000	0.000	10200	7.6

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
DL-03	Elevated reporting limit due to matrix interference.
L-02	Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.
MS-11	Matrix spike recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.
MS-22	Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.
MS-23	Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is outside of the method specified criteria. Reduced precision anticipated for any reported result for this compound.
R-02	Duplicate RPD is outside of control limits. Outlier can be attributed to sample non-homogeneity encountered during sample prep.
R-06	Matrix spike duplicate RPD is outside of control limits. Reduced precision is anticipated for reported result for this compound in this sample.
S-01	The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
MADEP EPH rev 2.1 in Soil	
C9-C18 Aliphatics	CT,NC,ME,NH-P
C19-C36 Aliphatics	CT,NC,ME,NH-P
Unadjusted C11-C22 Aromatics	CT,NC,ME,NH-P
C11-C22 Aromatics	CT,NC,ME,NH-P
Acenaphthene	CT,NC,ME,NH-P
Acenaphthylene	CT,NC,ME,NH-P
Anthracene	CT,NC,ME,NH-P
Benzo(a)anthracene	CT,NC,ME,NH-P
Benzo(a)pyrene	CT,NC,ME,NH-P
Benzo(b)fluoranthene	CT,NC,ME,NH-P
Benzo(g,h,i)perylene	CT,NC,ME,NH-P
Benzo(k)fluoranthene	CT,NC,ME,NH-P
Chrysene	CT,NC,ME,NH-P
Dibenz(a,h)anthracene	CT,NC,ME,NH-P
Fluoranthene	CT,NC,ME,NH-P
Fluorene	CT,NC,ME
Indeno(1,2,3-cd)pyrene	CT,NC,ME,NH-P
2-Methylnaphthalene	CT,NC
Naphthalene	CT,NC,ME,NH-P
Phenanthrene	CT,NC,ME,NH-P
Pyrene	CT,NC,ME,NH-P
MADEP EPH rev 2.1 in Water	
C9-C18 Aliphatics	CT,NC,ME,NH-P
C19-C36 Aliphatics	CT,NC,ME,NH-P
Unadjusted C11-C22 Aromatics	CT,NC,ME,NH-P
C11-C22 Aromatics	CT,NC,ME,NH-P
Acenaphthene	CT,NC,ME,NH-P
Acenaphthylene	CT,NC,ME,NH-P
Anthracene	CT,NC,ME,NH-P
Benzo(a)anthracene	CT,NC,ME,NH-P
Benzo(a)pyrene	CT,NC,ME,NH-P
Benzo(b)fluoranthene	CT,NC,ME,NH-P
Benzo(g,h,i)perylene	CT,NC,ME,NH-P
Benzo(k)fluoranthene	CT,NC,ME,NH-P
Chrysene	CT,NC,ME,NH-P
Dibenz(a,h)anthracene	CT,NC,ME,NH-P
Fluoranthene	CT,NC,ME,NH-P
Fluorene	CT,NC,ME
Indeno(1,2,3-cd)pyrene	CT,NC,ME,NH-P
2-Methylnaphthalene	CT,NC
Naphthalene	CT,NC,ME,NH-P
Phenanthrene	CT,NC,ME,NH-P
Pyrene	CT,NC,ME,NH-P
SW-846 6010D in Soil	
Arsenic	CT,NH,NY,ME,VA,NC
Cadmium	CT,NH,NY,ME,VA,NC

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 6010D in Soil	
Chromium	CT,NH,NY,ME,VA,NC
Copper	CT,NH,NY,ME,VA,NC
Lead	CT,NH,NY,AIHA,ME,VA,NC
Nickel	CT,NH,NY,ME,VA,NC
Zinc	CT,NH,NY,ME,VA,NC
SW-846 7471B in Soil	
Mercury	CT,NH,NY,NC,ME,VA
SW-846 8151A in Soil	
2,4-D	NY,ME,NC,NH,VA,CT
2,4-D [2C]	NY,ME,NC,NH,VA,CT
2,4-DB	NY,ME,NC,NH,VA,CT
2,4-DB [2C]	NY,ME,NC,NH,VA,CT
2,4,5-TP (Silvex)	NY,ME,NC,NH,VA,CT
2,4,5-TP (Silvex) [2C]	NY,ME,NC,NH,VA,CT
2,4,5-T	NY,ME,NC,NH,VA,CT
2,4,5-T [2C]	NY,ME,NC,NH,VA,CT
Dalapon	NY,ME,NC,NH,VA,CT
Dalapon [2C]	NY,ME,NC,NH,VA,CT
Dicamba	NY,ME,NC,NH,VA,CT
Dicamba [2C]	NY,ME,NC,NH,VA,CT
Dichloroprop	NY,ME,NC,NH,VA,CT
Dichloroprop [2C]	NY,ME,NC,NH,VA,CT
Dinoseb	NY,ME,NC,NH,VA,CT
Dinoseb [2C]	NY,ME,NC,NH,VA,CT
MCPA	NY,ME,NC,NH,VA,CT
MCPA [2C]	NY,ME,NC,NH,VA,CT
MCPP	NY,ME,NC,NH,VA,CT
MCPP [2C]	NY,ME,NC,NH,VA,CT
SW-846 8151A in Water	
2,4-D	ME,NC,NH,CT,NY,VA
2,4-D [2C]	ME,NC,NH,CT,NY,VA
2,4-DB	ME,NC,NH,CT,NY,VA
2,4-DB [2C]	ME,NC,NH,CT,NY,VA
2,4,5-TP (Silvex)	ME,NC,NH,CT,NY,VA
2,4,5-TP (Silvex) [2C]	ME,NC,NH,CT,NY,VA
2,4,5-T	ME,NC,NH,CT,NY,VA
2,4,5-T [2C]	ME,NC,NH,CT,NY,VA
Dalapon	ME,NC,NH,CT,NY,VA
Dalapon [2C]	ME,NC,NH,CT,NY,VA
Dicamba	ME,NC,NH,CT,NY,VA
Dicamba [2C]	ME,NC,NH,CT,NY,VA
Dichloroprop	ME,NC,NH,CT,NY,VA
Dichloroprop [2C]	ME,NC,NH,CT,NY,VA
Dinoseb	ME,NC,NH,CT,NY,VA
Dinoseb [2C]	ME,NC,NH,CT,NY,VA
MCPA	NC,CT

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8151A in Water	
MCPA [2C]	NC,CT
MCPP	NC,CT
MCPP [2C]	NC,CT
SW-846 8260D in Soil	
Acetone	CT,NH,NY,ME,VA
Acrylonitrile	CT,NH,NY,ME,VA
Benzene	CT,NH,NY,ME,VA
Bromobenzene	NH,NY,ME,VA
Bromochloromethane	NH,NY,ME,VA
Bromodichloromethane	CT,NH,NY,ME,VA
Bromoform	CT,NH,NY,ME,VA
Bromomethane	CT,NH,NY,ME,VA
2-Butanone (MEK)	CT,NH,NY,ME,VA
n-Butylbenzene	CT,NH,NY,ME,VA
sec-Butylbenzene	CT,NH,NY,ME,VA
tert-Butylbenzene	CT,NH,NY,ME,VA
Carbon Disulfide	CT,NH,NY,ME,VA
Carbon Tetrachloride	CT,NH,NY,ME,VA
Chlorobenzene	CT,NH,NY,ME,VA
Chlorodibromomethane	CT,NH,NY,ME,VA
Chloroethane	CT,NH,NY,ME,VA
Chloroform	CT,NH,NY,ME,VA
Chloromethane	CT,NH,NY,ME,VA
2-Chlorotoluene	CT,NH,NY,ME,VA
4-Chlorotoluene	CT,NH,NY,ME,VA
1,2-Dibromo-3-chloropropane (DBCP)	NY
1,2-Dibromoethane (EDB)	NH,NY
Dibromomethane	NH,NY,ME,VA
1,2-Dichlorobenzene	CT,NH,NY,ME,VA
1,3-Dichlorobenzene	CT,NH,NY,ME,VA
1,4-Dichlorobenzene	CT,NH,NY,ME,VA
Dichlorodifluoromethane (Freon 12)	NY,ME,VA
1,1-Dichloroethane	CT,NH,NY,ME,VA
1,2-Dichloroethane	CT,NH,NY,ME,VA
1,1-Dichloroethylene	CT,NH,NY,ME,VA
cis-1,2-Dichloroethylene	CT,NH,NY,ME,VA
trans-1,2-Dichloroethylene	CT,NH,NY,ME,VA
1,2-Dichloropropane	CT,NH,NY,ME,VA
1,3-Dichloropropane	NH,NY,ME,VA
2,2-Dichloropropane	NH,NY,ME,VA
1,1-Dichloropropene	NH,NY,ME,VA
cis-1,3-Dichloropropene	CT,NH,NY,ME,VA
trans-1,3-Dichloropropene	CT,NH,NY,ME,VA
Ethylbenzene	CT,NH,NY,ME,VA
Hexachlorobutadiene	NH,NY,ME,VA
2-Hexanone (MBK)	CT,NH,NY,ME,VA

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260D in Soil	
Isopropylbenzene (Cumene)	CT,NH,NY,ME,VA
p-Isopropyltoluene (p-Cymene)	NH,NY
Methyl tert-Butyl Ether (MTBE)	NY,VA
Methylene Chloride	CT,NH,NY,ME,VA
4-Methyl-2-pentanone (MIBK)	CT,NH,NY,VA
Naphthalene	NH,NY,ME,VA
n-Propylbenzene	NH,NY
Styrene	CT,NH,NY,ME,VA
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME,VA
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME,VA
Tetrachloroethylene	CT,NH,NY,ME,VA
Toluene	CT,NH,NY,ME,VA
1,2,4-Trichlorobenzene	NH,NY,ME,VA
1,1,1-Trichloroethane	CT,NH,NY,ME,VA
1,1,2-Trichloroethane	CT,NH,NY,ME,VA
Trichloroethylene	CT,NH,NY,ME,VA
Trichlorofluoromethane (Freon 11)	CT,NH,NY,VA
1,2,3-Trichloropropane	NH,NY,ME,VA
1,2,4-Trimethylbenzene	CT,NH,NY,ME,VA
1,3,5-Trimethylbenzene	CT,NH,NY,ME,VA
Vinyl Chloride	CT,NH,NY,ME,VA
m+p Xylene	CT,NH,NY,ME,VA
o-Xylene	CT,NH,NY,ME,VA
SW-846 8270E in Soil	
Acenaphthene	CT,NY,NH,ME,NC,VA
Acenaphthylene	CT,NY,NH,ME,NC,VA
Anthracene	CT,NY,NH,ME,NC,VA
Benzo(a)anthracene	CT,NY,NH,ME,NC,VA
Benzo(a)pyrene	CT,NY,NH,ME,NC,VA
Benzo(b)fluoranthene	CT,NY,NH,ME,NC,VA
Benzo(g,h,i)perylene	CT,NY,NH,ME,NC,VA
Benzo(k)fluoranthene	CT,NY,NH,ME,NC,VA
Chrysene	CT,NY,NH,ME,NC,VA
Dibenz(a,h)anthracene	CT,NY,NH,ME,NC,VA
Fluoranthene	CT,NY,NH,ME,NC,VA
Fluorene	CT,NY,NH,ME,NC,VA
Indeno(1,2,3-cd)pyrene	CT,NY,NH,ME,NC,VA
2-Methylnaphthalene	CT,NY,NH,ME,NC,VA
Naphthalene	CT,NY,NH,ME,NC,VA
Phenanthrene	CT,NY,NH,ME,NC,VA
Pyrene	CT,NY,NH,ME,NC,VA
SW-846 8270E in Water	
Acenaphthene	CT,NY,NH,ME,NC,VA
Acenaphthylene	CT,NY,NH,ME,NC,VA
Anthracene	CT,NY,NH,ME,NC,VA
Benzo(a)anthracene	CT,NY,NH,ME,NC,VA

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8270E in Water	
Benzo(a)pyrene	CT,NY,NH,ME,NC,VA
Benzo(b)fluoranthene	CT,NY,NH,ME,NC,VA
Benzo(g,h,i)perylene	CT,NY,NH,ME,NC,VA
Benzo(k)fluoranthene	CT,NY,NH,ME,NC,VA
Chrysene	CT,NY,NH,ME,NC,VA
Dibenz(a,h)anthracene	CT,NY,NH,ME,NC,VA
Fluoranthene	CT,NY,NH,ME,NC,VA
Fluorene	CT,NY,NH,ME,NC,VA
Indeno(1,2,3-cd)pyrene	CT,NY,NH,ME,NC,VA
2-Methylnaphthalene	CT,NY,NH,ME,NC,VA
Naphthalene	CT,NY,NH,ME,NC,VA
Phenanthrene	CT,NY,NH,ME,NC,VA
Pyrene	CT,NY,NH,ME,NC,VA

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2024
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Publilc Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2023
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2023
RI	Rhode Island Department of Health	LAO00373	12/30/2022
NC	North Carolina Div. of Water Quality	652	12/31/2022
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2022
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

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☐ 108 Myrtle Street, #502, North Quincy, MA 02171
☐ 317 Iron Horse Way, Suite 204, Providence, RI 02908
☐ 80 Washington Street, Suite 301, Poughkeepsie, NY
☒ 1550 Main St, Suite 400, Springfield, MA
☐ Other _____

2201164

CHAIN-OF-CUSTODY RECORD

42000

Turnaround
☐ 24-Hour* ☐ 72-Hour* ☐ Other _____ (days)
☐ 48-Hour* ☒ Standard (____ days) *Surcharge Applies

PROJECT NAME	PROJECT LOCATION	PROJECT NUMBER	LABORATORY
Parker Mill Dam	Wareham, MA	20210133.A11	PACE

REPORT TO: Matt Kissane (mkissane@fando.com)
INVOICE TO: Matt Kissane (mkissane@fando.com)
P.O. No.: 1701 20210133.A11
Sampler's Signature: [signature] Date: 4/15/22

Source Codes:
MW=Monitoring Well PW=Potable Water T=Treatment Facility S=Soil B=Sediment
SW=Surface Water ST=Stormwater W=Waste A=Air C=Concrete
X=Other _____

Analysis Request / **Containers**

Item No.	Transfer Check 1	2	3	4	Sample Number	Source Code	Date Sampled	Time Sampled	VOCs (8260)	311 TCLP Ext	Percent Solids	Total Metals (6010/7471)	PAH 8270	EPH	TOC 351	Soil VOA Vial, DI water	Soil VOA Vial, methanol	Soil VOA Vial, ☒ $NaHSO_4$	Glass Soil Container (16) oz	Other 6 Glass Soil Containers (3 oz)	Other 6 Glass Soil Containers (2 oz)	Water VOA Vial, ☐ As is ☐ HCl	Glass Amber (____) ml ☐ As is ☐ H_2SO_4	Plastic - As is; ☐ 250 ml ☐ 500 ☐ 1000 ml	Plastic - H_2SO_4, ☐ 250 ml ☐ 500 ml	Plastic - HNO_3, 250 ml ☐ Filtered ☐ 0.45µ ☐ 10µ	Plastic - NaOH, 250 ml	Comments
1					1701220414-01	B	4-14-22	1000	X	X	X	X	X	X	X		1	2	1	1	1								
2					1701220414-02	B	4-14-22	1030	X	X	X	X	X	X	X		1	2	1	1	1								
3					1701220414-03	B	4-14-22	1130	X	X	X	X	X	X	X		1	2	1	1	1								
4					1701220414-04	B	4-14-22	1330	X	X	X	X	X	X	X		1	2	1	1	1								
5					1701220415-05	B	4-15-22	0800	X	X	X	X	X	X	X		1	2	1	1	1								
6					1701220415-06	B	4-15-22	0845	X	X	X	X	X	X	X		1	2	1	1	1								
7					1701220415-07	B	4-15-22	0930	X	X	X	X	X	X	X		1	2	1	1	1								

run total As, Cd, Cr, Cu, Pb, Hg, Ni, Zn and then TCLP of any over the 20x rule. JLH 4/18/22

Transfer Number	Relinquished By	Accepted By	Date	Time
1	[signature]	[signature] 4.9	4/18/22	1445
2				
3				
4				

Charge Exceptions: ☐ CT Tax Exempt ☐ QA/QC ☐ Other _____
____ Duplicates ____ Blanks (Item Nos:)
Reporting and Detection Limit Requirements: ☐ RCP Deliverables ☐ MCP CAM Cert.
Additional Comments:

Table of Contents

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

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Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Fuss + O'neill

Received By DK Date 4/15/22 Time 1445

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____

Direct from Sampling _____ Ambient _____ Melted Ice _____

By Gun # S Actual Temp - 4.9

Were samples within Temperature? 2-6°C T By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA

Was COC Relinquished ? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T

Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? F Who was notified? _____

Is there enough Volume? T

Is there Headspace where applicable? T MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? F On COC? F

Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	7
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	7
Meoh-	7	250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-	14	Flashpoint		Col./Bacteria		2oz Amb/Clear	7
DI-		Other Glass		Other Plastic		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments:

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May 16, 2022

Matthew Kissane
Fuss & O'Neill - Springfield
1550 Main Street, Suite 400
Springfield, MA 01103

Project Location: Wareham, MA
Client Job Number:
Project Number: 20210133.A11
Laboratory Work Order Number: 22D2026

Enclosed are results of analyses for samples as received by the laboratory on April 28, 2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jessica L. Hoffman
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Fuss & O'Neill - Springfield
1550 Main Street, Suite 400
Springfield, MA 01103
ATTN: Matthew Kissane

REPORT DATE: 5/16/2022

PURCHASE ORDER NUMBER: 170120210133.A11

PROJECT NUMBER: 20210133.A11

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22D2026

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: Wareham, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
1701220414-01	22D2026-01	Soil		SM 2540G	
				SW-846 8081B	
				SW-846 8082A	
1701220414-02	22D2026-02	Soil		SM 2540G	
				SW-846 8081B	
				SW-846 8082A	
1701220414-03	22D2026-03	Soil		SM 2540G	
				SW-846 8081B	
				SW-846 8082A	
1701220414-04	22D2026-04	Soil		SM 2540G	
				SW-846 8081B	
				SW-846 8082A	
1701220414-05	22D2026-05	Soil		SM 2540G	
				SW-846 8081B	
				SW-846 8082A	
1701220414-06	22D2026-06	Soil		SM 2540G	
				SW-846 8081B	
				SW-846 8082A	
1701220414-07	22D2026-07	Soil		SM 2540G	
				SW-846 8081B	
				SW-846 8082A	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SW-846 8081B

Qualifications:

DL-03

Elevated reporting limit due to matrix interference.

Analyte & Samples(s) Qualified:

22D2026-01[1701220414-01], 22D2026-02[1701220414-02], 22D2026-03[1701220414-03], 22D2026-04[1701220414-04], 22D2026-05[1701220414-05], 22D2026-06[1701220414-06], 22D2026-07[1701220414-07]

V-06

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.

Analyte & Samples(s) Qualified:

Endosulfan I
B307165-BS1, B307165-BSD1

SW-846 8082A

Qualifications:

O-32

A dilution was performed as part of the standard analytical procedure.

Analyte & Samples(s) Qualified:

22D2026-01[1701220414-01], 22D2026-02[1701220414-02], 22D2026-03[1701220414-03], 22D2026-04[1701220414-04], 22D2026-05[1701220414-05], 22D2026-06[1701220414-06], 22D2026-07[1701220414-07]

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Tod E. Kopyscinski
Laboratory Director

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-01 | Sampled: 4/14/2022 10:00

Sample ID: 22D2026-01

Sample Matrix: Soil

Sample Flags: DL-03

Organochloride Pesticides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Alachlor [1]	ND	0.31	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
Aldrin [1]	ND	0.079	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
alpha-BHC [1]	ND	0.079	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
beta-BHC [1]	ND	0.079	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
delta-BHC [1]	ND	0.079	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
gamma-BHC (Lindane) [1]	ND	0.031	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
Chlordane [1]	ND	0.31	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
4,4'-DDD [1]	ND	0.063	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
4,4'-DDE [1]	ND	0.063	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
4,4'-DDT [1]	ND	0.063	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
Dieldrin [1]	ND	0.063	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
Endosulfan I [2]	ND	0.079	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
Endosulfan II [1]	ND	0.13	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
Endosulfan sulfate [1]	ND	0.13	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
Endrin [1]	ND	0.13	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
Endrin aldehyde [1]	ND	0.13	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 8:33	TG
Endrin ketone [1]	ND	0.13	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
Heptachlor [1]	ND	0.079	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
Heptachlor epoxide [1]	ND	0.079	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
Hexachlorobenzene [1]	ND	0.094	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
Methoxychlor [1]	ND	0.79	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG
Toxaphene [1]	ND	1.6	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 1:35	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	56.2	30-150		5/10/22 1:35
Decachlorobiphenyl [2]	55.8	30-150		5/10/22 1:35
Tetrachloro-m-xylene [1]	68.5	30-150		5/10/22 1:35
Tetrachloro-m-xylene [2]	62.4	30-150		5/10/22 1:35

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-01 | Sampled: 4/14/2022 10:00

Sample ID: 22D2026-01

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.25	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:16	JMB
Aroclor-1221 [1]	ND	0.25	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:16	JMB
Aroclor-1232 [1]	ND	0.25	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:16	JMB
Aroclor-1242 [1]	ND	0.25	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:16	JMB
Aroclor-1248 [1]	ND	0.25	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:16	JMB
Aroclor-1254 [1]	ND	0.25	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:16	JMB
Aroclor-1260 [1]	ND	0.25	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:16	JMB
Aroclor-1262 [1]	ND	0.25	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:16	JMB
Aroclor-1268 [1]	ND	0.25	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:16	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	70.1	30-150		5/13/22 14:16
Decachlorobiphenyl [2]	80.1	30-150		5/13/22 14:16
Tetrachloro-m-xylene [1]	59.4	30-150		5/13/22 14:16
Tetrachloro-m-xylene [2]	61.1	30-150		5/13/22 14:16

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-01 | Sampled: 4/14/2022 10:00

Sample ID: 22D2026-01

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	31.8		% Wt	1		SM 2540G	4/19/22	4/20/22 18:27	AMM2

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-02 | Sampled: 4/14/2022 10:30

Sample ID: 22D2026-02

Sample Matrix: Soil

Sample Flags: DL-03

Organochloride Pesticides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Alachlor [1]	ND	0.65	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
Aldrin [1]	ND	0.16	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
alpha-BHC [1]	ND	0.16	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
beta-BHC [1]	ND	0.16	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
delta-BHC [1]	ND	0.16	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
gamma-BHC (Lindane) [1]	ND	0.065	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
Chlordane [1]	ND	0.65	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
4,4'-DDD [1]	ND	0.13	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
4,4'-DDE [1]	ND	0.13	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
4,4'-DDT [1]	ND	0.13	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
Dieldrin [1]	ND	0.13	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
Endosulfan I [2]	ND	0.16	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
Endosulfan II [1]	ND	0.26	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
Endosulfan sulfate [1]	ND	0.26	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
Endrin [1]	ND	0.26	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
Endrin aldehyde [1]	ND	0.26	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 9:03	TG
Endrin ketone [1]	ND	0.26	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
Heptachlor [1]	ND	0.16	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
Heptachlor epoxide [1]	ND	0.16	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
Hexachlorobenzene [1]	ND	0.20	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
Methoxychlor [1]	ND	1.6	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG
Toxaphene [1]	ND	3.3	mg/Kg dry	10		SW-846 8081B	4/29/22	5/10/22 2:05	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	53.1	30-150		5/10/22 2:05
Decachlorobiphenyl [2]	49.6	30-150		5/10/22 2:05
Tetrachloro-m-xylene [1]	56.9	30-150		5/10/22 2:05
Tetrachloro-m-xylene [2]	53.6	30-150		5/10/22 2:05

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-02 | Sampled: 4/14/2022 10:30

Sample ID: 22D2026-02

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.26	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:35	JMB
Aroclor-1221 [1]	ND	0.26	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:35	JMB
Aroclor-1232 [1]	ND	0.26	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:35	JMB
Aroclor-1242 [1]	ND	0.26	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:35	JMB
Aroclor-1248 [1]	ND	0.26	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:35	JMB
Aroclor-1254 [1]	ND	0.26	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:35	JMB
Aroclor-1260 [1]	ND	0.26	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:35	JMB
Aroclor-1262 [1]	ND	0.26	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:35	JMB
Aroclor-1268 [1]	ND	0.26	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:35	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	67.9	30-150		5/13/22 14:35
Decachlorobiphenyl [2]	77.4	30-150		5/13/22 14:35
Tetrachloro-m-xylene [1]	58.6	30-150		5/13/22 14:35
Tetrachloro-m-xylene [2]	60.2	30-150		5/13/22 14:35

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-02 | Sampled: 4/14/2022 10:30

Sample ID: 22D2026-02

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	30.6		% Wt	1		SM 2540G	4/19/22	4/20/22 18:27	AMM2

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-03 | Sampled: 4/14/2022 11:30

Sample ID: 22D2026-03

Sample Matrix: Soil

Sample Flags: DL-03

Organochloride Pesticides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Alachlor [1]	ND	0.31	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
Aldrin [1]	ND	0.077	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
alpha-BHC [1]	ND	0.077	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
beta-BHC [1]	ND	0.077	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
delta-BHC [1]	ND	0.077	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
gamma-BHC (Lindane) [1]	ND	0.031	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
Chlordane [1]	ND	0.31	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
4,4'-DDD [1]	ND	0.062	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
4,4'-DDE [2]	ND	0.062	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
4,4'-DDT [1]	ND	0.062	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
Dieldrin [1]	ND	0.062	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
Endosulfan I [2]	ND	0.077	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
Endosulfan II [1]	ND	0.12	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
Endosulfan sulfate [1]	ND	0.12	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
Endrin [1]	ND	0.12	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
Endrin aldehyde [1]	ND	0.12	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 9:32	TG
Endrin ketone [1]	ND	0.12	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
Heptachlor [1]	ND	0.077	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
Heptachlor epoxide [1]	ND	0.077	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
Hexachlorobenzene [1]	ND	0.093	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
Methoxychlor [1]	ND	0.77	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG
Toxaphene [1]	ND	1.5	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 2:34	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	47.5	30-150		5/10/22 2:34
Decachlorobiphenyl [2]	47.2	30-150		5/10/22 2:34
Tetrachloro-m-xylene [1]	55.1	30-150		5/10/22 2:34
Tetrachloro-m-xylene [2]	54.7	30-150		5/10/22 2:34

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-03 | Sampled: 4/14/2022 11:30

Sample ID: 22D2026-03

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.25	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:53	JMB
Aroclor-1221 [1]	ND	0.25	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:53	JMB
Aroclor-1232 [1]	ND	0.25	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:53	JMB
Aroclor-1242 [1]	ND	0.25	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:53	JMB
Aroclor-1248 [1]	ND	0.25	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:53	JMB
Aroclor-1254 [1]	ND	0.25	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:53	JMB
Aroclor-1260 [1]	ND	0.25	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:53	JMB
Aroclor-1262 [1]	ND	0.25	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:53	JMB
Aroclor-1268 [1]	ND	0.25	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 14:53	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	81.0	30-150		5/13/22 14:53
Decachlorobiphenyl [2]	92.9	30-150		5/13/22 14:53
Tetrachloro-m-xylene [1]	68.8	30-150		5/13/22 14:53
Tetrachloro-m-xylene [2]	71.9	30-150		5/13/22 14:53

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-03 | Sampled: 4/14/2022 11:30

Sample ID: 22D2026-03

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	32.3		% Wt	1		SM 2540G	4/19/22	4/20/22 18:27	AMM2

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-04 | Sampled: 4/14/2022 13:30

Sample ID: 22D2026-04

Sample Matrix: Soil

Sample Flags: DL-03

Organochloride Pesticides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Alachlor [1]	ND	0.21	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
Aldrin [1]	ND	0.052	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
alpha-BHC [1]	ND	0.052	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
beta-BHC [1]	ND	0.052	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
delta-BHC [1]	ND	0.052	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
gamma-BHC (Lindane) [1]	ND	0.021	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
Chlordane [1]	ND	0.21	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
4,4'-DDD [1]	ND	0.041	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
4,4'-DDE [1]	ND	0.041	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
4,4'-DDT [1]	ND	0.041	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
Dieldrin [1]	ND	0.041	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
Endosulfan I [2]	ND	0.052	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
Endosulfan II [1]	ND	0.083	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
Endosulfan sulfate [1]	ND	0.083	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
Endrin [1]	ND	0.083	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
Endrin aldehyde [1]	ND	0.083	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 10:02	TG
Endrin ketone [1]	ND	0.083	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
Heptachlor [1]	ND	0.052	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
Heptachlor epoxide [1]	ND	0.052	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
Hexachlorobenzene [1]	ND	0.062	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
Methoxychlor [1]	ND	0.52	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG
Toxaphene [1]	ND	1.0	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:04	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
Decachlorobiphenyl [1]	64.6	30-150		5/10/22	3:04
Decachlorobiphenyl [2]	62.9	30-150		5/10/22	3:04
Tetrachloro-m-xylene [1]	70.5	30-150		5/10/22	3:04
Tetrachloro-m-xylene [2]	68.7	30-150		5/10/22	3:04

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-04 | Sampled: 4/14/2022 13:30

Sample ID: 22D2026-04

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.17	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:11	JMB
Aroclor-1221 [1]	ND	0.17	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:11	JMB
Aroclor-1232 [1]	ND	0.17	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:11	JMB
Aroclor-1242 [1]	ND	0.17	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:11	JMB
Aroclor-1248 [1]	ND	0.17	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:11	JMB
Aroclor-1254 [1]	ND	0.17	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:11	JMB
Aroclor-1260 [1]	ND	0.17	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:11	JMB
Aroclor-1262 [1]	ND	0.17	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:11	JMB
Aroclor-1268 [1]	ND	0.17	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:11	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	69.8	30-150		5/13/22 15:11
Decachlorobiphenyl [2]	81.0	30-150		5/13/22 15:11
Tetrachloro-m-xylene [1]	59.4	30-150		5/13/22 15:11
Tetrachloro-m-xylene [2]	63.1	30-150		5/13/22 15:11

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-04 | Sampled: 4/14/2022 13:30

Sample ID: 22D2026-04

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	48.3		% Wt	1		SM 2540G	4/19/22	4/20/22 18:27	AMM2

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-05 | Sampled: 4/15/2022 08:00

Sample ID: 22D2026-05

Sample Matrix: Soil

Sample Flags: DL-03

Organochloride Pesticides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Alachlor [1]	ND	0.33	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
Aldrin [1]	ND	0.082	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
alpha-BHC [1]	ND	0.082	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
beta-BHC [1]	ND	0.082	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
delta-BHC [1]	ND	0.082	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
gamma-BHC (Lindane) [1]	ND	0.033	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
Chlordane [1]	ND	0.33	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
4,4'-DDD [1]	ND	0.066	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
4,4'-DDE [2]	ND	0.066	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
4,4'-DDT [1]	ND	0.066	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
Dieldrin [1]	ND	0.066	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
Endosulfan I [2]	ND	0.082	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
Endosulfan II [1]	ND	0.13	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
Endosulfan sulfate [1]	ND	0.13	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
Endrin [1]	ND	0.13	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
Endrin aldehyde [1]	ND	0.13	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 10:31	TG
Endrin ketone [1]	ND	0.13	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
Heptachlor [1]	ND	0.082	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
Heptachlor epoxide [1]	ND	0.082	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
Hexachlorobenzene [1]	ND	0.098	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
Methoxychlor [1]	ND	0.82	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG
Toxaphene [1]	ND	1.6	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 3:34	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	47.1	30-150		5/10/22 3:34
Decachlorobiphenyl [2]	44.9	30-150		5/10/22 3:34
Tetrachloro-m-xylene [1]	52.3	30-150		5/10/22 3:34
Tetrachloro-m-xylene [2]	50.9	30-150		5/10/22 3:34

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-05 | Sampled: 4/15/2022 08:00

Sample ID: 22D2026-05

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.26	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:30	JMB
Aroclor-1221 [1]	ND	0.26	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:30	JMB
Aroclor-1232 [1]	ND	0.26	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:30	JMB
Aroclor-1242 [1]	ND	0.26	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:30	JMB
Aroclor-1248 [1]	ND	0.26	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:30	JMB
Aroclor-1254 [1]	ND	0.26	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:30	JMB
Aroclor-1260 [1]	ND	0.26	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:30	JMB
Aroclor-1262 [1]	ND	0.26	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:30	JMB
Aroclor-1268 [1]	ND	0.26	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:30	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	63.2	30-150		5/13/22 15:30
Decachlorobiphenyl [2]	73.8	30-150		5/13/22 15:30
Tetrachloro-m-xylene [1]	56.0	30-150		5/13/22 15:30
Tetrachloro-m-xylene [2]	59.5	30-150		5/13/22 15:30

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-05 | Sampled: 4/15/2022 08:00

Sample ID: 22D2026-05

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	30.5		% Wt	1		SM 2540G	4/19/22	4/20/22 18:27	AMM2

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-06 | Sampled: 4/15/2022 08:45

Sample ID: 22D2026-06

Sample Matrix: Soil

Sample Flags: DL-03

Organochloride Pesticides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Alachlor [1]	ND	0.27	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
Aldrin [1]	ND	0.068	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
alpha-BHC [1]	ND	0.068	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
beta-BHC [1]	ND	0.068	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
delta-BHC [1]	ND	0.068	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
gamma-BHC (Lindane) [1]	ND	0.027	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
Chlordane [1]	ND	0.27	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
4,4'-DDD [1]	ND	0.054	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
4,4'-DDE [1]	ND	0.054	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
4,4'-DDT [1]	ND	0.054	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
Dieldrin [1]	ND	0.054	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
Endosulfan I [2]	ND	0.068	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
Endosulfan II [1]	ND	0.11	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
Endosulfan sulfate [1]	ND	0.11	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
Endrin [1]	ND	0.11	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
Endrin aldehyde [1]	ND	0.11	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:01	TG
Endrin ketone [1]	ND	0.11	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
Heptachlor [1]	ND	0.068	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
Heptachlor epoxide [1]	ND	0.068	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
Hexachlorobenzene [1]	ND	0.082	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
Methoxychlor [1]	ND	0.68	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG
Toxaphene [1]	ND	1.4	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 4:03	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	41.5	30-150		5/10/22 4:03
Decachlorobiphenyl [2]	42.1	30-150		5/10/22 4:03
Tetrachloro-m-xylene [1]	46.1	30-150		5/10/22 4:03
Tetrachloro-m-xylene [2]	44.4	30-150		5/10/22 4:03

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-06 | Sampled: 4/15/2022 08:45

Sample ID: 22D2026-06

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.22	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:48	JMB
Aroclor-1221 [1]	ND	0.22	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:48	JMB
Aroclor-1232 [1]	ND	0.22	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:48	JMB
Aroclor-1242 [1]	ND	0.22	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:48	JMB
Aroclor-1248 [1]	ND	0.22	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:48	JMB
Aroclor-1254 [1]	ND	0.22	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:48	JMB
Aroclor-1260 [1]	ND	0.22	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:48	JMB
Aroclor-1262 [1]	ND	0.22	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:48	JMB
Aroclor-1268 [1]	ND	0.22	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 15:48	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	75.4	30-150		5/13/22 15:48
Decachlorobiphenyl [2]	87.3	30-150		5/13/22 15:48
Tetrachloro-m-xylene [1]	65.2	30-150		5/13/22 15:48
Tetrachloro-m-xylene [2]	68.8	30-150		5/13/22 15:48

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-06 | Sampled: 4/15/2022 08:45

Sample ID: 22D2026-06

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	36.8		% Wt	1		SM 2540G	4/19/22	4/20/22 18:27	AMM2

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-07 | Sampled: 4/15/2022 09:30

Sample ID: 22D2026-07

Sample Matrix: Soil

Sample Flags: DL-03

Organochloride Pesticides by GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Alachlor [1]	ND	0.50	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
Aldrin [1]	ND	0.12	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
alpha-BHC [1]	ND	0.12	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
beta-BHC [1]	ND	0.12	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
delta-BHC [1]	ND	0.12	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
gamma-BHC (Lindane) [1]	ND	0.050	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
Chlordane [1]	ND	0.50	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
4,4'-DDD [1]	0.11	0.10	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
4,4'-DDE [1]	ND	0.10	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
4,4'-DDT [1]	ND	0.10	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
Dieldrin [1]	ND	0.10	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
Endosulfan I [2]	ND	0.12	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
Endosulfan II [1]	ND	0.20	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
Endosulfan sulfate [1]	ND	0.20	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
Endrin [1]	ND	0.20	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
Endrin aldehyde [1]	ND	0.20	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
Endrin ketone [1]	ND	0.20	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
Heptachlor [1]	ND	0.12	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
Heptachlor epoxide [1]	ND	0.12	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
Hexachlorobenzene [1]	ND	0.15	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
Methoxychlor [1]	ND	1.2	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG
Toxaphene [1]	ND	2.5	mg/Kg dry	5		SW-846 8081B	4/29/22	5/10/22 11:30	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	52.9	30-150		5/10/22 11:30
Decachlorobiphenyl [2]	51.6	30-150		5/10/22 11:30
Tetrachloro-m-xylene [1]	54.3	30-150		5/10/22 11:30
Tetrachloro-m-xylene [2]	53.8	30-150		5/10/22 11:30

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-07 | Sampled: 4/15/2022 09:30

Sample ID: 22D2026-07

Sample Matrix: Soil

Sample Flags: O-32

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.40	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 16:06	JMB
Aroclor-1221 [1]	ND	0.40	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 16:06	JMB
Aroclor-1232 [1]	ND	0.40	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 16:06	JMB
Aroclor-1242 [1]	ND	0.40	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 16:06	JMB
Aroclor-1248 [1]	ND	0.40	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 16:06	JMB
Aroclor-1254 [1]	ND	0.40	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 16:06	JMB
Aroclor-1260 [1]	ND	0.40	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 16:06	JMB
Aroclor-1262 [1]	ND	0.40	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 16:06	JMB
Aroclor-1268 [1]	ND	0.40	mg/Kg dry	4		SW-846 8082A	5/10/22	5/13/22 16:06	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	76.7	30-150		5/13/22 16:06
Decachlorobiphenyl [2]	89.6	30-150		5/13/22 16:06
Tetrachloro-m-xylene [1]	65.9	30-150		5/13/22 16:06
Tetrachloro-m-xylene [2]	70.1	30-150		5/13/22 16:06

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Project Location: Wareham, MA | Sample Description: | Work Order: 22D2026

Date Received: 4/28/2022

Field Sample #: 1701220414-07 | Sampled: 4/15/2022 09:30

Sample ID: 22D2026-07

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	20.1		% Wt	1		SM 2540G	4/19/22	4/20/22 18:27	AMM2

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Sample Extraction Data

Prep Method: % Solids **Analytical Method: SM 2540G**

Lab Number [Field ID]	Batch	Date
22D2026-01 [1701220414-01]	B306195	04/19/22
22D2026-02 [1701220414-02]	B306195	04/19/22
22D2026-03 [1701220414-03]	B306195	04/19/22
22D2026-04 [1701220414-04]	B306195	04/19/22
22D2026-05 [1701220414-05]	B306195	04/19/22
22D2026-06 [1701220414-06]	B306195	04/19/22
22D2026-07 [1701220414-07]	B306195	04/19/22

Prep Method: SW-846 3546 **Analytical Method: SW-846 8081B**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22D2026-01 [1701220414-01]	B307165	10.0	10.0	04/29/22
22D2026-02 [1701220414-02]	B307165	10.0	10.0	04/29/22
22D2026-03 [1701220414-03]	B307165	10.0	10.0	04/29/22
22D2026-04 [1701220414-04]	B307165	10.0	10.0	04/29/22
22D2026-05 [1701220414-05]	B307165	10.0	10.0	04/29/22
22D2026-06 [1701220414-06]	B307165	10.0	10.0	04/29/22
22D2026-07 [1701220414-07]	B307165	10.0	10.0	04/29/22

Prep Method: SW-846 3546 **Analytical Method: SW-846 8082A**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22D2026-01 [1701220414-01]	B308087	10.0	10.0	05/10/22
22D2026-02 [1701220414-02]	B308087	10.0	10.0	05/10/22
22D2026-03 [1701220414-03]	B308087	10.0	10.0	05/10/22
22D2026-04 [1701220414-04]	B308087	10.0	10.0	05/10/22
22D2026-05 [1701220414-05]	B308087	10.0	10.0	05/10/22
22D2026-06 [1701220414-06]	B308087	10.0	10.0	05/10/22
22D2026-07 [1701220414-07]	B308087	10.0	10.0	05/10/22

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QUALITY CONTROL

Organochloride Pesticides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B307165 - SW-846 3546										
Blank (B307165-BLK1)				Prepared: 04/29/22 Analyzed: 05/09/22						
alpha-Chlordane	ND	0.0050	mg/Kg wet							
alpha-Chlordane [2C]	ND	0.0050	mg/Kg wet							
gamma-Chlordane	ND	0.0050	mg/Kg wet							
gamma-Chlordane [2C]	ND	0.0050	mg/Kg wet							
Alachlor	ND	0.020	mg/Kg wet							
Alachlor [2C]	ND	0.020	mg/Kg wet							
Aldrin	ND	0.0050	mg/Kg wet							
Aldrin [2C]	ND	0.0050	mg/Kg wet							
alpha-BHC	ND	0.0050	mg/Kg wet							
alpha-BHC [2C]	ND	0.0050	mg/Kg wet							
beta-BHC	ND	0.0050	mg/Kg wet							
beta-BHC [2C]	ND	0.0050	mg/Kg wet							
delta-BHC	ND	0.0050	mg/Kg wet							
delta-BHC [2C]	ND	0.0050	mg/Kg wet							
gamma-BHC (Lindane)	ND	0.0020	mg/Kg wet							
gamma-BHC (Lindane) [2C]	ND	0.0020	mg/Kg wet							
Chlordane	ND	0.020	mg/Kg wet							
Chlordane [2C]	ND	0.020	mg/Kg wet							
4,4'-DDD	ND	0.0040	mg/Kg wet							
4,4'-DDD [2C]	ND	0.0040	mg/Kg wet							
4,4'-DDE	ND	0.0040	mg/Kg wet							
4,4'-DDE [2C]	ND	0.0040	mg/Kg wet							
4,4'-DDT	ND	0.0040	mg/Kg wet							
4,4'-DDT [2C]	ND	0.0040	mg/Kg wet							
Dieldrin	ND	0.0040	mg/Kg wet							
Dieldrin [2C]	ND	0.0040	mg/Kg wet							
Endosulfan I	ND	0.0050	mg/Kg wet							
Endosulfan I [2C]	ND	0.0050	mg/Kg wet							
Endosulfan II	ND	0.0080	mg/Kg wet							
Endosulfan II [2C]	ND	0.0080	mg/Kg wet							
Endosulfan Sulfate	ND	0.0080	mg/Kg wet							
Endosulfan Sulfate [2C]	ND	0.0080	mg/Kg wet							
Endrin	ND	0.0080	mg/Kg wet							
Endrin [2C]	ND	0.0080	mg/Kg wet							
Endrin Aldehyde	ND	0.0080	mg/Kg wet							
Endrin Aldehyde [2C]	ND	0.0080	mg/Kg wet							
Endrin Ketone	ND	0.0080	mg/Kg wet							
Endrin Ketone [2C]	ND	0.0080	mg/Kg wet							
Heptachlor	ND	0.0050	mg/Kg wet							
Heptachlor [2C]	ND	0.0050	mg/Kg wet							
Heptachlor Epoxide	ND	0.0050	mg/Kg wet							
Heptachlor Epoxide [2C]	ND	0.0050	mg/Kg wet							
Hexachlorobenzene	ND	0.0060	mg/Kg wet							
Hexachlorobenzene [2C]	ND	0.0060	mg/Kg wet							
Methoxychlor	ND	0.050	mg/Kg wet							
Methoxychlor [2C]	ND	0.050	mg/Kg wet							
Toxaphene	ND	0.10	mg/Kg wet							
Toxaphene [2C]	ND	0.10	mg/Kg wet							
Surrogate: Decachlorobiphenyl	*0.133*		mg/Kg wet	0.200		66.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.107*		mg/Kg wet	0.200		53.6	30-150			
Surrogate: Tetrachloro-m-xylene	*0.107*		mg/Kg wet	0.200		53.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.107*		mg/Kg wet	0.200		53.7	30-150			

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QUALITY CONTROL

Organochloride Pesticides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B307165 - SW-846 3546										
LCS (B307165-BS1)				Prepared: 04/29/22 Analyzed: 05/09/22						
alpha-Chlordane	0.090	0.0050	mg/Kg wet	0.100		90.2	40-140			
alpha-Chlordane [2C]	0.093	0.0050	mg/Kg wet	0.100		93.1	40-140			
gamma-Chlordane	0.090	0.0050	mg/Kg wet	0.100		89.7	40-140			
gamma-Chlordane [2C]	0.095	0.0050	mg/Kg wet	0.100		95.0	40-140			
Alachlor	0.077	0.020	mg/Kg wet	0.100		77.4	40-140			
Alachlor [2C]	0.081	0.020	mg/Kg wet	0.100		81.5	40-140			
Aldrin	0.095	0.0050	mg/Kg wet	0.100		94.6	40-140			
Aldrin [2C]	0.098	0.0050	mg/Kg wet	0.100		97.9	40-140			
alpha-BHC	0.088	0.0050	mg/Kg wet	0.100		87.6	40-140			
alpha-BHC [2C]	0.083	0.0050	mg/Kg wet	0.100		82.8	40-140			
beta-BHC	0.084	0.0050	mg/Kg wet	0.100		83.8	40-140			
beta-BHC [2C]	0.084	0.0050	mg/Kg wet	0.100		83.9	40-140			
delta-BHC	0.081	0.0050	mg/Kg wet	0.100		81.2	40-140			
delta-BHC [2C]	0.085	0.0050	mg/Kg wet	0.100		85.1	40-140			
gamma-BHC (Lindane)	0.088	0.0020	mg/Kg wet	0.100		88.0	40-140			
gamma-BHC (Lindane) [2C]	0.086	0.0020	mg/Kg wet	0.100		86.0	40-140			
4,4'-DDD	0.099	0.0040	mg/Kg wet	0.100		98.9	40-140			
4,4'-DDD [2C]	0.099	0.0040	mg/Kg wet	0.100		99.2	40-140			
4,4'-DDE	0.099	0.0040	mg/Kg wet	0.100		98.7	40-140			
4,4'-DDE [2C]	0.099	0.0040	mg/Kg wet	0.100		99.3	40-140			
4,4'-DDT	0.095	0.0040	mg/Kg wet	0.100		94.7	40-140			
4,4'-DDT [2C]	0.096	0.0040	mg/Kg wet	0.100		95.7	40-140			
Dieldrin	0.093	0.0040	mg/Kg wet	0.100		93.1	40-140			
Dieldrin [2C]	0.096	0.0040	mg/Kg wet	0.100		96.2	40-140			
Endosulfan I	0.090	0.0050	mg/Kg wet	0.100		90.1	40-140			V-06
Endosulfan I [2C]	0.088	0.0050	mg/Kg wet	0.100		87.5	40-140			
Endosulfan II	0.082	0.0080	mg/Kg wet	0.100		81.9	40-140			
Endosulfan II [2C]	0.087	0.0080	mg/Kg wet	0.100		87.3	40-140			
Endosulfan Sulfate	0.063	0.0080	mg/Kg wet	0.100		63.2	40-140			
Endosulfan Sulfate [2C]	0.071	0.0080	mg/Kg wet	0.100		71.0	40-140			
Endrin	0.087	0.0080	mg/Kg wet	0.100		87.4	40-140			
Endrin [2C]	0.093	0.0080	mg/Kg wet	0.100		93.2	40-140			
Endrin Aldehyde	0.089	0.0080	mg/Kg wet	0.100		89.2	40-140			
Endrin Aldehyde [2C]	0.089	0.0080	mg/Kg wet	0.100		88.9	40-140			
Endrin Ketone	0.082	0.0080	mg/Kg wet	0.100		82.4	40-140			
Endrin Ketone [2C]	0.080	0.0080	mg/Kg wet	0.100		80.1	40-140			
Heptachlor	0.092	0.0050	mg/Kg wet	0.100		92.3	40-140			
Heptachlor [2C]	0.093	0.0050	mg/Kg wet	0.100		93.3	40-140			
Heptachlor Epoxide	0.090	0.0050	mg/Kg wet	0.100		90.2	40-140			
Heptachlor Epoxide [2C]	0.093	0.0050	mg/Kg wet	0.100		93.2	40-140			
Hexachlorobenzene	0.088	0.0060	mg/Kg wet	0.100		88.0	40-140			
Hexachlorobenzene [2C]	0.085	0.0060	mg/Kg wet	0.100		85.3	40-140			
Methoxychlor	0.085	0.050	mg/Kg wet	0.100		85.5	40-140			
Methoxychlor [2C]	0.089	0.050	mg/Kg wet	0.100		88.9	40-140			
Surrogate: Decachlorobiphenyl	*0.149*		mg/Kg wet	0.200		74.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.127*		mg/Kg wet	0.200		63.4	30-150			
Surrogate: Tetrachloro-m-xylene	*0.154*		mg/Kg wet	0.200		76.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.144*		mg/Kg wet	0.200		71.8	30-150			

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QUALITY CONTROL

Organochloride Pesticides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B307165 - SW-846 3546										
LCS Dup (B307165-BSD1)				Prepared: 04/29/22 Analyzed: 05/09/22						
alpha-Chlordane	0.086	0.0050	mg/Kg wet	0.100		85.7	40-140	5.16	30	
alpha-Chlordane [2C]	0.089	0.0050	mg/Kg wet	0.100		88.7	40-140	4.94	30	
gamma-Chlordane	0.085	0.0050	mg/Kg wet	0.100		85.2	40-140	5.11	30	
gamma-Chlordane [2C]	0.090	0.0050	mg/Kg wet	0.100		90.3	40-140	5.04	30	
Alachlor	0.076	0.020	mg/Kg wet	0.100		75.8	40-140	2.09	30	
Alachlor [2C]	0.081	0.020	mg/Kg wet	0.100		81.4	40-140	0.134	30	
Aldrin	0.088	0.0050	mg/Kg wet	0.100		87.7	40-140	7.63	30	
Aldrin [2C]	0.092	0.0050	mg/Kg wet	0.100		91.5	40-140	6.74	30	
alpha-BHC	0.078	0.0050	mg/Kg wet	0.100		78.0	40-140	11.6	30	
alpha-BHC [2C]	0.075	0.0050	mg/Kg wet	0.100		75.2	40-140	9.66	30	
beta-BHC	0.080	0.0050	mg/Kg wet	0.100		79.8	40-140	4.89	30	
beta-BHC [2C]	0.080	0.0050	mg/Kg wet	0.100		79.9	40-140	4.93	30	
delta-BHC	0.076	0.0050	mg/Kg wet	0.100		76.1	40-140	6.43	30	
delta-BHC [2C]	0.081	0.0050	mg/Kg wet	0.100		80.6	40-140	5.44	30	
gamma-BHC (Lindane)	0.081	0.0020	mg/Kg wet	0.100		81.2	40-140	7.99	30	
gamma-BHC (Lindane) [2C]	0.079	0.0020	mg/Kg wet	0.100		78.8	40-140	8.79	30	
4,4'-DDD	0.095	0.0040	mg/Kg wet	0.100		95.1	40-140	3.89	30	
4,4'-DDD [2C]	0.096	0.0040	mg/Kg wet	0.100		96.1	40-140	3.11	30	
4,4'-DDE	0.094	0.0040	mg/Kg wet	0.100		93.9	40-140	4.99	30	
4,4'-DDE [2C]	0.095	0.0040	mg/Kg wet	0.100		94.9	40-140	4.58	30	
4,4'-DDT	0.092	0.0040	mg/Kg wet	0.100		91.9	40-140	3.00	30	
4,4'-DDT [2C]	0.092	0.0040	mg/Kg wet	0.100		92.0	40-140	3.96	30	
Dieldrin	0.089	0.0040	mg/Kg wet	0.100		88.6	40-140	4.91	30	
Dieldrin [2C]	0.092	0.0040	mg/Kg wet	0.100		91.6	40-140	4.91	30	
Endosulfan I	0.085	0.0050	mg/Kg wet	0.100		85.4	40-140	5.40	30	V-06
Endosulfan I [2C]	0.082	0.0050	mg/Kg wet	0.100		82.2	40-140	6.24	30	
Endosulfan II	0.079	0.0080	mg/Kg wet	0.100		79.3	40-140	3.16	30	
Endosulfan II [2C]	0.085	0.0080	mg/Kg wet	0.100		84.7	40-140	3.05	30	
Endosulfan Sulfate	0.062	0.0080	mg/Kg wet	0.100		61.9	40-140	2.09	30	
Endosulfan Sulfate [2C]	0.070	0.0080	mg/Kg wet	0.100		69.9	40-140	1.49	30	
Endrin	0.081	0.0080	mg/Kg wet	0.100		81.5	40-140	6.95	30	
Endrin [2C]	0.090	0.0080	mg/Kg wet	0.100		89.8	40-140	3.70	30	
Endrin Aldehyde	0.083	0.0080	mg/Kg wet	0.100		83.0	40-140	7.26	30	
Endrin Aldehyde [2C]	0.084	0.0080	mg/Kg wet	0.100		83.8	40-140	5.87	30	
Endrin Ketone	0.082	0.0080	mg/Kg wet	0.100		81.9	40-140	0.600	30	
Endrin Ketone [2C]	0.079	0.0080	mg/Kg wet	0.100		79.1	40-140	1.29	30	
Heptachlor	0.085	0.0050	mg/Kg wet	0.100		85.3	40-140	7.86	30	
Heptachlor [2C]	0.085	0.0050	mg/Kg wet	0.100		85.3	40-140	9.00	30	
Heptachlor Epoxide	0.085	0.0050	mg/Kg wet	0.100		85.2	40-140	5.73	30	
Heptachlor Epoxide [2C]	0.088	0.0050	mg/Kg wet	0.100		88.2	40-140	5.61	30	
Hexachlorobenzene	0.081	0.0060	mg/Kg wet	0.100		80.6	40-140	8.82	30	
Hexachlorobenzene [2C]	0.078	0.0060	mg/Kg wet	0.100		77.9	40-140	9.18	30	
Methoxychlor	0.083	0.050	mg/Kg wet	0.100		82.7	40-140	3.33	30	
Methoxychlor [2C]	0.086	0.050	mg/Kg wet	0.100		85.5	40-140	3.86	30	
Surrogate: Decachlorobiphenyl	*0.144*		mg/Kg wet	0.200		71.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.125*		mg/Kg wet	0.200		62.6	30-150			
Surrogate: Tetrachloro-m-xylene	*0.138*		mg/Kg wet	0.200		69.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.132*		mg/Kg wet	0.200		65.9	30-150			

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QUALITY CONTROL

Polychlorinated Biphenyls By GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308087 - SW-846 3546										
Blank (B308087-BLK1)				Prepared: 05/10/22 Analyzed: 05/13/22						
Aroclor-1016	ND	0.020	mg/Kg wet							
Aroclor-1016 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1221	ND	0.020	mg/Kg wet							
Aroclor-1221 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1232	ND	0.020	mg/Kg wet							
Aroclor-1232 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1242	ND	0.020	mg/Kg wet							
Aroclor-1242 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1248	ND	0.020	mg/Kg wet							
Aroclor-1248 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1254	ND	0.020	mg/Kg wet							
Aroclor-1254 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1260	ND	0.020	mg/Kg wet							
Aroclor-1260 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1262	ND	0.020	mg/Kg wet							
Aroclor-1262 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1268	ND	0.020	mg/Kg wet							
Aroclor-1268 [2C]	ND	0.020	mg/Kg wet							
Surrogate: Decachlorobiphenyl	*0.181*		mg/Kg wet	0.200		90.7	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.188*		mg/Kg wet	0.200		94.0	30-150			
Surrogate: Tetrachloro-m-xylene	*0.151*		mg/Kg wet	0.200		75.3	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.142*		mg/Kg wet	0.200		70.8	30-150			
LCS (B308087-BS1)				Prepared: 05/10/22 Analyzed: 05/13/22						
Aroclor-1016	0.13	0.020	mg/Kg wet	0.200		64.9	40-140			
Aroclor-1016 [2C]	0.14	0.020	mg/Kg wet	0.200		70.4	40-140			
Aroclor-1260	0.15	0.020	mg/Kg wet	0.200		75.6	40-140			
Aroclor-1260 [2C]	0.15	0.020	mg/Kg wet	0.200		76.9	40-140			
Surrogate: Decachlorobiphenyl	*0.182*		mg/Kg wet	0.200		91.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.193*		mg/Kg wet	0.200		96.7	30-150			
Surrogate: Tetrachloro-m-xylene	*0.147*		mg/Kg wet	0.200		73.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.141*		mg/Kg wet	0.200		70.3	30-150			
LCS Dup (B308087-BSD1)				Prepared: 05/10/22 Analyzed: 05/13/22						
Aroclor-1016	0.14	0.020	mg/Kg wet	0.200		71.2	40-140	9.27	30	
Aroclor-1016 [2C]	0.16	0.020	mg/Kg wet	0.200		78.0	40-140	10.3	30	
Aroclor-1260	0.17	0.020	mg/Kg wet	0.200		82.6	40-140	8.80	30	
Aroclor-1260 [2C]	0.17	0.020	mg/Kg wet	0.200		84.6	40-140	9.53	30	
Surrogate: Decachlorobiphenyl	*0.193*		mg/Kg wet	0.200		96.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.205*		mg/Kg wet	0.200		103	30-150			
Surrogate: Tetrachloro-m-xylene	*0.153*		mg/Kg wet	0.200		76.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.147*		mg/Kg wet	0.200		73.5	30-150			

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BREAKDOWN REPORT

Lab Sample ID:	S071316-PEM1	Analyzed:	05/09/2022

Column Number: 1

Analyte	% Breakdown
4,4'-DDT [1]	0.27
Endrin [1]	1.03

Column Number: 2

Analyte	% Breakdown
4,4'-DDT [2]	0.24
Endrin [2]	1.16

BREAKDOWN REPORT

Lab Sample ID:	S071316-PEM2	Analyzed:	05/09/2022

Column Number: 1

Analyte	% Breakdown
4,4'-DDT [1]	0.29
Endrin [1]	0.95

Column Number: 2

Analyte	% Breakdown
4,4'-DDT [2]	0.27
Endrin [2]	1.06

BREAKDOWN REPORT

Lab Sample ID:	S071316-PEM3	Analyzed:	05/09/2022

Column Number: 1

Analyte	% Breakdown
4,4'-DDT [1]	1.05
Endrin [1]	3.87

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BREAKDOWN REPORT

Lab Sample ID:	S071316-PEM3	Analyzed:	05/09/2022

Column Number: 2

Analyte	% Breakdown
4,4'-DDT [2]	1.03
Endrin [2]	3.86

BREAKDOWN REPORT

Lab Sample ID:	S071316-PEM4	Analyzed:	05/10/2022

Column Number: 1

Analyte	% Breakdown
4,4'-DDT [1]	3.28
Endrin [1]	5.47

Column Number: 2

Analyte	% Breakdown
4,4'-DDT [2]	3.16
Endrin [2]	5.54

BREAKDOWN REPORT

Lab Sample ID:	S071316-PEM5	Analyzed:	05/10/2022

Column Number: 1

Analyte	% Breakdown
4,4'-DDT [1]	4.52
Endrin [1]	5.12

Column Number: 2

Analyte	% Breakdown
4,4'-DDT [2]	4.39
Endrin [2]	5.43

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8081B

1701220414-07

Lab Sample ID: 22D2026-07 Date(s) Analyzed: 05/10/2022 05/10/2022

Instrument ID (1): ECD2 Instrument ID (2): ECD2

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
4,4'-DDD	1	7.777	7.752	7.812	0.11	
	2	7.557	7.530	7.590	0.11	0.0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8081B

LCS

Lab Sample ID: B307165-BS1 Date(s) Analyzed: 05/09/2022 05/09/2022

Instrument ID (1): ECD2A Instrument ID (2): ECD2B

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
4,4'-DDD	1	7.785	7.755	7.815	0.099	
	2	7.561	7.531	7.591	0.099	0.0
4,4'-DDE	1	7.318	7.288	7.348	0.099	
	2	7.116	7.087	7.147	0.099	0.0
4,4'-DDT	1	7.999	7.969	8.029	0.095	
	2	7.803	7.773	7.833	0.096	1.1
Alachlor	1	6.717	6.687	6.747	0.077	
	2	6.267	6.236	6.296	0.081	5.1
Aldrin	1	6.626	6.596	6.656	0.095	
	2	6.345	6.315	6.375	0.098	3.1
alpha-BHC	1	5.842	5.812	5.872	0.088	
	2	5.609	5.578	5.638	0.083	5.9
alpha-Chlordane	1	7.272	7.241	7.301	0.090	
	2	6.990	6.959	7.019	0.093	3.3
beta-BHC	1	6.121	6.090	6.150	0.084	
	2	5.900	5.870	5.930	0.084	0.0
delta-BHC	1	6.251	6.220	6.280	0.081	
	2	6.100	6.069	6.129	0.085	4.8
Dieldrin	1	7.567	7.536	7.596	0.093	
	2	7.238	7.207	7.267	0.096	3.2
Endosulfan I	1	7.383	7.353	7.413	0.090	
	2	7.031	7.001	7.061	0.088	2.3
Endosulfan II	1	7.925	7.895	7.955	0.082	
	2	7.642	7.612	7.672	0.087	5.9
Endosulfan Sulfate	1	8.514	8.484	8.544	0.063	
	2	8.101	8.072	8.132	0.071	11.9
Endrin	1	7.751	7.720	7.780	0.087	
	2	7.469	7.439	7.499	0.093	6.7
Endrin Aldehyde	1	8.227	8.197	8.257	0.089	
	2	7.901	7.871	7.931	0.089	0.0
Endrin Ketone	1	8.687	8.657	8.717	0.082	

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8081B

LCS

Lab Sample ID: B307165-BS1 Date(s) Analyzed: 05/09/2022 05/09/2022

Instrument ID (1): ECD2A Instrument ID (2): ECD2B

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
	2	8.462	8.432	8.492	0.080	2.5
gamma-BHC (Lindane)	1	6.064	6.033	6.093	0.088	
	2	5.837	5.807	5.867	0.086	2.3
gamma-Chlordane	1	7.170	7.140	7.200	0.090	
	2	6.886	6.856	6.916	0.095	5.4
Heptachlor	1	6.404	6.373	6.433	0.092	
	2	6.124	6.093	6.153	0.093	1.1
Heptachlor Epoxide	1	7.078	7.048	7.108	0.090	
	2	6.746	6.715	6.775	0.093	3.3
Hexachlorobenzene	1	5.724	5.693	5.753	0.088	
	2	5.520	5.489	5.549	0.085	3.5
Methoxychlor	1	8.328	8.298	8.358	0.085	
	2	8.317	8.288	8.348	0.089	3.4

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8081B

LCS Dup

Lab Sample ID: B307165-BSD1 Date(s) Analyzed: 05/09/2022 05/09/2022

Instrument ID (1): ECD2A Instrument ID (2): ECD2B

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
4,4'-DDD	1	7.785	7.755	7.815	0.095	
	2	7.562	7.531	7.591	0.096	1.1
4,4'-DDE	1	7.318	7.288	7.348	0.094	
	2	7.117	7.087	7.147	0.095	1.1
4,4'-DDT	1	7.999	7.969	8.029	0.092	
	2	7.803	7.773	7.833	0.092	0.0
Alachlor	1	6.717	6.687	6.747	0.076	
	2	6.267	6.236	6.296	0.081	6.4
Aldrin	1	6.626	6.596	6.656	0.088	
	2	6.345	6.315	6.375	0.092	4.4
alpha-BHC	1	5.842	5.812	5.872	0.078	
	2	5.609	5.578	5.638	0.075	3.9
alpha-Chlordane	1	7.271	7.241	7.301	0.086	
	2	6.990	6.959	7.019	0.089	3.4
beta-BHC	1	6.120	6.090	6.150	0.080	
	2	5.900	5.870	5.930	0.080	0.0
delta-BHC	1	6.251	6.220	6.280	0.076	
	2	6.100	6.069	6.129	0.081	6.4
Dieldrin	1	7.567	7.536	7.596	0.089	
	2	7.237	7.207	7.267	0.092	3.3
Endosulfan I	1	7.383	7.353	7.413	0.085	
	2	7.031	7.001	7.061	0.082	3.6
Endosulfan II	1	7.924	7.895	7.955	0.079	
	2	7.642	7.612	7.672	0.085	7.3
Endosulfan Sulfate	1	8.514	8.484	8.544	0.062	
	2	8.101	8.072	8.132	0.070	12.1
Endrin	1	7.750	7.720	7.780	0.081	
	2	7.470	7.439	7.499	0.090	9.3
Endrin Aldehyde	1	8.228	8.197	8.257	0.083	
	2	7.902	7.871	7.931	0.084	1.2
Endrin Ketone	1	8.687	8.657	8.717	0.082	

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8081B

LCS Dup

Lab Sample ID: B307165-BSD1 Date(s) Analyzed: 05/09/2022 05/09/2022

Instrument ID (1): ECD2A Instrument ID (2): ECD2B

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
	2	8.462	8.432	8.492	0.079	3.7
gamma-BHC (Lindane)	1	6.064	6.033	6.093	0.081	
	2	5.837	5.807	5.867	0.079	2.5
gamma-Chlordane	1	7.170	7.140	7.200	0.085	
	2	6.887	6.856	6.916	0.090	5.7
Heptachlor	1	6.404	6.373	6.433	0.085	
	2	6.124	6.093	6.153	0.085	0.0
Heptachlor Epoxide	1	7.078	7.048	7.108	0.085	
	2	6.746	6.715	6.775	0.088	3.5
Hexachlorobenzene	1	5.724	5.693	5.753	0.081	
	2	5.520	5.489	5.549	0.078	3.8
Methoxychlor	1	8.327	8.298	8.358	0.083	
	2	8.318	8.288	8.348	0.086	3.6

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B308087-BS1 Date(s) Analyzed: 05/13/2022 05/13/2022

Instrument ID (1): ECD1 Instrument ID (2): ECD1

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.13	
	2	0.000	0.000	0.000	0.14	7.4
Aroclor-1260	1	0.000	0.000	0.000	0.15	
	2	0.000	0.000	0.000	0.15	0.0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B308087-BSD1 Date(s) Analyzed: 05/13/2022 05/13/2022

Instrument ID (1): ECD1 Instrument ID (2): ECD1

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.14	
	2	0.000	0.000	0.000	0.16	13.3
Aroclor-1260	1	0.000	0.000	0.000	0.17	
	2	0.000	0.000	0.000	0.17	0.0

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
DL-03	Elevated reporting limit due to matrix interference.
O-32	A dilution was performed as part of the standard analytical procedure.
V-06	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8081B in Soil	
Alachlor	NC
Alachlor [2C]	NC
Aldrin	CT,NH,NY,ME,NC,VA
Aldrin [2C]	CT,NH,NY,ME,NC,VA
alpha-BHC	CT,NH,NY,ME,NC,VA
alpha-BHC [2C]	CT,NH,NY,ME,NC,VA
beta-BHC	CT,NH,NY,ME,NC,VA
beta-BHC [2C]	CT,NH,NY,ME,NC,VA
delta-BHC	CT,NH,NY,ME,NC,VA
delta-BHC [2C]	CT,NH,NY,ME,NC,VA
gamma-BHC (Lindane)	CT,NH,NY,ME,NC,VA
gamma-BHC (Lindane) [2C]	CT,NH,NY,ME,NC,VA
Chlordane	CT,NH,NY,ME,NC,VA
Chlordane [2C]	CT,NH,NY,ME,NC,VA
4,4'-DDD	CT,NH,NY,ME,NC,VA
4,4'-DDD [2C]	CT,NH,NY,ME,NC,VA
4,4'-DDE	CT,NH,NY,ME,NC,VA
4,4'-DDE [2C]	CT,NH,NY,ME,NC,VA
4,4'-DDT	CT,NH,NY,ME,NC,VA
4,4'-DDT [2C]	CT,NH,NY,ME,NC,VA
Dieldrin	CT,NH,NY,ME,NC,VA
Dieldrin [2C]	CT,NH,NY,ME,NC,VA
Endosulfan I	CT,NH,NY,ME,NC,VA
Endosulfan I [2C]	CT,NH,NY,ME,NC,VA
Endosulfan II	CT,NH,NY,ME,NC,VA
Endosulfan II [2C]	CT,NH,NY,ME,NC,VA
Endosulfan Sulfate	CT,NH,NY,ME,NC,VA
Endosulfan Sulfate [2C]	CT,NH,NY,ME,NC,VA
Endrin	CT,NH,NY,ME,NC,VA
Endrin [2C]	CT,NH,NY,ME,NC,VA
Endrin Aldehyde	CT,NH,NY,ME,NC,VA
Endrin Aldehyde [2C]	CT,NH,NY,ME,NC,VA
Endrin Ketone	NC
Endrin Ketone [2C]	NC
Heptachlor	CT,NH,NY,ME,NC,VA
Heptachlor [2C]	CT,NH,NY,ME,NC,VA
Heptachlor Epoxide	CT,NH,NY,ME,NC,VA
Heptachlor Epoxide [2C]	CT,NH,NY,ME,NC,VA
Hexachlorobenzene	NC
Hexachlorobenzene [2C]	NC
Methoxychlor	CT,NH,NY,ME,NC,VA
Methoxychlor [2C]	CT,NH,NY,ME,NC,VA
Toxaphene	CT,NH,NY,ME,NC,VA
Toxaphene [2C]	CT,NH,NY,ME,NC,VA
SW-846 8081B in Water	
Alachlor	NC

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8081B in Water	
Alachlor [2C]	NC
Aldrin	CT,NH,NY,ME,NC,VA
Aldrin [2C]	CT,NH,NY,ME,NC,VA
alpha-BHC	CT,NH,NY,ME,NC,VA
alpha-BHC [2C]	CT,NH,NY,ME,NC,VA
beta-BHC	CT,NH,NY,ME,NC,VA
beta-BHC [2C]	CT,NH,NY,ME,NC,VA
delta-BHC	CT,NH,NY,ME,NC,VA
delta-BHC [2C]	CT,NH,NY,ME,NC,VA
gamma-BHC (Lindane)	CT,NH,NY,ME,NC,VA
gamma-BHC (Lindane) [2C]	CT,NH,NY,ME,NC,VA
Chlordane	CT,NH,NY,ME,NC,VA
Chlordane [2C]	CT,NH,NY,ME,NC,VA
4,4'-DDD	CT,NH,NY,ME,NC,VA
4,4'-DDD [2C]	CT,NH,NY,ME,NC,VA
4,4'-DDE	CT,NH,NY,ME,NC,VA
4,4'-DDE [2C]	CT,NH,NY,ME,NC,VA
4,4'-DDT	CT,NH,NY,ME,NC,VA
4,4'-DDT [2C]	CT,NH,NY,ME,NC,VA
Dieldrin	CT,NH,NY,ME,NC,VA
Dieldrin [2C]	CT,NH,NY,ME,NC,VA
Endosulfan I	CT,NH,NY,ME,NC,VA
Endosulfan I [2C]	CT,NH,NY,ME,NC,VA
Endosulfan II	CT,NH,NY,ME,NC,VA
Endosulfan II [2C]	CT,NH,NY,ME,NC,VA
Endosulfan Sulfate	CT,NH,NY,ME,NC,VA
Endosulfan Sulfate [2C]	CT,NH,NY,ME,NC,VA
Endrin	CT,NH,NY,ME,NC,VA
Endrin [2C]	CT,NH,NY,ME,NC,VA
Endrin Aldehyde	CT,NH,NY,ME,NC,VA
Endrin Aldehyde [2C]	CT,NH,NY,ME,NC,VA
Endrin Ketone	NC
Endrin Ketone [2C]	NC
Heptachlor	CT,NH,NY,ME,NC,VA
Heptachlor [2C]	CT,NH,NY,ME,NC,VA
Heptachlor Epoxide	CT,NH,NY,ME,NC,VA
Heptachlor Epoxide [2C]	CT,NH,NY,ME,NC,VA
Hexachlorobenzene	NC
Hexachlorobenzene [2C]	NC
Methoxychlor	CT,NH,NY,ME,NC,VA
Methoxychlor [2C]	CT,NH,NY,ME,NC,VA
Toxaphene	CT,NH,NY,ME,NC,VA
Toxaphene [2C]	CT,NH,NY,ME,NC,VA
SW-846 8082A in Soil	
Aroclor-1016	CT,NH,NY,NC,ME,VA,PA
Aroclor-1016 [2C]	CT,NH,NY,NC,ME,VA,PA

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Soil	
Aroclor-1221	CT,NH,NY,NC,ME,VA,PA
Aroclor-1221 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1232	CT,NH,NY,NC,ME,VA,PA
Aroclor-1232 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1242	CT,NH,NY,NC,ME,VA,PA
Aroclor-1242 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1248	CT,NH,NY,NC,ME,VA,PA
Aroclor-1248 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1254	CT,NH,NY,NC,ME,VA,PA
Aroclor-1254 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1260	CT,NH,NY,NC,ME,VA,PA
Aroclor-1260 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1262	NH,NY,NC,ME,VA,PA
Aroclor-1262 [2C]	NH,NY,NC,ME,VA,PA
Aroclor-1268	NH,NY,NC,ME,VA,PA
Aroclor-1268 [2C]	NH,NY,NC,ME,VA,PA
SW-846 8082A in Water	
Aroclor-1016	CT,NH,NY,NC,ME,VA,PA
Aroclor-1016 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1221	CT,NH,NY,NC,ME,VA,PA
Aroclor-1221 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1232	CT,NH,NY,NC,ME,VA,PA
Aroclor-1232 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1242	CT,NH,NY,NC,ME,VA,PA
Aroclor-1242 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1248	CT,NH,NY,NC,ME,VA,PA
Aroclor-1248 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1254	CT,NH,NY,NC,ME,VA,PA
Aroclor-1254 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1260	CT,NH,NY,NC,ME,VA,PA
Aroclor-1260 [2C]	CT,NH,NY,NC,ME,VA,PA
Aroclor-1262	NH,NY,NC,ME,VA,PA
Aroclor-1262 [2C]	NH,NY,NC,ME,VA,PA
Aroclor-1268	NH,NY,NC,ME,VA,PA
Aroclor-1268 [2C]	NH,NY,NC,ME,VA,PA

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Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2024
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Publilc Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2023
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2023
RI	Rhode Island Department of Health	LAO00373	12/30/2022
NC	North Carolina Div. of Water Quality	652	12/31/2022
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2022
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

22D2026

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☐ 108 Myrtle Street, #502, North Quincy, MA 02171
☐ 317 Iron Horse Way, Suite 204, Providence, RI 02908
☐ 80 Washington Street, Suite 301, Poughkeepsie, NY
☒ 1550 Main St, Suite 400, Springfield, MA
☐ Other _____

22D1104 ~~CHAIN-OF-CUSTODY RECORD~~ 42000

Turnaround
☐ 24-Hour* ☐ 72-Hour* ☐ Other _____ (days)
☐ 48-Hour* ☒ Standard (____ days) *Surcharge Applies

Project Name	Project Location	Project Number	Laboratory
Parker Mill Dam	Wareham, MA	20210133.A11	PACE

Report To: Matt Kissane (mkissane@fando.com)
Invoice To: Matt Kissane (mkissane@fando.com)
P.O. No.: 1701 20210133.A11
Sampler's Signature: [signature] Date: 4/15/22

Source Codes:
MW=Monitoring Well PW=Potable Water T=Treatment Facility S=Soil B=Sediment
SW=Surface Water ST=Stormwater W=Waste A=Air C=Concrete
X=Other _____

Item No.	Transfer Check 1	2	3	4	Sample Number	Source Code	Date Sampled	Time Sampled	Analysis Request: VOCs (8260)	1311 TCLP Ext	Percent Solids	Total Metals (6010/7471)	PAH 8270	EPH	TOC 9060	Containers: Soil VOA Vial, 5g mechanol	Soil VOA Vial, ☐ water ☒ NaHSO4	Glass Soil Container (16) oz	Other 6 Glass Soil Container (8 oz)	Other 6 Glass Soil Container (4 oz)	Water VOA Vial ☐ As is ☐ HCl	Glass Amber ( ) ml ☐ As is ☐ H2SO4	Plastic - As is ☐ 250 ml ☐ 500 ☐ 1000 ml	Plastic - H2SO4 ☐ 250 ml ☐ 500 ml	Plastic - HNO3 250 ml ☐ Filtered ☐ 0.45µ ☐ 10µ	Plastic - NaOH 250 ml	Comments
1					1701220414-01	B	4-14-22	1000	X	X	X	X	X	X	X	1	2	1	1	1							
2					1701220414-02	B	4-14-22	1030	X	X	X	X	X	X	X	1	2	1	1	1							
3					1701220414-03	B	4-14-22	1130	X	X	X	X	X	X	X	1	2	1	1	1							
4					1701220414-04	B	4-14-22	1330	X	X	X	X	X	X	X	1	2	1	1	1							
5					1701220415-05	B	4-15-22	0800	X	X	X	X	X	X	X	1	2	1	1	1							
6					1701220415-06	B	4-15-22	0845	X	X	X	X	X	X	X	1	2	1	1	1							
7					1701220415-07	B	4-15-22	0930	X	X	X	X	X	X	X	1	2	1	1	1							

Client asked to run 8081 on samples. JLH 4/28/22
Client wants pcbs added. JLH 5/10/22

Transfer Number	Relinquished By	Accepted By	Date	Time
1	[signature]	[signature] 4.9	4/15/22	1445
2				
3				
4				

Charge Exceptions: ☐ CT Tax Exempt ☐ QA/QC ☐ Other _____
____ Duplicates ____ Blanks (Item Nos:)
Reporting and Detection Limit Requirements: ☐ RCP Deliverables ☐ MCP CAM Cert.
Additional Comments:

Table of Contents

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Fuss + O'neill

Received By DK Date 4/15/22 Time 1445

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____

Direct from Sampling _____ Ambient _____ Melted Ice _____

By Gun # S Actual Temp - 4.9

Were samples within Temperature? 2-6°C T By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA

Was COC Relinquished ? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T

Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? F Who was notified? _____

Is there enough Volume? T

Is there Headspace where applicable? T MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? F On COC? F

Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	7
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	7
Meoh-	7	250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-	14	Flashpoint		Col./Bacteria		2oz Amb/Clear	7
DI-		Other Glass		Other Plastic		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments:

THIELSCH ENGINEERING

195 Frances Avenue
Cranston RI, 02910
Phone: (401)-467-6454
Fax: (401)-467-2398
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Let's Build a Solid Foundation

Client Information:
Fuss & O'Neill
Quincy, MA
PM: Evan Koncewicz
Assigned By: Evan Koncewicz
Collected By: Fuss & O'Neill

Project Information:
Parker Mills Pond
1 Elm Street, Wareham, MA 02571
F&ON Project Number: 20210133.A11
Summary Page: 1 of 1
Report Date: 05.02.22

LABORATORY TESTING DATA SHEET, Report No.: 7422-D-B017

Source	Sample ID	Depth (ft)	Laboratory No.	Identification Tests								Proctor / CBR / Permeability Tests								Laboratory Log and Soil Description
				As Received Moisture Content %	LL %	PL %	Gravel %	Sand %	Fines %	Org. %	pH	Dry unit wt. (pcf)	Test Moisture Content %	γ_d MAX (pcf) W_{opt} (%)	γ_d MAX (pcf) W_{opt} (%) (Corr.)	Target Test Setup as % of Proctor	CBR @ 0.1"	CBR @ 0.2"	Permeability cm/sec	
				D2216	D4318		D6913			D2974	D4792			D1557						
Test Pit	TS-1	Unknown	22-S-B288				3.5	58.7	37.8											Brown-Gray silty sand (SM)
Test Pit	TS-2	Unknown	22-S-B289				0.0	31.0	69.0											Dark Brown sandy silt (ML)
Test Pit	TS-3	Unknown	22-S-B290				5.6	56.6	37.8											Dark Brown silty sand (SM)
Test Pit	TS-4	Unknown	22-S-B291				0.6	69.8	29.6											Dark Brown silty sand (SM)
Test Pit	TS-5	Unknown	22-S-B292				0.3	58.6	41.1											Dark Brown silty sand (SM)
Test Pit	TS-6	Unknown	22-S-B293				0.2	56.0	43.8											Dark Brown silty sand (SM)
Test Pit	TS-7	Unknown	22-S-B294				0.3	17.3	82.4											Dark Brown silt with sand (ML)

Date Received: *04.19.2022*

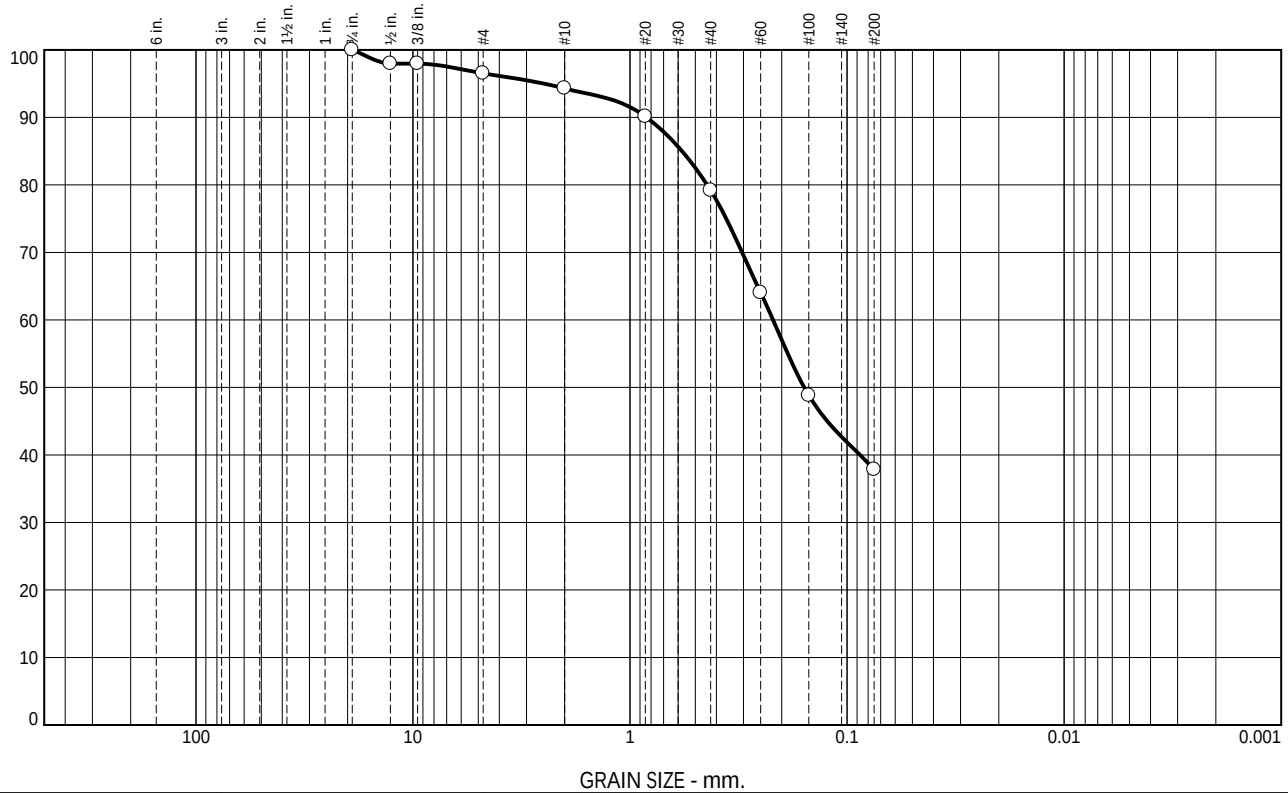
Reviewed By: Pamela L. Blanc

Date Reviewed: *05.02.2022*

This report only relates to items inspect and/or tested. No warranty, expressed or implied, is made.
This report shall not be reproduced, except in full, without prior written approval from the Agency, as defined in ASTM E329.

Particle Size Distribution Report

ASTM D6913



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	3.5	2.2	15.1	41.4	37.8	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)	Pct. of Fines
3/4"	100.0			
1/2"	98.0			
3/8"	98.0			
#4	96.5			
#10	94.3			
#20	90.1			
#40	79.2			
#60	64.0			
#100	48.8			
#200	37.8			

* (no specification provided)

Material Description

Brown-Gray silty sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.8393 D_{85}= 0.5760 D_{60}= 0.2194
D_{50}= 0.1577 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-4(0)

Test Remarks

Sample visually classified as non-plastic. Sample contains organic material. Sample received with standing water.

Source of Sample: Test Pit
Sample Number: TS-1

Sample Date:

Thielsch Engineering Inc.

Cranston, RI

Client: Fuss & O'Neill
Project: Parker Mills Pond
1 Elm Street, Wareham, MA
Project No: 20210133.A11

Figure 22-S-B288

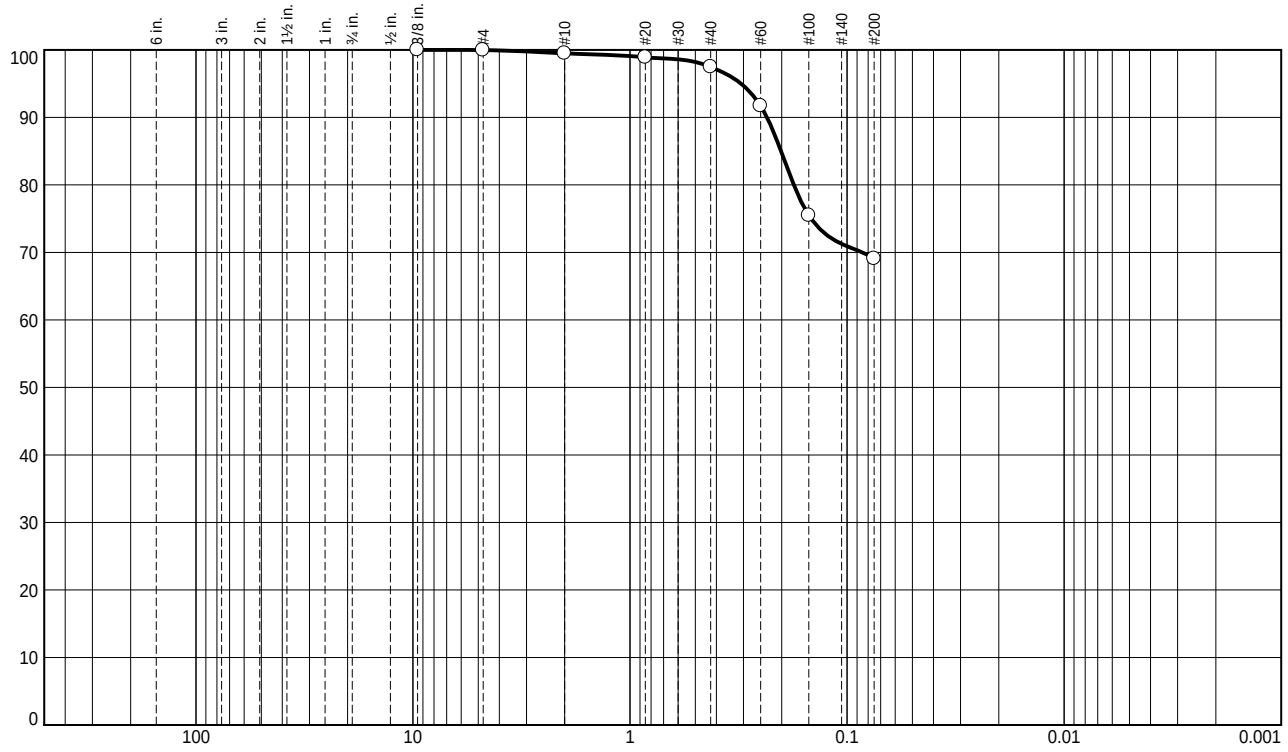
Tested By: DN / RL

Checked By: Ronald L. Blanc

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

Particle Size Distribution Report

ASTM D6913



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	2.0	28.5	69.0	

Test Results (ASTM D6913)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)	Pct. of Fines
3/8"	100.0			
#4	100.0			
#10	99.5			
#20	98.9			
#40	97.5			
#60	91.7			
#100	75.5			
#200	69.0			

* (no specification provided)

Material Description

Dark Brown sandy silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.2336 D_{85}= 0.2015 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Test Remarks

Sample visually classified as non-plastic. Sample contains organic material. Sample received with standing water.

Source of Sample: Test Pit
Sample Number: TS-2

Sample Date:

Thielsch Engineering Inc.

Cranston, RI

Client: Fuss & O'Neill
Project: Parker Mills Pond
1 Elm Street, Wareham, MA
Project No: 20210133.A11

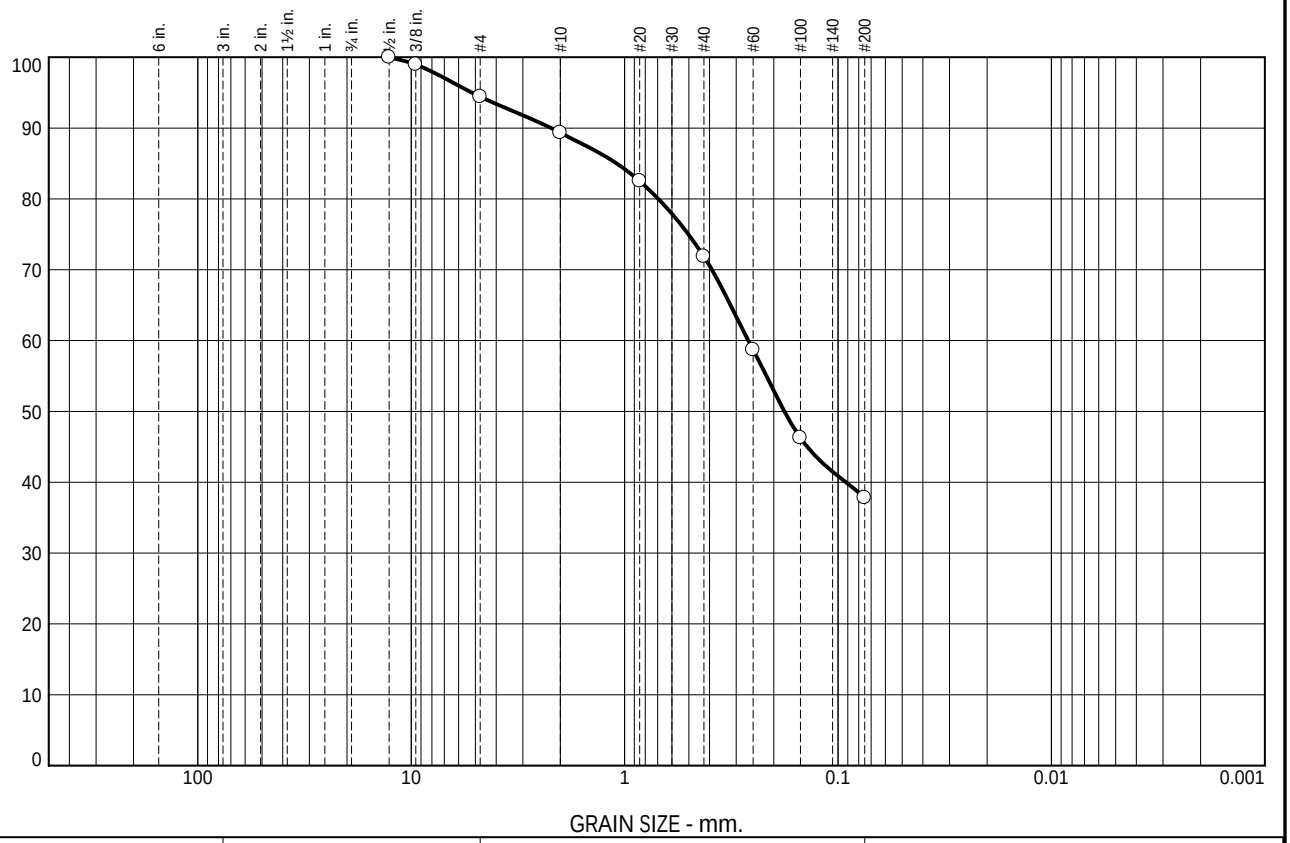
Figure 22-S-B289

Tested By: DN / RL

Checked By: Ronald L. Blanc

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	5.6	5.1	17.4	34.1	37.8	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100.0		
3/8"	99.0		
#4	94.4		
#10	89.3		
#20	82.5		
#40	71.9		
#60	58.7		
#100	46.3		
#200	37.8		

* (no specification provided)

Soil Description

Dark Brown silty sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 2.2101 D_{85}= 1.0888 D_{60}= 0.2633
D_{50}= 0.1783 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-4(0)

Remarks

Sample visually classified as non-plastic. Sample contains organic material. Sample received with standing water.

Source of Sample: Test Pit
Sample Number: TS-3

Date:

Thielsch Engineering Inc.

Cranston, RI

Client: Fuss & O'Neill
Project: Parker Mills Pond
1 Elm Street, Wareham, MA
Project No: 20210133.A11

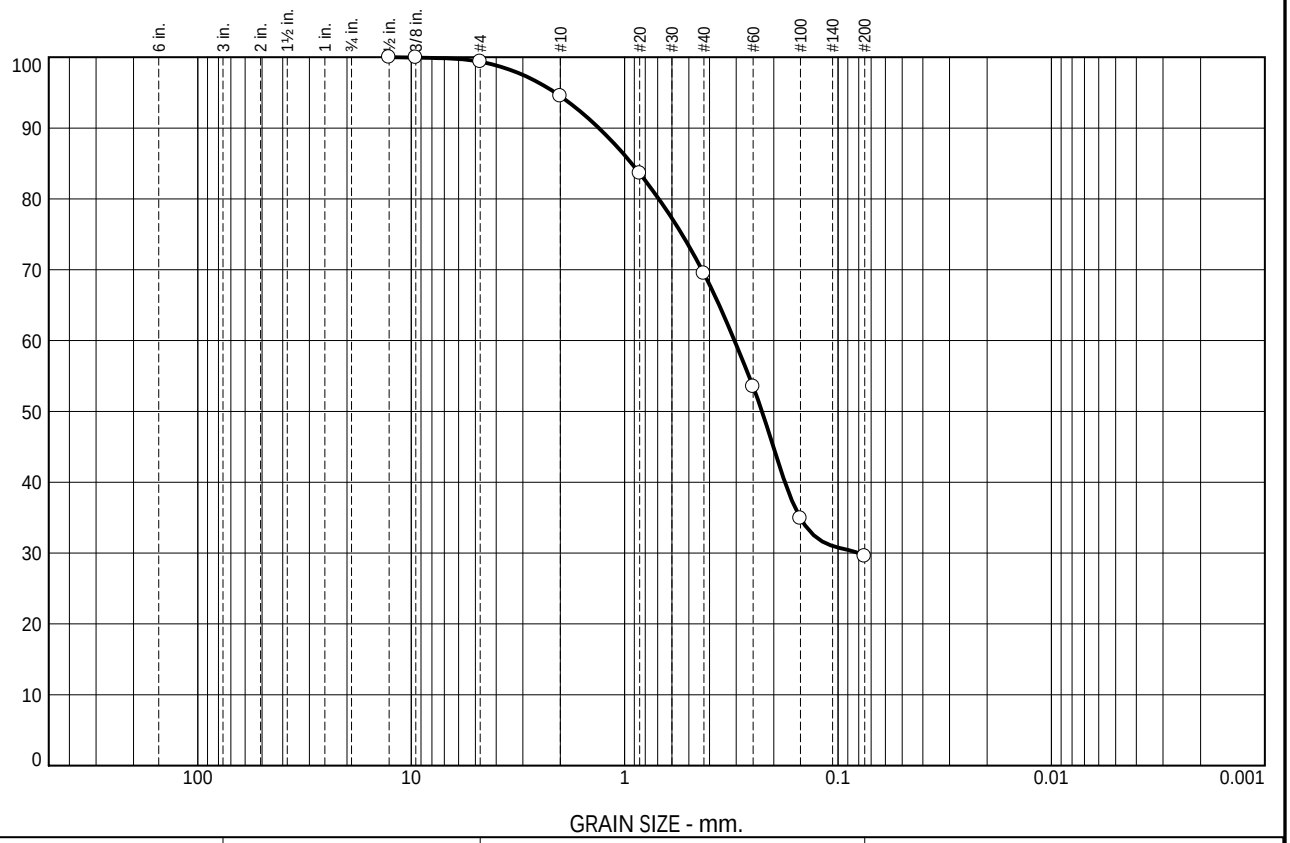
Figure 22-S-B290

Tested By: DN / RL

Checked By: Bonnie LaBlanc

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	4.9	25.0	39.9	29.6	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100.0		
3/8"	99.9		
#4	99.4		
#10	94.5		
#20	83.6		
#40	69.5		
#60	53.5		
#100	34.9		
#200	29.6		

* (no specification provided)

Soil Description

Dark Brown silty sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 1.3199 D_{85}= 0.9268 D_{60}= 0.3054
D_{50}= 0.2272 D_{30}= 0.0804 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Sample visually classified as non-plastic. Sample contains organic material. Sample received with standing water.

Source of Sample: Test Pit
Sample Number: TS-4

Date:

Thielsch Engineering Inc.

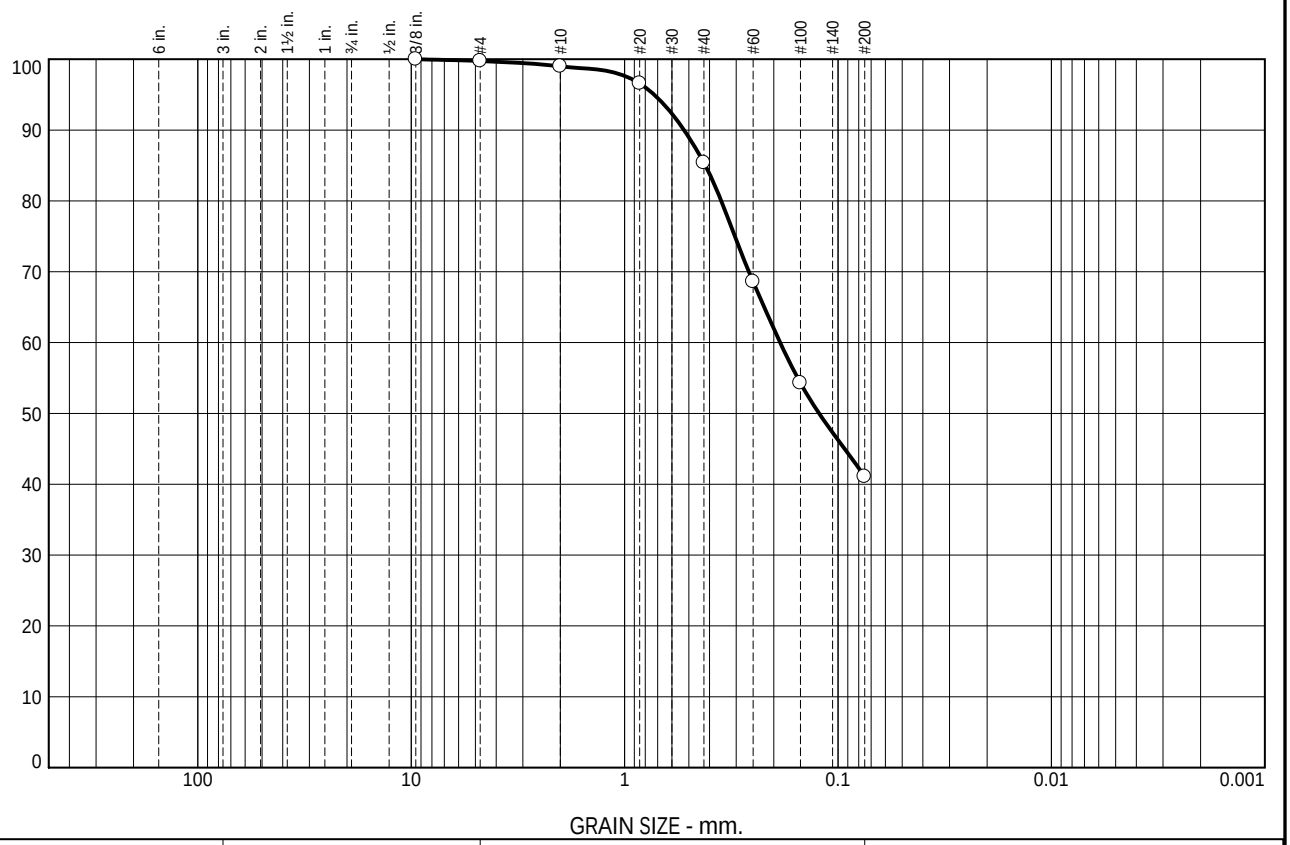
Cranston, RI

Client: Fuss & O'Neill
Project: Parker Mills Pond
1 Elm Street, Wareham, MA
Project No: 20210133.A11 Figure 22-S-B291

Tested By: DN / RL Checked By: Bonnie LaBlanc

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.7	13.6	44.3	41.1	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100.0		
#4	99.7		
#10	99.0		
#20	96.6		
#40	85.4		
#60	68.6		
#100	54.3		
#200	41.1		

* (no specification provided)

Soil Description

Dark Brown silty sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.5264 D_{85}= 0.4182 D_{60}= 0.1868
D_{50}= 0.1226 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-4(0)

Remarks

Sample visually classified as non-plastic. Sample contains organic material. Sample received with standing water.

Source of Sample: Test Pit
Sample Number: TS-5

Date:

Thielsch Engineering Inc.

Cranston, RI

Client: Fuss & O'Neill
Project: Parker Mills Pond
1 Elm Street, Wareham, MA
Project No: 20210133.A11

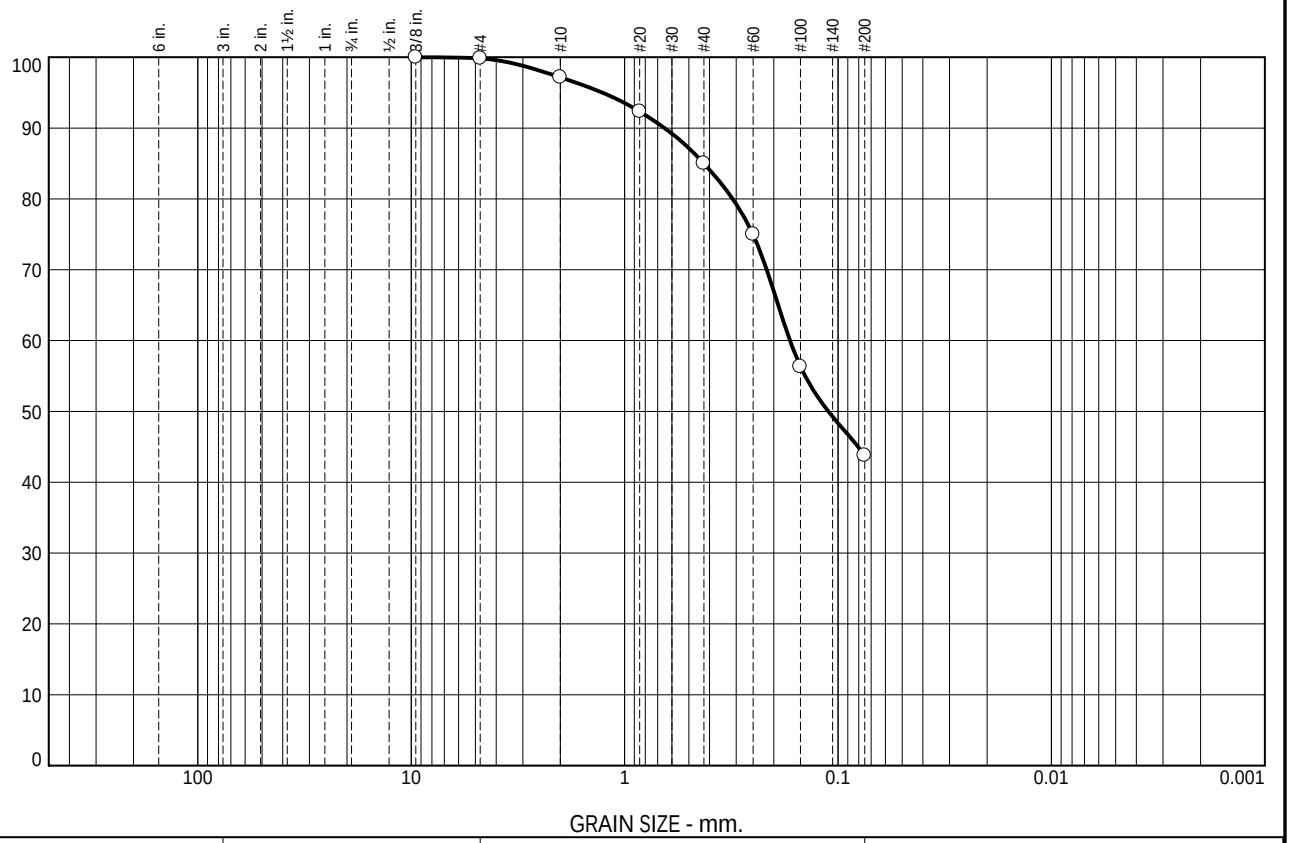
Figure 22-S-B292

Tested By: RL / DN

Checked By: Bonnie LaBlanc

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	2.6	12.2	41.2	43.8	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100.0		
#4	99.8		
#10	97.2		
#20	92.3		
#40	85.0		
#60	75.0		
#100	56.3		
#200	43.8		

* (no specification provided)

Soil Description

Dark Brown silty sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.6502 D_{85}= 0.4253 D_{60}= 0.1679
D_{50}= 0.1110 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-4(0)

Remarks

Sample visually classified as non-plastic. Sanmple contains organic material. Sample received with standing water.

Source of Sample: Test Pit
Sample Number: TS-6

Date:

Thielsch Engineering Inc.

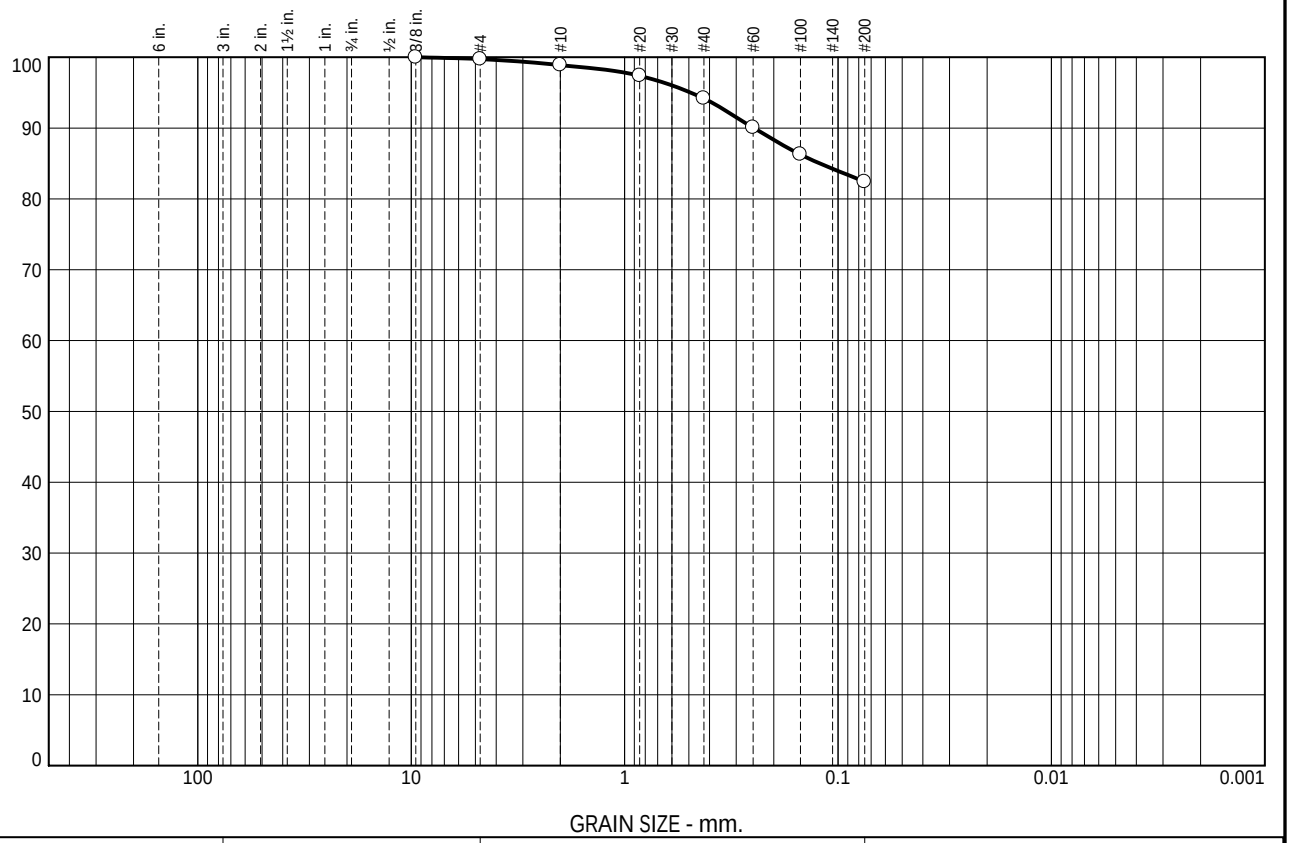
Cranston, RI

Client: Fuss & O'Neill
Project: Parker Mills Pond
1 Elm Street, Wareham, MA
Project No: 20210133.A11 Figure 22-S-B293

Tested By: RL / DN Checked By: Pamela LaBlanc

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.8	4.7	11.8	82.4	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100.0		
#4	99.7		
#10	98.9		
#20	97.4		
#40	94.2		
#60	90.1		
#100	86.3		
#200	82.4		

* (no specification provided)

Soil Description

Dark Brown silt with sand

Atterberg Limits

PL= NP LL= NV PI=

Coefficients

D_{90}= 0.2479 D_{85}= 0.1215 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Sample visually classified as non-plastic. Sample contains organic material. Sample received with standing water.

Source of Sample: Test Pit
Sample Number: TS-7

Date:

Thielsch Engineering Inc.

Cranston, RI

Client: Fuss & O'Neill
Project: Parker Mills Pond
1 Elm Street, Wareham, MA
Project No: 20210133.A11 Figure 22-S-B294

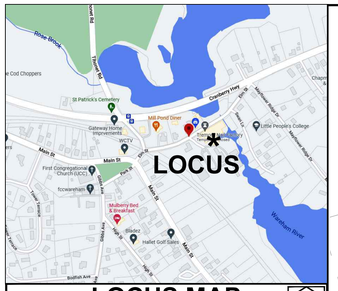
Tested By: RL / DN Checked By: Pamela LaBlanc

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

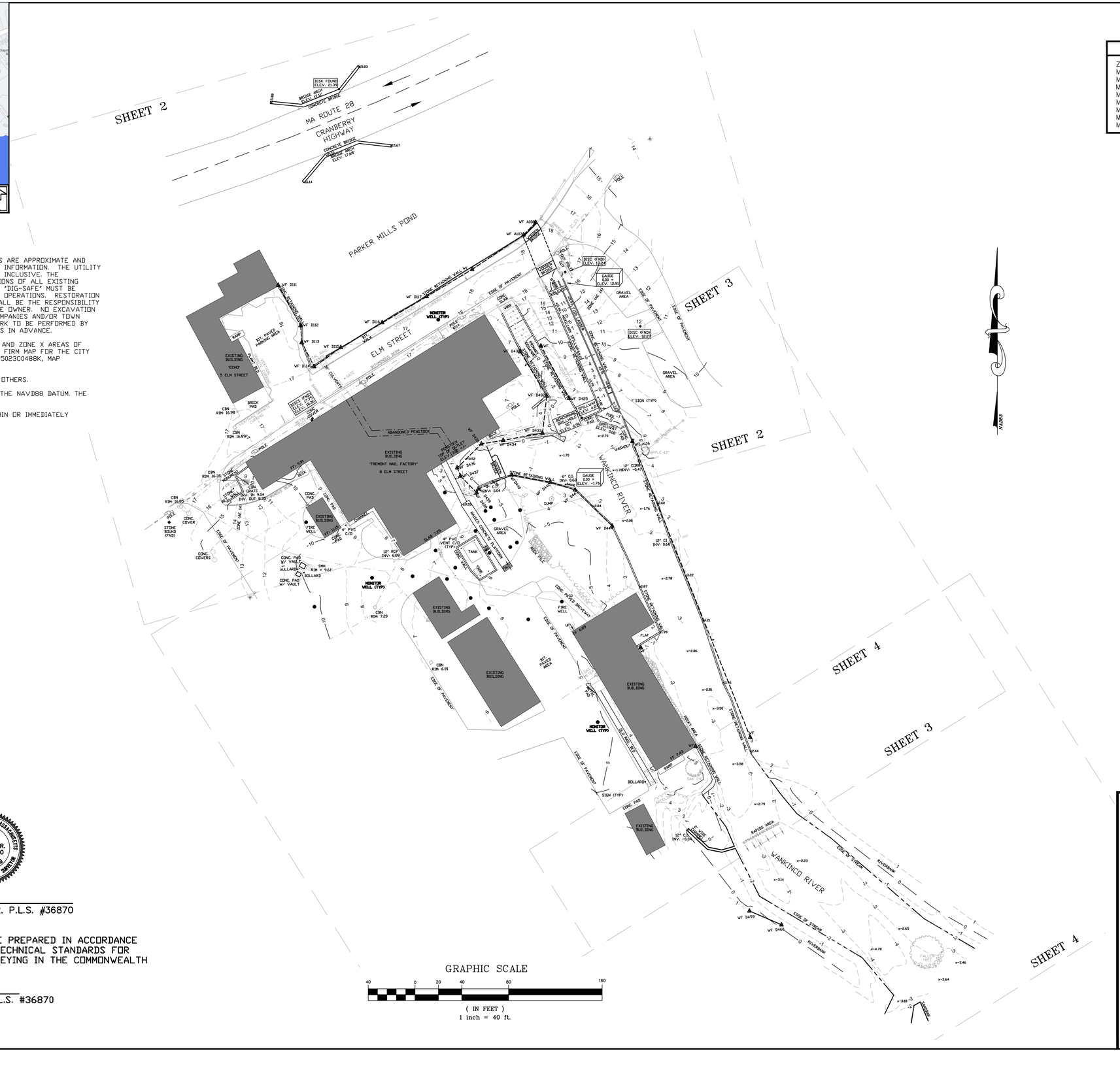
FUSS & O'NEILL

APPENDIX C

BASE MAPPING



LOCUS MAP



GENERAL NOTES:

1. THE LOCATION AND DEPTH OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE LATEST AVAILABLE INFORMATION. THE UTILITY LOCATIONS ARE APPROXIMATE AND MAY NOT BE ALL INCLUSIVE. THE CONTRACTOR SHALL CHECK AND VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, BOTH OVERHEAD AND UNDERGROUND, AND "DIG-SAFE" MUST BE NOTIFIED PRIOR TO COMMENCING ANY CONSTRUCTION OPERATIONS. RESTORATION AND REPAIR OF DAMAGE TO EXISTING UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR WITH NO ADDITIONAL COST THE OWNER. NO EXCAVATION SHALL COMMENCE UNTIL ALL INVOLVED UTILITY COMPANIES AND/OR TOWN WHOSE FACILITIES MIGHT BE AFFECTED BY ANY WORK TO BE PERFORMED BY THE CONTRACTOR ARE NOTIFIED AT LEAST 72 HOURS IN ADVANCE.

2. THIS SITE LIES IN BOTH A ZONE AE (ELEV 14') AND ZONE X AREAS OF OUTSIDE 500 YEAR FLOOD PLAIN AS SHOWN ON THE FIRM MAP FOR THE CITY OF WAREHAM, MA COMMUNITY PANEL FIRM MAP NO. 25023C0408K, MAP EFFECTIVE JULY 6, 2021.

3. WETLANDS SHOWN HEREIN WERE DELINEATED BY OTHERS.

4. THE CONTOURS SHOWN HEREIN ARE BASED UPON THE NAVD88 DATUM. THE LOCATION IS BASED UPON THE NAD83 DATUM.

5. THERE ARE NO KNOW HISTORIC CEMETERIES WITHIN OR IMMEDIATELY ADJACENT TO THIS PARCEL.

ZONING CRITERIA

WV1 ZONING	
ZONING DISTRICT	WV1
MINIMUM LOT AREA	5,000 SQ. FT.
MINIMUM LOT WIDTH	75'
MINIMUM LOT FRONTAGE	75'
MINIMUM FRONT YARD SETBACK	0'
MINIMUM SIDE YARD SETBACK	10'
MINIMUM REAR YARD SETBACK	10'
MAXIMUM LOT BUILDING COVERAGE	30%
MAXIMUM BUILDING HEIGHT	40'

DIG SAFE
1-888-DIG-SAFE
PROTECT YOURSELF, GIVE TWO WORKING DAYS NOTICE

LEGEND
NOT TO SCALE

- MAJOR CONTOUR
- MINOR CONTOUR
- STONEWALL
- TREELINE
- WETLANDS EDGE
- STREAM
- GAS LINE
- DRAINAGE LINE
- WATER LINE
- ELECTRIC LINE
- OHW OVERHEAD ELECTRIC
- UTILITY POLE
- WATER VALVE
- GAS VALVE
- HYDRANT
- WELL

BRUCE E. WILSON, JR. REGISTERED PROFESSIONAL LAND SURVEYOR — COMMONWEALTH OF MASSACHUSETTS — No. 36870

BRUCE E. WILSON, JR. P.L.S. #36870

THIS SURVEY AND PLAN WERE PREPARED IN ACCORDANCE WITH THE PROCEDURAL AND TECHNICAL STANDARDS FOR THE PRACTICE OF LAND SURVEYING IN THE COMMONWEALTH OF MASSACHUSETTS.

BY: _____
BRUCE E. WILSON, JR. P.L.S. #36870

INDEX SHEET

PRINCIPE COMPANY, INC.
ENGINEERING DIVISION
27 SAKONNET RIDGE DRIVE
TIVERTON, RI 02878
401.816.5385
SURVEY@PRINCIPEENGINEERING.COM
PRINCIPEENGINEERING.COM
ESTABLISHED IN 1981

TOPOGRAPHICAL SURVEY
for
TOWN OF WAREHAM
AP 132 LOTS A1 & 1008C
PARKER MILLS POND DAM
ELM STREET
in
WAREHAM, MASSACHUSETTS

SCALE: 1"=40'		SHEET NO: 1 OF 4
DRAWN BY: RAW	DESIGN BY:	CHECKED BY: BW
DATE: MAY 24, 2022		PROJECT NO.: SVY-2022-50

Y:\NATIONAL 2022\SVY-2022-50\dwg\SVY-2022-50-CIVIL.dwg, Layout1



ZONING CRITERIA

WV1 ZONING	
ZONING DISTRICT	WV1
MINIMUM LOT AREA	5,000 SQ. FT.
MINIMUM LOT WIDTH	75'
MINIMUM LOT FRONTAGE	75'
MINIMUM FRONT YARD SETBACK	0'
MINIMUM SIDE YARD SETBACK	10'
MINIMUM REAR YARD SETBACK	10'
MAXIMUM LOT BUILDING COVERAGE	30%
MAXIMUM BUILDING HEIGHT	40'

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GENERAL NOTES:

1. THE LOCATION AND DEPTH OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE LATEST AVAILABLE INFORMATION. THE UTILITY LOCATIONS ARE APPROXIMATE AND MAY NOT BE ALL INCLUSIVE. THE CONTRACTOR SHALL CHECK AND VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, BOTH OVERHEAD AND UNDERGROUND, AND "DIG-SAFE" MUST BE NOTIFIED PRIOR TO COMMENCING ANY CONSTRUCTION OPERATIONS. RESTORATION AND REPAIR OF DAMAGE TO EXISTING UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR WITH NO ADDITIONAL COST THE OWNER. NO EXCAVATION SHALL COMMENCE UNTIL ALL INVOLVED UTILITY COMPANIES AND/OR TOWN WHOSE FACILITIES MIGHT BE AFFECTED BY ANY WORK TO BE PERFORMED BY THE CONTRACTOR ARE NOTIFIED AT LEAST 72 HOURS IN ADVANCE.

2. THIS SITE LIES IN BOTH A ZONE AE (ELEV 14') AND ZONE X AREAS OF OUTSIDE 500 YEAR FLOOD PLAIN AS SHOWN ON THE FIRM MAP FOR THE CITY OF WAREHAM, MA COMMUNITY PANEL FIRM MAP NO. 25023C0488K, MAP EFFECTIVE JULY 6, 2021.

3. WETLANDS SHOWN HEREIN WERE DELINEATED BY OTHERS.

4. THE CONTOURS SHOWN HEREIN ARE BASED UPON THE NAVD88 DATUM. THE LOCATION IS BASED UPON THE NAD83 DATUM.

5. THERE ARE NO KNOW HISTORIC CEMETERIES WITHIN OR IMMEDIATELY ADJACENT TO THIS PARCEL.



COMMONWEALTH OF MASSACHUSETTS BRUCE E. WILSON, JR. No. 36870 REGISTERED PROFESSIONAL LAND SURVEYOR

BRUCE E. WILSON, JR. P.L.S. #36870

THIS SURVEY AND PLAN WERE PREPARED IN ACCORDANCE WITH THE PROCEDURAL AND TECHNICAL STANDARDS FOR THE PRACTICE OF LAND SURVEYING IN THE COMMONWEALTH OF MASSACHUSETTS.

BY: ______________________
BRUCE E. WILSON, JR. P.L.S. #36870

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

LEGEND
NOT TO SCALE

- MAJOR CONTOUR
- MINOR CONTOUR
- STONEWALL
- TREELINE
- WETLANDS EDGE
- STREAM
- GAS LINE
- DRAINAGE LINE
- WATER LINE
- ELECTRIC LINE
- OVERHEAD ELECTRIC
- UTILITY POLE
- WATER VALVE
- GAS VALVE
- HYDRANT
- WELL

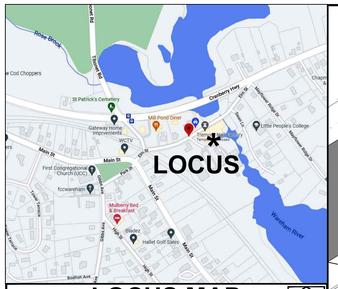
NAD83

PRINCIPE COMPANY, INC.
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TOPOGRAPHICAL SURVEY
for
TOWN OF WAREHAM
AP 132 LOTS A1 & 1008C
PARKER MILLS POND DAM
ELM STREET
in
WAREHAM, MASSACHUSETTS

SCALE: 1"=20'		SHEET NO: 2 OF 4
DRAWN BY: RAW	DESIGN BY:	CHECKED BY: BW
DATE: MAY 24, 2022		PROJECT NO.: SVY-2022-50

Y:\NATIONAL 2022\SVY-2022-50\dwg\SVY-2022-50-CIVIL.dwg, Layout2



LOCUS MAP

ZONING CRITERIA

WV1 ZONING	
ZONING DISTRICT	WV1
MINIMUM LOT AREA	5,000 SQ. FT.
MINIMUM LOT WIDTH	75'
MINIMUM LOT FRONTAGE	75'
MINIMUM FRONT YARD SETBACK	0'
MINIMUM SIDE YARD SETBACK	10'
MINIMUM REAR YARD SETBACK	10'
MAXIMUM LOT BUILDING COVERAGE	30%
MAXIMUM BUILDING HEIGHT	40'

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LEGEND
NOT TO SCALE

- MAJOR CONTOUR
- MINOR CONTOUR
- STONEWALL
- TREELINE
- WETLANDS EDGE
- STREAM
- GAS LINE
- DRAINAGE LINE
- WATER LINE
- ELECTRIC LINE
- OVERHEAD ELECTRIC
- UTILITY POLE
- WATER VALVE
- GAS VALVE
- HYDRANT
- WELL

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2. THIS SITE LIES IN BOTH A ZONE AE (ELEV 14') AND ZONE X AREAS OF OUTSIDE 500 YEAR FLOOD PLAIN AS SHOWN ON THE FIRM MAP FOR THE CITY OF WAREHAM, MA COMMUNITY PANEL FIRM MAP NO. 25023C0488K, MAP EFFECTIVE JULY 6, 2021.

3. WETLANDS SHOWN HEREIN WERE DELINEATED BY OTHERS.

4. THE CONTOURS SHOWN HEREIN ARE BASED UPON THE NAVD88 DATUM. THE LOCATION IS BASED UPON THE NAD83 DATUM.

5. THERE ARE NO KNOW HISTORIC CEMETERIES WITHIN OR IMMEDIATELY ADJACENT TO THIS PARCEL.

COMMONWEALTH OF MASSACHUSETTS
BRUCE E. WILSON, JR. No. 36870 REGISTERED PROFESSIONAL LAND SURVEYOR

BRUCE E. WILSON, JR. P.L.S. #36870

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BY: _____
BRUCE E. WILSON, JR. P.L.S. #36870

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

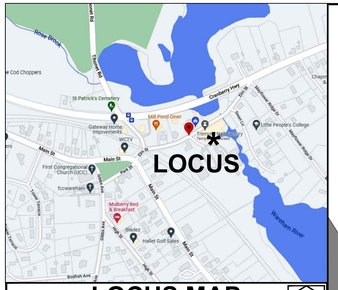
NAD83

PRINCIPE COMPANY, INC.
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ESTABLISHED IN RI

TOPOGRAPHICAL SURVEY
for
TOWN OF WAREHAM
AP 132 LOTS A1 & 1008C
PARKER MILLS POND DAM
ELM STREET
in
WAREHAM, MASSACHUSETTS

SCALE: 1"=20'		SHEET NO: 3 OF 4
DRAWN BY: RAW	DESIGN BY:	CHECKED BY: BW
DATE: MAY 24, 2022		PROJECT NO.: SVY-2022-50

Y:\NATIONAL 2022\SVY-2022-50\dwg\SVY-2022-50-CIVIL.dwg, Layout3



LOCUS MAP

ZONING CRITERIA

WV1 ZONING	
ZONING DISTRICT	WV1
MINIMUM LOT AREA	5,000 SQ. FT.
MINIMUM LOT WIDTH	75'
MINIMUM LOT FRONTAGE	75'
MINIMUM FRONT YARD SETBACK	0'
MINIMUM SIDE YARD SETBACK	10'
MINIMUM REAR YARD SETBACK	10'
MAXIMUM LOT BUILDING COVERAGE	30%
MAXIMUM BUILDING HEIGHT	40'

DIG-SAFE
CALL THEM FIRST
1-888-DIG-SAFE
PROTECT YOURSELF, GIVE TWO WORKING DAYS NOTICE

LEGEND

NOT TO SCALE

- MAJOR CONTOUR
- MINOR CONTOUR
- STONEWALL
- TREELINE
- WETLANDS EDGE
- STREAM
- G GAS LINE
- D DRAINAGE LINE
- W WATER LINE
- E ELECTRIC LINE
- OHW OVERHEAD ELECTRIC
- UTILITY POLE
- WATER VALVE
- GAS VALVE
- HYDRANT
- WELL

GENERAL NOTES:

1. THE LOCATION AND DEPTH OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE LATEST AVAILABLE INFORMATION. THE UTILITY LOCATIONS ARE APPROXIMATE AND MAY NOT BE ALL INCLUSIVE. THE CONTRACTOR SHALL CHECK AND VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, BOTH OVERHEAD AND UNDERGROUND, AND "DIG-SAFE" MUST BE NOTIFIED PRIOR TO COMMENCING ANY CONSTRUCTION OPERATIONS. RESTORATION AND REPAIR OF DAMAGE TO EXISTING UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR WITH NO ADDITIONAL COST THE OWNER. NO EXCAVATION SHALL COMMENCE UNTIL ALL INVOLVED UTILITY COMPANIES AND/OR TOWN WHOSE FACILITIES MIGHT BE AFFECTED BY ANY WORK TO BE PERFORMED BY THE CONTRACTOR ARE NOTIFIED AT LEAST 72 HOURS IN ADVANCE.

2. THIS SITE LIES IN BOTH A ZONE AE (ELEV 14') AND ZONE X AREAS OF OUTSIDE 500 YEAR FLOOD PLAIN AS SHOWN ON THE FIRM MAP FOR THE CITY OF WAREHAM, MA COMMUNITY PANEL FIRM MAP NO. 25023C0488K, MAP EFFECTIVE JULY 6, 2021.

3. WETLANDS SHOWN HEREIN WERE DELINEATED BY OTHERS.

4. THE CONTOURS SHOWN HEREIN ARE BASED UPON THE NAVD88 DATUM. THE LOCATION IS BASED UPON THE NAD83 DATUM.

5. THERE ARE NO KNOW HISTORIC CEMETERIES WITHIN OR IMMEDIATELY ADJACENT TO THIS PARCEL.

COMMONWEALTH OF MASSACHUSETTS
BRUCE E. WILSON, JR. No. 36870
REGISTERED PROFESSIONAL LAND SURVEYOR

BRUCE E. WILSON, JR. P.L.S. #36870

THIS SURVEY AND PLAN WERE PREPARED IN ACCORDANCE WITH THE PROCEDURAL AND TECHNICAL STANDARDS FOR THE PRACTICE OF LAND SURVEYING IN THE COMMONWEALTH OF MASSACHUSETTS.

BY: _____
BRUCE E. WILSON, JR. P.L.S. #36870

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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TOPOGRAPHICAL SURVEY
for
TOWN OF WAREHAM
AP 132 LOTS A1 & 1008C
PARKER MILLS POND DAM
ELM STREET
in
WAREHAM, MASSACHUSETTS

SCALE: 1"=20'		SHEET NO: 4 OF 4
DRAWN BY: RAW	DESIGN BY:	CHECKED BY: BW
DATE: MAY 24, 2022		PROJECT NO.: SVY-2022-50

Y:\NATIONAL 2022\SVY-2022-50\dwg\SVY-2022-50-CIVIL.dwg, Layout4

Appendix B

NHESP Rare and Endangered Species and Habitat, MassDEP wetland delineations, and NRCS Web Soil Survey Report

FUSS & O'NEILL

Massachusetts Resource Area Delineation Report

Resource Area Description

Report Date: May 3, 2022

Prepared For: Mr. Kenneth Buckland, Director of Planning and Community Development
Town of Wareham
Memorial Town Hall
Wareham, MA 02571

Project number: 20210133.A11

Site Address/Location: Parker Mills Pond Dam and Wankinco River, WarehamMA
41.767296143°N, 70.72221955°W

Inspection Date: March 29, 2022

Regulated Inland Wetland Resource Areas:

- ☒ Bank
- ☒ Land Under Water Bodies and Waterways (LUWW)
- ☒ Riverfront Area
- ☒ Buffer Zone
- ☐ Vernal Pool (Certified and/or Potential)
- ☒ Bordering Vegetated Wetland (BVW)
- ☒ Land Subject to Flooding (BLSF/ILSF)
- ☒ Estimated Habitats of Rare Wildlife
- ☒ Priority Habitats of Rare Species

Regulated Coastal Wetland Resource Areas:

- ☒ Bank of or Land under the Ocean, Ponds, Streams, Rivers, Lakes, or Creeks that Underlie an Anadromous/Catadromous Fish Run ("Fish Run")
- ☒ Salt Marshes

Delineated Resource Area Field Numbering Sequence [see Attachment, *Sketch Map of Wetland Resource Areas*]:

Flag Series

Inland Bank: A100-A113, D400-D423
BVW: G700-G708
Isolated freshwater wetlands: B200-B203
Bank of Land Under River that Underlie a Fish Run: A114-A128, D424-D460
Salt Marsh: C300-C303, E500-E503, F600-F603

Inland resource areas were delineated in accordance with applicable local, state and federal statutes, as detailed within the Resource Area Description attachment. This delineation does not constitute an official wetland boundary until such time as it is accepted and approved by local, state or federal regulatory agencies.

The wetlands delineation was conducted by:

Michael E. Soares
Wetlands Scientist

ATTACHMENTS

- Resource Areas Description
- Sketch Map of Wetland Resource Areas
- MassGIS Map
- US Army Corps of Engineers Wetland Determination Data Forms
- Flood Insurance Rate Map for Plymouth County, Massachusetts. Panel 488 of 650
- NRCS Soil Map and Soil Report
- Site Photographs

Introduction

Fuss & O'Neill Inc. performed a wetland resource area field inspection and delineation of a project area containing Parker Mills Pond, the Wankinco River, and associated regulated resource areas near the Parker Mills Dam in Wareham, Massachusetts ("Site"). The field inspection and delineation occurred on March 29, 2022. The purpose of the delineation was to locate the jurisdictional limits of areas regulated under the Wetlands Protection Act (M.G.L. c. 131 sec. 40) and associated Wetlands Protection Act Regulations (310 CMR 10).

The following inland wetland resource areas were identified and delineated at the Site during the field investigation: Bordering Vegetated Wetland (BVW), Bank, Land Under Water Bodies and Waterways (LUWW), and Bordering Land Subject to Flooding (BLSF). Downstream of the dam, which comprises the crossing at Elm Street, the following coastal resource areas were identified and delineated: Banks of Land under the Ocean, Ponds, Streams, Rivers, Lakes, or Creeks that Underlie an Anadromous/Catadromous Fish Run; and Salt Marsh. Consecutively numbered flags were placed in the field to demarcate the boundaries of resource areas, and flags were then located via sub-meter GPS. State-regulated Riverfront Area is measured horizontally from Banks identified and delineated, and state-regulated Buffer Zone is measured horizontally from the boundaries of BVW identified at the Site. The Town of Wareham Wetland Protection Protective By-Law builds upon the Buffer Zone to include a 100-foot buffer zone around "any freshwater or coastal wetlands; marshes; wet meadows; bogs; swamps; vernal pools; banks; reservoirs; lakes; ponds of any size; intermittent streams; creeks; beaches; dunes; estuaries; the ocean; lands under water bodies; and, land containing shellfish" (see *Section III. Definitions*). In the By-Law, the term freshwater wetlands "include[s], without limitation, those areas within which saturated or inundated conditions exist other than salt marshes." In addition to BVW, a small isolated wetland was identified at the Site (flag series B200-B203).

Maps retrieved from MassGIS (https://maps.massgis.digital.mass.gov/MassMapper/MassMapper.html) were used to determine if specific regulated wetland resources have been mapped and/or documented at the Site. MassGIS mapping depicts Massachusetts Natural Heritage and Endangered Species Program (NHESP) Priority Habitats of Rare Species and Estimated Habitats of Rare Wildlife that occur primarily within the estuarine portion of Wankinco River, located downstream of the Parker Mills Dam at Elm Street. A description of each resource area present at the Site is provided below.

In addition to the field delineation of resource areas, an inspection of the Site and its habitats was conducted. The Wankinco River is a mapped, perennial watercourse that flows in a southerly direction through the project area. At the center of the Site, the river has been impounded by a manmade dam, located where Elm Street crosses the Wankinco River. The impounded portion of the river is known as Parker Mills Pond, a waterbody of approximately 70 acres that extends upriver to State Route 25. The pond and the Wankinco River are located upstream of the dam and are freshwater resource areas. Terrestrial habitats near the southern end of Parker Mills Pond (i.e, between Elm Street and State Route 28) are limited, due to the extent of existing development (residential/commercial buildings and parking areas; public roads) throughout the area. Downstream of the dam at Elm Street, the Wankinco River is tidally influenced within the project area and until it empties into Buzzards Bay. Although vertebrate fish were not observed during the site investigation, a fishway is present for bypassing the dam and MassGIS has mapped the presence of anadromous/catadromous fish at monitoring stations up- and downstream of the dam. Similarly, shellfish were not observed during the site investigation, but MassGIS has mapped the river downstream of the Site as a Shellfish Suitability Area for the American oyster (*Crassostrea virginica*). All of the Wankinco River downstream of the dam is mapped as Prohibited for Shellfish Growing Areas. Terrestrial

habitats along the river downstream of the dam are also limited by existing development, but to a lesser extent. Approximately 350 feet downstream of the base of the fishway, fringing salt marshes were identified and delineated along the eastern and western bank of the river. A freshwater farther west and upslope of the salt marsh along the western bank (flag series E500-E503 and F600-F602), the eastern limit of an inland wetland was identified and delineated (flag series G700-G708). This wetland is a combination of patches of emergent wetland vegetation, primarily cattail (Typha sp.) among forested wetlands.

Resource Areas

Bank: Regulatory Framework and Delineation Methodology

Bank is defined under 310 CMR 10.54(2)(c) as "*the portion of the land surface which normally abuts and confines a water body. It occurs between a water body and a vegetated bordering wetland and adjacent flood plain, or, in the absence of these, it occurs between a water body and an upland*." Fuss & O'Neill Inc. performed a delineation of Bank at the Site using consecutively numbered flags placed in the field to demarcate Bank associated with Parker Mills Pond and the Wankinco River.

Bank: Resource Description

Bank was located in the field by the first observable break in topography between the waterbodies or waterways and adjacent upland. As defined under 310 CMR 10.58 (2)(a)(2), the delineated Bank was observed to coincide with the mean annual high water line (MAHWL) for inland and tidal waters.

Banks of the southern end of Parker Mills Pond (south of State Route 28, or SR-28) have been significantly modified by bank armoring/stabilization and the construction of adjacent roads and buildings. Non-landscaped vegetation is limited to the segments of the eastern and western banks between SR-28 and Elm Street and includes [common name (*scientific name*), wetland indicator status]: black locust (*Robinia pseudoacacia*), FACU; red maple (*Acer rubrum*) FAC; Tatarian honeysuckle (*Lonicera tatarica*), FACU; sweet pepperbush (*Clethra alnifolia*), FAC; multiflora rose (*Rosa multiflora*), FACU; mugwort (*Artemisia vulgaris*), UPL; and oriental bittersweet (*Celastrus orbiculatus*), UPL.

Banks of the Wankinco River downstream of Parker Mills Dam are also significantly modified. All banks within approximately 300 feet of the downstream face of the dam are vertical armored walls constructed of stone or concrete. Downstream of these armored walls, banks are not vegetated and located immediately adjacent to Salt Marsh.

Land under Water Bodies and Waterways (LUWW)

LUWW is defined under 310 CMR 10.56 (2)(a) as "*the land beneath any creek, river, stream, pond or lake. Said land may be composed of organic muck or peat, fine sediments, rocks or bedrock.*" The boundary of LUWW is defined as the mean annual low water level (310 CMR 10.56 (2)(c). LUWW identified upstream of the Parker Mills Dam was not specifically field delineated. For the intents and purposes of this resource area delineation, locations of Bank as described previously are considered to be analogous to the limits of LUWW.

Land under the Ocean, Ponds, Streams, Rivers, Lakes, or Creeks that Underlie an Anadromous/Catadromous Fish Run

Land under the Ocean, Ponds, Streams, Rivers, Lakes, or Creeks that Underlie an Anadromous/Catadromous Fish Run is described under 310 CMR 10.35 (1) as "*land under the ocean or under a pond, stream, river, lake or creek which is a fish run"* for anadromous/catadromous fish. As defined in 310 CMR 10.35 (2), anadromous fish *"enter fresh water from the ocean to spawn (alewives, shad, salmon) or fish; catadromous fish "enter salt water from fresh water to spawn, such as eels."* Although vertebrate fish were not observed during the site investigation, a fishway is present for bypassing the dam and MassGIS has mapped the presence of anadromous fish at monitoring stations up- and downstream of the dam. This resource area, identified downstream of dam's spillway and fishway, was not specifically field delineated. For the intents and purposes of this resource area delineation, locations of Bank as described previously are considered to be analogous to the limits of this resource area.

Riverfront Area: Regulatory Framework and Delineation Methodology

Riverfront Area is defined under 310 CMR 10.58(2)(a) as "*the area of land between a river's mean annual high water line and a parallel line measured horizontally*." 310 CMR 10.58(2)(a)(1) defines rivers as, "*any natural flowing body of water that empties to any ocean, lake, pond or other river and which flows throughout the year. Rivers include streams (see 310 CMR 10.04: Stream) that are perennial because surface water flows within them throughout the year. Intermittent streams are not rivers as defined herein because surface water does not flow within them throughout the year*." 310 CMR 10.58(2)(a)(2) further specifies that "*The Riverfront Area is the area of land between a river's mean annual high-water line measured horizontally outward from the river and a parallel line located 200 feet away, …*" continuing with exceptions that are not applicable at the Site. The extent of the Riverfront Area at the Site is determined by measuring a horizontal line 200 feet from the locations of Bank delineated along the Wankinco River.

Riverfront Area: Resource Area Description

Riverfront Area at the Site is associated with the Wankinco River, located downstream of Parker Mills Dam. Nearly all of the Riverfront Area at the Site is occupied by development (commercial/residential buildings and parking, roadways) or has been altered significantly. Riverfront Area at the Site is associated with Wankinco River. It is comprised mainly of development (residential/commercial buildings and parking areas; public roads). Upstream of the Parker Mills Dam, common vegetation includes [common name (*scientific name*), wetland indicator status]: black locust (*Robinia pseudoacacia*), FACU; red maple (*Acer rubrum*) FAC; red oak (*Quercus rubra*), FACU; pignut hickory (Ca*rya glabra*), FACU; Tatarian honeysuckle (*Lonicera tatarica*), FACU; sweet pepperbush (*Clethra alnifolia*), FAC; multiflora rose (*Rosa multiflora*), FACU; mugwort (*Artemisia vulgaris*), UPL; and oriental bittersweet (*Celastrus orbiculatus*), UPL. Remaining vegetation include turfgrass and ornamental herbaceous and woody plants.

Riverfront Area at the Site includes the following regulated resource areas: BVW, BLSF, and Buffer Zone. Downstream of the dam, NHESP Priority Habitats of Rare Species and Estimated Habitats of Rare Wildlife are included in Salt Marsh and BVW identified and delineated at the Site.

Bordering Vegetated Wetlands (BVW): Regulatory Framework and Delineation Methodology

As stated in 310 CMR (2)(a), "*Bordering Vegetated Wetlands are freshwater wetlands which border on creeks, rivers, streams, ponds and lakes. The types of freshwater wetlands are wet meadows, marshes, swamps and bogs. Bordering Vegetated Wetlands are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants. The ground and surface water regime and the vegetation community which occur in each type of freshwater wetland are specified in M.G.L. c 131 sec. 40.*"

Fuss & O'Neill Inc. inspected the Site for bordering vegetated wetlands in accordance with methodology provided in the Massachusetts DEP (MA DEP) handbook, *Delineating Bordering Vegetated Wetlands under the Massachusetts Wetlands Protection Act*, (March 1995), the 1987 *Corps of Engineers Wetlands Delineation Manual*, and the *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Northcentral and Northeast Region* (Version 2.0. January 2012). Data regarding vegetation, soils, and hydrology were gathered to complete the required U.S. Army Corps of Engineers Wetland Determination Data Forms. Wetlands are categorized in accordance with *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979).

Hydric soil determinations were made in accordance with *Field Indicators for Identifying Hydric Soils in New England*, *Version 4* (New England Hydric Soils Technical Committee, 2018). The Wetland Indicator Status for plant species was ascertained using the U.S. Army Corps of Engineers *Northcentral and Northeast 2020 Subregional Regional Wetland Plant List* (U.S. Army Corps of Engineer, National Wetlands Plant List, version 3.5, 2020).

BVW: Resource Area Description

Vegetation

BVW identified at the Site (flag series G700-G708) is classified as an intermix of forested and emergent wetlands. Common vegetation identified within this wetland includes [common name (*scientific name*), wetland indicator status]: red maple (*Acer rubrum*), FAC; speckled alder (*Alnus incana*), FACW; highbush blueberry (*Vaccinium corymbosum*), FACW; silky dogwood (*Swida amomum*), FACW; cat-tail (*Typha latifolia*), OBL; common reed (*Phragmites australis*), FACW; sensitive fern (*Onoclea sensibilis*), FACW; sphagnum moss (*Sphagnum sp.*), OBL, and river grape (*Vitis riparia*), FAC.

Hydrology

The Site is located within the drainage basin (Major Basin #24, Subbasin #24009) of the Wankinco River, a perennial stream that empties into Buzzards Bay, a marine waterbody connected to the Atlantic Ocean. The Parker Mills Dam, located under Elm Street at the center of the Site, is a constructed dam that impounds the river to create Parker Mills Pond, an inland water body of approximately 70 acres. Surface water exits the pond via a spillway and the adjacent fishway. At the base of these elements, surface water enters the upstream end of the estuarine portion of the Wankinco River. Tidal influence was observed at all locations at the Site downstream of the spillway and fishway. Culverts presumed to be stormwater out falls were found on the eastern and western banks of the Wankinco River.

Soils

Soil types mapped by the Natural Resource Conservation Service (NRCS) at the Site include: Brockton sandy loam, Windsor loamy sand, Deerfield fine loamy sand, Plymouth-Carver complex, Udorthents-urban land complex, and Udipsamments. Detailed information regarding each of these soil series is included within the Attachment *NRCS Soil Map and Soil Report*. Results of the detailed field analyses of soils at the Site were generally consistent with the published NRCS soil mapping with minor exceptions.

Buffer Zone

Buffer Zone is defined in 310 CMR 10.04 as "*that area of land extending 100 feet horizontally outward from the boundary of any area specified in 310 CMR 10.02(1)(a)*." Buffer Zone within the project area is associated with BVW delineated at the Site. Buffer Zone at the Site is comprised primarily of residential/commercial development and public roads, with some vegetated banks and patches of woodlands present. Common vegetation identified within the Buffer Zone includes [common name (*scientific name*), wetland indicator status]: black locust (*Robinia pseudoacacia*), FACU; red maple (*Acer rubrum*) FAC; red oak (*Quercus rubra*), FACU; pignut hickory (C*arya glabra*), FACU; Tatarian honeysuckle (*Lonicera tatarica*), FACU; sweet pepperbush (*Clethra alnifolia*), FAC; multiflora rose (*Rosa multiflora*), FACU; mugwort (*Artemisia vulgaris*), UPL; and oriental bittersweet (*Celastrus orbiculatus*), UPL. Remaining vegetation include turfgrass and ornamental herbaceous and woody plants.

Priority Habitats of Rare Species and Estimated Habitats of Rare Wildlife

As stated in 312 CMR 10.02: Definitions & Abbreviations, "Priority Habitat" is defined as *"the geographic extent of Habitat for State-listed Species as delineated by the Division* [of Fisheries & Wildlife] *pursuant to 321 CMR 10.12."* The mapped areas are based on records of State-listed Species observed within the 25 years prior to the delineation of Priority Habitats. According to 321 CMR 10.61(5), *"Any person filing a petition, request, or application to a board of health, building inspector, zoning board, planning board, or conservation commission for any kind or type of permit, order, variance, ruling or approval regarding a proposed activity within a Significant Habitat shall send notice in writing to the Director* [of the Division of Fisheries & Wildlife] *within 21 days of such filing."* Areas mapped as Estimated Habitats of Rare Wildlife are a subset of the Priority Habitats of Rare Species. They are based on occurrences of rare wetland wildlife observed within the last 25 years and documented in the database managed by the Massachusetts Natural Heritage and Endangered Species Program (NHESP). They do not include those areas delineated as Priority Habitat for rare plants or for rare wildlife with strictly upland habitat requirements.

Massachusetts NHESP Areas: Resource Area Description

As mapped by Massachusetts Department of Environmental Protection (MADEP) and depicted in MassGIS (last updated August 2021), the Site contains the resource areas Estimated Habitats of Rare Wildlife and Priority Habitats of Rare Species. These regulated areas are located primarily within the Wankinco River and adjacent resource areas downstream of the dam's spillway and fishway (see Attachment *MassGIS Map*).

FUSS & O'NEILL

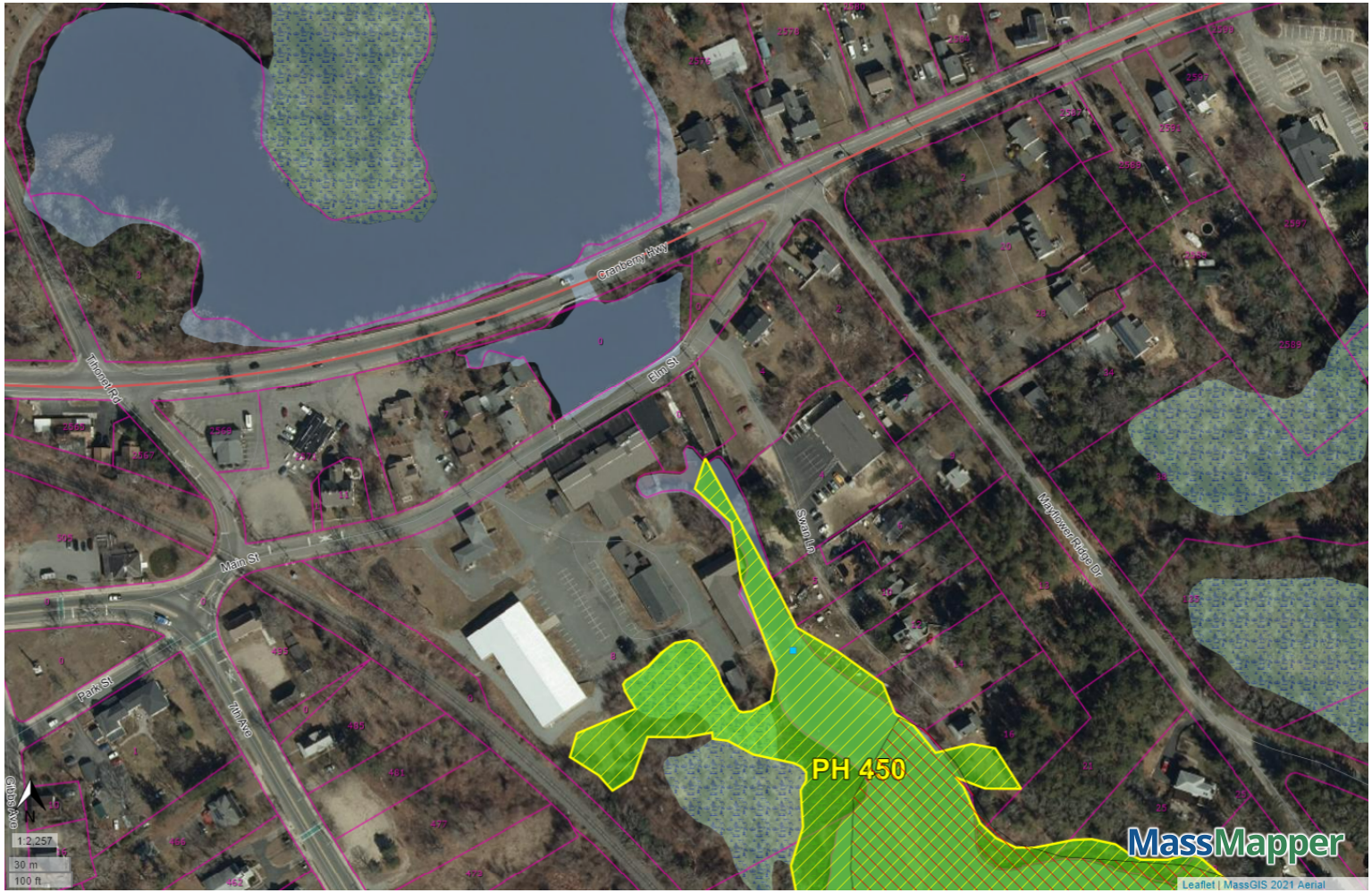
Bordering Land Subject to Flooding (BLSF): Resource Area Description

Bordering Land Subject to Flooding is defined in 310 CMR 10.57 (2)(a) as *"an area with low, flat topography adjacent to and inundated by flood waters rising from creeks, rivers, stream, ponds, or lakes."* According to 310 CMR 10.57 (3), the boundary of BLSF is *"determined by reference to the most recently available flood profile data prepared…under the National Flood Insurance Program."* A Flood Insurance Rate Map (FIRM), published by Federal Emergency management Agency (FEMA) and dated July 6, 2021, depicts areas at the Site within Flood Zone A, which designates areas likely to experience flooding in 100-year storm events (see attached *Flood Insurance Rate Map for Plymouth County, Massachusetts. Panel 488 of 650*). Based on these site conditions observed, it is my professional opinion that the mapped extent of Flood Zone A accurately represents the lateral extent of BLSF at the Site.



Path: K:\P2021\0133\A11\MXD\ParkerMills.aprx

Parker Mills Dam (Wareham, MA)



Census 2010 TIGER Roads

- Primary Road
- Secondary Road
- Highway Ramp
- Local Road
- Vehicular Trail (4WD)
- Other Trails
- Interstate Shields
- U.S. Federal Shields
- State Shields

Shellfish Suitability Areas

- AMERICAN OYSTER
- BAY SCALLOP
- BLUE MUSSEL
- EUROPEAN OYSTER
- OCEAN QUAHOG
- QUAHOG
- RAZOR CLAM
- SEA SCALLOP
- SOFT-SHELLED CLAM
- SURF CLAM

Anadromous Fish Presence

NHESP Priority Habitats of Rare Species

NHESP Estimated Habitats of Rare Wildlife

Property Tax Parcels

DEP Wetlands General Categories

- MARSH/BOG
- WOODED MARSH
- CRANBERRY BOG
- SALT MARSH
- OPEN WATER
- RESERVOIR (WITH PWSID)
- TIDAL FLATS
- BEACH/DUNE

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Parker Mills Pond Dam City/County: Wareham Sampling Date: 3/29/22

Applicant/Owner: Town of Wareham State: MA Sampling Point: BW1

Investigator(s): Michael Soares Section, Township, Range: Plymouth County

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): level Slope (%): 0

Subregion (LRR or MLRA): LRR S, MLRA 149B Lat: 41.767714592061544 Long: -70.72196059667303 Datum: WGS 84

Soil Map Unit Name: Deerfield loamy fine sand NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**		
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X	**No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:		

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

____ Surface Water (A1)	____ Water-Stained Leaves (B9)	X Surface Soil Cracks (B6)
X High Water Table (A2)	____ Aquatic Fauna (B13)	____ Drainage Patterns (B10)
X Saturation (A3)	____ Marl Deposits (B15)	____ Moss Trim Lines (B16)
____ Water Marks (B1)	____ Hydrogen Sulfide Odor (C1)	____ Dry-Season Water Table (C2)
____ Sediment Deposits (B2)	____ Oxidized Rhizospheres on Living Roots (C3)	____ Crayfish Burrows (C8)
____ Drift Deposits (B3)	____ Presence of Reduced Iron (C4)	____ Saturation Visible on Aerial Imagery (C9)
____ Algal Mat or Crust (B4)	____ Recent Iron Reduction in Tilled Soils (C6)	X Stunted or Stressed Plants (D1)
____ Iron Deposits (B5)	____ Thin Muck Surface (C7)	X Geomorphic Position (D2)
____ Inundation Visible on Aerial Imagery (B7)	____ Other (Explain in Remarks)	____ Shallow Aquitard (D3)
____ Sparsely Vegetated Concave Surface (B8)		____ Microtopographic Relief (D4)
		____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____	
Water Table Present?	Yes X	No ____	Depth (inches): 7	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 4	**Wetland Hydrology Present?** **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland vegetation is absent within the wetland, as the entire area is mangaged as turf grass. Indicators for soils and hydrology area strongly in favor of its determination as an inland wetland.

VEGETATION – Use scientific names of plants. Sampling Point: BW1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	7	Yes	FACU
2. *Acer rubrum*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	12	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Lonicera tatarica*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Herb Stratum (Plot size:)			
1. *Turf grass*	95	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	12	x 4 =	48
UPL species	0	x 5 =	0
Column Totals:	17 (A)		63 (B)
Prevalence Index = B/A =			3.71

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Wetland vegetation is absent within the wetland, as the entire area is mangaged as turf grass.

SOIL

Sampling Point: BW1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 2/1	100					Mucky Sand	
9-19	10YR 2/1	100					Muck	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Parker Mills Pond Dam City/County: Wareham Sampling Date: 3/29/22

Applicant/Owner: Town of Wareham State: MA Sampling Point: CW1

Investigator(s): Michael Soares Section, Township, Range: Plymouth County

Landform (hillside, terrace, etc.): terrace (salt marsh) Local relief (concave, convex, none): level Slope (%): 2

Subregion (LRR or MLRA): LRR S, MLRA 149B Lat: 41.76600829086813 Long: -70.7211679893351 Datum: WGS 84

Soil Map Unit Name: Plymouth - Carver complex NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**		
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X	**No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:		

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	X Water-Stained Leaves (B9)	___ Aquatic Fauna (B13)
X High Water Table (A2)	___ Marl Deposits (B15)	___ Hydrogen Sulfide Odor (C1)
X Saturation (A3)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Presence of Reduced Iron (C4)
X Water Marks (B1)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Thin Muck Surface (C7)
___ Sediment Deposits (B2)	___ Other (Explain in Remarks)	
___ Drift Deposits (B3)		
___ Algal Mat or Crust (B4)		
___ Iron Deposits (B5)		
___ Inundation Visible on Aerial Imagery (B7)		
___ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
X Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____		
Water Table Present?	Yes X	No ____	Depth (inches): 6		
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 2	**Wetland Hydrology Present?**	**Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: CW1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Phragmites australis*	95	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	95 (A)		190 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: CW1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/1	65	10YR 4/6	30	C	M	Mucky Sand	Prominent redox concentrations
			10YR 3/3	5	C	M		Distinct redox concentrations
12-19	10YR 4/1	60	10YR 5/6	40	C	M	Sandy	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ? Depleted Below Dark Surface (A11)
- ? Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ? Stripped Matrix (S6)
- ? Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ? Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: saturated and unconsilidated

Depth (inches): 19

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Parker Mills Pond Dam City/County: Wareham Sampling Date: 3/29/22

Applicant/Owner: Town of Wareham State: MA Sampling Point: GW1

Investigator(s): Michael Soares Section, Township, Range: Plymouth County

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): level Slope (%): 0

Subregion (LRR or MLRA): LRR S, MLRA 149B Lat: 41.76566940584737 Long: -70.72176252753788 Datum: WGS 84

Soil Map Unit Name: Brockton sandy loam NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**		
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X	**No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:		

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

____ Surface Water (A1)	X Water-Stained Leaves (B9)	____ Aquatic Fauna (B13)
X High Water Table (A2)	____ Marl Deposits (B15)	____ Hydrogen Sulfide Odor (C1)
X Saturation (A3)	____ Oxidized Rhizospheres on Living Roots (C3)	____ Presence of Reduced Iron (C4)
X Water Marks (B1)	____ Recent Iron Reduction in Tilled Soils (C6)	____ Thin Muck Surface (C7)
____ Sediment Deposits (B2)	____ Other (Explain in Remarks)	
____ Drift Deposits (B3)		
____ Algal Mat or Crust (B4)		
____ Iron Deposits (B5)		
____ Inundation Visible on Aerial Imagery (B7)		
____ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

____ Surface Soil Cracks (B6)
X Drainage Patterns (B10)
X Moss Trim Lines (B16)
____ Dry-Season Water Table (C2)
____ Crayfish Burrows (C8)
____ Saturation Visible on Aerial Imagery (C9)
X Stunted or Stressed Plants (D1)
X Geomorphic Position (D2)
____ Shallow Aquitard (D3)
____ Microtopographic Relief (D4)
X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____		
Water Table Present?	Yes X	No ____	Depth (inches): 2		
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0	**Wetland Hydrology Present?**	**Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: GW1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	35	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Acer rubrum*	25	Yes	FAC
2. *Vaccinium corymbosum*	12	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	37	=Total Cover	
Herb Stratum (Plot size:)			
1. *Phragmites australis*	80	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	92	x 2 =	184
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	152 (A)		364 (B)

Prevalence Index = B/A = 2.39

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: GW1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 2/1						Muck	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- X Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Parker Mills Pond Dam City/County: Wareham Sampling Date: 3/29/22

Applicant/Owner: Town of Wareham State: MA Sampling Point: G-UPL

Investigator(s): Michael Soares Section, Township, Range: Plymouth County

Landform (hillside, terrace, etc.): upland Local relief (concave, convex, none): level Slope (%): 0

Subregion (LRR or MLRA): LRR S, MLRA 149B Lat: 41.76574829154348 Long: -70.72172563359017 Datum: WGS 84

Soil Map Unit Name: Brockton sandy loam NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: G-UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	15	Yes	FACU
2. *Quercus rubra*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	

Sapling/Shrub Stratum (Plot size:)			
1. *Pinus strobus*	30	Yes	FACU
2. *Betula lenta*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	40	=Total Cover	

Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	

Woody Vine Stratum (Plot size:)			
1. *Celastrus orbiculatus*	20	Yes	UPL
2. *Vitis labrusca*	10	Yes	FACU
3. *Toxicodendron radicans*	5	No	FAC
4.			
	35	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	70	x 4 =	280
UPL species	20	x 5 =	100
Column Totals:	95 (A)		395 (B)

Prevalence Index = B/A = 4.16

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: G-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/3						Loamy/Clayey	
3-16	10YR 5/4						Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

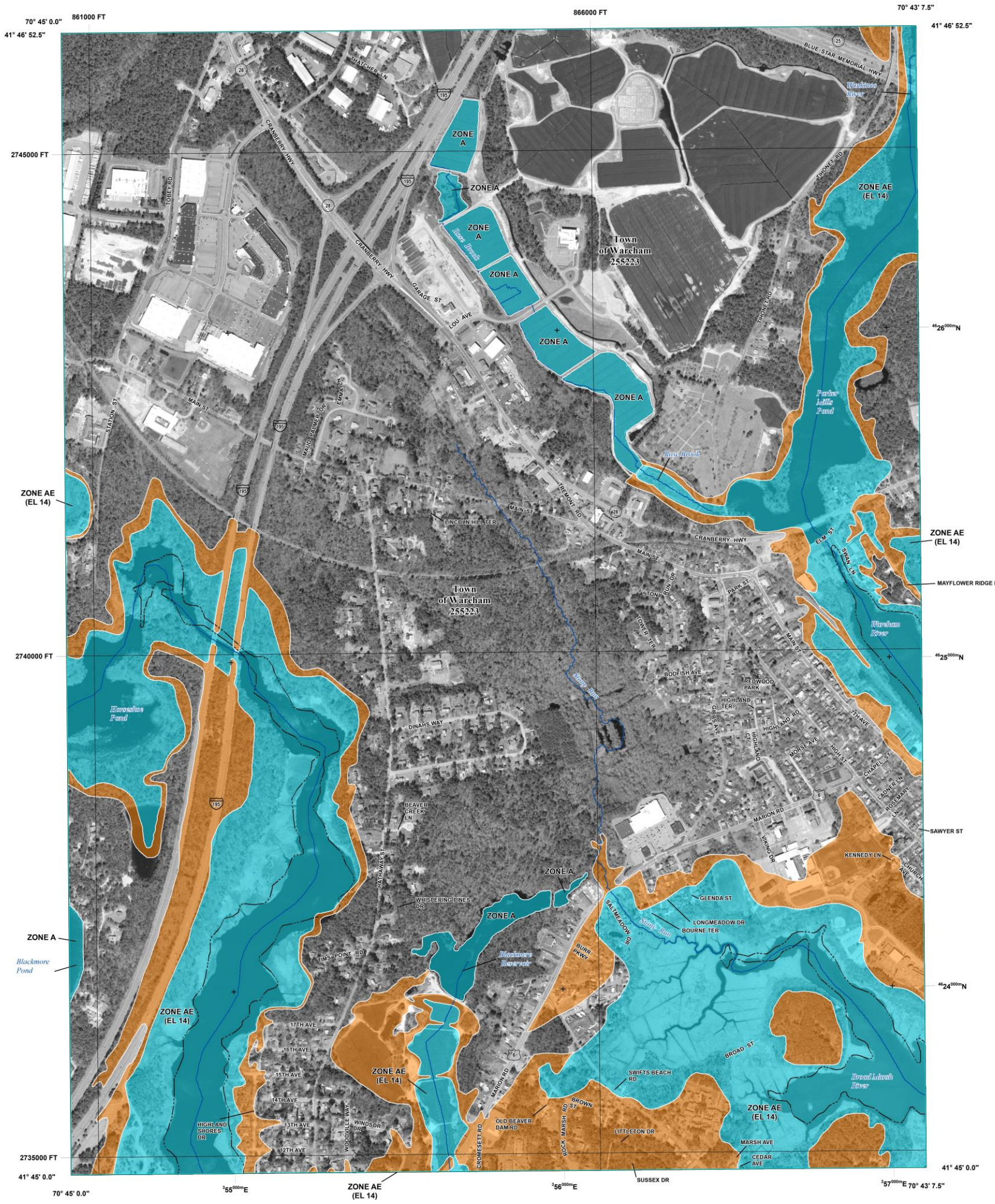
Type: HTM

Depth (inches): 16

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTPS://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A,V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- E 18.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on the FIRM uses 2013 and 2014 imagery provided by the U.S. Geological Survey and 2016 transportation data provided by the U.S. Census Bureau, with all other vector data unchanged from the previous FIRM.

SCALE

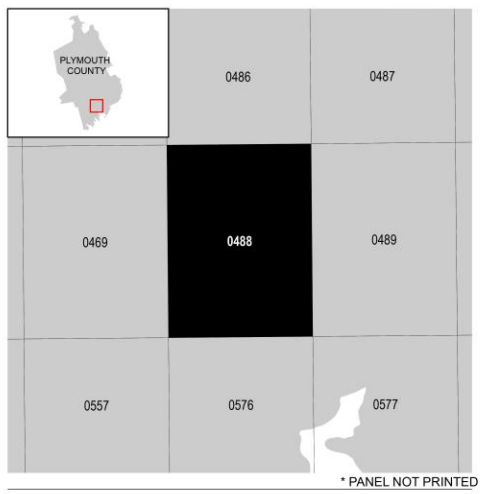
Map Projection:
NAD 1983 State Plane, Massachusetts Mainland, FIPS 2001, Feet;
Western Hemisphere; Vertical Datum: NAVD 88

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 Feet

0 130 260 520 Meters

PANEL LOCATOR



* PANEL NOT PRINTED

FEMA National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

PLYMOUTH COUNTY, MASSACHUSETTS
(ALL JURISDICTIONS)

PANEL 488 OF 650

FEMA

Panel Contains:

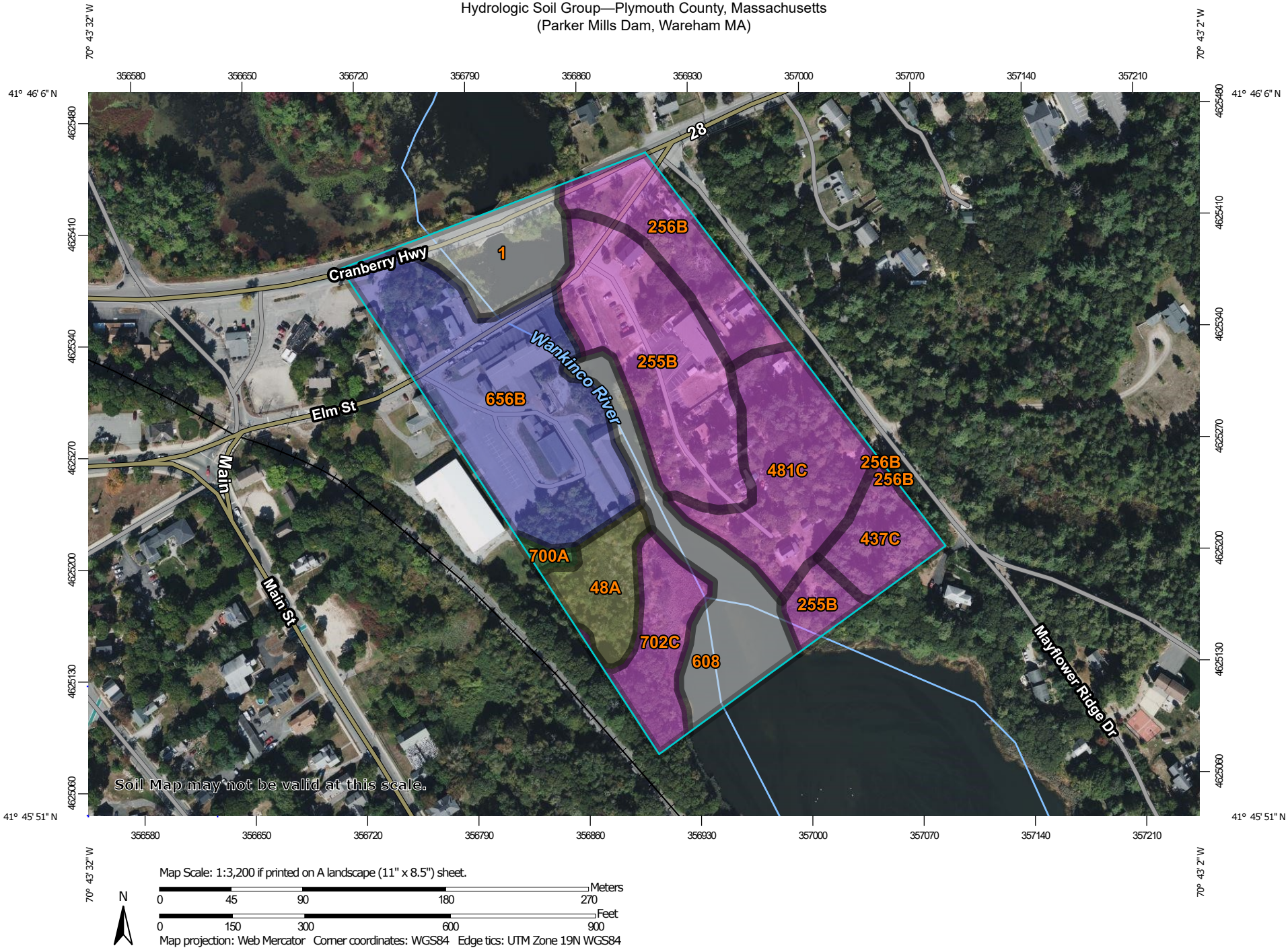
COMMUNITY	NUMBER	PANEL	SUFFIX
WAREHAM, TOWN OF	255223	0488	K

VERSION NUMBER
2.6.3.5

MAP NUMBER
25023C0488K

MAP REVISED
July 6, 2021

Hydrologic Soil Group—Plymouth County, Massachusetts
(Parker Mills Dam, Wareham MA)



Map Scale: 1:3,200 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Plymouth County, Massachusetts
Survey Area Data: Version 14, Sep 2, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 25, 2020—Oct 9, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Water		1.2	6.8%
48A	Brockton sandy loam, 0 to 3 percent slopes, extremely stony	C/D	0.9	5.2%
255B	Windsor loamy sand, 3 to 8 percent slopes	A	3.4	19.2%
256B	Deerfield loamy fine sand, 3 to 8 percent slopes	A	1.5	8.6%
437C	Plymouth loamy coarse sand, 8 to 15 percent slopes, bouldery	A	0.9	4.9%
481C	Plymouth - Carver complex, 8 to 15 percent slopes, bouldery	A	2.4	13.8%
608	Water, ocean		1.9	10.6%
656B	Udorthents - Urban land complex, 0 to 8 percent slopes	B	4.2	23.8%
700A	Udipsamments, wet substratum, 0 to 3 percent slopes	A/D	0.1	0.6%
702C	Udipsamments, 8 to 15 percent slopes	A	1.1	6.5%
Totals for Area of Interest			**17.6**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.



Photo 1. Crossing of Cranberry Highway (SR-28) through Parker Mills Pond. Looking north-northwest from Elm Street.



Photo 2. Bank of Parker Mils Pond Dam, located east of the crossing shown in Photo 1. Cranberry Highway (SR-28) is in the background. Looking northwest near flag A108.



Photo 3. Crossing of Elm Street at Parker Mills Dam. Looking southwest near flag A108.



Photo 4. Elm Street at Parker Mills Dam. Looking west-southwest near flag D419.



Photo 5. Bank along the eastern property boundary of 7 Elm Street. Looking west near flag D417.



Photo 6. Bank and western-most portion of Parker Mills Pond, located between Cranberry Highway (SR-28) and 7 Elm Street. Looking east near flag D405.



Photo 7. Outflow from Parker Mills Dam, and fish ladder (at left). Looking southeast (downstream) from Elm Street.



Photo 8. Downstream end of the fish ladder. Looking northwest (upstream) near flag A116.



Photo 9. Main spillway of Parker Mills Dam, and fish ladder (at left). Looking northwest (upstream) near flag D424.



Photo 10. Wankinco River and banks along the eastern property boundary of 8 Elm Street. Looking west near flag D424.



Photo 11. Tidally-influenced portion of the Wankinco River, located immediately south of the main building at 8 Elm Street. Minimal surface flow was observed exiting the conveyance structure under the building (arrow). Looking northwest.



Photo 12. Tidally-influenced portion of the Wankinco River, located immediately south of the main building at 8 Elm Street. Looking east.



Photo 13. Armored western bank of the Wankinco River along the eastern property boundary of 8 Elm Street. Looking west near flag D424. Looking north (upstream) near flag A112.



Photo 14. Wankinco River and armored banks. Looking southeast (downstream) near flag D424.



Photo 15. Salt Marsh on along eastern bank of the Wankinco River (flag series C300-C303). Looking southeast (downstream) near flag A124.



Photo 16. Salt Marsh on along eastern bank of the Wankinco River (flag series C300-C303). Looking northwest (upstream) near flag A128.



Photo 17. Armored western bank of the Wankinco River along the eastern property boundary of 8 Elm Street. Looking north (upstream) near flag D444.



Photo 18. Salt Marsh on along western bank of the Wankinco River (flag series E500-E503 and F600-F602). Looking northwest (downstream) near flag E501.



Photo 19. Upland area located between Salt Marsh (flag series E500-E503 and F600-F602) and BVW to its west. Upland is likely fill material added to support a now-abandoned railway (arrow). Looking north approximately 30 feet east of G702.



Photo 20. BVW delineated west of the Wankinco River (flag series G700-G708). Looking west near flag G701.



Photo 21. BVW delineated west of the Wankinco River (flag series G700-G708). Looking northwest near flag G703.



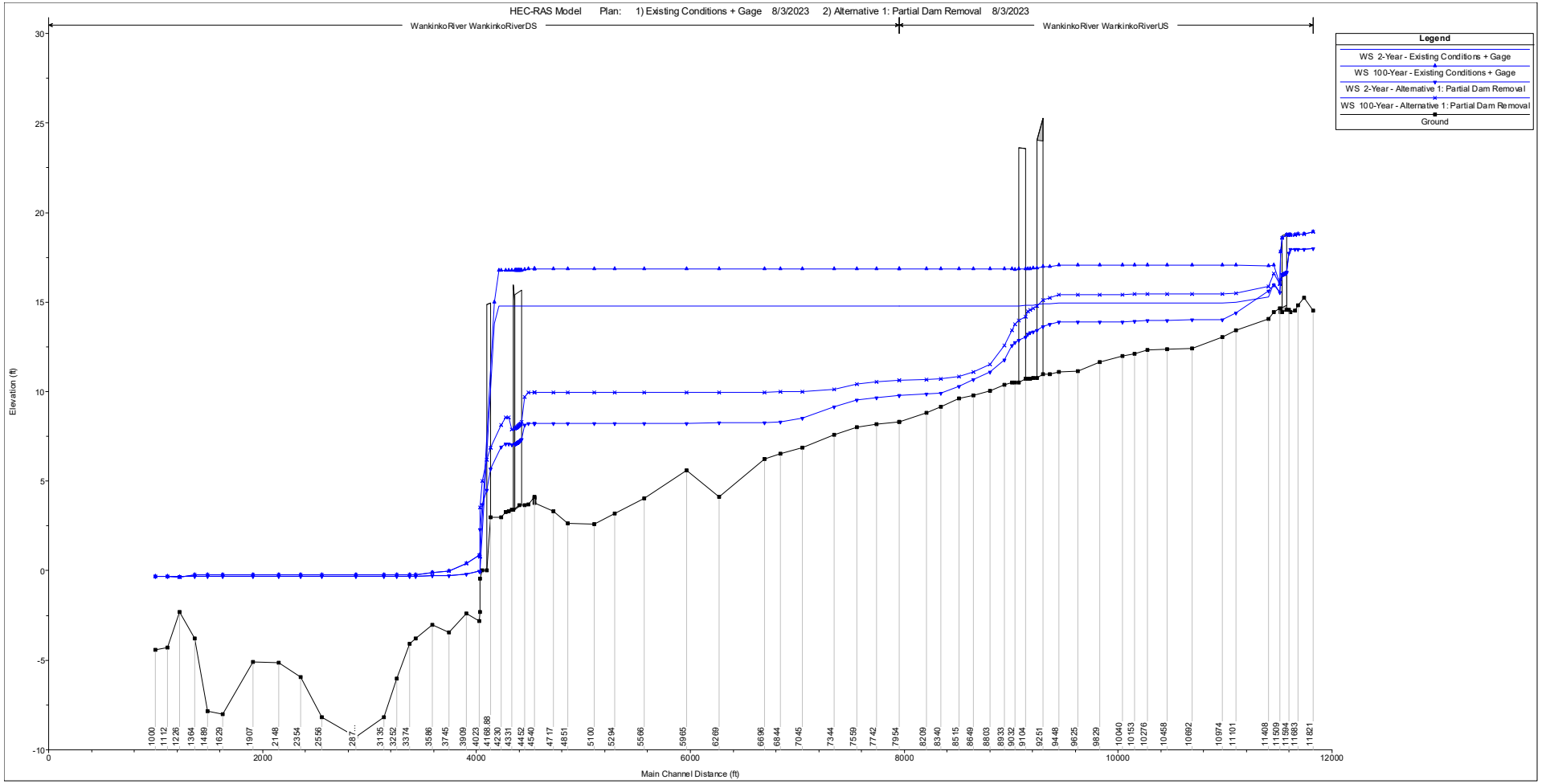
Photo 22. Isolated wetland delineated east of the Parker Mills Pond and just north of Elm Street River (flag series B200-B203). Looking west toward Parker Mills Pond near flag B201.



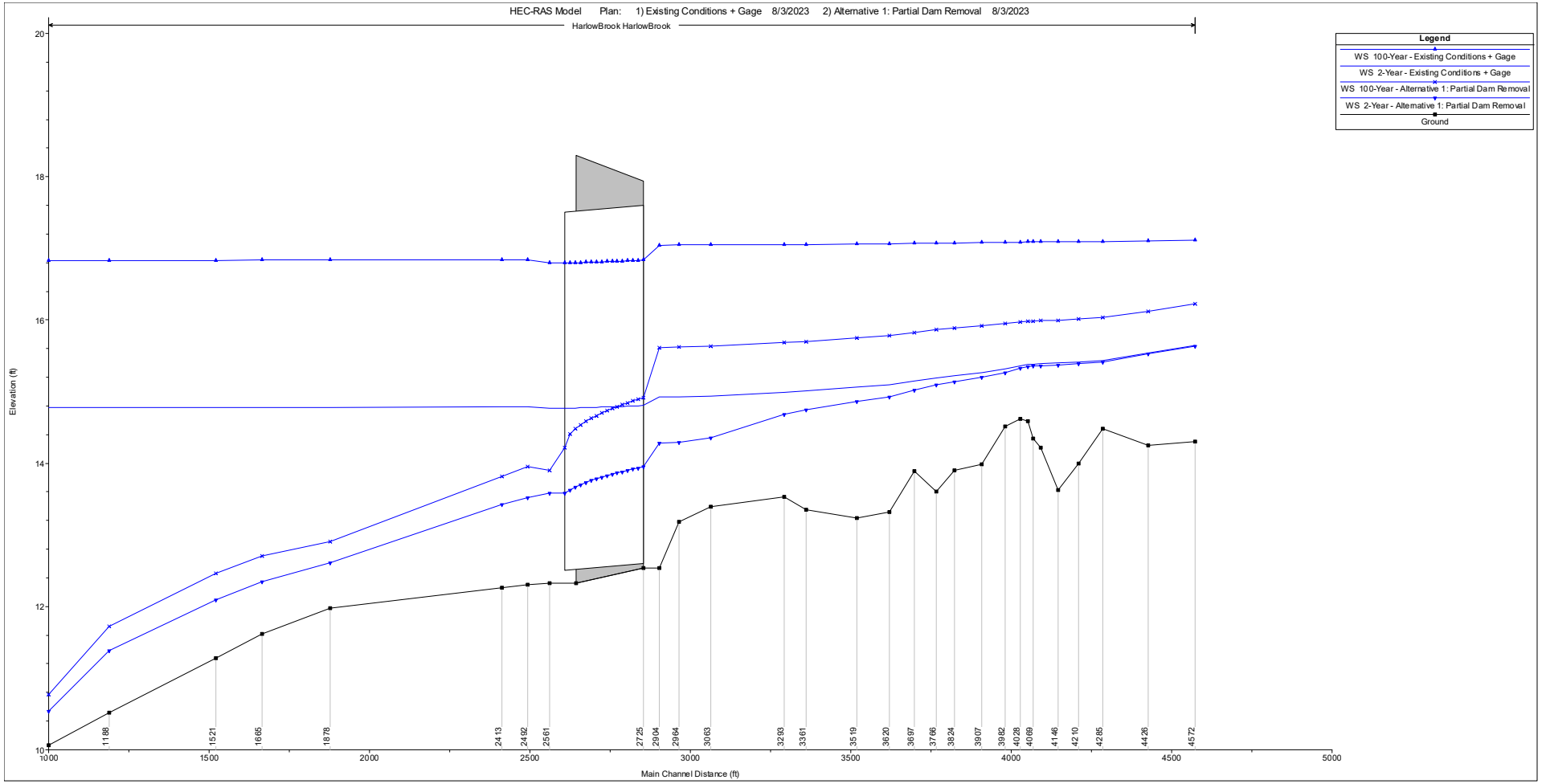
Photo 23. Hydric soils within the isolated wetland that was delineated east of the Parker Mills Pond and just north of Elm Street River (flag series B200-B203).

Appendix C

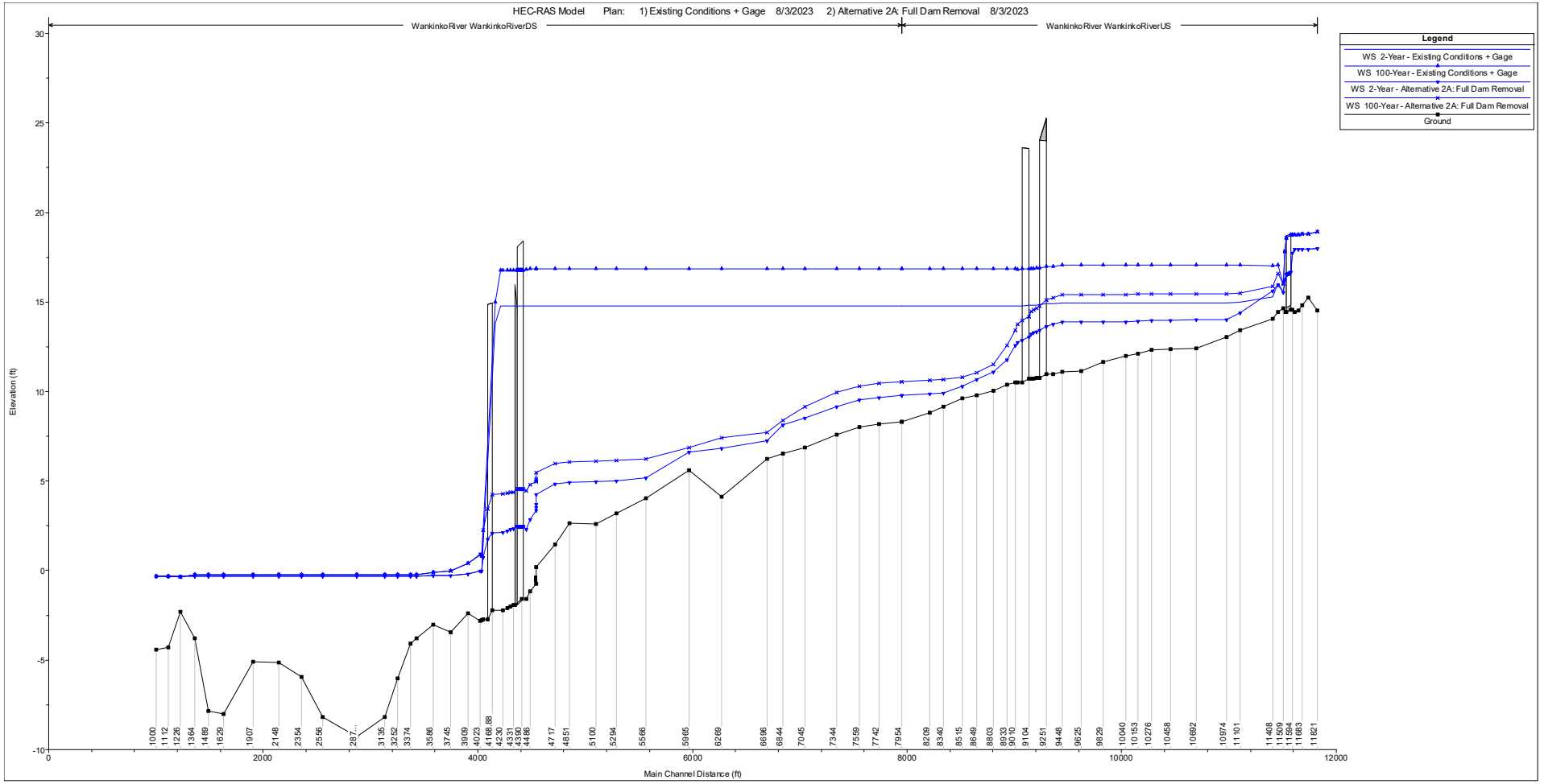
HEC-RAS Hydraulic Model Summary Report



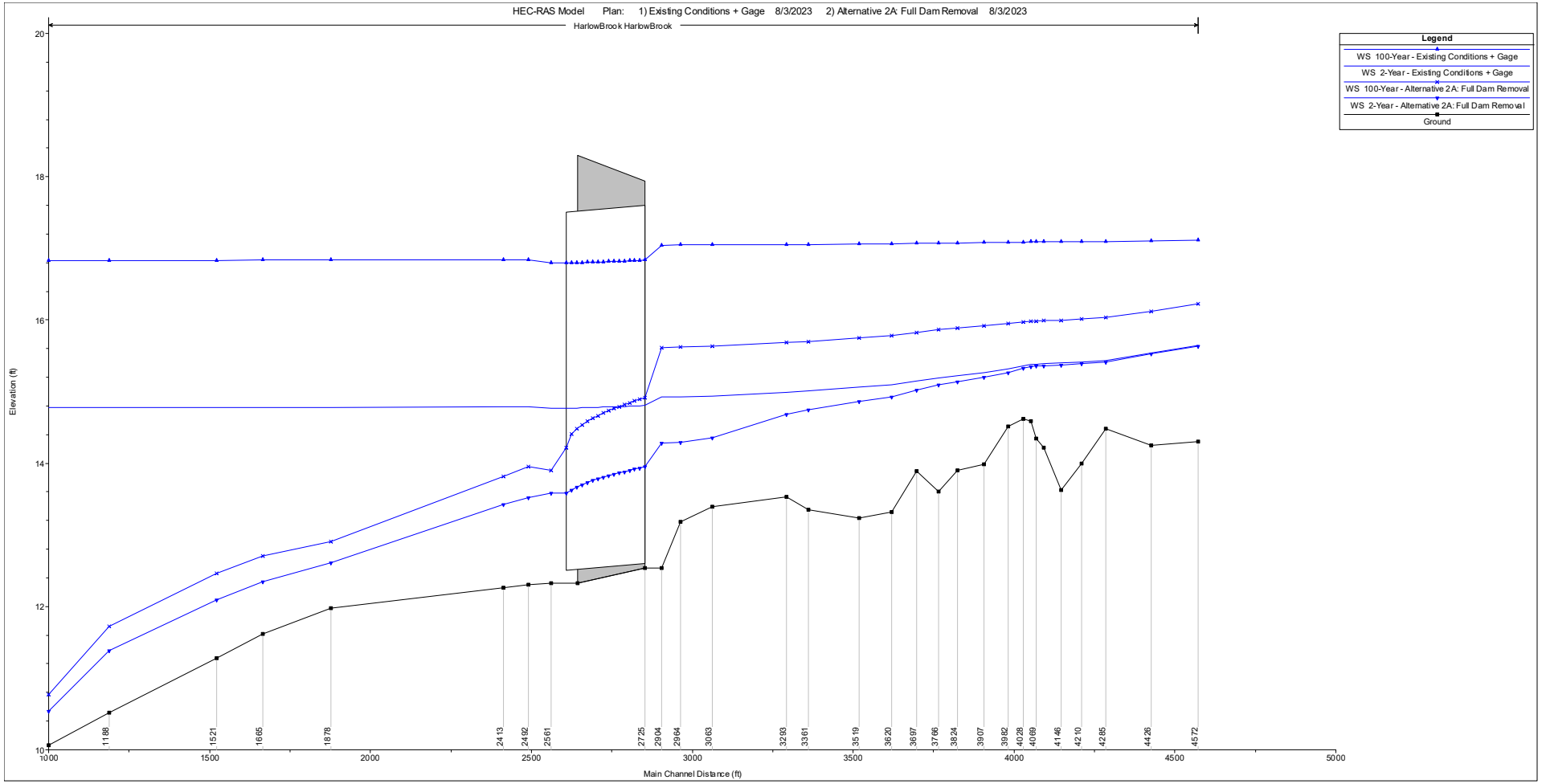
Partial Dam Removal Alternative: Wankinko River



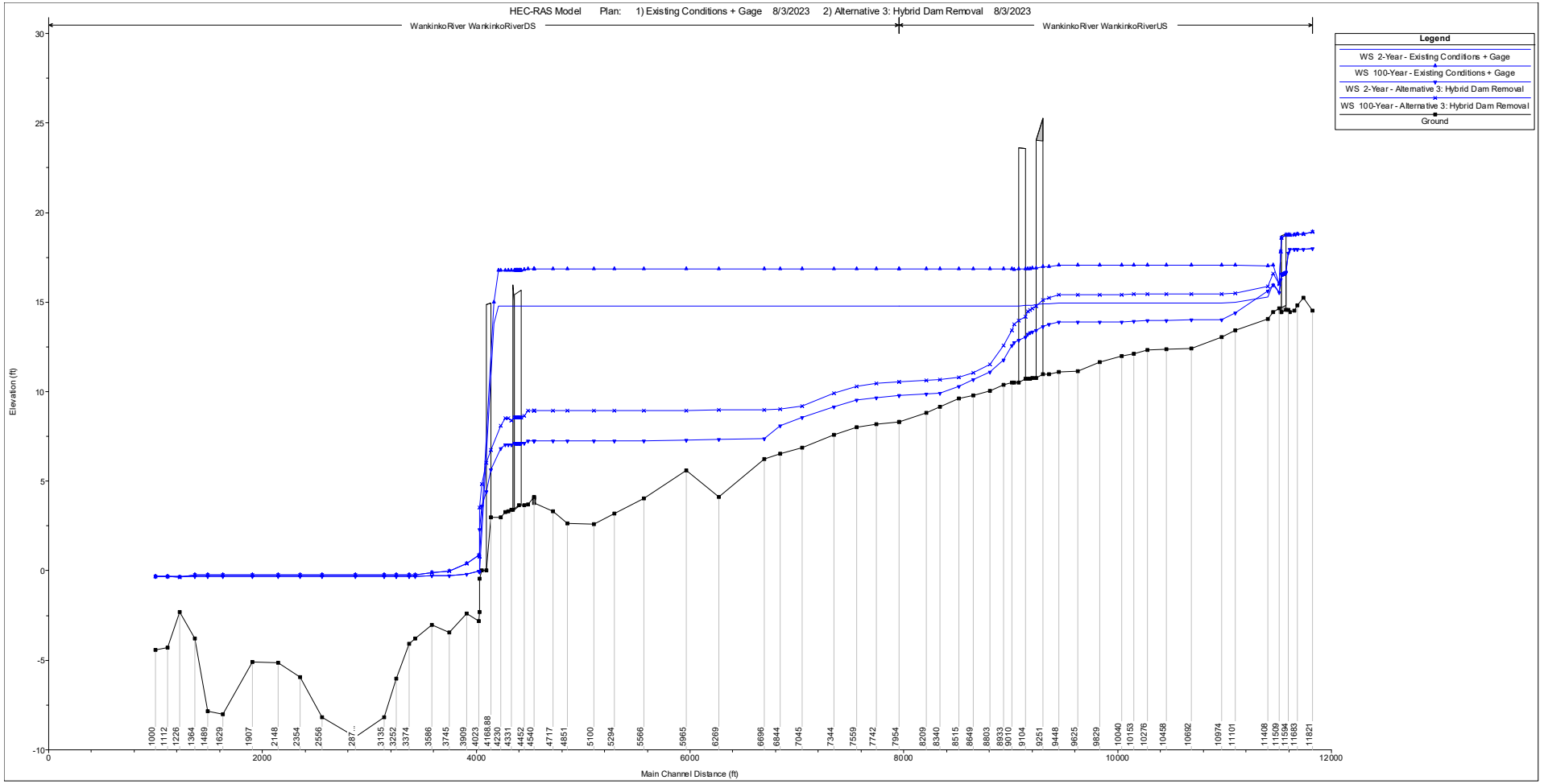
Partial Dam Removal Alternative: Harlow Brook



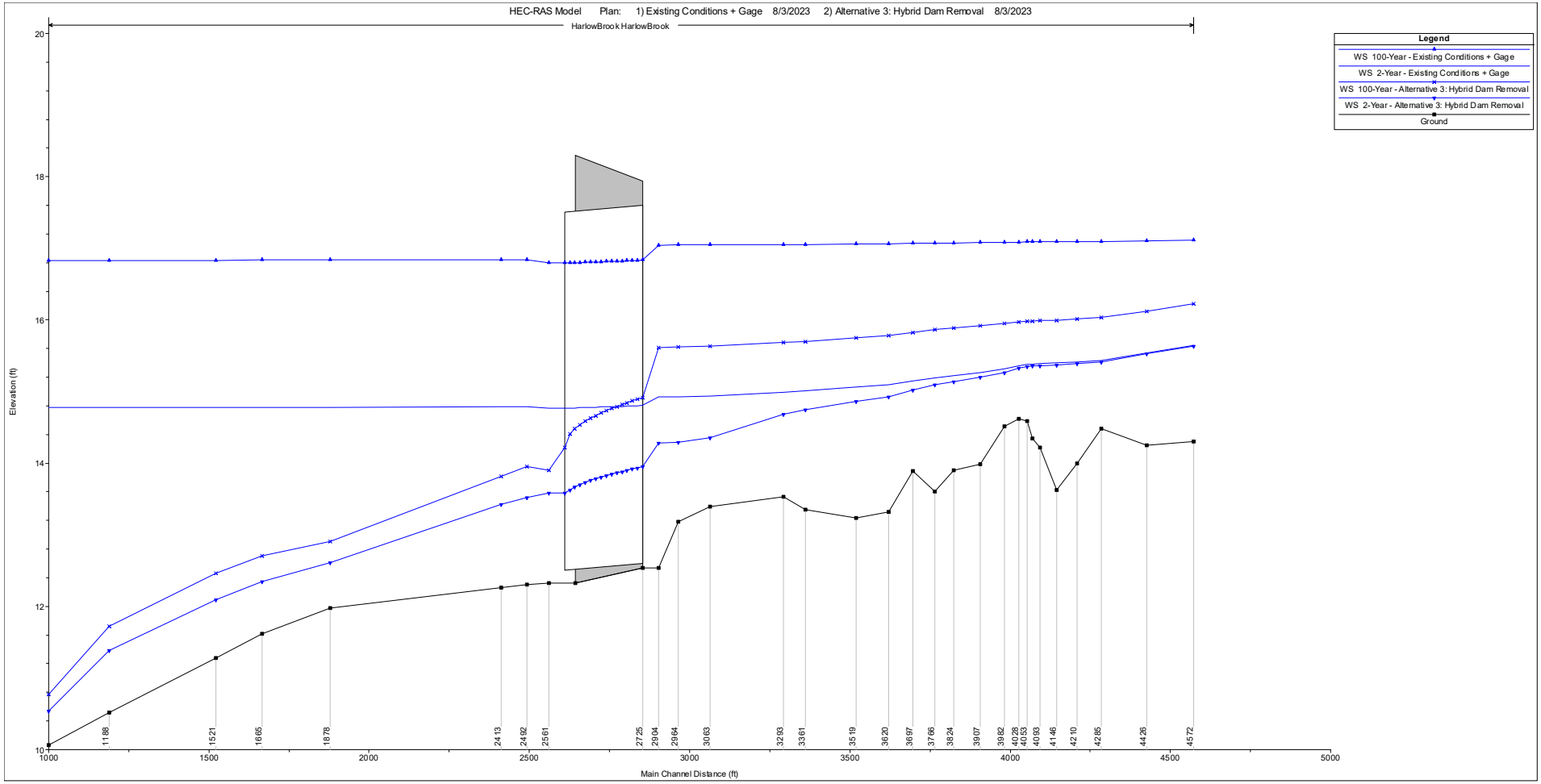
Full Dam Removal Alternative: Wankinko River



Full Dam Removal Alternative: Harlow Brook



Hybrid Dam Removal Alternative: Wankinko River



Hybrid Dam Removal Alternative: Harlow Brook

Parker Mill Pond Dam H&H Results
Fish Passage Flow

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Flow Depth
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		
WankinkoRiver	WankinkoRiverUS	11821	FishPassageFlow	Existing Conditions + FishFlow	17	14.51	15.82	14.99	15.83	0.000198	0.63	26.96	31.14	0.12	1.31
WankinkoRiver	WankinkoRiverUS	11821	FishPassageFlow	Alternative 1: Partial + Fish	17	14.51	15.82	14.99	15.83	0.000198	0.63	26.96	31.14	0.12	1.31
WankinkoRiver	WankinkoRiverUS	11821	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	14.51	15.82	14.99	15.83	0.000198	0.63	26.96	31.14	0.12	1.31
WankinkoRiver	WankinkoRiverUS	11821	FishPassageFlow	Alternative 3: Hybrid + Fish	17	14.51	15.82	14.99	15.83	0.000198	0.63	26.96	31.14	0.12	1.31
															0
WankinkoRiver	WankinkoRiverUS	11741	FishPassageFlow	Existing Conditions + FishFlow	17	15.26	15.71	15.63	15.78	0.007987	2.01	8.47	27.74	0.64	0.45
WankinkoRiver	WankinkoRiverUS	11741	FishPassageFlow	Alternative 1: Partial + Fish	17	15.26	15.71	15.63	15.78	0.007987	2.01	8.47	27.74	0.64	0.45
WankinkoRiver	WankinkoRiverUS	11741	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	15.26	15.71	15.63	15.78	0.007987	2.01	8.47	27.74	0.64	0.45
WankinkoRiver	WankinkoRiverUS	11741	FishPassageFlow	Alternative 3: Hybrid + Fish	17	15.26	15.71	15.63	15.78	0.007987	2.01	8.47	27.74	0.64	0.45
															0
WankinkoRiver	WankinkoRiverUS	11683	FishPassageFlow	Existing Conditions + FishFlow	17	14.81	15.65	15.18	15.67	0.000696	0.98	17.41	26.76	0.21	0.84
WankinkoRiver	WankinkoRiverUS	11683	FishPassageFlow	Alternative 1: Partial + Fish	17	14.81	15.65	15.18	15.67	0.000696	0.98	17.41	26.76	0.21	0.84
WankinkoRiver	WankinkoRiverUS	11683	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	14.81	15.65	15.18	15.67	0.000696	0.98	17.41	26.76	0.21	0.84
WankinkoRiver	WankinkoRiverUS	11683	FishPassageFlow	Alternative 3: Hybrid + Fish	17	14.81	15.65	15.18	15.67	0.000696	0.98	17.41	26.76	0.21	0.84
															0
WankinkoRiver	WankinkoRiverUS	11650	FishPassageFlow	Existing Conditions + FishFlow	17	14.54	15.64		15.65	0.000293	0.72	23.52	29.75	0.14	1.1
WankinkoRiver	WankinkoRiverUS	11650	FishPassageFlow	Alternative 1: Partial + Fish	17	14.54	15.64		15.65	0.000293	0.72	23.52	29.75	0.14	1.1
WankinkoRiver	WankinkoRiverUS	11650	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	14.54	15.64		15.65	0.000293	0.72	23.52	29.75	0.14	1.1
WankinkoRiver	WankinkoRiverUS	11650	FishPassageFlow	Alternative 3: Hybrid + Fish	17	14.54	15.64		15.65	0.000293	0.72	23.52	29.75	0.14	1.1
															0
WankinkoRiver	WankinkoRiverUS	11613	FishPassageFlow	Existing Conditions + FishFlow	17	14.46	15.63		15.64	0.000203	0.67	25.44	27.32	0.12	1.17
WankinkoRiver	WankinkoRiverUS	11613	FishPassageFlow	Alternative 1: Partial + Fish	17	14.46	15.63		15.64	0.000203	0.67	25.44	27.32	0.12	1.17
WankinkoRiver	WankinkoRiverUS	11613	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	14.46	15.63		15.64	0.000203	0.67	25.44	27.32	0.12	1.17
WankinkoRiver	WankinkoRiverUS	11613	FishPassageFlow	Alternative 3: Hybrid + Fish	17	14.46	15.63		15.64	0.000203	0.67	25.44	27.32	0.12	1.17
															0
WankinkoRiver	WankinkoRiverUS	11594	FishPassageFlow	Existing Conditions + FishFlow	17	14.57	15.6	15.06	15.63	0.00079	1.28	13.27	27.07	0.24	1.03
WankinkoRiver	WankinkoRiverUS	11594	FishPassageFlow	Alternative 1: Partial + Fish	17	14.57	15.6	15.06	15.63	0.00079	1.28	13.27	27.07	0.24	1.03
WankinkoRiver	WankinkoRiverUS	11594	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	14.57	15.6	15.06	15.63	0.00079	1.28	13.27	27.07	0.24	1.03
WankinkoRiver	WankinkoRiverUS	11594	FishPassageFlow	Alternative 3: Hybrid + Fish	17	14.57	15.6	15.06	15.63	0.00079	1.28	13.27	27.07	0.24	1.03
															0
WankinkoRiver	WankinkoRiverUS	11554			Culvert										0
															0
WankinkoRiver	WankinkoRiverUS	11522	FishPassageFlow	Existing Conditions + FishFlow	17	14.44	15.45	15.04	15.5	0.001675	1.75	9.72	17.35	0.34	1.01
WankinkoRiver	WankinkoRiverUS	11522	FishPassageFlow	Alternative 1: Partial + Fish	17	14.44	15.45	15.04	15.5	0.001675	1.75	9.72	17.35	0.34	1.01
WankinkoRiver	WankinkoRiverUS	11522	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	14.44	15.45	15.04	15.5	0.001675	1.75	9.72	17.35	0.34	1.01
WankinkoRiver	WankinkoRiverUS	11522	FishPassageFlow	Alternative 3: Hybrid + Fish	17	14.44	15.45	15.04	15.5	0.001675	1.75	9.72	17.35	0.34	1.01
															0
WankinkoRiver	WankinkoRiverUS	11509	FishPassageFlow	Existing Conditions + FishFlow	17	14.65	15.45	15.08	15.47	0.001755	1.2	14.21	32.35	0.32	0.8
WankinkoRiver	WankinkoRiverUS	11509	FishPassageFlow	Alternative 1: Partial + Fish	17	14.65	15.45	15.08	15.47	0.001755	1.2	14.21	32.35	0.32	0.8
WankinkoRiver	WankinkoRiverUS	11509	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	14.65	15.45	15.08	15.47	0.001755	1.2	14.21	32.35	0.32	0.8
WankinkoRiver	WankinkoRiverUS	11509	FishPassageFlow	Alternative 3: Hybrid + Fish	17	14.65	15.45	15.08	15.47	0.001755	1.2	14.21	32.35	0.32	0.8
															0
WankinkoRiver	WankinkoRiverUS	11458	FishPassageFlow	Existing Conditions + FishFlow	17	14.45	15.11	15.07	15.23	0.015844	2.81	6.04	19.87	0.9	0.66
WankinkoRiver	WankinkoRiverUS	11458	FishPassageFlow	Alternative 1: Partial + Fish	17	14.45	15.11	15.07	15.23	0.015844	2.81	6.04	19.87	0.9	0.66
WankinkoRiver	WankinkoRiverUS	11458	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	14.45	15.11	15.07	15.23	0.015844	2.81	6.04	19.87	0.9	0.66
WankinkoRiver	WankinkoRiverUS	11458	FishPassageFlow	Alternative 3: Hybrid + Fish	17	14.45	15.11	15.07	15.23	0.015844	2.81	6.04	19.87	0.9	0.66
															0
WankinkoRiver	WankinkoRiverUS	11408	FishPassageFlow	Existing Conditions + FishFlow	17	14.07	14.53		14.6	0.009671	2.18	7.79	25.94	0.7	0.46
WankinkoRiver	WankinkoRiverUS	11408	FishPassageFlow	Alternative 1: Partial + Fish	17	14.07	14.53		14.6	0.009671	2.18	7.79	25.94	0.7	0.46
WankinkoRiver	WankinkoRiverUS	11408	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	14.07	14.53		14.6	0.009671	2.18	7.79	25.94	0.7	0.46
WankinkoRiver	WankinkoRiverUS	11408	FishPassageFlow	Alternative 3: Hybrid + Fish	17	14.07	14.53		14.6	0.009671	2.18	7.79	25.94	0.7	0.46
															0
WankinkoRiver	WankinkoRiverUS	11101	FishPassageFlow	Existing Conditions + FishFlow	17	13.42	13.79		13.8	0.001162	0.75	22.78	77.44	0.24	0.37
WankinkoRiver	WankinkoRiverUS	11101	FishPassageFlow	Alternative 1: Partial + Fish	17	13.42	13.79		13.8	0.001162	0.75	22.78	77.44	0.24	0.37
WankinkoRiver	WankinkoRiverUS	11101	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	13.42	13.79		13.8	0.001162	0.75	22.78	77.44	0.24	0.37
WankinkoRiver	WankinkoRiverUS	11101	FishPassageFlow	Alternative 3: Hybrid + Fish	17	13.42	13.79		13.8	0.001162	0.75	22.78	77.44	0.24	0.37
															0
WankinkoRiver	WankinkoRiverUS	10974	FishPassageFlow	Existing Conditions + FishFlow	17	13.05	13.33	13.33	13.39	0.025988	1.97	8.62	70.25	0.99	0.28
WankinkoRiver	WankinkoRiverUS	10974	FishPassageFlow	Alternative 1: Partial + Fish	17	13.05	13.33	13.33	13.39	0.025988	1.97	8.62	70.25	0.99	0.28
WankinkoRiver	WankinkoRiverUS	10974	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	13.05	13.33	13.33	13.39	0.025988	1.97	8.62	70.25	0.99	0.28
WankinkoRiver	WankinkoRiverUS	10974	FishPassageFlow	Alternative 3: Hybrid + Fish	17	13.05	13.33	13.33	13.39	0.025988	1.97	8.62	70.25	0.99	0.28
															0
WankinkoRiver	WankinkoRiverUS	10692	FishPassageFlow	Existing Conditions + FishFlow	17	12.4	13	12.62	13	0.000101	0.22	77.73	267.68	0.07	0.6
WankinkoRiver	WankinkoRiverUS	10692	FishPassageFlow	Alternative 1: Partial + Fish	17	12.4	13	12.62	13	0.000109	0.22	75.74	264.23	0.07	0.6
WankinkoRiver	WankinkoRiverUS	10692	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	12.4	13	12.62	13	0.000109	0.22	75.74	264.23	0.07	0.6
WankinkoRiver	WankinkoRiverUS	10692	FishPassageFlow	Alternative 3: Hybrid + Fish	17	12.4	13	12.62	13	0.000109	0.22	75.74	264.23	0.07	0.6
															0
WankinkoRiver	WankinkoRiverUS	10458	FishPassageFlow	Existing Conditions + FishFlow	17	12.38	12.98		12.98	0.000102	0.21	81.56	302.32	0.07	0.6
WankinkoRiver	WankinkoRiverUS	10458	FishPassageFlow	Alternative 1: Partial + Fish	17	12.38	12.97		12.97	0.000112	0.22	78.71	296.82	0.07	0.59
WankinkoRiver	WankinkoRiverUS	10458	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	12.38	12.97		12.97	0.000112	0.22	78.71	296.82	0.07	0.59
WankinkoRiver	WankinkoRiverUS	10458	FishPassageFlow	Alternative 3: Hybrid + Fish	17	12.38	12.97		12.97	0.000112	0.22	78.71	296.82	0.07	0.59
															0
WankinkoRiver	WankinkoRiverUS	10276	FishPassageFlow	Existing Conditions + FishFlow	17	12.31	12.91		12.93	0.002884	1.08	15.7	60.39	0.37	0.6
WankinkoRiver	WankinkoRiverUS	10276	FishPassageFlow	Alternative 1: Partial + Fish	17	12.31	12.89		12.91	0.003404	1.16	14.65	57.48	0.41	0.58
WankinkoRiver	WankinkoRiverUS	10276	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	12.31	12.89		12.91	0.003404	1.16	14.65	57.48	0.41	0.58
WankinkoRiver	WankinkoRiverUS	10276	FishPassageFlow	Alternative 3: Hybrid + Fish	17	12.31	12.89		12.91	0.003404	1.16	14.65	57.48	0.41	0.58
															0
WankinkoRiver	WankinkoRiverUS	10153	FishPassageFlow	Existing Conditions + FishFlow	17	12.13	12.82		12.82	0.000348	0.49	35.01	91.93	0.14	0.69
WankinkoRiver	WankinkoRiverUS	10153	FishPassageFlow	Alternative 1: Partial + Fish	17	12.13	12.68		12.68	0.001045	0.73	23.22	75.1	0.23	0.55
WankinkoRiver	WankinkoRiverUS	10153	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	12.13	12.68		12.68	0.001045	0.73	23.22	75.1	0.23	0.55
WankinkoRiver	WankinkoRiverUS	10153	FishPassageFlow	Alternative 3: Hybrid + Fish	17	12.13	12.68		12.68	0.001045	0.73	23.22	75.1	0.23	0.55
															0
WankinkoRiver	WankinkoRiverUS	10040	FishPassageFlow	Existing Conditions + FishFlow	17	11.97	12.78		12.79	0.000232	0.45	38.16	83.96	0.12	0.81
WankinkoRiver	WankinkoRiverUS	10040	FishPassageFlow	Alternative 1: Partial + Fish	17	11.97	12.51		12.52	0.001622	0.92	18.46	58.83	0.29	0.54
WankinkoRiver	WankinkoRiverUS	10040	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	11.97	12.51		12.52	0.001622	0.92	18.46	58.83	0.29	0.54
WankinkoRiver	WankinkoRiverUS	10040	FishPassageFlow	Alternative 3: Hybrid + Fish	17	11.97	12.51		12.52	0.001622	0.92	18.46	58.83	0.29	0.54
															0
WankinkoRiver	WankinkoRiverUS	9829	FishPassageFlow	Existing Conditions + FishFlow	17	11.67	12.78		12.78	0.00001	0.1	177	381.46	0.02	1.11
WankinkoRiver	WankinkoRiverUS	9829	FishPassageFlow	Alternative 1: Partial + Fish	17	11.67	12.03		12.04	0.003298	0.97	17.49	87.6	0.38	0.36
WankinkoRiver	WankinkoRiverUS	9829	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	11.67	12.03		12.04	0.003298	0.97	17.49	87.6	0.38	0.36
WankinkoRiver	WankinkoRiverUS	9829	FishPassageFlow	Alternative 3: Hybrid + Fish	17	11.67	12.03		12.04	0.003298	0.97	17.49	87.6	0.38	0.36
															0
WankinkoRiver	WankinkoRiverUS	9625	FishPassageFlow	Existing Conditions + FishFlow	17	11.16	12.78		12.78	0.000003	0.07	233.14	291.93	0.01	1.62
WankinkoRiver	WankinkoRiverUS	9625	FishPassageFlow	Alternative 1: Partial + Fish	17	11.16	12		12.01	0.000052	0.23	73.26	139.64	0.06	0.84
WankinkoRiver	WankinkoRiverUS	9625	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	11.16	12		12.01	0.000052	0.23	73.26	139.64	0.06	0.84
WankinkoRiver	WankinkoRiverUS	9625	FishPassageFlow	Alternative 3: Hybrid + Fish	17	11.16	12		12.01	0.000052	0.23	73.26	139.64	0.06	0.84
															0
WankinkoRiver	WankinkoRiverUS	9448	FishPassageFlow	Existing Conditions + FishFlow	17	11.12	12.78		12.78	0.000006	0.11	159.31	191.32	0.02	1.66
WankinkoRiver	WankinkoRiverUS	9448	FishPassageFlow	Alternative 1: Partial + Fish	17	11.12	11.98		11.99	0.000296	0.44	38.97	106.24	0.13	0.86
WankinkoRiver	WankinkoRiverUS	9448	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	11.12	11.98		11.99	0.000296	0.44	38.97	106.24	0.13	0.86
WankinkoRiver	WankinkoRiverUS	9448	FishPassageFlow	Alternative 3: Hybrid + Fish	17	11.12	11.98		11.99	0.000296	0.44	38.97	106.24	0.13	0.86
															0
WankinkoRiver	WankinkoRiverUS	9359	FishPassageFlow	Existing Conditions + FishFlow	17	10.99	12.77	11.41	12.77	0.000086	0.52	32.81	56.59	0.08	1.78
WankinkoRiver	WankinkoRiverUS	9359	FishPassageFlow	Alternative 1: Partial + Fish	17	10.99	11.91	11.41	11.93	0.001104	1.29	13.17	18.7	0.27	0.92
WankinkoRiver	WankinkoRiverUS	9359	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	10.99	11.91	11.41	11.93	0.001104	1.29	13.17	18.7	0.27	0.92
WankinkoRiver	WankinkoRiverUS	9359	FishPassageFlow	Alternative 3: Hybrid + Fish	17	10.99	11.91	11.41	11.93	0.001104	1.29	13.17	18.7	0.27	0.92
															0
WankinkoRiver	WankinkoRiverUS	9251			Bridge										0
															0
WankinkoRiver	WankinkoRiverUS	9203	FishPassageFlow	Existing Conditions + FishFlow	17	10.77	12.76	11.2	12.76	0.000075	0.54	31.62	21.85	0.08	1.99
WankinkoRiver	WankinkoRiverUS	9203	FishPassageFlow	Alternative 1: Partial + Fish	17	10.77	11.63	11.2	11.67	0.001616	1.57	10.82	15.14	0.33	0.86
WankinkoRiver	WankinkoRiverUS	9203	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	10.77	11.63	11.2	11.67	0.001616	1.57	10.82	15.14	0.33	0.86
WankinkoRiver	WankinkoRiverUS	9203	FishPassageFlow	Alternative 3: Hybrid + Fish	17	10.77	11.63	11.2	11.67	0.001616	1.57	10.82	15.14	0.33	0.86
															0
WankinkoRiver	WankinkoRiverUS	9180	FishPassageFlow	Existing Conditions + FishFlow	17	10.73	12.75		12.76	0.000069	0.52	32.66	22.28	0.08	2.02
WankinkoRiver	WankinkoRiverUS	9180	FishPassageFlow	Alternative 1: Partial + Fish	17	10.73	11.59		11.63	0.001591	1.56	10.89	15.24	0.33	0.86
WankinkoRiver	WankinkoRiverUS	9180	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	10.73	11.59		11.63	0.001591	1.56	10.89	15.24	0.33	0.86
WankinkoRiver	WankinkoRiverUS	9180	FishPassageFlow	Alternative 3: Hybrid + Fish	17	10.73	11.59		11.63	0.001591	1.56	10.89	15.24	0.33	0.86
															0
WankinkoRiver	WankinkoRiverUS	9157	FishPassageFlow	Existing Conditions + FishFlow	17	10.7	12.75	11.13	12.76	0.000067	0.52	32.77	21.94	0.07	2.05
WankinkoRiver	WankinkoRiverUS	9157	FishPassageFlow	Alternative 1: Partial + Fish	17	10.7	11.55	11.13	11.59	0.00167	1.59	10.66	14.97	0.33	0.85
WankinkoRiver	WankinkoRiverUS	9157	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	10.7	11.55	11.13	11.59	0.00167	1.59	10.66	14.97	0.33	0.85
WankinkoRiver	WankinkoRiverUS	9157	FishPassageFlow	Alternative 3: Hybrid + Fish	17	10.7	11.55	11.13	11.59	0.00167	1.59	10.66	14.97	0.33	0.85
															0
WankinkoRiver	WankinkoRiverUS	9104			Bridge										0
															0
WankinkoRiver	WankinkoRiverUS	9032	FishPassageFlow	Existing Conditions + FishFlow	17	10.52	12.75	10.94	12.75	0.000035	0.38	45.3	30.71	0.05	2.23
WankinkoRiver	WankinkoRiverUS	9032	FishPassageFlow	Alternative 1: Partial + Fish	17	10.52	11.3	10.94	11.34	0.001992	1.59	10.67	17.28	0.36	0.78
WankinkoRiver	WankinkoRiverUS	9032	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	10.52	11.3	10.94	11.34	0.001992	1.59	10.67	17.28	0.36	0.78
WankinkoRiver	WankinkoRiverUS	9032	FishPassageFlow	Alternative 3: Hybrid + Fish	17	10.52	11.3	10.94	11.34	0.001992	1.59	10.67	17.28	0.36	0.78
															0
WankinkoRiver	WankinkoRiverUS	9010	FishPassageFlow	Existing Conditions + FishFlow	17	10.49	12.74		12.75	0.000035	0.38	44.48	29.46	0.05	2.25
WankinkoRiver	WankinkoRiverUS	9010	FishPassageFlow	Alternative 1: Partial + Fish	17	10.49	11.24		11.29	0.002348	1.7	9.98	16.5	0.39	0.75

WankinkoRiver	WankinkoRiverUS	9010	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	10.49	11.24		11.29	0.002348	1.7	9.98	16.5	0.39	0.75
WankinkoRiver	WankinkoRiverUS	9010	FishPassageFlow	Alternative 3: Hybrid + Fish	17	10.49	11.24		11.29	0.002348	1.7	9.98	16.5	0.39	0.75
															0
WankinkoRiver	WankinkoRiverUS	8933	FishPassageFlow	Existing Conditions + FishFlow	17	10.38	12.74		12.74	0.000017	0.26	66.57	46.33	0.04	2.36
WankinkoRiver	WankinkoRiverUS	8933	FishPassageFlow	Alternative 1: Partial + Fish	17	10.38	10.98		11.04	0.004415	1.94	8.75	19.21	0.51	0.6
WankinkoRiver	WankinkoRiverUS	8933	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	10.38	10.98		11.04	0.004415	1.94	8.75	19.21	0.51	0.6
WankinkoRiver	WankinkoRiverUS	8933	FishPassageFlow	Alternative 3: Hybrid + Fish	17	10.38	10.98		11.04	0.004415	1.94	8.75	19.21	0.51	0.6
															0
WankinkoRiver	WankinkoRiverUS	8803	FishPassageFlow	Existing Conditions + FishFlow	17	10.06	12.74		12.74	0.000001	0.06	298.41	168.33	0.01	2.68
WankinkoRiver	WankinkoRiverUS	8803	FishPassageFlow	Alternative 1: Partial + Fish	17	10.06	10.57		10.59	0.002522	0.97	17.62	72.86	0.35	0.51
WankinkoRiver	WankinkoRiverUS	8803	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	10.06	10.57		10.59	0.002522	0.97	17.62	72.86	0.35	0.51
WankinkoRiver	WankinkoRiverUS	8803	FishPassageFlow	Alternative 3: Hybrid + Fish	17	10.06	10.57		10.59	0.002522	0.97	17.62	72.86	0.35	0.51
															0
WankinkoRiver	WankinkoRiverUS	8649	FishPassageFlow	Existing Conditions + FishFlow	17	9.8	12.74		12.74	0	0.03	516.19	228.24	0	2.94
WankinkoRiver	WankinkoRiverUS	8649	FishPassageFlow	Alternative 1: Partial + Fish	17	9.8	10.22		10.23	0.002117	0.73	23.38	129.52	0.3	0.42
WankinkoRiver	WankinkoRiverUS	8649	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	9.8	10.22		10.23	0.002117	0.73	23.38	129.52	0.3	0.42
WankinkoRiver	WankinkoRiverUS	8649	FishPassageFlow	Alternative 3: Hybrid + Fish	17	9.8	10.22		10.23	0.002117	0.73	23.38	129.52	0.3	0.42
															0
WankinkoRiver	WankinkoRiverUS	8515	FishPassageFlow	Existing Conditions + FishFlow	17	9.61	12.74	9.76	12.74	0	0.03	615.94	232.37	0	3.13
WankinkoRiver	WankinkoRiverUS	8515	FishPassageFlow	Alternative 1: Partial + Fish	17	9.61	9.84	9.76	9.86	0.003685	0.89	19.05	117.79	0.39	0.23
WankinkoRiver	WankinkoRiverUS	8515	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	9.61	9.84	9.76	9.86	0.003685	0.89	19.05	117.79	0.39	0.23
WankinkoRiver	WankinkoRiverUS	8515	FishPassageFlow	Alternative 3: Hybrid + Fish	17	9.61	9.84	9.76	9.86	0.003685	0.89	19.05	117.79	0.39	0.23
															0
WankinkoRiver	WankinkoRiverUS	8340	FishPassageFlow	Existing Conditions + FishFlow	17	9.17	12.74	9.29	12.74	0	0.02	912.61	333.88	0	3.57
WankinkoRiver	WankinkoRiverUS	8340	FishPassageFlow	Alternative 1: Partial + Fish	17	9.17	9.4	9.29	9.41	0.001878	0.66	25.85	152.51	0.28	0.23
WankinkoRiver	WankinkoRiverUS	8340	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	9.17	9.4	9.29	9.41	0.001878	0.66	25.85	152.51	0.28	0.23
WankinkoRiver	WankinkoRiverUS	8340	FishPassageFlow	Alternative 3: Hybrid + Fish	17	9.17	9.4	9.29	9.41	0.001878	0.66	25.85	152.51	0.28	0.23
															0
WankinkoRiver	WankinkoRiverUS	8209	FishPassageFlow	Existing Conditions + FishFlow	17	8.82	12.74		12.74	0	0.02	1128.84	378.68	0	3.92
WankinkoRiver	WankinkoRiverUS	8209	FishPassageFlow	Alternative 1: Partial + Fish	17	8.82	9.01		9.02	0.005163	0.87	19.57	162.23	0.44	0.19
WankinkoRiver	WankinkoRiverUS	8209	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	8.82	9.01		9.02	0.005163	0.87	19.57	162.23	0.44	0.19
WankinkoRiver	WankinkoRiverUS	8209	FishPassageFlow	Alternative 3: Hybrid + Fish	17	8.82	9.01		9.02	0.005163	0.87	19.57	162.23	0.44	0.19
															0
WankinkoRiver	WankinkoRiverDS	7954	FishPassageFlow	Existing Conditions + FishFlow	17	8.3	12.74		12.74	0	0.01	1308.68	422.65	0	4.44
WankinkoRiver	WankinkoRiverDS	7954	FishPassageFlow	Alternative 1: Partial + Fish	17	8.3	8.73	8.5	8.74	0.000463	0.45	38.11	140.79	0.15	0.43
WankinkoRiver	WankinkoRiverDS	7954	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	8.3	8.73	8.5	8.74	0.000463	0.45	38.11	140.79	0.15	0.43
WankinkoRiver	WankinkoRiverDS	7954	FishPassageFlow	Alternative 3: Hybrid + Fish	17	8.3	8.73	8.5	8.74	0.000463	0.45	38.11	140.79	0.15	0.43
															0
WankinkoRiver	WankinkoRiverDS	7742	FishPassageFlow	Existing Conditions + FishFlow	17	8.17	12.74	8.35	12.74	0	0.02	1130.71	359.95	0	4.57
WankinkoRiver	WankinkoRiverDS	7742	FishPassageFlow	Alternative 1: Partial + Fish	17	8.17	8.63	8.35	8.64	0.000476	0.51	33.25	102.2	0.16	0.46
WankinkoRiver	WankinkoRiverDS	7742	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	8.17	8.63	8.35	8.64	0.000476	0.51	33.25	102.2	0.16	0.46
WankinkoRiver	WankinkoRiverDS	7742	FishPassageFlow	Alternative 3: Hybrid + Fish	17	8.17	8.63	8.35	8.64	0.000476	0.51	33.25	102.2	0.16	0.46
															0
WankinkoRiver	WankinkoRiverDS	7559	FishPassageFlow	Existing Conditions + FishFlow	17	8.01	12.74	8.24	12.74	0	0.01	1166.1	427.05	0	4.73
WankinkoRiver	WankinkoRiverDS	7559	FishPassageFlow	Alternative 1: Partial + Fish	17	8.01	8.5	8.24	8.51	0.001025	0.74	23.12	73.21	0.23	0.49
WankinkoRiver	WankinkoRiverDS	7559	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	8.01	8.5	8.24	8.51	0.001025	0.74	23.12	73.21	0.23	0.49
WankinkoRiver	WankinkoRiverDS	7559	FishPassageFlow	Alternative 3: Hybrid + Fish	17	8.01	8.5	8.24	8.51	0.001025	0.74	23.12	73.21	0.23	0.49
															0
WankinkoRiver	WankinkoRiverDS	7344	FishPassageFlow	Existing Conditions + FishFlow	17	7.59	12.74	7.96	12.74	0	0.02	1012.66	329.51	0	5.15
WankinkoRiver	WankinkoRiverDS	7344	FishPassageFlow	Alternative 1: Partial + Fish	17	7.59	8.15	7.96	8.17	0.002966	1.23	13.79	44.59	0.39	0.56
WankinkoRiver	WankinkoRiverDS	7344	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	7.59	8.15	7.96	8.17	0.002966	1.23	13.79	44.59	0.39	0.56
WankinkoRiver	WankinkoRiverDS	7344	FishPassageFlow	Alternative 3: Hybrid + Fish	17	7.59	8.15	7.96	8.17	0.002966	1.23	13.79	44.59	0.39	0.56
															0
WankinkoRiver	WankinkoRiverDS	7045	FishPassageFlow	Existing Conditions + FishFlow	17	6.88	12.74		12.74	0	0.01	1278.52	321.84	0	5.86
WankinkoRiver	WankinkoRiverDS	7045	FishPassageFlow	Alternative 1: Partial + Fish	17	6.88	7.49		7.5	0.001758	0.98	17.43	54.15	0.3	0.61
WankinkoRiver	WankinkoRiverDS	7045	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	6.88	7.49		7.5	0.001758	0.98	17.43	54.15	0.3	0.61
WankinkoRiver	WankinkoRiverDS	7045	FishPassageFlow	Alternative 3: Hybrid + Fish	17	6.88	7.49		7.5	0.001758	0.98	17.43	54.15	0.3	0.61
															0
WankinkoRiver	WankinkoRiverDS	6844	FishPassageFlow	Existing Conditions + FishFlow	17	6.53	12.74		12.74	0	0.01	1520.22	363.94	0	6.21
WankinkoRiver	WankinkoRiverDS	6844	FishPassageFlow	Alternative 1: Partial + Fish	17	6.53	7.2	6.92	7.22	0.001191	0.85	19.91	55.71	0.25	0.67
WankinkoRiver	WankinkoRiverDS	6844	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	6.53	7.2	6.92	7.22	0.001191	0.85	19.91	55.71	0.25	0.67
WankinkoRiver	WankinkoRiverDS	6844	FishPassageFlow	Alternative 3: Hybrid + Fish	17	6.53	7.2	6.92	7.22	0.001191	0.85	19.91	55.71	0.25	0.67
															0
WankinkoRiver	WankinkoRiverDS	6696	FishPassageFlow	Existing Conditions + FishFlow	17	6.25	12.74		12.74	0	0.01	1642.64	325.78	0	6.49
WankinkoRiver	WankinkoRiverDS	6696	FishPassageFlow	Alternative 1: Partial + Fish	17	6.25	6.64	6.64	6.74	0.022736	2.5	6.8	34.71	1	0.39
WankinkoRiver	WankinkoRiverDS	6696	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	6.25	6.64	6.64	6.74	0.022736	2.5	6.8	34.71	1	0.39
WankinkoRiver	WankinkoRiverDS	6696	FishPassageFlow	Alternative 3: Hybrid + Fish	17	6.25	6.64	6.64	6.74	0.022736	2.5	6.8	34.71	1	0.39
															0
WankinkoRiver	WankinkoRiverDS	6269	FishPassageFlow	Existing Conditions + FishFlow	17	4.14	12.74		12.74	0	0.01	2059.69	313.36	0	8.6
WankinkoRiver	WankinkoRiverDS	6269	FishPassageFlow	Alternative 1: Partial + Fish	17	4.14	6.57	4.48	6.57	0.000002	0.07	238.8	193.09	0.01	2.43
WankinkoRiver	WankinkoRiverDS	6269	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	4.14	6.07	4.48	6.07	0.000006	0.11	149.91	161.54	0.02	1.93
WankinkoRiver	WankinkoRiverDS	6269	FishPassageFlow	Alternative 3: Hybrid + Fish	17	4.14	6.02	4.48	6.02	0.000007	0.12	141.62	158.15	0.02	1.88
															0
WankinkoRiver	WankinkoRiverDS	5965	FishPassageFlow	Existing Conditions + FishFlow	17	5.62	12.74	5.93	12.74	0	0.01	1446.35	240.06	0	7.12
WankinkoRiver	WankinkoRiverDS	5965	FishPassageFlow	Alternative 1: Partial + Fish	17	5.62	6.57	5.93	6.57	0.000055	0.22	78.38	172.5	0.06	0.95
WankinkoRiver	WankinkoRiverDS	5965	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	5.62	6.04	5.93	6.06	0.004537	1.2	14.2	66.05	0.46	0.42
WankinkoRiver	WankinkoRiverDS	5965	FishPassageFlow	Alternative 3: Hybrid + Fish	17	5.62	5.93	5.93	6.01	0.024731	2.25	7.56	48.68	1.01	0.31
															0
WankinkoRiver	WankinkoRiverDS	5566	FishPassageFlow	Existing Conditions + FishFlow	17	4.05	12.74	4.33	12.74	0	0.01	2100.23	333.8	0	8.69
WankinkoRiver	WankinkoRiverDS	5566	FishPassageFlow	Alternative 1: Partial + Fish	17	4.05	6.57	4.33	6.57	0	0.04	400.65	240	0.01	2.52
WankinkoRiver	WankinkoRiverDS	5566	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	4.05	4.46	4.33	4.48	0.003485	1.02	16.67	80.96	0.4	0.41
WankinkoRiver	WankinkoRiverDS	5566	FishPassageFlow	Alternative 3: Hybrid + Fish	17	4.05	5.02	4.33	5.02	0.000034	0.2	83.25	141.42	0.05	0.97
															0
WankinkoRiver	WankinkoRiverDS	5294	FishPassageFlow	Existing Conditions + FishFlow	17	3.21	12.74		12.74	0	0.01	2614.16	392.01	0	9.53
WankinkoRiver	WankinkoRiverDS	5294	FishPassageFlow	Alternative 1: Partial + Fish	17	3.21	6.57		6.57	0	0.03	592.48	262.58	0	3.36
WankinkoRiver	WankinkoRiverDS	5294	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	3.21	3.64		3.66	0.002635	0.99	17.19	70.88	0.35	0.43
WankinkoRiver	WankinkoRiverDS	5294	FishPassageFlow	Alternative 3: Hybrid + Fish	17	3.21	5.02		5.02	0.000002	0.08	213.22	199.22	0.01	1.81
															0
WankinkoRiver	WankinkoRiverDS	5100	FishPassageFlow	Existing Conditions + FishFlow	17	2.62	12.74		12.74	0	0.01	2750.99	399.3	0	10.12
WankinkoRiver	WankinkoRiverDS	5100	FishPassageFlow	Alternative 1: Partial + Fish	17	2.62	6.57		6.57	0	0.02	682.38	270.87	0	3.95
WankinkoRiver	WankinkoRiverDS	5100	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	2.62	3.24		3.25	0.00171	0.93	18.3	59.9	0.3	0.62
WankinkoRiver	WankinkoRiverDS	5100	FishPassageFlow	Alternative 3: Hybrid + Fish	17	2.62	5.02		5.02	0.000001	0.06	288.03	226.38	0.01	2.4
															0
WankinkoRiver	WankinkoRiverDS	4851	FishPassageFlow	Existing Conditions + FishFlow	17	2.64	12.74	2.77	12.74	0	0.01	2608.79	373.8	0	10.1
WankinkoRiver	WankinkoRiverDS	4851	FishPassageFlow	Alternative 1: Partial + Fish	17	2.64	6.57	2.77	6.57	0	0.03	668.78	272.74	0	3.93
WankinkoRiver	WankinkoRiverDS	4851	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	2.64	3.18	2.78	3.18	0.000105	0.3	57.09	126.99	0.08	0.54
WankinkoRiver	WankinkoRiverDS	4851	FishPassageFlow	Alternative 3: Hybrid + Fish	17	2.64	5.02	2.77	5.02	0	0.05	332.28	172.65	0.01	2.38
															0
WankinkoRiver	WankinkoRiverDS	4717	FishPassageFlow	Existing Conditions + FishFlow	17	3.33	12.74	3.47	12.74	0	0.01	2410.28	364.45	0	9.41
WankinkoRiver	WankinkoRiverDS	4717	FishPassageFlow	Alternative 1: Partial + Fish	17	3.33	6.57	3.47	6.57	0	0.03	519.37	301.61	0	3.24
WankinkoRiver	WankinkoRiverDS	4717	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	1.46	3.06	2.26	3.07	0.001754	0.89	19.12	23.86	0.18	1.6
WankinkoRiver	WankinkoRiverDS	4717	FishPassageFlow	Alternative 3: Hybrid + Fish	17	3.33	5.02	3.47	5.02	0.000003	0.09	191.02	158.1	0.01	1.69
															0
WankinkoRiver	WankinkoRiverDS	4541	FishPassageFlow	Existing Conditions + FishFlow	17	3.79	12.74	3.98	12.74	0	0.01	2472.09	693.86	0	8.95
WankinkoRiver	WankinkoRiverDS	4541	FishPassageFlow	Alternative 1: Partial + Fish	17	3.79	6.57	3.98	6.57	0	0.04	458.12	287.8	0.01	2.78
WankinkoRiver	WankinkoRiverDS	4541	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	0.19	2.12	1.22	2.15	0.002444	1.17	14.51	15	0.21	1.93
WankinkoRiver	WankinkoRiverDS	4541	FishPassageFlow	Alternative 3: Hybrid + Fish	17	3.79	5.02	3.98	5.02	0.000023	0.19	89.88	127.6	0.04	1.23
															0
WankinkoRiver	WankinkoRiverDS	4540.6	FishPassageFlow	Existing Conditions + FishFlow	17	3.99	12.74	4.21	12.74	0	0.01	2466.85	691.87	0	8.75
WankinkoRiver	WankinkoRiverDS	4540.6	FishPassageFlow	Alternative 1: Partial + Fish	17	3.99	6.57	4.21	6.57	0	0.04	442.85	290.62	0.01	2.58
WankinkoRiver	WankinkoRiverDS	4540.6	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-0.37	1.59	0.7	1.62	0.002802	1.26	13.48	13.74	0.22	1.96
WankinkoRiver	WankinkoRiverDS	4540.6	FishPassageFlow	Alternative 3: Hybrid + Fish	17	3.99	5.02	4.21	5.02	0.000055	0.23	74.95	154.96	0.06	1.03
															0
WankinkoRiver	WankinkoRiverDS	4540.4	FishPassageFlow	Existing Conditions + FishFlow	17	4.09	12.74	4.35	12.74	0	0.01	2432.09	635.16	0	8.65
WankinkoRiver	WankinkoRiverDS	4540.4	FishPassageFlow	Alternative 1: Partial + Fish	17	4.09	6.57	4.35	6.57	0	0.04	434.72	272.17	0.01	2.48
WankinkoRiver	WankinkoRiverDS	4540.4	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-0.53	1.43	0.55	1.46	0.002818	1.26	13.45	13.72	0.23	1.96
WankinkoRiver	WankinkoRiverDS	4540.4	FishPassageFlow	Alternative 3: Hybrid + Fish	17	4.09	5.02	4.35	5.02	0.000061	0.23	75.12	167.77	0.06	0.93
															0
WankinkoRiver	WankinkoRiverDS	4540	FishPassageFlow	Existing Conditions + FishFlow	17	4.11	12.74	4.39	12.74	0	0	3465.21	695.83	0	8.63
WankinkoRiver	WankinkoRiverDS	4540	FishPassageFlow	Alternative 1: Partial + Fish	17	4.11	6.57	4.39	6.57	0	0.04	436.92	260.36	0.01	2.46
WankinkoRiver	WankinkoRiverDS	4540	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-0.73	1.23	0.34	1.25	0.002816	1.26	13.46	13.73	0.22	1.96
WankinkoRiver	WankinkoRiverDS	4540	FishPassageFlow	Alternative 3: Hybrid + Fish	17	4.11	5.02	4.39	5.02	0.000037	0.19	88.26	172.68	0.05	0.91
															0
WankinkoRiver	WankinkoRiverDS	4486	FishPassageFlow	Existing Conditions + FishFlow	17	3.68	12.74	3.98	12.74	0	0	4220.09	677.26	0	9.06
WankinkoRiver	WankinkoRiverDS	4486	FishPassageFlow	Alternative 1: Partial + Fish	17	3.68	6.57	3.98	6.57	0	0.03	600.86	440.56	0	2.89
WankinkoRiver	WankinkoRiverDS	4486	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-1.17	0.76	-0.09	0.79	0.003071	1.31	13.02	13.5	0.23	1.93
WankinkoRiver	WankinkoRiverDS	4486	FishPassageFlow	Alternative 3: Hybrid + Fish	17	3.68	5.01	3.97	5.01	0.000008	0.12	137.84	170.87	0.02	1.33
															0
WankinkoRiver	WankinkoRiverDS	4452	FishPassageFlow	Existing Conditions + FishFlow	17	4.96	12.74	5.68	12.74	0	0.06	265.36	567.01	0	7.78
WankinkoRiver	WankinkoRiverDS	4452	FishPassageFlow	Alternative 1: Partial + Fish	17	4.96	6.57	5.68	6.57	0.000069	0.43	39.35	398.82	0.07	1.61
WankinkoRiver	WankinkoRiverDS	4452	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-1.57	0.08	-0.49	0.13	0.007142	1.79	9.49	11.52	0.35	1.65
WankinkoRiver	WankinkoRiverDS	4452	FishPassageFlow	Alternative 3: Hybrid + Fish	17	3.66	4.98	4.45	5.01	0.001182	1.28	13.24	80.31	0.28	1.32
															0
WankinkoRiver	WankinkoRiverDS	4390			Culvert										0
															0
WankinkoRiver	WankinkoRiverDS	4331	FishPassageFlow	Existing Conditions + FishFlow	17	5.98	12.74	6.19	12.74	0	0.08	202.76	366.55	0.01	6.76
WankinkoRiver	WankinkoRiverDS	4331	FishPassageFlow	Alternative 1: Partial + Fish	17	5.98	6.4	6.2	6.43	0.008325	1.34	12.69	76.37	0.36	0.42
WankinkoRiver	WankinkoRiverDS	4331	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-1.92	0.11	-0.84	0.13	0.002362	1.18	14.37	14.18	0.21	2.03
WankinkoRiver	WankinkoRiverDS	4331	FishPassageFlow	Alternative 3: Hybrid + Fish	17	3.39	4.98	4.3	5.01	0.003491	1.24	13.68	17.2	0.25	1.59
															0
WankinkoRiver	WankinkoRiverDS	4300	FishPassageFlow	Existing Conditions + FishFlow	17	5.89	12.74	6.09	12.74	0	0.01	1368.82	342.23	0	6.85
WankinkoRiver	WankinkoRiverDS	4300	FishPassageFlow	Alternative 1: Partial + Fish	17	5.12	5.88	5.76	5.96	0.031086	2.28	7.46	19.75	0.65	0.76
WankinkoRiver	WankinkoRiverDS	4300	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-2.01	0.03	-0.93	0.06	0.002251	1.16	14.63	14.31	0.2	2.04
WankinkoRiver	WankinkoRiverDS	4300	FishPassageFlow	Alternative 3: Hybrid + Fish	17	3.32	4.85	4.24	4.88	0.00447	1.37	12.41	16.21	0.28	1.53
															0

WankinkoRiver	WankinkoRiverDS	4272	FishPassageFlow	Existing Conditions + FishFlow	17	5	12.74	5.27	12.74	0	0.01	1475.97	323.11	0	7.74
WankinkoRiver	WankinkoRiverDS	4272	FishPassageFlow	Alternative 1: Partial + Fish	17	4.29	5.04	4.92	5.1	0.028952	2.08	8.19	39.4	0.8	0.75
WankinkoRiver	WankinkoRiverDS	4272	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-2.1	-0.04	-1.02	-0.02	0.002151	1.14	14.89	14.43	0.2	2.06
WankinkoRiver	WankinkoRiverDS	4272	FishPassageFlow	Alternative 3: Hybrid + Fish	17	3.26	4.75	4.09	4.77	0.00308	1.12	15.14	20.29	0.23	1.49
															0
WankinkoRiver	WankinkoRiverDS	4230	FishPassageFlow	Existing Conditions + FishFlow	17	5.68	12.74	6.13	12.74	0	0.02	982.2	309.15	0	7.06
WankinkoRiver	WankinkoRiverDS	4230	FishPassageFlow	Alternative 1: Partial + Fish	17	3.09	4.58	4.03	4.62	0.005948	1.55	10.96	14.67	0.32	1.49
WankinkoRiver	WankinkoRiverDS	4230	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-2.23	-0.13	-1.15	-0.11	0.001942	1.1	15.47	14.72	0.19	2.1
WankinkoRiver	WankinkoRiverDS	4230	FishPassageFlow	Alternative 3: Hybrid + Fish	17	3	4.56	3.99	4.6	0.005992	1.56	10.88	14.44	0.32	1.56
															0
WankinkoRiver	WankinkoRiverDS	4188			Inl Struct										0
															0
WankinkoRiver	WankinkoRiverDS	4051	FishPassageFlow	Alternative 1: Partial + Fish	17	0	1.31	1.03	1.41	0.019287	2.54	6.7	10.25	0.55	1.31
WankinkoRiver	WankinkoRiverDS	4051	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-2.73	-0.33	-1.51	-0.31	0.002023	1.27	13.44	18.78	0.2	2.4
WankinkoRiver	WankinkoRiverDS	4051	FishPassageFlow	Alternative 3: Hybrid + Fish	17	0	1.31	1.03	1.41	0.019287	2.54	6.7	10.25	0.55	1.31
															0
WankinkoRiver	WankinkoRiverDS	4034	FishPassageFlow	Alternative 1: Partial + Fish	17	-0.43	0.58	0.58	0.83	0.068552	4.02	4.23	8.41	1	1.01
WankinkoRiver	WankinkoRiverDS	4034	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-0.43	0.58	0.58	0.83	0.068552	4.02	4.23	8.41	1	1.01
															0
WankinkoRiver	WankinkoRiverDS	4033	FishPassageFlow	Existing Conditions + FishFlow	17	-2.32	-0.33		-0.33	0.000023	0.27	63.4	50.89	0.04	1.99
WankinkoRiver	WankinkoRiverDS	4033	FishPassageFlow	Alternative 1: Partial + Fish	17	-2.32	-0.33	-1.69	-0.33	0.000023	0.27	63.4	50.89	0.04	1.99
WankinkoRiver	WankinkoRiverDS	4033	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-2.78	-0.33		-0.33	0.000042	0.24	70.64	50.89	0.04	2.45
WankinkoRiver	WankinkoRiverDS	4033	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-2.32	-0.33	-1.69	-0.33	0.000023	0.27	63.4	50.89	0.04	1.99
															0
WankinkoRiver	WankinkoRiverDS	4023	FishPassageFlow	Existing Conditions + FishFlow	17	-2.81	-0.33		-0.33	0.000003	0.13	134.89	80.05	0.02	2.48
WankinkoRiver	WankinkoRiverDS	4023	FishPassageFlow	Alternative 1: Partial + Fish	17	-2.81	-0.33		-0.33	0.000003	0.13	134.89	80.05	0.02	2.48
WankinkoRiver	WankinkoRiverDS	4023	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-2.81	-0.33		-0.33	0.000008	0.14	120.6	80.05	0.02	2.48
WankinkoRiver	WankinkoRiverDS	4023	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-2.81	-0.33		-0.33	0.000003	0.13	134.89	80.05	0.02	2.48
															0
WankinkoRiver	WankinkoRiverDS	3909	FishPassageFlow	Existing Conditions + FishFlow	17	-2.4	-0.33		-0.33	0.000009	0.22	78.28	38.6	0.03	2.07
WankinkoRiver	WankinkoRiverDS	3909	FishPassageFlow	Alternative 1: Partial + Fish	17	-2.4	-0.33		-0.33	0.000009	0.22	78.28	38.6	0.03	2.07
WankinkoRiver	WankinkoRiverDS	3909	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-2.4	-0.33	-2.17	-0.33	0.000009	0.22	78.28	38.6	0.03	2.07
WankinkoRiver	WankinkoRiverDS	3909	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-2.4	-0.33		-0.33	0.000009	0.22	78.28	38.6	0.03	2.07
															0
WankinkoRiver	WankinkoRiverDS	3745	FishPassageFlow	Existing Conditions + FishFlow	17	-3.45	-0.33		-0.33	0.000004	0.17	100.3	39.71	0.02	3.12
WankinkoRiver	WankinkoRiverDS	3745	FishPassageFlow	Alternative 1: Partial + Fish	17	-3.45	-0.33		-0.33	0.000004	0.17	100.3	39.71	0.02	3.12
WankinkoRiver	WankinkoRiverDS	3745	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-3.45	-0.33		-0.33	0.000004	0.17	100.3	39.71	0.02	3.12
WankinkoRiver	WankinkoRiverDS	3745	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-3.45	-0.33		-0.33	0.000004	0.17	100.3	39.71	0.02	3.12
															0
WankinkoRiver	WankinkoRiverDS	3586	FishPassageFlow	Existing Conditions + FishFlow	17	-3.02	-0.33		-0.33	0.000002	0.1	176.67	88.49	0.01	2.69
WankinkoRiver	WankinkoRiverDS	3586	FishPassageFlow	Alternative 1: Partial + Fish	17	-3.02	-0.33		-0.33	0.000002	0.1	176.67	88.49	0.01	2.69
WankinkoRiver	WankinkoRiverDS	3586	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-3.02	-0.33		-0.33	0.000002	0.1	176.67	88.49	0.01	2.69
WankinkoRiver	WankinkoRiverDS	3586	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-3.02	-0.33		-0.33	0.000002	0.1	176.67	88.49	0.01	2.69
															0
WankinkoRiver	WankinkoRiverDS	3430	FishPassageFlow	Existing Conditions + FishFlow	17	-3.8	-0.33		-0.33	0.000001	0.08	225.26	119.83	0.01	3.47
WankinkoRiver	WankinkoRiverDS	3430	FishPassageFlow	Alternative 1: Partial + Fish	17	-3.8	-0.33		-0.33	0.000001	0.08	225.26	119.83	0.01	3.47
WankinkoRiver	WankinkoRiverDS	3430	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-3.8	-0.33		-0.33	0.000001	0.08	225.26	119.83	0.01	3.47
WankinkoRiver	WankinkoRiverDS	3430	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-3.8	-0.33		-0.33	0.000001	0.08	225.26	119.83	0.01	3.47
															0
WankinkoRiver	WankinkoRiverDS	3374	FishPassageFlow	Existing Conditions + FishFlow	17	-4.1	-0.33		-0.33	0	0.04	401.53	222.27	0.01	3.77
WankinkoRiver	WankinkoRiverDS	3374	FishPassageFlow	Alternative 1: Partial + Fish	17	-4.1	-0.33		-0.33	0	0.04	401.53	222.27	0.01	3.77
WankinkoRiver	WankinkoRiverDS	3374	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-4.1	-0.33		-0.33	0	0.04	401.53	222.27	0.01	3.77
WankinkoRiver	WankinkoRiverDS	3374	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-4.1	-0.33		-0.33	0	0.04	401.53	222.27	0.01	3.77
															0
WankinkoRiver	WankinkoRiverDS	3252	FishPassageFlow	Existing Conditions + FishFlow	17	-6.02	-0.33		-0.33	0	0.02	909.59	306.24	0	5.69
WankinkoRiver	WankinkoRiverDS	3252	FishPassageFlow	Alternative 1: Partial + Fish	17	-6.02	-0.33		-0.33	0	0.02	909.59	306.24	0	5.69
WankinkoRiver	WankinkoRiverDS	3252	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-6.02	-0.33		-0.33	0	0.02	909.59	306.24	0	5.69
WankinkoRiver	WankinkoRiverDS	3252	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-6.02	-0.33		-0.33	0	0.02	909.59	306.24	0	5.69
															0
WankinkoRiver	WankinkoRiverDS	3135	FishPassageFlow	Existing Conditions + FishFlow	17	-8.18	-0.33		-0.33	0	0.01	2441.88	469.86	0	7.85
WankinkoRiver	WankinkoRiverDS	3135	FishPassageFlow	Alternative 1: Partial + Fish	17	-8.18	-0.33		-0.33	0	0.01	2441.88	469.86	0	7.85
WankinkoRiver	WankinkoRiverDS	3135	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-8.18	-0.33		-0.33	0	0.01	2441.88	469.86	0	7.85
WankinkoRiver	WankinkoRiverDS	3135	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-8.18	-0.33		-0.33	0	0.01	2441.88	469.86	0	7.85
															0
WankinkoRiver	WankinkoRiverDS	2871	FishPassageFlow	Existing Conditions + FishFlow	17	-9.29	-0.33		-0.33	0	0.01	2858.03	511.24	0	8.96
WankinkoRiver	WankinkoRiverDS	2871	FishPassageFlow	Alternative 1: Partial + Fish	17	-9.29	-0.33		-0.33	0	0.01	2858.03	511.24	0	8.96
WankinkoRiver	WankinkoRiverDS	2871	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-9.29	-0.33		-0.33	0	0.01	2858.03	511.24	0	8.96
WankinkoRiver	WankinkoRiverDS	2871	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-9.29	-0.33		-0.33	0	0.01	2858.03	511.24	0	8.96
															0
WankinkoRiver	WankinkoRiverDS	2556	FishPassageFlow	Existing Conditions + FishFlow	17	-8.18	-0.33		-0.33	0	0.01	2426.32	474.21	0	7.85
WankinkoRiver	WankinkoRiverDS	2556	FishPassageFlow	Alternative 1: Partial + Fish	17	-8.18	-0.33		-0.33	0	0.01	2426.32	474.21	0	7.85
WankinkoRiver	WankinkoRiverDS	2556	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-8.18	-0.33		-0.33	0	0.01	2426.32	474.21	0	7.85
WankinkoRiver	WankinkoRiverDS	2556	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-8.18	-0.33		-0.33	0	0.01	2426.32	474.21	0	7.85
															0
WankinkoRiver	WankinkoRiverDS	2354	FishPassageFlow	Existing Conditions + FishFlow	17	-5.96	-0.33		-0.33	0	0.01	2650.19	769.97	0	5.63
WankinkoRiver	WankinkoRiverDS	2354	FishPassageFlow	Alternative 1: Partial + Fish	17	-5.96	-0.33		-0.33	0	0.01	2650.19	769.97	0	5.63
WankinkoRiver	WankinkoRiverDS	2354	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-5.96	-0.33		-0.33	0	0.01	2650.19	769.97	0	5.63
WankinkoRiver	WankinkoRiverDS	2354	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-5.96	-0.33		-0.33	0	0.01	2650.19	769.97	0	5.63
															0
WankinkoRiver	WankinkoRiverDS	2148	FishPassageFlow	Existing Conditions + FishFlow	17	-5.12	-0.33		-0.33	0	0.02	1061.14	349.23	0	4.79
WankinkoRiver	WankinkoRiverDS	2148	FishPassageFlow	Alternative 1: Partial + Fish	17	-5.12	-0.33		-0.33	0	0.02	1061.14	349.23	0	4.79
WankinkoRiver	WankinkoRiverDS	2148	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-5.12	-0.33		-0.33	0	0.02	1061.14	349.23	0	4.79
WankinkoRiver	WankinkoRiverDS	2148	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-5.12	-0.33		-0.33	0	0.02	1061.14	349.23	0	4.79
															0
WankinkoRiver	WankinkoRiverDS	1907	FishPassageFlow	Existing Conditions + FishFlow	17	-5.1	-0.33		-0.33	0	0.01	1650.94	446.64	0	4.77
WankinkoRiver	WankinkoRiverDS	1907	FishPassageFlow	Alternative 1: Partial + Fish	17	-5.1	-0.33		-0.33	0	0.01	1650.94	446.64	0	4.77
WankinkoRiver	WankinkoRiverDS	1907	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-5.1	-0.33		-0.33	0	0.01	1650.94	446.64	0	4.77
WankinkoRiver	WankinkoRiverDS	1907	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-5.1	-0.33		-0.33	0	0.01	1650.94	446.64	0	4.77
															0
WankinkoRiver	WankinkoRiverDS	1629	FishPassageFlow	Existing Conditions + FishFlow	17	-8.02	-0.33		-0.33	0	0.01	1814.21	391.44	0	7.69
WankinkoRiver	WankinkoRiverDS	1629	FishPassageFlow	Alternative 1: Partial + Fish	17	-8.02	-0.33		-0.33	0	0.01	1814.21	391.44	0	7.69
WankinkoRiver	WankinkoRiverDS	1629	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-8.02	-0.33		-0.33	0	0.01	1814.21	391.44	0	7.69
WankinkoRiver	WankinkoRiverDS	1629	FishPassageFlow	Alternative 2B: Full Dam + Fish	17	-8.02	-0.33		-0.33	0	0.01	1814.21	391.44	0	7.69
WankinkoRiver	WankinkoRiverDS	1629	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-8.02	-0.33		-0.33	0	0.01	1814.21	391.44	0	7.69
															0
WankinkoRiver	WankinkoRiverDS	1489	FishPassageFlow	Existing Conditions + FishFlow	17	-7.84	-0.33		-0.33	0	0.01	1849.09	430.4	0	7.51
WankinkoRiver	WankinkoRiverDS	1489	FishPassageFlow	Alternative 1: Partial + Fish	17	-7.84	-0.33		-0.33	0	0.01	1849.09	430.4	0	7.51
WankinkoRiver	WankinkoRiverDS	1489	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-7.84	-0.33		-0.33	0	0.01	1849.09	430.4	0	7.51
WankinkoRiver	WankinkoRiverDS	1489	FishPassageFlow	Alternative 2B: Full Dam + Fish	17	-7.84	-0.33		-0.33	0	0.01	1849.09	430.4	0	7.51
WankinkoRiver	WankinkoRiverDS	1489	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-7.84	-0.33		-0.33	0	0.01	1849.09	430.4	0	7.51
															0
WankinkoRiver	WankinkoRiverDS	1364	FishPassageFlow	Existing Conditions + FishFlow	17	-3.79	-0.33		-0.33	0	0.03	682.15	307.75	0	3.46
WankinkoRiver	WankinkoRiverDS	1364	FishPassageFlow	Alternative 1: Partial + Fish	17	-3.79	-0.33		-0.33	0	0.03	682.15	307.75	0	3.46
WankinkoRiver	WankinkoRiverDS	1364	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-3.79	-0.33		-0.33	0	0.03	682.15	307.75	0	3.46
WankinkoRiver	WankinkoRiverDS	1364	FishPassageFlow	Alternative 2B: Full Dam + Fish	17	-3.79	-0.33		-0.33	0	0.03	682.15	307.75	0	3.46
WankinkoRiver	WankinkoRiverDS	1364	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-3.79	-0.33		-0.33	0	0.03	682.15	307.75	0	3.46
															0
WankinkoRiver	WankinkoRiverDS	1226	FishPassageFlow	Existing Conditions + FishFlow	17	-2.29	-0.33	-2.02	-0.33	0.000002	0.08	215.76	280.64	0.01	1.96
WankinkoRiver	WankinkoRiverDS	1226	FishPassageFlow	Alternative 1: Partial + Fish	17	-2.29	-0.33	-2.02	-0.33	0.000002	0.08	215.76	280.64	0.01	1.96
WankinkoRiver	WankinkoRiverDS	1226	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-2.29	-0.33	-2.02	-0.33	0.000002	0.08	215.76	280.64	0.01	1.96
WankinkoRiver	WankinkoRiverDS	1226	FishPassageFlow	Alternative 2B: Full Dam + Fish	17	-2.29	-0.33	-2.02	-0.33	0.000002	0.08	215.76	280.64	0.01	1.96
WankinkoRiver	WankinkoRiverDS	1226	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-2.29	-0.33	-2.02	-0.33	0.000002	0.08	215.76	280.64	0.01	1.96
															0
WankinkoRiver	WankinkoRiverDS	1112	FishPassageFlow	Existing Conditions + FishFlow	17	-4.3	-0.33		-0.33	0	0.02	929.66	444.24	0	3.97
WankinkoRiver	WankinkoRiverDS	1112	FishPassageFlow	Alternative 1: Partial + Fish	17	-4.3	-0.33		-0.33	0	0.02	929.66	444.24	0	3.97
WankinkoRiver	WankinkoRiverDS	1112	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-4.3	-0.33		-0.33	0	0.02	929.66	444.24	0	3.97
WankinkoRiver	WankinkoRiverDS	1112	FishPassageFlow	Alternative 2B: Full Dam + Fish	17	-4.3	-0.33		-0.33	0	0.02	929.66	444.24	0	3.97
WankinkoRiver	WankinkoRiverDS	1112	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-4.3	-0.33		-0.33	0	0.02	929.66	444.24	0	3.97
															0
WankinkoRiver	WankinkoRiverDS	1000	FishPassageFlow	Existing Conditions + FishFlow	17	-4.41	-0.33	-4.2	-0.33	0	0.01	1332.6	511.64	0	4.08
WankinkoRiver	WankinkoRiverDS	1000	FishPassageFlow	Alternative 1: Partial + Fish	17	-4.41	-0.33	-4.2	-0.33	0	0.01	1332.6	511.64	0	4.08
WankinkoRiver	WankinkoRiverDS	1000	FishPassageFlow	Alternative 2A: Full Dam + Fish	17	-4.41	-0.33	-4.2	-0.33	0	0.01	1332.6	511.64	0	4.08
WankinkoRiver	WankinkoRiverDS	1000	FishPassageFlow	Alternative 2B: Full Dam + Fish	17	-4.41	-0.33	-4.2	-0.33	0	0.01	1332.6	511.64	0	4.08
WankinkoRiver	WankinkoRiverDS	1000	FishPassageFlow	Alternative 3: Hybrid + Fish	17	-4.41	-0.33	-4.2	-0.33	0	0.01	1332.6	511.64	0	4.08
															0
HarlowBrook	HarlowBrook	4572	FishPassageFlow	Existing Conditions + FishFlow	17	14.3	15.1	14.5	15.1	0.00033	0.63	41.34	119.37	0.14	0.8
HarlowBrook	HarlowBrook	4572	FishPassageFlow	Alternative 1: Partial + Fish	17	14.3	15.1	14.5	15.1	0.00033	0.63	41.34	119.37	0.14	0.8
HarlowBrook	HarlowBrook	4572	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	14.3	15.12	14.51	15.13	0.000357	0.68	43.16	123.43	0.15	0.82
HarlowBrook	HarlowBrook	4572	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	14.3	15.12	14.51	15.13	0.000357	0.68	43.16	123.43	0.15	0.82
HarlowBrook	HarlowBrook	4572	FishPassageFlow	Alternative 3: Hybrid + Fish	19	14.3	15.12	14.51	15.13	0.000357	0.68	43.16	123.43	0.15	0.82
															0
HarlowBrook	HarlowBrook	4426	FishPassageFlow	Existing Conditions + FishFlow	17	14.25	15.05	14.54	15.05	0.000404	0.59	79.47	213.07	0.15	0.8
HarlowBrook	HarlowBrook	4426	FishPassageFlow	Alternative 1: Partial + Fish	17	14.25	15.05	14.54	15.05	0.000404	0.59	79.47	213.07	0.15	0.8
HarlowBrook	HarlowBrook	4426	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	14.25	15.07	14.59	15.07	0.000431	0.62	84.27	219.03	0.16	0.82
HarlowBrook	HarlowBrook	4426	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	14.25	15.07	14.59	15.07	0.000431	0.62	84.27	219.03	0.16	0.82
HarlowBrook	HarlowBrook	4426	FishPassageFlow	Alternative 3: Hybrid + Fish	19	14.25	15.07	14.59	15.07	0.000431	0.62	84.27	219.03	0.16	0.82
															0
HarlowBrook	HarlowBrook	4285	FishPassageFlow	Existing Conditions + FishFlow	17	14.48	14.98	14.55	14.98	0.000591	0.49	75.66	263.04	0.17	0.5
HarlowBrook	HarlowBrook	4285	FishPassageFlow	Alternative 1: Partial + Fish	17	14.48	14.98	14.55	14.98	0.000591	0.49	75.66	263.04	0.17	0.5
HarlowBrook	HarlowBrook	4285	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	14.48	15	14.56	15	0.000613	0.51	80.68	267.73	0.17	0.52
HarlowBrook	HarlowBrook	4285	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	14.48	15	14.56	15	0.000613	0.51	80.68	267.73	0.17	0.52
HarlowBrook	HarlowBrook	4285	FishPassageFlow	Alternative 3: Hybrid + Fish	19	14.48	15	14.56	15	0.000613	0.51	80.68	267.73	0.17	0.52
															0
HarlowBrook	HarlowBrook	4210	FishPassageFlow	Existing Conditions + FishFlow	17	14	14.97	14.41	14.97	0.000052	0.26	122.54	311.68	0.06	0.97
HarlowBrook	HarlowBrook	4210	FishPassageFlow	Alternative 1: Partial + Fish	17	14	14.97	14.41	14.97	0.000052	0.26	122.54	311.68	0.06	0.97

HarlowBrook	HarlowBrook	4210	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	14	14.99	14.42	14.99	0.000058	0.28	128.58	315.82	0.06	0.99
HarlowBrook	HarlowBrook	4210	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	14	14.99	14.42	14.99	0.000058	0.28	128.58	315.82	0.06	0.99
HarlowBrook	HarlowBrook	4210	FishPassageFlow	Alternative 3: Hybrid + Fish	19	14	14.99	14.42	14.99	0.000058	0.28	128.58	315.82	0.06	0.99
															0
HarlowBrook	HarlowBrook	4146	FishPassageFlow	Existing Conditions + FishFlow	17	13.63	14.96		14.96	0.000135	0.41	100.47	297.01	0.09	1.33
HarlowBrook	HarlowBrook	4146	FishPassageFlow	Alternative 1: Partial + Fish	17	13.63	14.96		14.96	0.000135	0.41	100.47	297.01	0.09	1.33
HarlowBrook	HarlowBrook	4146	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	13.63	14.98		14.98	0.000148	0.43	106.54	310.86	0.1	1.35
HarlowBrook	HarlowBrook	4146	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	13.63	14.98		14.98	0.000148	0.43	106.54	310.86	0.1	1.35
HarlowBrook	HarlowBrook	4146	FishPassageFlow	Alternative 3: Hybrid + Fish	19	13.63	14.98		14.98	0.000148	0.43	106.54	310.86	0.1	1.35
															0
HarlowBrook	HarlowBrook	4093	FishPassageFlow	Existing Conditions + FishFlow	17	14.22	14.95	14.54	14.95	0.000259	0.34	114.83	464.71	0.11	0.73
HarlowBrook	HarlowBrook	4093	FishPassageFlow	Alternative 1: Partial + Fish	17	14.22	14.95	14.54	14.95	0.000259	0.34	114.83	464.71	0.11	0.73
HarlowBrook	HarlowBrook	4093	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	14.22	14.97	14.56	14.97	0.000264	0.36	123.13	481.91	0.12	0.75
HarlowBrook	HarlowBrook	4093	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	14.22	14.97	14.56	14.97	0.000264	0.36	123.13	481.91	0.12	0.75
HarlowBrook	HarlowBrook	4093	FishPassageFlow	Alternative 3: Hybrid + Fish	19	14.22	14.97	14.56	14.97	0.000264	0.36	123.13	481.91	0.12	0.75
															0
HarlowBrook	HarlowBrook	4069	FishPassageFlow	Existing Conditions + FishFlow	17	14.34	14.95	14.54	14.95	0.000204	0.32	122.7	503.95	0.1	0.61
HarlowBrook	HarlowBrook	4069	FishPassageFlow	Alternative 1: Partial + Fish	17	14.34	14.95	14.54	14.95	0.000204	0.32	122.7	503.95	0.1	0.61
HarlowBrook	HarlowBrook	4069	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	14.34	14.97	14.56	14.97	0.000217	0.32	131.9	521.3	0.1	0.63
HarlowBrook	HarlowBrook	4069	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	14.34	14.97	14.56	14.97	0.000217	0.32	131.9	521.3	0.1	0.63
HarlowBrook	HarlowBrook	4069	FishPassageFlow	Alternative 3: Hybrid + Fish	19	14.34	14.97	14.56	14.97	0.000217	0.32	131.9	521.3	0.1	0.63
															0
HarlowBrook	HarlowBrook	4053	FishPassageFlow	Existing Conditions + FishFlow	17	14.59	14.94	14.56	14.94	0.000504	0.42	107.62	497.73	0.15	0.35
HarlowBrook	HarlowBrook	4053	FishPassageFlow	Alternative 1: Partial + Fish	17	14.59	14.94	14.56	14.94	0.000504	0.42	107.62	497.73	0.15	0.35
HarlowBrook	HarlowBrook	4053	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	14.59	14.96	14.57	14.96	0.000504	0.43	116.82	517.55	0.15	0.37
HarlowBrook	HarlowBrook	4053	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	14.59	14.96	14.57	14.96	0.000504	0.43	116.82	517.55	0.15	0.37
HarlowBrook	HarlowBrook	4053	FishPassageFlow	Alternative 3: Hybrid + Fish	19	14.59	14.96	14.57	14.96	0.000504	0.43	116.82	517.55	0.15	0.37
															0
HarlowBrook	HarlowBrook	4028	FishPassageFlow	Existing Conditions + FishFlow	17	14.62	14.91	14.71	14.91	0.003721	0.92	41.6	224.91	0.4	0.29
HarlowBrook	HarlowBrook	4028	FishPassageFlow	Alternative 1: Partial + Fish	17	14.62	14.91	14.71	14.91	0.003721	0.92	41.6	224.91	0.4	0.29
HarlowBrook	HarlowBrook	4028	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	14.62	14.93	14.73	14.93	0.003516	0.95	45.71	232.79	0.39	0.31
HarlowBrook	HarlowBrook	4028	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	14.62	14.93	14.73	14.93	0.003516	0.95	45.71	232.79	0.39	0.31
HarlowBrook	HarlowBrook	4028	FishPassageFlow	Alternative 3: Hybrid + Fish	19	14.62	14.93	14.73	14.93	0.003516	0.95	45.71	232.79	0.39	0.31
															0
HarlowBrook	HarlowBrook	3982	FishPassageFlow	Existing Conditions + FishFlow	17	14.51	14.77	14.46	14.77	0.002681	0.75	43.58	202.98	0.33	0.26
HarlowBrook	HarlowBrook	3982	FishPassageFlow	Alternative 1: Partial + Fish	17	14.51	14.77	14.46	14.77	0.002681	0.75	43.58	202.98	0.33	0.26
HarlowBrook	HarlowBrook	3982	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	14.51	14.8	14.47	14.8	0.002569	0.77	48.74	223.12	0.33	0.29
HarlowBrook	HarlowBrook	3982	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	14.51	14.8	14.47	14.8	0.002569	0.77	48.74	223.12	0.33	0.29
HarlowBrook	HarlowBrook	3982	FishPassageFlow	Alternative 3: Hybrid + Fish	19	14.51	14.8	14.47	14.8	0.002569	0.77	48.74	223.12	0.33	0.29
															0
HarlowBrook	HarlowBrook	3907	FishPassageFlow	Existing Conditions + FishFlow	17	13.98	14.69		14.69	0.000568	0.66	59.87	209.1	0.18	0.71
HarlowBrook	HarlowBrook	3907	FishPassageFlow	Alternative 1: Partial + Fish	17	13.98	14.69		14.69	0.000568	0.66	59.87	209.1	0.18	0.71
HarlowBrook	HarlowBrook	3907	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	13.98	14.72		14.72	0.000575	0.7	65.44	223.98	0.18	0.74
HarlowBrook	HarlowBrook	3907	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	13.98	14.72		14.72	0.000575	0.7	65.44	223.98	0.18	0.74
HarlowBrook	HarlowBrook	3907	FishPassageFlow	Alternative 3: Hybrid + Fish	19	13.98	14.72		14.72	0.000575	0.7	65.44	223.98	0.18	0.74
															0
HarlowBrook	HarlowBrook	3824	FishPassageFlow	Existing Conditions + FishFlow	17	13.9	14.6	14.4	14.61	0.002488	1.1	24.89	113.47	0.36	0.7
HarlowBrook	HarlowBrook	3824	FishPassageFlow	Alternative 1: Partial + Fish	17	13.9	14.6	14.4	14.61	0.002488	1.1	24.89	113.48	0.36	0.7
HarlowBrook	HarlowBrook	3824	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	13.9	14.62	14.41	14.64	0.00253	1.14	27.66	121.2	0.36	0.72
HarlowBrook	HarlowBrook	3824	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	13.9	14.62	14.41	14.64	0.00253	1.14	27.66	121.2	0.36	0.72
HarlowBrook	HarlowBrook	3824	FishPassageFlow	Alternative 3: Hybrid + Fish	19	13.9	14.62	14.41	14.64	0.00253	1.14	27.66	121.2	0.36	0.72
															0
HarlowBrook	HarlowBrook	3766	FishPassageFlow	Existing Conditions + FishFlow	17	13.6	14.57		14.58	0.000233	0.56	44.63	134.23	0.12	0.97
HarlowBrook	HarlowBrook	3766	FishPassageFlow	Alternative 1: Partial + Fish	17	13.6	14.57		14.58	0.000233	0.56	44.63	134.23	0.12	0.97
HarlowBrook	HarlowBrook	3766	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	13.6	14.6		14.6	0.000257	0.6	47.55	144	0.13	1
HarlowBrook	HarlowBrook	3766	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	13.6	14.6		14.6	0.000257	0.6	47.55	144	0.13	1
HarlowBrook	HarlowBrook	3766	FishPassageFlow	Alternative 3: Hybrid + Fish	19	13.6	14.6		14.6	0.000257	0.6	47.55	144	0.13	1
															0
HarlowBrook	HarlowBrook	3697	FishPassageFlow	Existing Conditions + FishFlow	17	13.89	14.42	14.42	14.52	0.015076	2.77	11.26	78.77	0.88	0.53
HarlowBrook	HarlowBrook	3697	FishPassageFlow	Alternative 1: Partial + Fish	17	13.89	14.42	14.42	14.52	0.015076	2.77	11.26	78.77	0.88	0.53
HarlowBrook	HarlowBrook	3697	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	13.89	14.47	14.46	14.54	0.012027	2.5	15.16	97.33	0.79	0.58
HarlowBrook	HarlowBrook	3697	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	13.89	14.47	14.46	14.54	0.012027	2.5	15.16	97.33	0.79	0.58
HarlowBrook	HarlowBrook	3697	FishPassageFlow	Alternative 3: Hybrid + Fish	19	13.89	14.47	14.46	14.54	0.012027	2.5	15.16	97.33	0.79	0.58
															0
HarlowBrook	HarlowBrook	3620	FishPassageFlow	Existing Conditions + FishFlow	17	13.32	14.37	13.77	14.38	0.000443	0.83	35.63	102.63	0.17	1.05
HarlowBrook	HarlowBrook	3620	FishPassageFlow	Alternative 1: Partial + Fish	17	13.32	14.37	13.77	14.38	0.000441	0.82	35.73	102.8	0.17	1.05
HarlowBrook	HarlowBrook	3620	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	13.32	14.4	13.8	14.41	0.000469	0.86	39.2	111.39	0.18	1.08
HarlowBrook	HarlowBrook	3620	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	13.32	14.4	13.8	14.41	0.000469	0.86	39.2	111.39	0.18	1.08
HarlowBrook	HarlowBrook	3620	FishPassageFlow	Alternative 3: Hybrid + Fish	19	13.32	14.4	13.8	14.41	0.000469	0.86	39.2	111.39	0.18	1.08
															0
HarlowBrook	HarlowBrook	3519	FishPassageFlow	Existing Conditions + FishFlow	17	13.23	14.33		14.34	0.000345	0.67	43.92	127.66	0.15	1.1
HarlowBrook	HarlowBrook	3519	FishPassageFlow	Alternative 1: Partial + Fish	17	13.23	14.33		14.34	0.000343	0.67	44.06	128.02	0.15	1.1
HarlowBrook	HarlowBrook	3519	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	13.23	14.36		14.37	0.000368	0.71	48.06	137.55	0.16	1.13
HarlowBrook	HarlowBrook	3519	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	13.23	14.36		14.37	0.000368	0.71	48.06	137.55	0.16	1.13
HarlowBrook	HarlowBrook	3519	FishPassageFlow	Alternative 3: Hybrid + Fish	19	13.23	14.36		14.37	0.000368	0.71	48.06	137.55	0.16	1.13
															0
HarlowBrook	HarlowBrook	3361	FishPassageFlow	Existing Conditions + FishFlow	17	13.35	14.27		14.28	0.000389	0.76	45.41	142.04	0.16	0.92
HarlowBrook	HarlowBrook	3361	FishPassageFlow	Alternative 1: Partial + Fish	17	13.35	14.27		14.28	0.000385	0.76	45.63	142.25	0.16	0.92
HarlowBrook	HarlowBrook	3361	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	13.35	14.3		14.31	0.00041	0.8	49.37	146.24	0.17	0.95
HarlowBrook	HarlowBrook	3361	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	13.35	14.3		14.31	0.00041	0.8	49.37	146.24	0.17	0.95
HarlowBrook	HarlowBrook	3361	FishPassageFlow	Alternative 3: Hybrid + Fish	19	13.35	14.3		14.31	0.00041	0.8	49.37	146.24	0.17	0.95
															0
HarlowBrook	HarlowBrook	3293	FishPassageFlow	Existing Conditions + FishFlow	17	13.53	14.23	14	14.24	0.001074	0.96	44.2	193.16	0.25	0.7
HarlowBrook	HarlowBrook	3293	FishPassageFlow	Alternative 1: Partial + Fish	17	13.53	14.23	14	14.24	0.001052	0.95	44.63	194.05	0.25	0.7
HarlowBrook	HarlowBrook	3293	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	13.53	14.26	14.03	14.27	0.001041	0.98	49.6	204.11	0.25	0.73
HarlowBrook	HarlowBrook	3293	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	13.53	14.26	14.03	14.27	0.001041	0.98	49.6	204.11	0.25	0.73
HarlowBrook	HarlowBrook	3293	FishPassageFlow	Alternative 3: Hybrid + Fish	19	13.53	14.26	14.03	14.27	0.001041	0.98	49.6	204.11	0.25	0.73
															0
HarlowBrook	HarlowBrook	3063	FishPassageFlow	Existing Conditions + FishFlow	17	13.39	13.81	13.52	13.82	0.002681	1.09	36.26	129.11	0.37	0.42
HarlowBrook	HarlowBrook	3063	FishPassageFlow	Alternative 1: Partial + Fish	17	13.39	13.81	13.52	13.82	0.002776	1.1	35.82	128.35	0.37	0.42
HarlowBrook	HarlowBrook	3063	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	13.39	13.83	13.53	13.84	0.00285	1.17	38.43	133.13	0.38	0.44
HarlowBrook	HarlowBrook	3063	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	13.39	13.83	13.53	13.84	0.00285	1.17	38.43	133.13	0.38	0.44
HarlowBrook	HarlowBrook	3063	FishPassageFlow	Alternative 3: Hybrid + Fish	19	13.39	13.83	13.53	13.84	0.00285	1.17	38.43	133.13	0.38	0.44
															0
HarlowBrook	HarlowBrook	2964	FishPassageFlow	Existing Conditions + FishFlow	17	13.18	13.27	13.09	13.28	0.017649	0.86	17.86	66.11	0.7	0.09
HarlowBrook	HarlowBrook	2964	FishPassageFlow	Alternative 1: Partial + Fish	17	13.18	13.29	13.09	13.3	0.014122	0.9	19.2	67.5	0.65	0.11
HarlowBrook	HarlowBrook	2964	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	13.18	13.32	13.11	13.33	0.012656	1.02	21.39	73.7	0.64	0.14
HarlowBrook	HarlowBrook	2964	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	13.18	13.32	13.11	13.33	0.012656	1.02	21.39	73.7	0.64	0.14
HarlowBrook	HarlowBrook	2964	FishPassageFlow	Alternative 3: Hybrid + Fish	19	13.18	13.32	13.11	13.33	0.012656	1.02	21.39	73.7	0.64	0.14
															0
HarlowBrook	HarlowBrook	2904	FishPassageFlow	Existing Conditions + FishFlow	17	12.54	13.25	12.82	13.25	0.000119	0.33	51.78	168.94	0.08	0.71
HarlowBrook	HarlowBrook	2904	FishPassageFlow	Alternative 1: Partial + Fish	17	12.54	13.27	12.82	13.27	0.000104	0.31	54.22	170.93	0.08	0.73
HarlowBrook	HarlowBrook	2904	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	12.54	13.3	12.83	13.3	0.000111	0.33	57.63	178.4	0.08	0.76
HarlowBrook	HarlowBrook	2904	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	12.54	13.3	12.83	13.3	0.000111	0.33	57.63	178.4	0.08	0.76
HarlowBrook	HarlowBrook	2904	FishPassageFlow	Alternative 3: Hybrid + Fish	19	12.54	13.3	12.83	13.3	0.000111	0.33	57.63	178.4	0.08	0.76
															0
HarlowBrook	HarlowBrook	2725			Culvert										0
															0
HarlowBrook	HarlowBrook	2561	FishPassageFlow	Existing Conditions + FishFlow	17	12.33	13.03	12.68	13.06	0.001358	1.36	12.51	127.62	0.3	0.7
HarlowBrook	HarlowBrook	2561	FishPassageFlow	Alternative 1: Partial + Fish	17	12.33	13.06	12.68	13.09	0.001169	1.3	13.08	135.09	0.28	0.73
HarlowBrook	HarlowBrook	2561	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	12.33	13.09	12.7	13.12	0.001265	1.39	13.66	142.26	0.29	0.76
HarlowBrook	HarlowBrook	2561	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	12.33	13.09	12.7	13.12	0.001265	1.39	13.66	142.26	0.29	0.76
HarlowBrook	HarlowBrook	2561	FishPassageFlow	Alternative 3: Hybrid + Fish	19	12.33	13.09	12.7	13.12	0.001265	1.39	13.66	142.26	0.29	0.76
															0
HarlowBrook	HarlowBrook	2492	FishPassageFlow	Existing Conditions + FishFlow	17	12.3	12.94	12.64	12.95	0.001637	0.95	17.89	54.72	0.29	0.64
HarlowBrook	HarlowBrook	2492	FishPassageFlow	Alternative 1: Partial + Fish	17	12.3	12.99	12.64	13	0.00103	0.81	21.03	57.94	0.24	0.69
HarlowBrook	HarlowBrook	2492	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	12.3	13.02	12.66	13.03	0.001039	0.84	22.67	59.56	0.24	0.72
HarlowBrook	HarlowBrook	2492	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	12.3	13.02	12.66	13.03	0.001039	0.84	22.67	59.56	0.24	0.72
HarlowBrook	HarlowBrook	2492	FishPassageFlow	Alternative 3: Hybrid + Fish	19	12.3	13.02	12.66	13.03	0.001039	0.84	22.67	59.56	0.24	0.72
															0
HarlowBrook	HarlowBrook	2413	FishPassageFlow	Existing Conditions + FishFlow	17	12.26	12.8	12.57	12.81	0.001913	1.01	16.83	52.79	0.32	0.54
HarlowBrook	HarlowBrook	2413	FishPassageFlow	Alternative 1: Partial + Fish	17	12.26	12.93	12.57	12.94	0.000682	0.69	24.71	63.66	0.19	0.67
HarlowBrook	HarlowBrook	2413	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	12.26	12.96	12.58	12.97	0.00071	0.72	26.41	65.6	0.2	0.7
HarlowBrook	HarlowBrook	2413	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	12.26	12.96	12.58	12.97	0.00071	0.72	26.41	65.6	0.2	0.7
HarlowBrook	HarlowBrook	2413	FishPassageFlow	Alternative 3: Hybrid + Fish	19	12.26	12.96	12.58	12.97	0.00071	0.72	26.41	65.6	0.2	0.7
															0
HarlowBrook	HarlowBrook	1878	FishPassageFlow	Existing Conditions + FishFlow	17	11.98	12.75		12.75	0.000037	0.18	96.55	214.42	0.05	0.77
HarlowBrook	HarlowBrook	1878	FishPassageFlow	Alternative 1: Partial + Fish	17	11.98	12.32		12.33	0.002317	0.77	22.04	119.74	0.32	0.34
HarlowBrook	HarlowBrook	1878	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	11.98	12.34		12.35	0.002321	0.79	23.94	124.75	0.32	0.36
HarlowBrook	HarlowBrook	1878	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	11.98	12.34		12.35	0.002321	0.79	23.94	124.75	0.32	0.36
HarlowBrook	HarlowBrook	1878	FishPassageFlow	Alternative 3: Hybrid + Fish	19	11.98	12.34		12.35	0.002321	0.79	23.94	124.75	0.32	0.36
															0
HarlowBrook	HarlowBrook	1665	FishPassageFlow	Existing Conditions + FishFlow	17	11.62	12.74		12.74	0.000003	0.07	256.36	419.51	0.01	1.12
HarlowBrook	HarlowBrook	1665	FishPassageFlow	Alternative 1: Partial + Fish	17	11.62	11.99		11.99	0.001169	0.57	29.91	153.79	0.23	0.37
HarlowBrook	HarlowBrook	1665	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	11.62	12		12.01	0.001146	0.58	32.75	160.89	0.23	0.38
HarlowBrook	HarlowBrook	1665	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	11.62	12		12.01	0.001146	0.58	32.75	160.89	0.23	0.38
HarlowBrook	HarlowBrook	1665	FishPassageFlow	Alternative 3: Hybrid + Fish	19	11.62	12		12.01	0.001146	0.58	32.75	160.89	0.23	0.38
															0
HarlowBrook	HarlowBrook	1521	FishPassageFlow	Existing Conditions + FishFlow	17	11.28	12.74	11.55	12.74	0.000008	0.12	141.22	173.02	0.02	1.46
HarlowBrook	HarlowBrook	1521	FishPassageFlow	Alternative 1: Partial + Fish	17	11.28	11.68	11.55	11.71	0.004257	1.23	13.8	58.64	0.45	0.4
HarlowBrook	HarlowBrook	1521	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	11.28	11.7	11.57	11.73	0.004201	1.26	15.07	61.2	0.45	0.42
HarlowBrook	HarlowBrook	1521	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	11.28	11.7	11.57	11.73	0.004201	1.26	15.07	61.2	0.45	0.42
HarlowBrook	HarlowBrook	1521	FishPassageFlow	Alternative 3: Hybrid + Fish	19	11.28	11.7	11.57	11.73	0.004201	1.26	15.07	61.2	0.45	0.42
															0
HarlowBrook	HarlowBrook	1188	FishPassageFlow	Existing Conditions + FishFlow	17	10.52	12.74		12.74	0	0.04	437.42	357.13	0.01	2.22

HarlowBrook	HarlowBrook	1188	FishPassageFlow	Alternative 1: Partial + Fish	17	10.52	10.99	10.77	11	0.001247	0.72	23.7	90.27	0.25	0.47
HarlowBrook	HarlowBrook	1188	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	10.52	11.01	10.78	11.02	0.001259	0.74	25.67	93.89	0.25	0.49
HarlowBrook	HarlowBrook	1188	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	10.52	11.01	10.78	11.02	0.001259	0.74	25.67	93.89	0.25	0.49
HarlowBrook	HarlowBrook	1188	FishPassageFlow	Alternative 3: Hybrid + Fish	19	10.52	11.01	10.78	11.02	0.001259	0.74	25.67	93.89	0.25	0.49
															0
HarlowBrook	HarlowBrook	1000	FishPassageFlow	Existing Conditions + FishFlow	17	10.06	12.74		12.74	0	0.02	753.18	551.29	0	2.68
HarlowBrook	HarlowBrook	1000	FishPassageFlow	Alternative 1: Partial + Fish	17	10.06	10.3	10.3	10.37	0.025192	2.11	8.05	57.86	1	0.24
HarlowBrook	HarlowBrook	1000	FishPassageFlow	Alternative 2A: Full Dam + Fish	19	10.06	10.31	10.31	10.38	0.024758	2.16	8.8	60.43	1	0.25
HarlowBrook	HarlowBrook	1000	FishPassageFlow	Alternative 2B: Full Dam + Fish	19	10.06	10.31	10.31	10.38	0.024758	2.16	8.8	60.43	1	0.25
HarlowBrook	HarlowBrook	1000	FishPassageFlow	Alternative 3: Hybrid + Fish	19	10.06	10.31	10.31	10.38	0.024758	2.16	8.8	60.43	1	0.25

Parker Mill Pond Dam H&H Results

Flood Flows

River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Flow Depth
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)
WankinkoRiver	WankinkoRiverUS	11821	2-Year	Existing Conditions + Gage	157	14.51	18.01	15.89	18.04	0.000245	1.32	118.61	127.22	0.15	3.5
WankinkoRiver	WankinkoRiverUS	11821	2-Year	Alternative 1: Partial Dam Removal	157	14.51	18.01	15.89	18.04	0.000245	1.32	118.61	127.22	0.15	3.5
WankinkoRiver	WankinkoRiverUS	11821	2-Year	Alternative 2A: Full Dam Removal	157	14.51	18.01	15.89	18.04	0.000245	1.32	118.61	127.22	0.15	3.5
WankinkoRiver	WankinkoRiverUS	11821	2-Year	Alternative 3: Hybrid Dam Removal	157	14.51	18.01	15.89	18.04	0.000245	1.32	118.61	127.22	0.15	3.5
WankinkoRiver	WankinkoRiverUS	11821	10-Year	Existing Conditions + Gage	260	14.51	18.57	16.28	18.62	0.000371	1.73	150.27	147.36	0.19	4.06
WankinkoRiver	WankinkoRiverUS	11821	10-Year	Alternative 1: Partial Dam Removal	260	14.51	18.57	16.28	18.62	0.000371	1.73	150.27	147.36	0.19	4.06
WankinkoRiver	WankinkoRiverUS	11821	10-Year	Alternative 2A: Full Dam Removal	260	14.51	18.57	16.28	18.62	0.000371	1.73	150.27	147.36	0.19	4.06
WankinkoRiver	WankinkoRiverUS	11821	10-Year	Alternative 3: Hybrid Dam Removal	260	14.51	18.57	16.28	18.62	0.000371	1.73	150.27	147.36	0.19	4.06
WankinkoRiver	WankinkoRiverUS	11821	50-Year	Existing Conditions + Gage	352	14.51	19.17	16.57	19.22	0.000371	1.86	190.24	181.52	0.2	4.66
WankinkoRiver	WankinkoRiverUS	11821	50-Year	Alternative 1: Partial Dam Removal	352	14.51	19.17	16.57	19.22	0.000371	1.86	190.24	181.52	0.2	4.66
WankinkoRiver	WankinkoRiverUS	11821	50-Year	Alternative 2A: Full Dam Removal	352	14.51	19.17	16.57	19.22	0.000371	1.86	190.24	181.52	0.2	4.66
WankinkoRiver	WankinkoRiverUS	11821	50-Year	Alternative 3: Hybrid Dam Removal	352	14.51	19.17	16.57	19.22	0.000371	1.86	190.24	181.52	0.2	4.66
WankinkoRiver	WankinkoRiverUS	11821	100-Year	Existing Conditions + Gage	391	14.51	18.92	16.68	19	0.000597	2.27	171.87	164.59	0.25	4.41
WankinkoRiver	WankinkoRiverUS	11821	100-Year	Alternative 1: Partial Dam Removal	391	14.51	18.92	16.68	19	0.000597	2.27	171.87	164.59	0.25	4.41
WankinkoRiver	WankinkoRiverUS	11821	100-Year	Alternative 2A: Full Dam Removal	391	14.51	18.92	16.68	19	0.000597	2.27	171.87	164.59	0.25	4.41
WankinkoRiver	WankinkoRiverUS	11821	100-Year	Alternative 3: Hybrid Dam Removal	391	14.51	18.92	16.68	19	0.000597	2.27	171.87	164.59	0.25	4.41
															0
WankinkoRiver	WankinkoRiverUS	11741	2-Year	Existing Conditions + Gage	157	15.26	17.97	16.39	18.01	0.000446	1.7	97.04	141.15	0.21	2.71
WankinkoRiver	WankinkoRiverUS	11741	2-Year	Alternative 1: Partial Dam Removal	157	15.26	17.97	16.39	18.01	0.000446	1.7	97.04	141.15	0.21	2.71
WankinkoRiver	WankinkoRiverUS	11741	2-Year	Alternative 2A: Full Dam Removal	157	15.26	17.97	16.39	18.01	0.000446	1.7	97.04	141.15	0.21	2.71
WankinkoRiver	WankinkoRiverUS	11741	2-Year	Alternative 3: Hybrid Dam Removal	157	15.26	17.97	16.39	18.01	0.000446	1.7	97.04	141.15	0.21	2.71
WankinkoRiver	WankinkoRiverUS	11741	10-Year	Existing Conditions + Gage	260	15.26	18.51	16.76	18.58	0.000576	2.19	139.48	203.24	0.24	3.25
WankinkoRiver	WankinkoRiverUS	11741	10-Year	Alternative 1: Partial Dam Removal	260	15.26	18.51	16.76	18.58	0.000576	2.19	139.48	203.24	0.24	3.25
WankinkoRiver	WankinkoRiverUS	11741	10-Year	Alternative 2A: Full Dam Removal	260	15.26	18.51	16.76	18.58	0.000576	2.19	139.48	203.24	0.24	3.25
WankinkoRiver	WankinkoRiverUS	11741	10-Year	Alternative 3: Hybrid Dam Removal	260	15.26	18.51	16.76	18.58	0.000576	2.19	139.48	203.24	0.24	3.25
WankinkoRiver	WankinkoRiverUS	11741	50-Year	Existing Conditions + Gage	352	15.26	19.11	17.03	19.19	0.000488	2.32	207.54	289.72	0.23	3.85
WankinkoRiver	WankinkoRiverUS	11741	50-Year	Alternative 1: Partial Dam Removal	352	15.26	19.11	17.03	19.19	0.000488	2.32	207.54	289.72	0.23	3.85
WankinkoRiver	WankinkoRiverUS	11741	50-Year	Alternative 2A: Full Dam Removal	352	15.26	19.11	17.03	19.19	0.000488	2.32	207.54	289.72	0.23	3.85
WankinkoRiver	WankinkoRiverUS	11741	50-Year	Alternative 3: Hybrid Dam Removal	352	15.26	19.11	17.03	19.19	0.000488	2.32	207.54	289.72	0.23	3.85
WankinkoRiver	WankinkoRiverUS	11741	100-Year	Existing Conditions + Gage	391	15.26	18.81	17.13	18.93	0.000863	2.89	168.87	229.01	0.3	3.55
WankinkoRiver	WankinkoRiverUS	11741	100-Year	Alternative 1: Partial Dam Removal	391	15.26	18.81	17.13	18.93	0.000863	2.89	168.87	229.01	0.3	3.55
WankinkoRiver	WankinkoRiverUS	11741	100-Year	Alternative 2A: Full Dam Removal	391	15.26	18.81	17.13	18.93	0.000863	2.89	168.87	229.01	0.3	3.55
WankinkoRiver	WankinkoRiverUS	11741	100-Year	Alternative 3: Hybrid Dam Removal	391	15.26	18.81	17.13	18.93	0.000863	2.89	168.87	229.01	0.3	3.55
															0
WankinkoRiver	WankinkoRiverUS	11683	2-Year	Existing Conditions + Gage	157	14.81	17.95	16.04	17.99	0.000337	1.58	117.01	179.91	0.18	3.14
WankinkoRiver	WankinkoRiverUS	11683	2-Year	Alternative 1: Partial Dam Removal	157	14.81	17.95	16.04	17.99	0.000337	1.58	117.01	179.91	0.18	3.14
WankinkoRiver	WankinkoRiverUS	11683	2-Year	Alternative 2A: Full Dam Removal	157	14.81	17.95	16.04	17.99	0.000337	1.58	117.01	179.91	0.18	3.14
WankinkoRiver	WankinkoRiverUS	11683	2-Year	Alternative 3: Hybrid Dam Removal	157	14.81	17.95	16.04	17.99	0.000337	1.58	117.01	179.91	0.18	3.14
WankinkoRiver	WankinkoRiverUS	11683	10-Year	Existing Conditions + Gage	260	14.81	18.49	16.44	18.55	0.000418	2.02	185.18	239.5	0.21	3.68
WankinkoRiver	WankinkoRiverUS	11683	10-Year	Alternative 1: Partial Dam Removal	260	14.81	18.49	16.44	18.55	0.000418	2.02	185.18	239.5	0.21	3.68
WankinkoRiver	WankinkoRiverUS	11683	10-Year	Alternative 2A: Full Dam Removal	260	14.81	18.49	16.44	18.55	0.000418	2.02	185.18	239.5	0.21	3.68
WankinkoRiver	WankinkoRiverUS	11683	10-Year	Alternative 3: Hybrid Dam Removal	260	14.81	18.49	16.44	18.55	0.000418	2.02	185.18	239.5	0.21	3.68
WankinkoRiver	WankinkoRiverUS	11683	50-Year	Existing Conditions + Gage	352	14.81	19.12	16.74	19.16	0.000261	1.82	428.69	279.55	0.17	4.31
WankinkoRiver	WankinkoRiverUS	11683	50-Year	Alternative 1: Partial Dam Removal	352	14.81	19.12	16.74	19.16	0.000261	1.82	428.69	279.55	0.17	4.31
WankinkoRiver	WankinkoRiverUS	11683	50-Year	Alternative 2A: Full Dam Removal	352	14.81	19.12	16.74	19.16	0.000261	1.82	428.69	279.55	0.17	4.31
WankinkoRiver	WankinkoRiverUS	11683	50-Year	Alternative 3: Hybrid Dam Removal	352	14.81	19.12	16.74	19.16	0.000261	1.82	428.69	279.55	0.17	4.31
WankinkoRiver	WankinkoRiverUS	11683	100-Year	Existing Conditions + Gage	391	14.81	18.79	16.86	18.88	0.000634	2.66	228.97	262.13	0.26	3.98
WankinkoRiver	WankinkoRiverUS	11683	100-Year	Alternative 1: Partial Dam Removal	391	14.81	18.79	16.86	18.88	0.000634	2.66	228.97	262.13	0.26	3.98
WankinkoRiver	WankinkoRiverUS	11683	100-Year	Alternative 2A: Full Dam Removal	391	14.81	18.79	16.86	18.88	0.000634	2.66	228.97	262.13	0.26	3.98
WankinkoRiver	WankinkoRiverUS	11683	100-Year	Alternative 3: Hybrid Dam Removal	391	14.81	18.79	16.86	18.88	0.000634	2.66	228.97	262.13	0.26	3.98
															0
WankinkoRiver	WankinkoRiverUS	11650	2-Year	Existing Conditions + Gage	157	14.54	17.94		17.98	0.000223	1.5	119.61	71.59	0.15	3.4
WankinkoRiver	WankinkoRiverUS	11650	2-Year	Alternative 1: Partial Dam Removal	157	14.54	17.94		17.98	0.000223	1.5	119.61	71.59	0.15	3.4
WankinkoRiver	WankinkoRiverUS	11650	2-Year	Alternative 2A: Full Dam Removal	157	14.54	17.94		17.98	0.000223	1.5	119.61	71.59	0.15	3.4
WankinkoRiver	WankinkoRiverUS	11650	2-Year	Alternative 3: Hybrid Dam Removal	157	14.54	17.94		17.98	0.000223	1.5	119.61	71.59	0.15	3.4
WankinkoRiver	WankinkoRiverUS	11650	10-Year	Existing Conditions + Gage	260	14.54	18.47		18.53	0.000331	2.04	187.24	203.88	0.19	3.93
WankinkoRiver	WankinkoRiverUS	11650	10-Year	Alternative 1: Partial Dam Removal	260	14.54	18.47		18.53	0.000331	2.04	187.24	203.88	0.19	3.93
WankinkoRiver	WankinkoRiverUS	11650	10-Year	Alternative 2A: Full Dam Removal	260	14.54	18.47		18.53	0.000331	2.04	187.24	203.88	0.19	3.93
WankinkoRiver	WankinkoRiverUS	11650	10-Year	Alternative 3: Hybrid Dam Removal	260	14.54	18.47		18.53	0.000331	2.04	187.24	203.88	0.19	3.93
WankinkoRiver	WankinkoRiverUS	11650	50-Year	Existing Conditions + Gage	352	14.54	19.08		19.14	0.000288	2.12	335.65	259.38	0.19	4.54
WankinkoRiver	WankinkoRiverUS	11650	50-Year	Alternative 1: Partial Dam Removal	352	14.54	19.08		19.14	0.000288	2.12	335.65	259.38	0.19	4.54
WankinkoRiver	WankinkoRiverUS	11650	50-Year	Alternative 2A: Full Dam Removal	352	14.54	19.08		19.14	0.000288	2.12	335.65	259.38	0.19	4.54
WankinkoRiver	WankinkoRiverUS	11650	50-Year	Alternative 3: Hybrid Dam Removal	352	14.54	19.08		19.14	0.000288	2.12	335.65	259.38	0.19	4.54
WankinkoRiver	WankinkoRiverUS	11650	100-Year	Existing Conditions + Gage	391	14.54	18.76		18.86	0.000533	2.73	253.37	246.62	0.25	4.22
WankinkoRiver	WankinkoRiverUS	11650	100-Year	Alternative 1: Partial Dam Removal	391	14.54	18.76		18.86	0.000533	2.73	253.37	246.62	0.25	4.22
WankinkoRiver	WankinkoRiverUS	11650	100-Year	Alternative 2A: Full Dam Removal	391	14.54	18.76		18.86	0.000533	2.73	253.37	246.62	0.25	4.22
WankinkoRiver	WankinkoRiverUS	11650	100-Year	Alternative 3: Hybrid Dam Removal	391	14.54	18.76		18.86	0.000533	2.73	253.37	246.62	0.25	4.22
															0
WankinkoRiver	WankinkoRiverUS	11613	2-Year	Existing Conditions + Gage	157	14.46	17.94		17.97	0.000225	1.41	125.83	76.23	0.15	3.48
WankinkoRiver	WankinkoRiverUS	11613	2-Year	Alternative 1: Partial Dam Removal	157	14.46	17.94		17.97	0.000225	1.41	125.83	76.23	0.15	3.48
WankinkoRiver	WankinkoRiverUS	11613	2-Year	Alternative 2A: Full Dam Removal	157	14.46	17.94		17.97	0.000225	1.41	125.83	76.23	0.15	3.48
WankinkoRiver	WankinkoRiverUS	11613	2-Year	Alternative 3: Hybrid Dam Removal	157	14.46	17.94		17.97	0.000225	1.41	125.83	76.23	0.15	3.48
WankinkoRiver	WankinkoRiverUS	11613	10-Year	Existing Conditions + Gage	260	14.46	18.47		18.52	0.000315	1.88	198.46	183.6	0.19	4.01
WankinkoRiver	WankinkoRiverUS	11613	10-Year	Alternative 1: Partial Dam Removal	260	14.46	18.47		18.52	0.000315	1.88	198.46	183.6	0.19	4.01
WankinkoRiver	WankinkoRiverUS	11613	10-Year	Alternative 2A: Full Dam Removal	260	14.46	18.47		18.52	0.000315	1.88	198.46	183.6	0.19	4.01
WankinkoRiver	WankinkoRiverUS	11613	10-Year	Alternative 3: Hybrid Dam Removal	260	14.46	18.47		18.52	0.000315	1.88	198.46	183.6	0.19	4.01
WankinkoRiver	WankinkoRiverUS	11613	50-Year	Existing Conditions + Gage	352	14.46	19.08		19.13	0.000272	1.96	329.4	239.04	0.18	4.62
WankinkoRiver	WankinkoRiverUS	11613	50-Year	Alternative 1: Partial Dam Removal	352	14.46	19.08		19.13	0.000272	1.96	329.4	239.04	0.18	4.62
WankinkoRiver	WankinkoRiverUS	11613	50-Year	Alternative 2A: Full Dam Removal	352	14.46	19.08		19.13	0.000272	1.96	329.4	239.04	0.18	4.62
WankinkoRiver	WankinkoRiverUS	11613	50-Year	Alternative 3: Hybrid Dam Removal	352	14.46	19.08		19.13	0.000272	1.96	329.4	239.04	0.18	4.62
WankinkoRiver	WankinkoRiverUS	11613	100-Year	Existing Conditions + Gage	391	14.46	18.75		18.84	0.0005	2.51	255.53	219.95	0.24	4.29
WankinkoRiver	WankinkoRiverUS	11613	100-Year	Alternative 1: Partial Dam Removal	391	14.46	18.75		18.84	0.0005	2.51	255.53	219.95	0.24	4.29
WankinkoRiver	WankinkoRiverUS	11613	100-Year	Alternative 2A: Full Dam Removal	391	14.46	18.75		18.84	0.0005	2.51	255.53	219.95	0.24	4.29
WankinkoRiver	WankinkoRiverUS	11613	100-Year	Alternative 3: Hybrid Dam Removal	391	14.46	18.75		18.84	0.0005	2.51	255.53	219.95	0.24	4.29
															0
WankinkoRiver	WankinkoRiverUS	11594	2-Year	Existing Conditions + Gage	157	14.57	17.72	16.22	17.91	0.001139	3.48	45.11	102.56	0.35	3.15
WankinkoRiver	WankinkoRiverUS	11594	2-Year	Alternative 1: Partial Dam Removal	157	14.57	17.72	16.22	17.91	0.001139	3.48	45.11	102.56	0.35	3.15
WankinkoRiver	WankinkoRiverUS	11594	2-Year	Alternative 2A: Full Dam Removal	157	14.57	17.72	16.22	17.91	0.001139	3.48	45.11	102.56	0.35	3.15
WankinkoRiver	WankinkoRiverUS	11594	2-Year	Alternative 3: Hybrid Dam Removal	157	14.57	17.72	16.22	17.91	0.001139	3.48	45.11	102.56	0.35	3.15
WankinkoRiver	WankinkoRiverUS	11594	10-Year	Existing Conditions + Gage	260	14.57	18.46	16.82	18.51	0.000308	1.79	215.67	164.92	0.18	3.89
WankinkoRiver	WankinkoRiverUS	11594	10-Year	Alternative 1: Partial Dam Removal	260	14.57	18.46	16.82	18.51	0.000308	1.79	215.67	164.92	0.18	3.89
WankinkoRiver	WankinkoRiverUS	11594	10-Year	Alternative 2A: Full Dam Removal	260	14.57	18.46	16.82	18.51	0.000308	1.79	215.67	164.92	0.18	3.89
WankinkoRiver	WankinkoRiverUS	11594	10-Year	Alternative 3: Hybrid Dam Removal	260	14.57	18.46	16.82	18.51	0.000308	1.79	215.67	164.92	0.18	3.89
WankinkoRiver	WankinkoRiverUS	11594	50-Year	Existing Conditions + Gage	352	14.57	19.08	17.29	19.12	0.000262	1.87	344.78	237.87	0.17	4.51
WankinkoRiver	WankinkoRiverUS	11594	50-Year	Alternative 1: Partial Dam Removal	352	14.57	19.08	17.29	19.12	0.000262	1.87	344.78	237.87	0.17	4.51
WankinkoRiver	WankinkoRiverUS	11594	50-Year	Alternative 2A: Full Dam Removal	352	14.57	19.08	17.29	19.12	0.000262	1.87	344.78	237.87	0.17	4.51
WankinkoRiver	WankinkoRiverUS	11594	50-Year	Alternative 3: Hybrid Dam Removal	352	14.57	19.08	17.29	19.12	0.000262	1.87	344.78	237.87	0.17	4.51
WankinkoRiver	WankinkoRiverUS	11594	100-Year	Existing Conditions + Gage	391	14.57	18.75	17.48	18.83	0.000487	2.39	268.2	215.47	0.23	4.18
WankinkoRiver	WankinkoRiverUS	11594	100-Year	Alternative 1: Partial Dam Removal	391	14.57	18.75	17.48	18.83	0.000487	2.39	268.2	215.47	0.23	4.18
WankinkoRiver	WankinkoRiverUS	11594	100-Year	Alternative 2A: Full Dam Removal	391	14.57	18.75	17.48	18.83	0.000487	2.39	268.2	215.47	0.23	4.18
WankinkoRiver	WankinkoRiverUS	11594	100-Year	Alternative 3: Hybrid Dam Removal	391	14.57	18.75	17.48	18.83	0.000487	2.39	268.2	215.47	0.23	4.18
															0
WankinkoRiver	WankinkoRiverUS	11554			Culvert										0
															0
WankinkoRiver	WankinkoRiverUS	11522	2-Year	Existing Conditions + Gage	157	14.44	16.26	16.38	17.27	0.013908	8.03	19.56	21.77	1.11	1.82
WankinkoRiver	WankinkoRiverUS	11522	2-Year	Alternative 1: Partial Dam Removal	157	14.44	16.26	16.38	17.27	0.013908	8.03	19.56	21.77	1.11	1.82
WankinkoRiver	WankinkoRiverUS	11522	2-Year	Alternative 2A: Full Dam Removal	157	14.44	16.26	16.38	17.27	0.013908	8.03	19.56	21.77	1.11	1.82
WankinkoRiver	WankinkoRiverUS	11522	2-Year	Alternative 3: Hybrid Dam Removal	157	14.44	16.26	16.38	17.27	0.013908	8.03	19.56	21.77	1.11	1.82
WankinkoRiver	WankinkoRiverUS	11522	10-Year	Existing Conditions + Gage	260	14.44	17.08	17.08	18.29	0.009733	8.82	29.46	26.1	1	2.64
WankinkoRiver	WankinkoRiverUS	11522	10-Year	Alternative 1: Partial Dam Removal	260	14.44	17.08	17.08	18.29	0.009733	8.82	29.46	26.1	1	2.64

WankinkoRiver	WankinkoRiverUS	11522	10-Year	Alternative 2A: Full Dam Removal	260	14.44	17.08	17.08	18.29	0.009733	8.82	29.46	26.1	1	2.64
WankinkoRiver	WankinkoRiverUS	11522	10-Year	Alternative 3: Hybrid Dam Removal	260	14.44	17.08	17.08	18.29	0.009733	8.82	29.46	26.1	1	2.64
WankinkoRiver	WankinkoRiverUS	11522	50-Year	Existing Conditions + Gage	352	14.44	17.62	17.62	19.11	0.009147	9.78	36	51.97	1	3.18
WankinkoRiver	WankinkoRiverUS	11522	50-Year	Alternative 1: Partial Dam Removal	352	14.44	17.62	17.62	19.11	0.009147	9.78	36	51.97	1	3.18
WankinkoRiver	WankinkoRiverUS	11522	50-Year	Alternative 2A: Full Dam Removal	352	14.44	17.62	17.62	19.11	0.009147	9.78	36	51.97	1	3.18
WankinkoRiver	WankinkoRiverUS	11522	50-Year	Alternative 3: Hybrid Dam Removal	352	14.44	17.62	17.62	19.11	0.009147	9.78	36	51.97	1	3.18
WankinkoRiver	WankinkoRiverUS	11522	100-Year	Existing Conditions + Gage	391	14.44	17.83	17.83	18.32	0.004644	5.66	77.48	61.59	0.66	3.39
WankinkoRiver	WankinkoRiverUS	11522	100-Year	Alternative 1: Partial Dam Removal	391	14.44	17.83	17.83	18.32	0.004644	5.66	77.48	61.59	0.66	3.39
WankinkoRiver	WankinkoRiverUS	11522	100-Year	Alternative 2A: Full Dam Removal	391	14.44	17.83	17.83	18.32	0.004644	5.66	77.48	61.59	0.66	3.39
WankinkoRiver	WankinkoRiverUS	11522	100-Year	Alternative 3: Hybrid Dam Removal	391	14.44	17.83	17.83	18.32	0.004644	5.66	77.48	61.59	0.66	3.39
															0
WankinkoRiver	WankinkoRiverUS	11509	2-Year	Existing Conditions + Gage	157	14.65	15.53	15.89	16.81	0.093684	9.05	17.35	37.51	2.34	0.88
WankinkoRiver	WankinkoRiverUS	11509	2-Year	Alternative 1: Partial Dam Removal	157	14.65	15.53	15.89	16.81	0.093656	9.05	17.36	37.51	2.34	0.88
WankinkoRiver	WankinkoRiverUS	11509	2-Year	Alternative 2A: Full Dam Removal	157	14.65	15.53	15.89	16.81	0.093656	9.05	17.36	37.51	2.34	0.88
WankinkoRiver	WankinkoRiverUS	11509	2-Year	Alternative 3: Hybrid Dam Removal	157	14.65	15.53	15.89	16.81	0.093656	9.05	17.36	37.51	2.34	0.88
WankinkoRiver	WankinkoRiverUS	11509	10-Year	Existing Conditions + Gage	260	14.65	15.67	16.21	17.73	0.113909	11.51	22.6	39.41	2.68	1.02
WankinkoRiver	WankinkoRiverUS	11509	10-Year	Alternative 1: Partial Dam Removal	260	14.65	15.67	16.21	17.73	0.113898	11.51	22.6	39.41	2.68	1.02
WankinkoRiver	WankinkoRiverUS	11509	10-Year	Alternative 2A: Full Dam Removal	260	14.65	15.67	16.21	17.73	0.113898	11.51	22.6	39.41	2.68	1.02
WankinkoRiver	WankinkoRiverUS	11509	10-Year	Alternative 3: Hybrid Dam Removal	260	14.65	15.67	16.21	17.73	0.113898	11.51	22.6	39.41	2.68	1.02
WankinkoRiver	WankinkoRiverUS	11509	50-Year	Existing Conditions + Gage	352	14.65	15.78	16.46	18.45	0.122627	13.13	26.81	43.43	2.85	1.13
WankinkoRiver	WankinkoRiverUS	11509	50-Year	Alternative 1: Partial Dam Removal	352	14.65	15.78	16.46	18.45	0.122627	13.13	26.81	43.43	2.85	1.13
WankinkoRiver	WankinkoRiverUS	11509	50-Year	Alternative 2A: Full Dam Removal	352	14.65	15.78	16.46	18.45	0.122627	13.13	26.81	43.43	2.85	1.13
WankinkoRiver	WankinkoRiverUS	11509	50-Year	Alternative 3: Hybrid Dam Removal	352	14.65	15.78	16.46	18.45	0.122627	13.13	26.81	43.43	2.85	1.13
WankinkoRiver	WankinkoRiverUS	11509	100-Year	Existing Conditions + Gage	391	14.65	16.01	16.58	17.79	0.057463	10.7	36.54	52.02	2.03	1.36
WankinkoRiver	WankinkoRiverUS	11509	100-Year	Alternative 1: Partial Dam Removal	391	14.65	16.01	16.58	17.79	0.057463	10.7	36.55	52.02	2.03	1.36
WankinkoRiver	WankinkoRiverUS	11509	100-Year	Alternative 2A: Full Dam Removal	391	14.65	16.01	16.58	17.79	0.057463	10.7	36.55	52.02	2.03	1.36
WankinkoRiver	WankinkoRiverUS	11509	100-Year	Alternative 3: Hybrid Dam Removal	391	14.65	16.01	16.58	17.79	0.057463	10.7	36.55	52.02	2.03	1.36
															0
WankinkoRiver	WankinkoRiverUS	11458	2-Year	Existing Conditions + Gage	157	14.45	16.04	15.85	16.18	0.007315	3.01	52.14	86.63	0.68	1.59
WankinkoRiver	WankinkoRiverUS	11458	2-Year	Alternative 1: Partial Dam Removal	157	14.45	15.96	15.85	16.15	0.010674	3.5	44.85	78.93	0.82	1.51
WankinkoRiver	WankinkoRiverUS	11458	2-Year	Alternative 2A: Full Dam Removal	157	14.45	15.96	15.85	16.15	0.010674	3.5	44.85	78.93	0.82	1.51
WankinkoRiver	WankinkoRiverUS	11458	2-Year	Alternative 3: Hybrid Dam Removal	157	14.45	15.96	15.85	16.15	0.010674	3.5	44.85	78.93	0.82	1.51
WankinkoRiver	WankinkoRiverUS	11458	10-Year	Existing Conditions + Gage	260	14.45	16.23	16.08	16.45	0.008516	3.76	69.12	92.17	0.77	1.78
WankinkoRiver	WankinkoRiverUS	11458	10-Year	Alternative 1: Partial Dam Removal	260	14.45	16.31	16.1	16.49	0.006185	3.39	76.59	93.72	0.66	1.86
WankinkoRiver	WankinkoRiverUS	11458	10-Year	Alternative 2A: Full Dam Removal	260	14.45	16.31	16.1	16.49	0.006184	3.39	76.59	93.72	0.66	1.86
WankinkoRiver	WankinkoRiverUS	11458	10-Year	Alternative 3: Hybrid Dam Removal	260	14.45	16.31	16.1	16.49	0.006184	3.39	76.59	93.72	0.66	1.86
WankinkoRiver	WankinkoRiverUS	11458	50-Year	Existing Conditions + Gage	352	14.45	16.78	16.25	16.89	0.003191	2.67	131.9	141.02	0.49	2.33
WankinkoRiver	WankinkoRiverUS	11458	50-Year	Alternative 1: Partial Dam Removal	352	14.45	16.53	16.25	16.73	0.006516	3.53	99.68	119.6	0.68	2.08
WankinkoRiver	WankinkoRiverUS	11458	50-Year	Alternative 2A: Full Dam Removal	352	14.45	16.53	16.25	16.73	0.006517	3.53	99.67	119.6	0.68	2.08
WankinkoRiver	WankinkoRiverUS	11458	50-Year	Alternative 3: Hybrid Dam Removal	352	14.45	16.53	16.25	16.73	0.006516	3.53	99.68	119.6	0.68	2.08
WankinkoRiver	WankinkoRiverUS	11458	100-Year	Existing Conditions + Gage	391	14.45	17.07	16.3	17.14	0.001833	2.22	175.89	163.16	0.38	2.62
WankinkoRiver	WankinkoRiverUS	11458	100-Year	Alternative 1: Partial Dam Removal	391	14.45	16.61	16.3	16.81	0.006409	3.59	108.86	125.77	0.68	2.16
WankinkoRiver	WankinkoRiverUS	11458	100-Year	Alternative 2A: Full Dam Removal	391	14.45	16.61	16.3	16.81	0.006409	3.59	108.86	125.77	0.68	2.16
WankinkoRiver	WankinkoRiverUS	11458	100-Year	Alternative 3: Hybrid Dam Removal	391	14.45	16.61	16.3	16.81	0.006409	3.59	108.86	125.77	0.68	2.16
															0
WankinkoRiver	WankinkoRiverUS	11408	2-Year	Existing Conditions + Gage	157	14.07	15.27	15.27	15.62	0.015045	4.73	33.2	48.2	1	1.2
WankinkoRiver	WankinkoRiverUS	11408	2-Year	Alternative 1: Partial Dam Removal	157	14.07	15.61	15.27	15.75	0.00563	2.95	53.3	75.29	0.62	1.54
WankinkoRiver	WankinkoRiverUS	11408	2-Year	Alternative 2A: Full Dam Removal	157	14.07	15.61	15.27	15.75	0.00563	2.95	53.3	75.29	0.62	1.54
WankinkoRiver	WankinkoRiverUS	11408	2-Year	Alternative 3: Hybrid Dam Removal	157	14.07	15.61	15.27	15.75	0.00563	2.95	53.3	75.29	0.62	1.54
WankinkoRiver	WankinkoRiverUS	11408	10-Year	Existing Conditions + Gage	260	14.07	15.9		16.07	0.006303	3.31	78.53	101.3	0.66	1.83
WankinkoRiver	WankinkoRiverUS	11408	10-Year	Alternative 1: Partial Dam Removal	260	14.07	15.62	15.62	15.98	0.015181	4.84	53.7	75.73	1.01	1.55
WankinkoRiver	WankinkoRiverUS	11408	10-Year	Alternative 2A: Full Dam Removal	260	14.07	15.62	15.62	15.98	0.015185	4.84	53.69	75.72	1.01	1.55
WankinkoRiver	WankinkoRiverUS	11408	10-Year	Alternative 3: Hybrid Dam Removal	260	14.07	15.62	15.62	15.98	0.015184	4.84	53.69	75.72	1.01	1.55
WankinkoRiver	WankinkoRiverUS	11408	50-Year	Existing Conditions + Gage	352	14.07	16.73		16.78	0.001017	1.85	190.38	149.67	0.29	2.66
WankinkoRiver	WankinkoRiverUS	11408	50-Year	Alternative 1: Partial Dam Removal	352	14.07	15.81	15.81	16.2	0.014776	5.02	70.12	91.8	1.01	1.74
WankinkoRiver	WankinkoRiverUS	11408	50-Year	Alternative 2A: Full Dam Removal	352	14.07	15.81	15.81	16.2	0.014774	5.02	70.13	91.8	1.01	1.74
WankinkoRiver	WankinkoRiverUS	11408	50-Year	Alternative 3: Hybrid Dam Removal	352	14.07	15.81	15.81	16.2	0.014776	5.02	70.13	91.8	1.01	1.74
WankinkoRiver	WankinkoRiverUS	11408	100-Year	Existing Conditions + Gage	391	14.07	17.04		17.08	0.000638	1.64	240.44	176.72	0.24	2.97
WankinkoRiver	WankinkoRiverUS	11408	100-Year	Alternative 1: Partial Dam Removal	391	14.07	15.88	15.88	16.28	0.015013	5.1	76.71	99.32	1.02	1.81
WankinkoRiver	WankinkoRiverUS	11408	100-Year	Alternative 2A: Full Dam Removal	391	14.07	15.88	15.88	16.28	0.015013	5.1	76.71	99.32	1.02	1.81
WankinkoRiver	WankinkoRiverUS	11408	100-Year	Alternative 3: Hybrid Dam Removal	391	14.07	15.88	15.88	16.28	0.015013	5.1	76.71	99.32	1.02	1.81
															0
WankinkoRiver	WankinkoRiverUS	11101	2-Year	Existing Conditions + Gage	157	13.42	14.99	14.01	14.99	0.000247	0.64	246.98	334.2	0.13	1.57
WankinkoRiver	WankinkoRiverUS	11101	2-Year	Alternative 1: Partial Dam Removal	157	13.42	14.38		14.44	0.003211	1.85	85.06	159.21	0.45	0.96
WankinkoRiver	WankinkoRiverUS	11101	2-Year	Alternative 2A: Full Dam Removal	157	13.42	14.38		14.44	0.003211	1.85	85.06	159.21	0.45	0.96
WankinkoRiver	WankinkoRiverUS	11101	2-Year	Alternative 3: Hybrid Dam Removal	157	13.42	14.38		14.44	0.003211	1.85	85.06	159.21	0.45	0.96
WankinkoRiver	WankinkoRiverUS	11101	10-Year	Existing Conditions + Gage	260	13.42	15.97		15.97	0.00004	0.44	588.98	354.3	0.06	2.55
WankinkoRiver	WankinkoRiverUS	11101	10-Year	Alternative 1: Partial Dam Removal	260	13.42	14.85	14.2	14.87	0.001286	1.29	201.14	323.47	0.29	1.43
WankinkoRiver	WankinkoRiverUS	11101	10-Year	Alternative 2A: Full Dam Removal	260	13.42	14.85	14.2	14.87	0.001286	1.29	201.16	323.49	0.29	1.43
WankinkoRiver	WankinkoRiverUS	11101	10-Year	Alternative 3: Hybrid Dam Removal	260	13.42	14.85	14.2	14.87	0.001286	1.29	201.16	323.48	0.29	1.43
WankinkoRiver	WankinkoRiverUS	11101	50-Year	Existing Conditions + Gage	352	13.42	16.74		16.74	0.000021	0.41	865.05	362.48	0.05	3.32
WankinkoRiver	WankinkoRiverUS	11101	50-Year	Alternative 1: Partial Dam Removal	352	13.42	15.29	14.38	15.3	0.000416	1.01	348.3	347.35	0.18	1.87
WankinkoRiver	WankinkoRiverUS	11101	50-Year	Alternative 2A: Full Dam Removal	352	13.42	15.29	14.38	15.3	0.000416	1.01	348.27	347.35	0.18	1.87
WankinkoRiver	WankinkoRiverUS	11101	50-Year	Alternative 3: Hybrid Dam Removal	352	13.42	15.29	14.38	15.3	0.000416	1.01	348.3	347.35	0.18	1.87
WankinkoRiver	WankinkoRiverUS	11101	100-Year	Existing Conditions + Gage	391	13.42	17.05		17.05	0.000018	0.4	976.48	364.78	0.04	3.63
WankinkoRiver	WankinkoRiverUS	11101	100-Year	Alternative 1: Partial Dam Removal	391	13.42	15.48	14.43	15.49	0.000287	0.94	415.46	349.24	0.15	2.06
WankinkoRiver	WankinkoRiverUS	11101	100-Year	Alternative 2A: Full Dam Removal	391	13.42	15.48	14.43	15.49	0.000287	0.94	415.42	349.24	0.15	2.06
WankinkoRiver	WankinkoRiverUS	11101	100-Year	Alternative 3: Hybrid Dam Removal	391	13.42	15.48	14.43	15.49	0.000287	0.94	415.44	349.24	0.15	2.06
															0
WankinkoRiver	WankinkoRiverUS	10974	2-Year	Existing Conditions + Gage	157	13.05	14.97		14.97	0.00013	0.5	312.05	369.34	0.1	1.92
WankinkoRiver	WankinkoRiverUS	10974	2-Year	Alternative 1: Partial Dam Removal	157	13.05	14		14.06	0.002815	1.94	80.85	127.11	0.43	0.95
WankinkoRiver	WankinkoRiverUS	10974	2-Year	Alternative 2A: Full Dam Removal	157	13.05	14		14.06	0.002816	1.94	80.85	127.11	0.43	0.95
WankinkoRiver	WankinkoRiverUS	10974	2-Year	Alternative 3: Hybrid Dam Removal	157	13.05	14		14.06	0.002815	1.94	80.85	127.11	0.43	0.95
WankinkoRiver	WankinkoRiverUS	10974	10-Year	Existing Conditions + Gage	260	13.05	15.97		15.97	0.000027	0.35	736.76	459.11	0.05	2.92
WankinkoRiver	WankinkoRiverUS	10974	10-Year	Alternative 1: Partial Dam Removal	260	13.05	14.72		14.74	0.000916	1.16	223.6	326.62	0.25	1.67
WankinkoRiver	WankinkoRiverUS	10974	10-Year	Alternative 2A: Full Dam Removal	260	13.05	14.72		14.74	0.000915	1.16	223.64	326.65	0.25	1.67
WankinkoRiver	WankinkoRiverUS	10974	10-Year	Alternative 3: Hybrid Dam Removal	260	13.05	14.72		14.74	0.000915	1.16	223.63	326.64	0.25	1.67
WankinkoRiver	WankinkoRiverUS	10974	50-Year	Existing Conditions + Gage	352	13.05	16.74		16.74	0.000014	0.32	1094.57	467.63	0.04	3.69
WankinkoRiver	WankinkoRiverUS	10974	50-Year	Alternative 1: Partial Dam Removal	352	13.05	15.25		15.26	0.000275	0.84	420.28	406.78	0.15	2.2
WankinkoRiver	WankinkoRiverUS	10974	50-Year	Alternative 2A: Full Dam Removal	352	13.05	15.25		15.26	0.000275	0.84	420.24	406.77	0.15	2.2
WankinkoRiver	WankinkoRiverUS	10974	50-Year	Alternative 3: Hybrid Dam Removal	352	13.05	15.25		15.26	0.000275	0.84	420.28	406.78	0.15	2.2
WankinkoRiver	WankinkoRiverUS	10974	100-Year	Existing Conditions + Gage	391	13.05	17.05		17.05	0.000011	0.32	1239.45	478.02	0.03	4
WankinkoRiver	WankinkoRiverUS	10974	100-Year	Alternative 1: Partial Dam Removal	391	13.05	15.45		15.46	0.000195	0.77	506.45	427.81	0.13	2.4
WankinkoRiver	WankinkoRiverUS	10974	100-Year	Alternative 2A: Full Dam Removal	391	13.05	15.45		15.46	0.000195	0.77	506.41	427.8	0.13	2.4
WankinkoRiver	WankinkoRiverUS	10974	100-Year	Alternative 3: Hybrid Dam Removal	391	13.05	15.45		15.46	0.000195	0.77	506.43	427.81	0.13	2.4
															0
WankinkoRiver	WankinkoRiverUS	10692	2-Year	Existing Conditions + Gage	157	12.4	14.97		14.97	0.000006	0.14	1142.98	900.93	0.02	2.57
WankinkoRiver	WankinkoRiverUS	10692	2-Year	Alternative 1: Partial Dam Removal	157	12.4	14		14	0.000046	0.33	471.12	478.43	0.06	1.6
WankinkoRiver	WankinkoRiverUS	10692	2-Year	Alternative 2A: Full Dam Removal	157	12.4	14		14	0.000046	0.33	471.12	478.43	0.06	1.6
WankinkoRiver	WankinkoRiverUS	10692	2-Year	Alternative 3: Hybrid Dam Removal	157	12.4	14		14	0.000046	0.33	471.12	478.43	0.06	1.6
WankinkoRiver	WankinkoRiverUS	10692	10-Year	Existing Conditions + Gage	260	12.4	15.97		15.97	0.000002	0.12	2112.03	1036.74	0.02	3.57
WankinkoRiver	WankinkoRiverUS	10692	10-Year	Alternative 1: Partial Dam Removal	260	12.4	14.71		14.71	0.000028	0.28	918.21	810.56	0.05	2.31
WankinkoRiver	WankinkoRiverUS	10692	10-Year	Alternative 2A: Full Dam Removal	260	12.4	14.71		14.71	0.000028	0.28	918.3	810.64	0.05	2.31
WankinkoRiver	WankinkoRiverUS	10692	10-Year	Alternative 3: Hybrid Dam Removal	260	12.4	14.71		14.71	0.000028	0.28	918.28	810.62	0.05	2.31
WankinkoRiver	WankinkoRiverUS	10692	50-Year	Existing Conditions + Gage	352	12.4	16.74		16.74	0.000002	0.12	2943.39	1099.78	0.01	4.34
WankinkoRiver	WankinkoRiverUS	10692	50-Year	Alternative 1: Partial Dam Removal	352	12.4	15.24		15.24	0.000015	0.25	1397.41	940.26	0.04	2.84
WankinkoRiver	WankinkoRiverUS	10692	50-Year	Alternative 2A: Full Dam Removal	352	12.4	15.24		15.24	0.000015	0.25	1397.33	940.25	0.04	2.84
WankinkoRiver	WankinkoRiverUS	10692	50-Year	Alternative 3: Hybrid Dam Removal	352	12.4	15.24		15.24	0.000015	0.25	1397.41	940.26	0.04	2.84
WankinkoRiver	WankinkoRiverUS	10692	100-Year	Existing Conditions + Gage	391	12.4	17.05		17.05	0.000001	0.12	3281.58	1104.11	0.01	4.65
WankinkoRiver	WankinkoRiverUS	10692	100-Year	Alternative 1: Partial Dam Removal	391	12.4	15.45		15.45	0.000013	0.25	1593.87	961	0.03	3.05
WankinkoRiver	WankinkoRiverUS	10692	100-Year	Alternative 2A: Full Dam Removal	391	12.4	15.45		15.45	0.000013	0.25	1593.77	961	0.03	3.05
WankinkoRiver	WankinkoRiverUS	10692	100-Year	Alternative 3: Hybrid Dam Removal	391	12.4	15.45		15.45	0.000013	0.25	1593.83	961	0.03	3.05
															0
WankinkoRiver	WankinkoRiverUS	10458	2-Year	Existing Conditions + Gage	157	12.38	14.96		14.96	0.000004	0.12	1288.86	951.04	0.02	2.58
WankinkoRiver	WankinkoRiverUS	10458	2-Year	Alternative 1: Partial Dam Removal	157	12.38	13.99		13.99	0.00003	0.27	584.27	596.52	0.05	1.61
WankinkoRiver	WankinkoRiverUS	10458	2-Year	Alternative 2A: Full Dam Removal	157	12.38	13.99		13.99	0.00003	0.27	584.26	596.52	0.05	1.61
WankinkoRiver	WankinkoRiverUS	10458	2-Year	Alternative 3: Hybrid Dam Removal	157	12.38	13.99		13.99	0.00003	0.27	584.26	596.52	0.05	1.61
WankinkoRiver	WankinkoRiverUS	10458	10-Year	Existing Conditions + Gage	260	12.38	15.97		15.97	0.000002	0.11	2359.25	1098.14	0.01	3.59
WankinkoRiver	WankinkoRiverUS	10458	10-Year	Alternative 1: Partial Dam Removal	260	12.38	14.7		14.7	0.000018	0.25	1057.87	820.66	0.04	2.32
WankinkoRiver	WankinkoRiverUS	10458	10-Year	Alternative 2A: Full Dam Removal	260	12.38	14.7		14.7	0.000018	0.25	1057.97	820.7	0.04	2.32
WankinkoRiver	WankinkoRiverUS	10458	10-Year	Alternative 3: Hybrid Dam Removal	260	12.38	14.7		14.7	0.000018	0.25	1057.95	820.69	0.04	2.32

WankinkoRiver	WankinkoRiverUS	10458	50-Year	Existing Conditions + Gage	352	12.38	16.74		16.74	0.000001	0.11	3223.51	1140.46	0.01	4.36
WankinkoRiver	WankinkoRiverUS	10458	50-Year	Alternative 1: Partial Dam Removal	352	12.38	15.24		15.24	0.000012	0.22	1568.32	1052.63	0.03	2.86
WankinkoRiver	WankinkoRiverUS	10458	50-Year	Alternative 2A: Full Dam Removal	352	12.38	15.24		15.24	0.000012	0.22	1568.23	1052.62	0.03	2.86
WankinkoRiver	WankinkoRiverUS	10458	50-Year	Alternative 3: Hybrid Dam Removal	352	12.38	15.24		15.24	0.000012	0.22	1568.32	1052.63	0.03	2.86
WankinkoRiver	WankinkoRiverUS	10458	100-Year	Existing Conditions + Gage	391	12.38	17.05		17.05	0.000001	0.11	3576	1162.61	0.01	4.67
WankinkoRiver	WankinkoRiverUS	10458	100-Year	Alternative 1: Partial Dam Removal	391	12.38	15.45		15.45	0.00001	0.22	1789.7	1082.78	0.03	3.07
WankinkoRiver	WankinkoRiverUS	10458	100-Year	Alternative 2A: Full Dam Removal	391	12.38	15.45		15.45	0.00001	0.22	1789.6	1082.78	0.03	3.07
WankinkoRiver	WankinkoRiverUS	10458	100-Year	Alternative 3: Hybrid Dam Removal	391	12.38	15.45		15.45	0.00001	0.22	1789.66	1082.78	0.03	3.07
															0
WankinkoRiver	WankinkoRiverUS	10276	2-Year	Existing Conditions + Gage	157	12.31	14.96		14.96	0.000012	0.2	868.79	888.92	0.03	2.65
WankinkoRiver	WankinkoRiverUS	10276	2-Year	Alternative 1: Partial Dam Removal	157	12.31	13.97		13.98	0.000352	0.66	238.42	399.47	0.15	1.66
WankinkoRiver	WankinkoRiverUS	10276	2-Year	Alternative 2A: Full Dam Removal	157	12.31	13.97		13.98	0.000352	0.66	238.42	399.46	0.15	1.66
WankinkoRiver	WankinkoRiverUS	10276	2-Year	Alternative 3: Hybrid Dam Removal	157	12.31	13.97		13.98	0.000352	0.66	238.42	399.46	0.15	1.66
WankinkoRiver	WankinkoRiverUS	10276	10-Year	Existing Conditions + Gage	260	12.31	15.97		15.97	0.000004	0.17	1866.76	1035.72	0.02	3.66
WankinkoRiver	WankinkoRiverUS	10276	10-Year	Alternative 1: Partial Dam Removal	260	12.31	14.69		14.7	0.000075	0.43	645.33	774.79	0.08	2.38
WankinkoRiver	WankinkoRiverUS	10276	10-Year	Alternative 2A: Full Dam Removal	260	12.31	14.69		14.7	0.000075	0.43	645.42	774.84	0.08	2.38
WankinkoRiver	WankinkoRiverUS	10276	10-Year	Alternative 3: Hybrid Dam Removal	260	12.31	14.69		14.7	0.000075	0.43	645.41	774.83	0.08	2.38
WankinkoRiver	WankinkoRiverUS	10276	50-Year	Existing Conditions + Gage	352	12.31	16.74		16.74	0.000003	0.16	2692.73	1127.64	0.02	4.43
WankinkoRiver	WankinkoRiverUS	10276	50-Year	Alternative 1: Partial Dam Removal	352	12.31	15.23		15.24	0.000032	0.36	1122.72	968.68	0.05	2.92
WankinkoRiver	WankinkoRiverUS	10276	50-Year	Alternative 2A: Full Dam Removal	352	12.31	15.23		15.24	0.000032	0.36	1122.64	968.65	0.05	2.92
WankinkoRiver	WankinkoRiverUS	10276	50-Year	Alternative 3: Hybrid Dam Removal	352	12.31	15.23		15.24	0.000032	0.36	1122.72	968.68	0.05	2.92
WankinkoRiver	WankinkoRiverUS	10276	100-Year	Existing Conditions + Gage	391	12.31	17.05		17.05	0.000002	0.16	3042.37	1154.23	0.02	4.74
WankinkoRiver	WankinkoRiverUS	10276	100-Year	Alternative 1: Partial Dam Removal	391	12.31	15.44		15.44	0.000025	0.35	1328.64	1007.3	0.05	3.13
WankinkoRiver	WankinkoRiverUS	10276	100-Year	Alternative 2A: Full Dam Removal	391	12.31	15.44		15.44	0.000025	0.35	1328.54	1007.29	0.05	3.13
WankinkoRiver	WankinkoRiverUS	10276	100-Year	Alternative 3: Hybrid Dam Removal	391	12.31	15.44		15.44	0.000025	0.35	1328.61	1007.29	0.05	3.13
															0
WankinkoRiver	WankinkoRiverUS	10153	2-Year	Existing Conditions + Gage	157	12.13	14.96		14.96	0.00002	0.3	725.19	791.89	0.04	2.83
WankinkoRiver	WankinkoRiverUS	10153	2-Year	Alternative 1: Partial Dam Removal	157	12.13	13.93		13.94	0.000241	0.75	210.3	219.59	0.13	1.8
WankinkoRiver	WankinkoRiverUS	10153	2-Year	Alternative 2A: Full Dam Removal	157	12.13	13.93		13.94	0.000241	0.75	210.3	219.59	0.13	1.8
WankinkoRiver	WankinkoRiverUS	10153	2-Year	Alternative 3: Hybrid Dam Removal	157	12.13	13.93		13.94	0.000241	0.75	210.3	219.59	0.13	1.8
WankinkoRiver	WankinkoRiverUS	10153	10-Year	Existing Conditions + Gage	260	12.13	15.97		15.97	0.000008	0.27	1640.21	985.57	0.03	3.84
WankinkoRiver	WankinkoRiverUS	10153	10-Year	Alternative 1: Partial Dam Removal	260	12.13	14.68		14.68	0.000101	0.62	529.46	600.6	0.09	2.55
WankinkoRiver	WankinkoRiverUS	10153	10-Year	Alternative 2A: Full Dam Removal	260	12.13	14.68		14.68	0.000101	0.62	529.53	600.67	0.09	2.55
WankinkoRiver	WankinkoRiverUS	10153	10-Year	Alternative 3: Hybrid Dam Removal	260	12.13	14.68		14.68	0.000101	0.62	529.51	600.66	0.09	2.55
WankinkoRiver	WankinkoRiverUS	10153	50-Year	Existing Conditions + Gage	352	12.13	16.74		16.74	0.000006	0.26	2421.62	1053.79	0.03	4.61
WankinkoRiver	WankinkoRiverUS	10153	50-Year	Alternative 1: Partial Dam Removal	352	12.13	15.23		15.23	0.000056	0.56	948.74	874.92	0.07	3.1
WankinkoRiver	WankinkoRiverUS	10153	50-Year	Alternative 2A: Full Dam Removal	352	12.13	15.23		15.23	0.000056	0.56	948.66	874.9	0.07	3.1
WankinkoRiver	WankinkoRiverUS	10153	50-Year	Alternative 3: Hybrid Dam Removal	352	12.13	15.23		15.23	0.000056	0.56	948.74	874.92	0.07	3.1
WankinkoRiver	WankinkoRiverUS	10153	100-Year	Existing Conditions + Gage	391	12.13	17.04		17.05	0.000005	0.26	2751.35	1101.74	0.02	4.91
WankinkoRiver	WankinkoRiverUS	10153	100-Year	Alternative 1: Partial Dam Removal	391	12.13	15.43		15.44	0.000047	0.55	1136.68	919.81	0.07	3.3
WankinkoRiver	WankinkoRiverUS	10153	100-Year	Alternative 2A: Full Dam Removal	391	12.13	15.43		15.44	0.000047	0.55	1136.58	919.79	0.07	3.3
WankinkoRiver	WankinkoRiverUS	10153	100-Year	Alternative 3: Hybrid Dam Removal	391	12.13	15.43		15.44	0.000047	0.55	1136.64	919.8	0.07	3.3
															0
WankinkoRiver	WankinkoRiverUS	10040	2-Year	Existing Conditions + Gage	157	11.97	14.96		14.96	0.000019	0.3	857.2	776.04	0.04	2.99
WankinkoRiver	WankinkoRiverUS	10040	2-Year	Alternative 1: Partial Dam Removal	157	11.97	13.9		13.91	0.000242	0.78	234.83	265.81	0.14	1.93
WankinkoRiver	WankinkoRiverUS	10040	2-Year	Alternative 2A: Full Dam Removal	157	11.97	13.9		13.91	0.000242	0.78	234.83	265.8	0.14	1.93
WankinkoRiver	WankinkoRiverUS	10040	2-Year	Alternative 3: Hybrid Dam Removal	157	11.97	13.9		13.91	0.000242	0.78	234.83	265.81	0.14	1.93
WankinkoRiver	WankinkoRiverUS	10040	10-Year	Existing Conditions + Gage	260	11.97	15.96		15.97	0.000009	0.27	1681.28	840.71	0.03	3.99
WankinkoRiver	WankinkoRiverUS	10040	10-Year	Alternative 1: Partial Dam Removal	260	11.97	14.67		14.67	0.000101	0.62	638.08	720.62	0.09	2.7
WankinkoRiver	WankinkoRiverUS	10040	10-Year	Alternative 2A: Full Dam Removal	260	11.97	14.67		14.67	0.000101	0.62	638.17	720.68	0.09	2.7
WankinkoRiver	WankinkoRiverUS	10040	10-Year	Alternative 3: Hybrid Dam Removal	260	11.97	14.67		14.67	0.000101	0.62	638.16	720.67	0.09	2.7
WankinkoRiver	WankinkoRiverUS	10040	50-Year	Existing Conditions + Gage	352	11.97	16.74		16.74	0.000006	0.27	2360.59	936.19	0.03	4.77
WankinkoRiver	WankinkoRiverUS	10040	50-Year	Alternative 1: Partial Dam Removal	352	11.97	15.22		15.22	0.000057	0.56	1065.43	809.3	0.07	3.25
WankinkoRiver	WankinkoRiverUS	10040	50-Year	Alternative 2A: Full Dam Removal	352	11.97	15.22		15.22	0.000057	0.56	1065.36	809.29	0.07	3.25
WankinkoRiver	WankinkoRiverUS	10040	50-Year	Alternative 3: Hybrid Dam Removal	352	11.97	15.22		15.22	0.000057	0.56	1065.43	809.3	0.07	3.25
WankinkoRiver	WankinkoRiverUS	10040	100-Year	Existing Conditions + Gage	391	11.97	17.04		17.04	0.000005	0.27	2654.81	976.98	0.03	5.07
WankinkoRiver	WankinkoRiverUS	10040	100-Year	Alternative 1: Partial Dam Removal	391	11.97	15.43		15.43	0.000047	0.54	1237.05	820.7	0.07	3.46
WankinkoRiver	WankinkoRiverUS	10040	100-Year	Alternative 2A: Full Dam Removal	391	11.97	15.43		15.43	0.000047	0.54	1236.97	820.69	0.07	3.46
WankinkoRiver	WankinkoRiverUS	10040	100-Year	Alternative 3: Hybrid Dam Removal	391	11.97	15.43		15.43	0.000047	0.54	1237.02	820.7	0.07	3.46
															0
WankinkoRiver	WankinkoRiverUS	9829	2-Year	Existing Conditions + Gage	157	11.67	14.96		14.96	0.000001	0.09	1701.24	826.03	0.01	3.29
WankinkoRiver	WankinkoRiverUS	9829	2-Year	Alternative 1: Partial Dam Removal	157	11.67	13.9		13.9	0.000011	0.18	868.97	745.39	0.03	2.23
WankinkoRiver	WankinkoRiverUS	9829	2-Year	Alternative 2A: Full Dam Removal	157	11.67	13.9		13.9	0.000011	0.18	868.96	745.39	0.03	2.23
WankinkoRiver	WankinkoRiverUS	9829	2-Year	Alternative 3: Hybrid Dam Removal	157	11.67	13.9		13.9	0.000011	0.18	868.96	745.39	0.03	2.23
WankinkoRiver	WankinkoRiverUS	9829	10-Year	Existing Conditions + Gage	260	11.67	15.96		15.96	0.000001	0.1	2552.42	857.06	0.01	4.29
WankinkoRiver	WankinkoRiverUS	9829	10-Year	Alternative 1: Partial Dam Removal	260	11.67	14.67		14.67	0.000006	0.18	1464.3	800.6	0.02	3
WankinkoRiver	WankinkoRiverUS	9829	10-Year	Alternative 2A: Full Dam Removal	260	11.67	14.67		14.67	0.000006	0.18	1464.41	800.61	0.02	3
WankinkoRiver	WankinkoRiverUS	9829	10-Year	Alternative 3: Hybrid Dam Removal	260	11.67	14.67		14.67	0.000006	0.18	1464.39	800.6	0.02	3
WankinkoRiver	WankinkoRiverUS	9829	50-Year	Existing Conditions + Gage	352	11.67	16.74		16.74	0.000001	0.11	3221.88	884.99	0.01	5.07
WankinkoRiver	WankinkoRiverUS	9829	50-Year	Alternative 1: Partial Dam Removal	352	11.67	15.22		15.22	0.000005	0.18	1920.41	840.16	0.02	3.55
WankinkoRiver	WankinkoRiverUS	9829	50-Year	Alternative 2A: Full Dam Removal	352	11.67	15.22		15.22	0.000005	0.18	1920.33	840.15	0.02	3.55
WankinkoRiver	WankinkoRiverUS	9829	50-Year	Alternative 3: Hybrid Dam Removal	352	11.67	15.22		15.22	0.000005	0.18	1920.41	840.16	0.02	3.55
WankinkoRiver	WankinkoRiverUS	9829	100-Year	Existing Conditions + Gage	391	11.67	17.04		17.04	0.000001	0.11	3494.69	891.76	0.01	5.37
WankinkoRiver	WankinkoRiverUS	9829	100-Year	Alternative 1: Partial Dam Removal	391	11.67	15.43		15.43	0.000004	0.19	2097.35	844.38	0.02	3.76
WankinkoRiver	WankinkoRiverUS	9829	100-Year	Alternative 2A: Full Dam Removal	391	11.67	15.43		15.43	0.000004	0.19	2097.26	844.37	0.02	3.76
WankinkoRiver	WankinkoRiverUS	9829	100-Year	Alternative 3: Hybrid Dam Removal	391	11.67	15.43		15.43	0.000004	0.19	2097.32	844.38	0.02	3.76
															0
WankinkoRiver	WankinkoRiverUS	9625	2-Year	Existing Conditions + Gage	157	11.16	14.96		14.96	0.000002	0.12	1322.02	588.74	0.01	3.8
WankinkoRiver	WankinkoRiverUS	9625	2-Year	Alternative 1: Partial Dam Removal	157	11.16	13.9		13.9	0.000013	0.22	726.04	547.46	0.03	2.74
WankinkoRiver	WankinkoRiverUS	9625	2-Year	Alternative 2A: Full Dam Removal	157	11.16	13.9		13.9	0.000013	0.22	726.03	547.46	0.03	2.74
WankinkoRiver	WankinkoRiverUS	9625	2-Year	Alternative 3: Hybrid Dam Removal	157	11.16	13.9		13.9	0.000013	0.22	726.03	547.46	0.03	2.74
WankinkoRiver	WankinkoRiverUS	9625	10-Year	Existing Conditions + Gage	260	11.16	15.96		15.96	0.000002	0.13	1926.91	608.19	0.01	4.8
WankinkoRiver	WankinkoRiverUS	9625	10-Year	Alternative 1: Partial Dam Removal	260	11.16	14.66		14.67	0.000008	0.23	1152.09	570.72	0.03	3.5
WankinkoRiver	WankinkoRiverUS	9625	10-Year	Alternative 2A: Full Dam Removal	260	11.16	14.67		14.67	0.000008	0.23	1152.16	570.74	0.03	3.51
WankinkoRiver	WankinkoRiverUS	9625	10-Year	Alternative 3: Hybrid Dam Removal	260	11.16	14.67		14.67	0.000008	0.23	1152.15	570.73	0.03	3.51
WankinkoRiver	WankinkoRiverUS	9625	50-Year	Existing Conditions + Gage	352	11.16	16.74		16.74	0.000001	0.15	2399.69	615.68	0.01	5.58
WankinkoRiver	WankinkoRiverUS	9625	50-Year	Alternative 1: Partial Dam Removal	352	11.16	15.22		15.22	0.000007	0.24	1476.77	596.94	0.03	4.06
WankinkoRiver	WankinkoRiverUS	9625	50-Year	Alternative 2A: Full Dam Removal	352	11.16	15.22		15.22	0.000007	0.24	1476.72	596.94	0.03	4.06
WankinkoRiver	WankinkoRiverUS	9625	50-Year	Alternative 3: Hybrid Dam Removal	352	11.16	15.22		15.22	0.000007	0.24	1476.77	596.94	0.03	4.06
WankinkoRiver	WankinkoRiverUS	9625	100-Year	Existing Conditions + Gage	391	11.16	17.04		17.04	0.000001	0.15	2589.23	618.48	0.01	5.88
WankinkoRiver	WankinkoRiverUS	9625	100-Year	Alternative 1: Partial Dam Removal	391	11.16	15.43		15.43	0.000007	0.24	1602.64	601.06	0.03	4.27
WankinkoRiver	WankinkoRiverUS	9625	100-Year	Alternative 2A: Full Dam Removal	391	11.16	15.43		15.43	0.000007	0.24	1602.58	601.06	0.03	4.27
WankinkoRiver	WankinkoRiverUS	9625	100-Year	Alternative 3: Hybrid Dam Removal	391	11.16	15.43		15.43	0.000007	0.24	1602.62	601.06	0.03	4.27
															0
WankinkoRiver	WankinkoRiverUS	9448	2-Year	Existing Conditions + Gage	157	11.12	14.96		14.96	0.000005	0.19	845.04	405.58	0.02	3.84
WankinkoRiver	WankinkoRiverUS	9448	2-Year	Alternative 1: Partial Dam Removal	157	11.12	13.89		13.89	0.000034	0.36	430.93	301.44	0.05	2.77
WankinkoRiver	WankinkoRiverUS	9448	2-Year	Alternative 2A: Full Dam Removal	157	11.12	13.89		13.89	0.000034	0.36	430.93	301.44	0.05	2.77
WankinkoRiver	WankinkoRiverUS	9448	2-Year	Alternative 3: Hybrid Dam Removal	157	11.12	13.89		13.89	0.000034	0.36	430.93	301.44	0.05	2.77
WankinkoRiver	WankinkoRiverUS	9448	10-Year	Existing Conditions + Gage	260	11.12	15.96		15.96	0.000004	0.21	1263.2	424.22	0.02	4.84
WankinkoRiver	WankinkoRiverUS	9448	10-Year	Alternative 1: Partial Dam Removal	260	11.12	14.66		14.66	0.000024	0.36	726.45	399.36	0.05	3.54
WankinkoRiver	WankinkoRiverUS	9448	10-Year	Alternative 2A: Full Dam Removal	260	11.12	14.66		14.66	0.000024	0.36	726.5	399.36	0.05	3.54
WankinkoRiver	WankinkoRiverUS	9448	10-Year	Alternative 3: Hybrid Dam Removal	260	11.12	14.66		14.66	0.000024	0.36	726.49	399.36	0.05	3.54
WankinkoRiver	WankinkoRiverUS	9448	50-Year	Existing Conditions + Gage	352	11.12	16.74		16.74	0.000003	0.22	1596.08	438.06	0.02	5.62
WankinkoRiver	WankinkoRiverUS	9448	50-Year	Alternative 1: Partial Dam Removal	352	11.12	15.21		15.22	0.000018	0.37	950.61	410.81	0.04	4.09
WankinkoRiver	WankinkoRiverUS	9448	50-Year	Alternative 2A: Full Dam Removal	352	11.12	15.21		15.22	0.000018	0.37	950.58	410.81	0.04	4.09
WankinkoRiver	WankinkoRiverUS	9448	50-Year	Alternative 3: Hybrid Dam Removal	352	11.12	15.21		15.22	0.000018	0.37	950.61	410.81	0.04	4.09
WankinkoRiver	WankinkoRiverUS	9448	100-Year	Existing Conditions + Gage	391	11.12	17.04		17.04	0.000003	0.23	1731.68	445.47	0.02	5.92
WankinkoRiver	WankinkoRiverUS	9448	100-Year	Alternative 1: Partial Dam Removal	391	11.12	15.42		15.43	0.000017	0.38	1037.37	414.52	0.04	4.3
WankinkoRiver	WankinkoRiverUS	9448	100-Year	Alternative 2A: Full Dam Removal	391	11.12	15.42		15.43	0.000017	0.38	1037.33	414.52	0.04	4.3
WankinkoRiver	WankinkoRiverUS	9448	100-Year	Alternative 3: Hybrid Dam Removal	391	11.12	15.42		15.43	0.000017	0.38	1037.35	414.52	0.04	4.3
															0
WankinkoRiver	WankinkoRiverUS	9359	2-Year	Existing Conditions + Gage	157	10.99	14.92	12.53	14.95	0.000259	1.4	112.22	154.9	0.16	3.93
WankinkoRiver	WankinkoRiverUS	9359	2-Year	Alternative 1: Partial Dam Removal	157	10.99	13.76	12.53	13.86	0.001173	2.45	64.18	103.94	0.32	2.77
WankinkoRiver	WankinkoRiverUS	9359	2-Year	Alternative 2A: Full Dam Removal	157	10.99	13.76	12.53	13.86	0.001173	2.45	64.18	103.93	0.32	2.77
WankinkoRiver	WankinkoRiverUS	9359	2-Year	Alternative 3: Hybrid Dam Removal	157	10.99	13.76	12.53	13.86	0.001173	2.45	64.18	103.93	0.32	2.77
WankinkoRiver	WankinkoRiverUS	9359	10-Year	Existing Conditions + Gage	260	10.99	15.91	13.01	15.95	0.000256	1.59	163.81	217.25	0.16	4.92
WankinkoRiver	WankinkoRiverUS	9359	10-Year	Alternative 1: Partial Dam Removal	260	10.99	14.5	13.01	14.62	0.001161	2.78	93.5	135.07	0.33	3.51
WankinkoRiver	WankinkoRiverUS	9359	10-Year	Alternative 2A: Full Dam Removal	260	10.99	14.5	13.01	14.62	0.00116	2.78	93.51	135.07	0.33	3.51
WankinkoRiver	WankinkoRiverUS	9359	10-Year	Alternative 3: Hybrid Dam Removal	260	10.99	14.5	13.01	14.62	0.00116	2.78	93.51	135.07	0.33	3.51
WankinkoRiver	WankinkoRiverUS	9359	50-Year	Existing Conditions + Gage	352	10.99	16.68	13.35	16.72	0.000221	1.69	208.46	271.82	0.16	5.69
WankinkoRiver	WankinkoRiverUS	9359	50-Year	Alternative 1: Partial Dam Removal	352	10.99	15.03	13.35	15.17	0.001142	2.99	117.75	158.04	0.34	4.04

WankinkoRiver	WankinkoRiverUS	9359	50-Year	Alternative 2A: Full Dam Removal	352	10.99	15.03	13.35	15.17	0.001142	2.99	117.74	158.04	0.34	4.04
WankinkoRiver	WankinkoRiverUS	9359	50-Year	Alternative 3: Hybrid Dam Removal	352	10.99	15.03	13.35	15.17	0.001142	2.99	117.75	158.04	0.34	4.04
WankinkoRiver	WankinkoRiverUS	9359	100-Year	Existing Conditions + Gage	391	10.99	16.98	13.48	17.03	0.000208	1.73	226.31	327.08	0.16	5.99
WankinkoRiver	WankinkoRiverUS	9359	100-Year	Alternative 1: Partial Dam Removal	391	10.99	15.23	13.48	15.38	0.001133	3.06	127.66	168.46	0.34	4.24
WankinkoRiver	WankinkoRiverUS	9359	100-Year	Alternative 2A: Full Dam Removal	391	10.99	15.23	13.48	15.38	0.001134	3.06	127.65	168.45	0.34	4.24
WankinkoRiver	WankinkoRiverUS	9359	100-Year	Alternative 3: Hybrid Dam Removal	391	10.99	15.23	13.48	15.38	0.001133	3.06	127.65	168.46	0.34	4.24
															0
WankinkoRiver	WankinkoRiverUS	9251			Bridge										0
															0
WankinkoRiver	WankinkoRiverUS	9203	2-Year	Existing Conditions + Gage	157	10.77	14.83	12.43	14.88	0.000361	1.75	89.91	34.26	0.19	4.06
WankinkoRiver	WankinkoRiverUS	9203	2-Year	Alternative 1: Partial Dam Removal	157	10.77	13.35	12.43	13.54	0.002287	3.43	45.78	25.43	0.45	2.58
WankinkoRiver	WankinkoRiverUS	9203	2-Year	Alternative 2A: Full Dam Removal	157	10.77	13.35	12.43	13.54	0.002287	3.43	45.78	25.43	0.45	2.58
WankinkoRiver	WankinkoRiverUS	9203	2-Year	Alternative 3: Hybrid Dam Removal	157	10.77	13.35	12.43	13.54	0.002287	3.43	45.78	25.43	0.45	2.58
WankinkoRiver	WankinkoRiverUS	9203	10-Year	Existing Conditions + Gage	260	10.77	15.81	12.97	15.88	0.000395	2.06	126.23	40.09	0.2	5.04
WankinkoRiver	WankinkoRiverUS	9203	10-Year	Alternative 1: Partial Dam Removal	260	10.77	14.01	12.97	14.27	0.002526	4.08	63.76	29.35	0.49	3.24
WankinkoRiver	WankinkoRiverUS	9203	10-Year	Alternative 2A: Full Dam Removal	260	10.77	14.01	12.97	14.27	0.002525	4.08	63.77	29.35	0.49	3.24
WankinkoRiver	WankinkoRiverUS	9203	10-Year	Alternative 3: Hybrid Dam Removal	260	10.77	14.01	12.97	14.27	0.002525	4.08	63.77	29.35	0.49	3.24
WankinkoRiver	WankinkoRiverUS	9203	50-Year	Existing Conditions + Gage	352	10.77	16.57	13.37	16.65	0.000393	2.22	158.46	44.64	0.21	5.8
WankinkoRiver	WankinkoRiverUS	9203	50-Year	Alternative 1: Partial Dam Removal	352	10.77	14.48	13.37	14.79	0.002661	4.51	78.11	32.14	0.51	3.71
WankinkoRiver	WankinkoRiverUS	9203	50-Year	Alternative 2A: Full Dam Removal	352	10.77	14.48	13.37	14.79	0.002662	4.51	78.11	32.14	0.51	3.71
WankinkoRiver	WankinkoRiverUS	9203	50-Year	Alternative 3: Hybrid Dam Removal	352	10.77	14.48	13.37	14.79	0.002661	4.51	78.11	32.14	0.51	3.71
WankinkoRiver	WankinkoRiverUS	9203	100-Year	Existing Conditions + Gage	391	10.77	16.87	13.52	16.95	0.000387	2.27	172.32	46.45	0.21	6.1
WankinkoRiver	WankinkoRiverUS	9203	100-Year	Alternative 1: Partial Dam Removal	391	10.77	14.65	13.52	14.99	0.002706	4.66	83.87	33.19	0.52	3.88
WankinkoRiver	WankinkoRiverUS	9203	100-Year	Alternative 2A: Full Dam Removal	391	10.77	14.65	13.52	14.99	0.002707	4.66	83.86	33.19	0.52	3.88
WankinkoRiver	WankinkoRiverUS	9203	100-Year	Alternative 3: Hybrid Dam Removal	391	10.77	14.65	13.52	14.99	0.002706	4.66	83.87	33.19	0.52	3.88
															0
WankinkoRiver	WankinkoRiverUS	9180	2-Year	Existing Conditions + Gage	157	10.73	14.83		14.87	0.000344	1.71	91.85	34.85	0.19	4.1
WankinkoRiver	WankinkoRiverUS	9180	2-Year	Alternative 1: Partial Dam Removal	157	10.73	13.3		13.48	0.002315	3.43	45.72	25.59	0.45	2.57
WankinkoRiver	WankinkoRiverUS	9180	2-Year	Alternative 2A: Full Dam Removal	157	10.73	13.3		13.48	0.002315	3.43	45.72	25.59	0.45	2.57
WankinkoRiver	WankinkoRiverUS	9180	2-Year	Alternative 3: Hybrid Dam Removal	157	10.73	13.3		13.48	0.002315	3.43	45.72	25.59	0.45	2.57
WankinkoRiver	WankinkoRiverUS	9180	10-Year	Existing Conditions + Gage	260	10.73	15.8		15.87	0.000378	2.02	128.76	40.78	0.2	5.07
WankinkoRiver	WankinkoRiverUS	9180	10-Year	Alternative 1: Partial Dam Removal	260	10.73	13.95		14.21	0.002562	4.09	63.63	29.53	0.49	3.22
WankinkoRiver	WankinkoRiverUS	9180	10-Year	Alternative 2A: Full Dam Removal	260	10.73	13.95		14.21	0.002561	4.09	63.64	29.54	0.49	3.22
WankinkoRiver	WankinkoRiverUS	9180	10-Year	Alternative 3: Hybrid Dam Removal	260	10.73	13.95		14.21	0.002561	4.09	63.64	29.54	0.49	3.22
WankinkoRiver	WankinkoRiverUS	9180	50-Year	Existing Conditions + Gage	352	10.73	16.56		16.64	0.000376	2.18	161.55	45.39	0.2	5.83
WankinkoRiver	WankinkoRiverUS	9180	50-Year	Alternative 1: Partial Dam Removal	352	10.73	14.41		14.73	0.002698	4.51	77.97	32.35	0.51	3.68
WankinkoRiver	WankinkoRiverUS	9180	50-Year	Alternative 2A: Full Dam Removal	352	10.73	14.41		14.73	0.002699	4.52	77.96	32.34	0.51	3.68
WankinkoRiver	WankinkoRiverUS	9180	50-Year	Alternative 3: Hybrid Dam Removal	352	10.73	14.41		14.73	0.002698	4.51	77.97	32.35	0.51	3.68
WankinkoRiver	WankinkoRiverUS	9180	100-Year	Existing Conditions + Gage	391	10.73	16.87		16.94	0.00037	2.23	175.66	47.24	0.2	6.14
WankinkoRiver	WankinkoRiverUS	9180	100-Year	Alternative 1: Partial Dam Removal	391	10.73	14.59		14.93	0.002743	4.67	83.73	33.41	0.52	3.86
WankinkoRiver	WankinkoRiverUS	9180	100-Year	Alternative 2A: Full Dam Removal	391	10.73	14.59		14.93	0.002744	4.67	83.72	33.41	0.52	3.86
WankinkoRiver	WankinkoRiverUS	9180	100-Year	Alternative 3: Hybrid Dam Removal	391	10.73	14.59		14.93	0.002743	4.67	83.72	33.41	0.52	3.86
															0
WankinkoRiver	WankinkoRiverUS	9157	2-Year	Existing Conditions + Gage	157	10.7	14.82	12.36	14.86	0.000351	1.74	90.43	33.95	0.19	4.12
WankinkoRiver	WankinkoRiverUS	9157	2-Year	Alternative 1: Partial Dam Removal	157	10.7	13.22	12.36	13.42	0.002561	3.59	43.74	24.68	0.48	2.52
WankinkoRiver	WankinkoRiverUS	9157	2-Year	Alternative 2A: Full Dam Removal	157	10.7	13.22	12.36	13.42	0.002561	3.59	43.74	24.68	0.48	2.52
WankinkoRiver	WankinkoRiverUS	9157	2-Year	Alternative 3: Hybrid Dam Removal	157	10.7	13.22	12.36	13.42	0.002561	3.59	43.74	24.68	0.48	2.52
WankinkoRiver	WankinkoRiverUS	9157	10-Year	Existing Conditions + Gage	260	10.7	15.79	12.91	15.86	0.00039	2.06	126.25	39.61	0.2	5.09
WankinkoRiver	WankinkoRiverUS	9157	10-Year	Alternative 1: Partial Dam Removal	260	10.7	13.85	12.91	14.14	0.002879	4.3	60.49	28.35	0.52	3.15
WankinkoRiver	WankinkoRiverUS	9157	10-Year	Alternative 2A: Full Dam Removal	260	10.7	13.85	12.91	14.14	0.002878	4.3	60.5	28.36	0.52	3.15
WankinkoRiver	WankinkoRiverUS	9157	10-Year	Alternative 3: Hybrid Dam Removal	260	10.7	13.85	12.91	14.14	0.002878	4.3	60.5	28.36	0.52	3.15
WankinkoRiver	WankinkoRiverUS	9157	50-Year	Existing Conditions + Gage	352	10.7	16.55	13.31	16.63	0.00039	2.23	158.03	44.03	0.21	5.85
WankinkoRiver	WankinkoRiverUS	9157	50-Year	Alternative 1: Partial Dam Removal	352	10.7	14.3	13.31	14.66	0.00307	4.77	73.76	30.96	0.55	3.6
WankinkoRiver	WankinkoRiverUS	9157	50-Year	Alternative 2A: Full Dam Removal	352	10.7	14.3	13.31	14.66	0.003071	4.77	73.75	30.95	0.55	3.6
WankinkoRiver	WankinkoRiverUS	9157	50-Year	Alternative 3: Hybrid Dam Removal	352	10.7	14.3	13.31	14.66	0.00307	4.77	73.76	30.96	0.55	3.6
WankinkoRiver	WankinkoRiverUS	9157	100-Year	Existing Conditions + Gage	391	10.7	16.85	13.47	16.93	0.000385	2.28	171.71	45.8	0.21	6.15
WankinkoRiver	WankinkoRiverUS	9157	100-Year	Alternative 1: Partial Dam Removal	391	10.7	14.47	13.47	14.85	0.003132	4.94	79.1	31.94	0.55	3.77
WankinkoRiver	WankinkoRiverUS	9157	100-Year	Alternative 2A: Full Dam Removal	391	10.7	14.47	13.47	14.85	0.003133	4.94	79.09	31.94	0.55	3.77
WankinkoRiver	WankinkoRiverUS	9157	100-Year	Alternative 3: Hybrid Dam Removal	391	10.7	14.47	13.47	14.85	0.003132	4.94	79.09	31.94	0.55	3.77
															0
WankinkoRiver	WankinkoRiverUS	9104			Bridge										0
															0
WankinkoRiver	WankinkoRiverUS	9032	2-Year	Existing Conditions + Gage	157	10.52	14.78	12.06	14.81	0.000178	1.23	127.85	125.54	0.13	4.26
WankinkoRiver	WankinkoRiverUS	9032	2-Year	Alternative 1: Partial Dam Removal	157	10.52	12.74	12.06	12.93	0.002991	3.47	45.23	30.69	0.5	2.22
WankinkoRiver	WankinkoRiverUS	9032	2-Year	Alternative 2A: Full Dam Removal	157	10.52	12.74	12.06	12.93	0.002991	3.47	45.23	30.69	0.5	2.22
WankinkoRiver	WankinkoRiverUS	9032	2-Year	Alternative 3: Hybrid Dam Removal	157	10.52	12.74	12.06	12.93	0.002991	3.47	45.23	30.69	0.5	2.22
WankinkoRiver	WankinkoRiverUS	9032	10-Year	Existing Conditions + Gage	260	10.52	15.76	12.54	15.79	0.000171	1.47	180.67	161.27	0.14	5.24
WankinkoRiver	WankinkoRiverUS	9032	10-Year	Alternative 1: Partial Dam Removal	260	10.52	13.26	12.54	13.53	0.003405	4.16	62.46	35.53	0.55	2.74
WankinkoRiver	WankinkoRiverUS	9032	10-Year	Alternative 2A: Full Dam Removal	260	10.52	13.27	12.54	13.53	0.003397	4.16	62.51	35.54	0.55	2.75
WankinkoRiver	WankinkoRiverUS	9032	10-Year	Alternative 3: Hybrid Dam Removal	260	10.52	13.26	12.54	13.53	0.003399	4.16	62.5	35.54	0.55	2.74
WankinkoRiver	WankinkoRiverUS	9032	50-Year	Existing Conditions + Gage	352	10.52	16.52	12.89	16.56	0.000161	1.63	224.16	174.13	0.14	6
WankinkoRiver	WankinkoRiverUS	9032	50-Year	Alternative 1: Partial Dam Removal	352	10.52	13.64	12.89	13.97	0.003621	4.61	76.35	39	0.58	3.12
WankinkoRiver	WankinkoRiverUS	9032	50-Year	Alternative 2A: Full Dam Removal	352	10.52	13.64	12.89	13.97	0.003627	4.61	76.3	38.99	0.58	3.12
WankinkoRiver	WankinkoRiverUS	9032	50-Year	Alternative 3: Hybrid Dam Removal	352	10.52	13.64	12.89	13.97	0.003621	4.61	76.35	39	0.58	3.12
WankinkoRiver	WankinkoRiverUS	9032	100-Year	Existing Conditions + Gage	391	10.52	16.82	13.02	16.87	0.000157	1.68	242.15	179.66	0.14	6.3
WankinkoRiver	WankinkoRiverUS	9032	100-Year	Alternative 1: Partial Dam Removal	391	10.52	13.78	13.02	14.13	0.003679	4.77	82.04	40.33	0.59	3.26
WankinkoRiver	WankinkoRiverUS	9032	100-Year	Alternative 2A: Full Dam Removal	391	10.52	13.78	13.02	14.13	0.003686	4.77	81.97	40.32	0.59	3.26
WankinkoRiver	WankinkoRiverUS	9032	100-Year	Alternative 3: Hybrid Dam Removal	391	10.52	13.78	13.02	14.13	0.003681	4.77	82.01	40.33	0.59	3.26
															0
WankinkoRiver	WankinkoRiverUS	9010	2-Year	Existing Conditions + Gage	157	10.49	14.78		14.8	0.000168	1.23	173.03	135.78	0.13	4.29
WankinkoRiver	WankinkoRiverUS	9010	2-Year	Alternative 1: Partial Dam Removal	157	10.49	12.59		12.83	0.003984	3.91	40.15	28.16	0.58	2.1
WankinkoRiver	WankinkoRiverUS	9010	2-Year	Alternative 2A: Full Dam Removal	157	10.49	12.59		12.83	0.003985	3.91	40.15	28.16	0.58	2.1
WankinkoRiver	WankinkoRiverUS	9010	2-Year	Alternative 3: Hybrid Dam Removal	157	10.49	12.59		12.83	0.003985	3.91	40.15	28.16	0.58	2.1
WankinkoRiver	WankinkoRiverUS	9010	10-Year	Existing Conditions + Gage	260	10.49	15.76		15.78	0.000152	1.34	314.65	165.64	0.13	5.27
WankinkoRiver	WankinkoRiverUS	9010	10-Year	Alternative 1: Partial Dam Removal	260	10.49	13.04		13.41	0.004969	4.85	53.55	32	0.66	2.55
WankinkoRiver	WankinkoRiverUS	9010	10-Year	Alternative 2A: Full Dam Removal	260	10.49	13.04		13.41	0.004947	4.85	53.65	32.03	0.66	2.55
WankinkoRiver	WankinkoRiverUS	9010	10-Year	Alternative 3: Hybrid Dam Removal	260	10.49	13.04		13.41	0.004951	4.85	53.63	32.02	0.66	2.55
WankinkoRiver	WankinkoRiverUS	9010	50-Year	Existing Conditions + Gage	352	10.49	16.52		16.55	0.000132	1.36	451.52	187.87	0.12	6.03
WankinkoRiver	WankinkoRiverUS	9010	50-Year	Alternative 1: Partial Dam Removal	352	10.49	13.33		13.81	0.005791	5.57	63.25	34.52	0.72	2.84
WankinkoRiver	WankinkoRiverUS	9010	50-Year	Alternative 2A: Full Dam Removal	352	10.49	13.33		13.81	0.00582	5.58	63.13	34.49	0.73	2.84
WankinkoRiver	WankinkoRiverUS	9010	50-Year	Alternative 3: Hybrid Dam Removal	352	10.49	13.33		13.81	0.005791	5.57	63.25	34.52	0.72	2.84
WankinkoRiver	WankinkoRiverUS	9010	100-Year	Existing Conditions + Gage	391	10.49	16.83		16.85	0.000123	1.36	510.76	200.57	0.12	6.34
WankinkoRiver	WankinkoRiverUS	9010	100-Year	Alternative 1: Partial Dam Removal	391	10.49	13.43	13.02	13.97	0.006151	5.85	66.84	35.41	0.75	2.94
WankinkoRiver	WankinkoRiverUS	9010	100-Year	Alternative 2A: Full Dam Removal	391	10.49	13.43	13.02	13.96	0.0062	5.87	66.64	35.36	0.75	2.94
WankinkoRiver	WankinkoRiverUS	9010	100-Year	Alternative 3: Hybrid Dam Removal	391	10.49	13.43	13.02	13.97	0.006168	5.86	66.77	35.39	0.75	2.94
															0
WankinkoRiver	WankinkoRiverUS	8933	2-Year	Existing Conditions + Gage	157	10.38	14.78		14.79	0.000074	0.8	236.12	148.22	0.09	4.4
WankinkoRiver	WankinkoRiverUS	8933	2-Year	Alternative 1: Partial Dam Removal	157	10.38	11.77	11.77	12.23	0.013855	5.47	28.69	31.34	1.01	1.39
WankinkoRiver	WankinkoRiverUS	8933	2-Year	Alternative 2A: Full Dam Removal	157	10.38	11.77	11.77	12.23	0.013848	5.47	28.69	31.34	1.01	1.39
WankinkoRiver	WankinkoRiverUS	8933	2-Year	Alternative 3: Hybrid Dam Removal	157	10.38	11.77	11.77	12.23	0.013849	5.47	28.69	31.34	1.01	1.39
WankinkoRiver	WankinkoRiverUS	8933	10-Year	Existing Conditions + Gage	260	10.38	15.76		15.77	0.000069	0.89	426.9	268.81	0.09	5.38
WankinkoRiver	WankinkoRiverUS	8933	10-Year	Alternative 1: Partial Dam Removal	260	10.38	12.18	12.18	12.75	0.012822	6.08	42.76	37.61	1.01	1.8
WankinkoRiver	WankinkoRiverUS	8933	10-Year	Alternative 2A: Full Dam Removal	260	10.38	12.17	12.17	12.75	0.012926	6.1	42.63	37.56	1.01	1.79
WankinkoRiver	WankinkoRiverUS	8933	10-Year	Alternative 3: Hybrid Dam Removal	260	10.38	12.17	12.17	12.75	0.012905	6.1	42.66	37.57	1.01	1.79
WankinkoRiver	WankinkoRiverUS	8933	50-Year	Existing Conditions + Gage	352	10.38	16.52		16.53	0.000056	0.9	676.74	378.23	0.08	6.14
WankinkoRiver	WankinkoRiverUS	8933	50-Year	Alternative 1: Partial Dam Removal	352	10.38	12.46	12.46	13.12	0.012403	6.5	54.14	42.01	1.01	2.08
WankinkoRiver	WankinkoRiverUS	8933	50-Year	Alternative 2A: Full Dam Removal	352	10.38	12.47	12.47	13.12	0.012319	6.49	54.28	42.06	1.01	2.09
WankinkoRiver	WankinkoRiverUS	8933	50-Year	Alternative 3: Hybrid Dam Removal	352	10.38	12.46	12.46	13.12	0.012404	6.5	54.14	42.01	1.01	2.08
WankinkoRiver	WankinkoRiverUS	8933	100-Year	Existing Conditions + Gage	391	10.38	16.83		16.84	0.000051	0.9	799.32	436.16	0.08	6.45
WankinkoRiver	WankinkoRiverUS	8933	100-Year	Alternative 1: Partial Dam Removal	391	10.38	12.57	12.57	13.26	0.012227	6.65	58.83	43.69	1.01	2.19
WankinkoRiver	WankinkoRiverUS	8933	100-Year	Alternative 2A: Full Dam Removal	391	10.38	12.58	12.58	13.26	0.0121	6.62	59.06	43.77	1	2.2
WankinkoRiver	WankinkoRiverUS	8933	100-Year	Alternative 3: Hybrid Dam Removal	391	10.38	12.57	12.57	13.26	0.012183	6.64	58.91	43.72	1.01	2.19
															0
WankinkoRiver	WankinkoRiverUS	8803	2-Year	Existing Conditions + Gage	157	10.06	14.78		14.78	0.000004	0.21	774.69	300.39	0.02	4.72
WankinkoRiver	WankinkoRiverUS	8803	2-Year	Alternative 1: Partial Dam Removal	157	10.06	11.1	10.85	11.17	0.003732	2.19	71.82	116.87	0.49	1.04
WankinkoRiver	WankinkoRiverUS	8803	2-Year	Alternative 2A: Full Dam Removal	157	10.06	11.1	10.85	11.17	0.003732	2.19	71.82	116.87	0.49	1.04
WankinkoRiver	WankinkoRiverUS	8803	2-Year	Alternative 3: Hybrid Dam Removal	157	10.06	11.1	10.85	11.17	0.003732	2.19	71.82	116.87	0.49	1.04
WankinkoRiver	WankinkoRiverUS	8803	10-Year	Existing Conditions + Gage	260	10.06	15.76		15.76	0.000004	0.25	1097.32	391.69	0.02	5.7
WankinkoRiver	WankinkoRiverUS	8803	10-Year	Alternative 1: Partial Dam Removal	260	10.06	11.3	11.01	11.41	0.004053	2.7	96.33	121.53	0.53	1.24
WankinkoRiver	WankinkoRiverUS	8803	10-Year	Alternative 2A: Full Dam Removal	260	10.06	11.3	11.01	11.41	0.004053	2.7	96.32	121.53	0.53	1.24
WankinkoRiver	WankinkoRiverUS	8803	10-Year	Alternative 3: Hybrid Dam Removal	260	10.06	11.3	11.01	11.41	0.004053	2.7	96.32	121.53	0.53	1.24

WankinkoRiver	WankinkoRiverUS	8803	50-Year	Existing Conditions + Gage	352	10.06	16.53		16.53	0.000004	0.28	1429.17	446.38	0.02	6.47
WankinkoRiver	WankinkoRiverUS	8803	50-Year	Alternative 1: Partial Dam Removal	352	10.06	11.45	11.13	11.6	0.004338	3.08	114.43	124.86	0.57	1.39
WankinkoRiver	WankinkoRiverUS	8803	50-Year	Alternative 2A: Full Dam Removal	352	10.06	11.45	11.13	11.6	0.004336	3.08	114.45	124.86	0.57	1.39
WankinkoRiver	WankinkoRiverUS	8803	50-Year	Alternative 3: Hybrid Dam Removal	352	10.06	11.45	11.13	11.6	0.004336	3.08	114.45	124.86	0.57	1.39
WankinkoRiver	WankinkoRiverUS	8803	100-Year	Existing Conditions + Gage	391	10.06	16.83		16.84	0.000004	0.29	1568.17	464.07	0.02	6.77
WankinkoRiver	WankinkoRiverUS	8803	100-Year	Alternative 1: Partial Dam Removal	391	10.06	11.51	11.18	11.67	0.004389	3.21	121.98	126.22	0.57	1.45
WankinkoRiver	WankinkoRiverUS	8803	100-Year	Alternative 2A: Full Dam Removal	391	10.06	11.51	11.18	11.67	0.004392	3.21	121.95	126.21	0.58	1.45
WankinkoRiver	WankinkoRiverUS	8803	100-Year	Alternative 3: Hybrid Dam Removal	391	10.06	11.51	11.18	11.67	0.004392	3.21	121.95	126.21	0.58	1.45
															0
WankinkoRiver	WankinkoRiverUS	8649	2-Year	Existing Conditions + Gage	157	9.8	14.78		14.78	0.000002	0.15	1064.19	397.31	0.01	4.98
WankinkoRiver	WankinkoRiverUS	8649	2-Year	Alternative 1: Partial Dam Removal	157	9.8	10.67		10.71	0.002273	1.6	98.03	175.31	0.38	0.87
WankinkoRiver	WankinkoRiverUS	8649	2-Year	Alternative 2A: Full Dam Removal	157	9.8	10.67		10.71	0.002273	1.6	98.03	175.31	0.38	0.87
WankinkoRiver	WankinkoRiverUS	8649	2-Year	Alternative 3: Hybrid Dam Removal	157	9.8	10.67		10.71	0.002273	1.6	98.03	175.31	0.38	0.87
WankinkoRiver	WankinkoRiverUS	8649	10-Year	Existing Conditions + Gage	260	9.8	15.76		15.76	0.000002	0.19	1551.48	574.92	0.02	5.96
WankinkoRiver	WankinkoRiverUS	8649	10-Year	Alternative 1: Partial Dam Removal	260	9.8	10.86		10.92	0.002482	1.99	130.66	180.21	0.41	1.06
WankinkoRiver	WankinkoRiverUS	8649	10-Year	Alternative 2A: Full Dam Removal	260	9.8	10.86		10.92	0.002481	1.99	130.68	180.21	0.41	1.06
WankinkoRiver	WankinkoRiverUS	8649	10-Year	Alternative 3: Hybrid Dam Removal	260	9.8	10.86		10.92	0.002481	1.99	130.68	180.21	0.41	1.06
WankinkoRiver	WankinkoRiverUS	8649	50-Year	Existing Conditions + Gage	352	9.8	16.53		16.53	0.000002	0.22	2000.91	598.66	0.02	6.73
WankinkoRiver	WankinkoRiverUS	8649	50-Year	Alternative 1: Partial Dam Removal	352	9.8	11.01		11.09	0.002453	2.22	158.63	184.14	0.42	1.21
WankinkoRiver	WankinkoRiverUS	8649	50-Year	Alternative 2A: Full Dam Removal	352	9.8	11.01		11.09	0.002478	2.23	158.11	184.07	0.42	1.21
WankinkoRiver	WankinkoRiverUS	8649	50-Year	Alternative 3: Hybrid Dam Removal	352	9.8	11.01		11.09	0.002476	2.23	158.15	184.08	0.42	1.21
WankinkoRiver	WankinkoRiverUS	8649	100-Year	Existing Conditions + Gage	391	9.8	16.83		16.83	0.000002	0.23	2186.08	609.6	0.02	7.03
WankinkoRiver	WankinkoRiverUS	8649	100-Year	Alternative 1: Partial Dam Removal	391	9.8	11.08		11.16	0.002355	2.28	171.69	185.91	0.42	1.28
WankinkoRiver	WankinkoRiverUS	8649	100-Year	Alternative 2A: Full Dam Removal	391	9.8	11.07		11.16	0.002429	2.3	170.02	185.68	0.42	1.27
WankinkoRiver	WankinkoRiverUS	8649	100-Year	Alternative 3: Hybrid Dam Removal	391	9.8	11.07		11.15	0.002435	2.3	169.88	185.66	0.42	1.27
															0
WankinkoRiver	WankinkoRiverUS	8515	2-Year	Existing Conditions + Gage	157	9.61	14.78	10.06	14.78	0.000001	0.14	1158.84	450.75	0.01	5.17
WankinkoRiver	WankinkoRiverUS	8515	2-Year	Alternative 1: Partial Dam Removal	157	9.61	10.29	10.06	10.34	0.003549	1.76	88.98	192.1	0.46	0.68
WankinkoRiver	WankinkoRiverUS	8515	2-Year	Alternative 2A: Full Dam Removal	157	9.61	10.29	10.06	10.34	0.003549	1.76	88.98	192.1	0.46	0.68
WankinkoRiver	WankinkoRiverUS	8515	2-Year	Alternative 3: Hybrid Dam Removal	157	9.61	10.29	10.06	10.34	0.00355	1.76	88.98	192.1	0.46	0.68
WankinkoRiver	WankinkoRiverUS	8515	10-Year	Existing Conditions + Gage	260	9.61	15.76	10.2	15.76	0.000002	0.17	1764.07	632.63	0.01	6.15
WankinkoRiver	WankinkoRiverUS	8515	10-Year	Alternative 1: Partial Dam Removal	260	9.61	10.52	10.2	10.58	0.00261	1.91	136.27	207.53	0.42	0.91
WankinkoRiver	WankinkoRiverUS	8515	10-Year	Alternative 2A: Full Dam Removal	260	9.61	10.52	10.2	10.57	0.002639	1.91	135.82	207.52	0.42	0.91
WankinkoRiver	WankinkoRiverUS	8515	10-Year	Alternative 3: Hybrid Dam Removal	260	9.61	10.52	10.2	10.57	0.002642	1.91	135.78	207.52	0.42	0.91
WankinkoRiver	WankinkoRiverUS	8515	50-Year	Existing Conditions + Gage	352	9.61	16.53	10.29	16.53	0.000002	0.2	2264.15	671.96	0.02	6.92
WankinkoRiver	WankinkoRiverUS	8515	50-Year	Alternative 1: Partial Dam Removal	352	9.61	10.74	10.29	10.8	0.001821	1.93	182.54	208.63	0.36	1.13
WankinkoRiver	WankinkoRiverUS	8515	50-Year	Alternative 2A: Full Dam Removal	352	9.61	10.73	10.29	10.79	0.001896	1.95	180.32	208.57	0.37	1.12
WankinkoRiver	WankinkoRiverUS	8515	50-Year	Alternative 3: Hybrid Dam Removal	352	9.61	10.73	10.29	10.79	0.00189	1.95	180.49	208.58	0.37	1.12
WankinkoRiver	WankinkoRiverUS	8515	100-Year	Existing Conditions + Gage	391	9.61	16.83	10.33	16.83	0.000002	0.21	2472.2	688.7	0.02	7.22
WankinkoRiver	WankinkoRiverUS	8515	100-Year	Alternative 1: Partial Dam Removal	391	9.61	10.84	10.33	10.9	0.001575	1.92	203.34	209.16	0.34	1.23
WankinkoRiver	WankinkoRiverUS	8515	100-Year	Alternative 2A: Full Dam Removal	391	9.61	10.81	10.33	10.87	0.001737	1.98	197.36	209	0.36	1.2
WankinkoRiver	WankinkoRiverUS	8515	100-Year	Alternative 3: Hybrid Dam Removal	391	9.61	10.81	10.33	10.87	0.001753	1.99	196.82	208.99	0.36	1.2
															0
WankinkoRiver	WankinkoRiverUS	8340	2-Year	Existing Conditions + Gage	157	9.17	14.78	9.56	14.78	0.000001	0.09	1789.87	570.29	0.01	5.61
WankinkoRiver	WankinkoRiverUS	8340	2-Year	Alternative 1: Partial Dam Removal	157	9.17	9.93	9.56	9.96	0.001409	1.3	120.68	206.2	0.3	0.76
WankinkoRiver	WankinkoRiverUS	8340	2-Year	Alternative 2A: Full Dam Removal	157	9.17	9.93	9.56	9.96	0.001409	1.3	120.68	206.21	0.3	0.76
WankinkoRiver	WankinkoRiverUS	8340	2-Year	Alternative 3: Hybrid Dam Removal	157	9.17	9.93	9.56	9.96	0.001408	1.3	120.71	206.22	0.3	0.76
WankinkoRiver	WankinkoRiverUS	8340	10-Year	Existing Conditions + Gage	260	9.17	15.76	9.69	15.76	0.000001	0.12	2296.38	654.99	0.01	6.59
WankinkoRiver	WankinkoRiverUS	8340	10-Year	Alternative 1: Partial Dam Removal	260	9.17	10.3	9.69	10.32	0.000852	1.28	203.07	243.67	0.25	1.13
WankinkoRiver	WankinkoRiverUS	8340	10-Year	Alternative 2A: Full Dam Removal	260	9.17	10.29	9.69	10.32	0.000879	1.29	201.13	243.4	0.25	1.12
WankinkoRiver	WankinkoRiverUS	8340	10-Year	Alternative 3: Hybrid Dam Removal	260	9.17	10.29	9.69	10.32	0.000881	1.29	200.94	243.37	0.25	1.12
WankinkoRiver	WankinkoRiverUS	8340	50-Year	Existing Conditions + Gage	352	9.17	16.53	9.78	16.53	0.000001	0.14	2957.22	740.33	0.01	7.36
WankinkoRiver	WankinkoRiverUS	8340	50-Year	Alternative 1: Partial Dam Removal	352	9.17	10.59	9.78	10.62	0.000609	1.26	279.68	267.32	0.22	1.42
WankinkoRiver	WankinkoRiverUS	8340	50-Year	Alternative 2A: Full Dam Removal	352	9.17	10.57	9.78	10.6	0.000647	1.28	274.4	266.94	0.22	1.4
WankinkoRiver	WankinkoRiverUS	8340	50-Year	Alternative 3: Hybrid Dam Removal	352	9.17	10.58	9.78	10.6	0.000644	1.28	274.83	266.97	0.22	1.41
WankinkoRiver	WankinkoRiverUS	8340	100-Year	Existing Conditions + Gage	391	9.17	16.83	9.82	16.83	0.000001	0.14	3186.61	755.97	0.01	7.66
WankinkoRiver	WankinkoRiverUS	8340	100-Year	Alternative 1: Partial Dam Removal	391	9.17	10.72	9.82	10.74	0.000524	1.25	312.74	269.84	0.2	1.55
WankinkoRiver	WankinkoRiverUS	8340	100-Year	Alternative 2A: Full Dam Removal	391	9.17	10.67	9.82	10.7	0.000597	1.3	300.35	268.84	0.22	1.5
WankinkoRiver	WankinkoRiverUS	8340	100-Year	Alternative 3: Hybrid Dam Removal	391	9.17	10.67	9.82	10.69	0.000605	1.31	299.18	268.75	0.22	1.5
															0
WankinkoRiver	WankinkoRiverUS	8209	2-Year	Existing Conditions + Gage	157	8.82	14.78		14.78	0	0.08	2074.51	568.62	0.01	5.96
WankinkoRiver	WankinkoRiverUS	8209	2-Year	Alternative 1: Partial Dam Removal	157	8.82	9.86		9.87	0.000371	0.81	193.73	247.38	0.16	1.04
WankinkoRiver	WankinkoRiverUS	8209	2-Year	Alternative 2A: Full Dam Removal	157	8.82	9.86		9.87	0.000371	0.81	193.73	247.38	0.16	1.04
WankinkoRiver	WankinkoRiverUS	8209	2-Year	Alternative 3: Hybrid Dam Removal	157	8.82	9.86		9.87	0.000371	0.81	193.77	247.4	0.16	1.04
WankinkoRiver	WankinkoRiverUS	8209	10-Year	Existing Conditions + Gage	260	8.82	15.76		15.76	0	0.1	2738.26	762.42	0.01	6.94
WankinkoRiver	WankinkoRiverUS	8209	10-Year	Alternative 1: Partial Dam Removal	260	8.82	10.25		10.26	0.000297	0.87	297.34	286.58	0.15	1.43
WankinkoRiver	WankinkoRiverUS	8209	10-Year	Alternative 2A: Full Dam Removal	260	8.82	10.24		10.25	0.000305	0.88	294.6	285.71	0.15	1.42
WankinkoRiver	WankinkoRiverUS	8209	10-Year	Alternative 3: Hybrid Dam Removal	260	8.82	10.24		10.25	0.000306	0.88	294.34	285.63	0.15	1.42
WankinkoRiver	WankinkoRiverUS	8209	50-Year	Existing Conditions + Gage	352	8.82	16.53		16.53	0.000001	0.12	3352.34	845.63	0.01	7.71
WankinkoRiver	WankinkoRiverUS	8209	50-Year	Alternative 1: Partial Dam Removal	352	8.82	10.55		10.57	0.000239	0.91	388.85	302.11	0.14	1.73
WankinkoRiver	WankinkoRiverUS	8209	50-Year	Alternative 2A: Full Dam Removal	352	8.82	10.53		10.55	0.000253	0.92	382.13	301.75	0.14	1.71
WankinkoRiver	WankinkoRiverUS	8209	50-Year	Alternative 3: Hybrid Dam Removal	352	8.82	10.53		10.55	0.000252	0.92	382.68	301.78	0.14	1.71
WankinkoRiver	WankinkoRiverUS	8209	100-Year	Existing Conditions + Gage	391	8.82	16.83		16.83	0.000001	0.13	3615.12	862.99	0.01	8.01
WankinkoRiver	WankinkoRiverUS	8209	100-Year	Alternative 1: Partial Dam Removal	391	8.82	10.68		10.7	0.000217	0.91	427.65	304.56	0.14	1.86
WankinkoRiver	WankinkoRiverUS	8209	100-Year	Alternative 2A: Full Dam Removal	391	8.82	10.63		10.65	0.000244	0.95	412.21	303.59	0.14	1.81
WankinkoRiver	WankinkoRiverUS	8209	100-Year	Alternative 3: Hybrid Dam Removal	391	8.82	10.63		10.64	0.000247	0.95	410.73	303.5	0.14	1.81
															0
WankinkoRiver	WankinkoRiverDS	7954	2-Year	Existing Conditions + Gage	210	8.3	14.78		14.78	0.000001	0.09	2476.62	709.71	0.01	6.48
WankinkoRiver	WankinkoRiverDS	7954	2-Year	Alternative 1: Partial Dam Removal	210	8.3	9.77	8.88	9.78	0.000323	0.86	244.24	257.17	0.16	1.47
WankinkoRiver	WankinkoRiverDS	7954	2-Year	Alternative 2A: Full Dam Removal	210	8.3	9.77	8.88	9.78	0.000323	0.86	244.24	257.18	0.16	1.47
WankinkoRiver	WankinkoRiverDS	7954	2-Year	Alternative 3: Hybrid Dam Removal	210	8.3	9.77	8.88	9.78	0.000323	0.86	244.3	257.2	0.16	1.47
WankinkoRiver	WankinkoRiverDS	7954	10-Year	Existing Conditions + Gage	349	8.3	15.76		15.76	0.000001	0.11	3200.06	761.26	0.01	7.46
WankinkoRiver	WankinkoRiverDS	7954	10-Year	Alternative 1: Partial Dam Removal	349	8.3	10.16	9.04	10.18	0.000316	0.98	354.52	299.84	0.16	1.86
WankinkoRiver	WankinkoRiverDS	7954	10-Year	Alternative 2A: Full Dam Removal	349	8.3	10.15	9.04	10.17	0.000325	0.99	350.98	298.62	0.16	1.85
WankinkoRiver	WankinkoRiverDS	7954	10-Year	Alternative 3: Hybrid Dam Removal	349	8.3	10.15	9.04	10.17	0.000326	1	350.64	298.5	0.16	1.85
WankinkoRiver	WankinkoRiverDS	7954	50-Year	Existing Conditions + Gage	472	8.3	16.53		16.53	0.000001	0.13	3791.41	793.94	0.01	8.23
WankinkoRiver	WankinkoRiverDS	7954	50-Year	Alternative 1: Partial Dam Removal	472	8.3	10.48	9.16	10.5	0.000289	1.04	454.94	332.27	0.16	2.18
WankinkoRiver	WankinkoRiverDS	7954	50-Year	Alternative 2A: Full Dam Removal	472	8.3	10.46	9.16	10.47	0.000305	1.06	446.22	329.75	0.16	2.16
WankinkoRiver	WankinkoRiverDS	7954	50-Year	Alternative 3: Hybrid Dam Removal	472	8.3	10.46	9.16	10.48	0.000303	1.06	446.94	329.91	0.16	2.16
WankinkoRiver	WankinkoRiverDS	7954	100-Year	Existing Conditions + Gage	524	8.3	16.83		16.83	0.000001	0.14	4035.95	799.87	0.01	8.53
WankinkoRiver	WankinkoRiverDS	7954	100-Year	Alternative 1: Partial Dam Removal	524	8.3	10.62	9.21	10.63	0.000267	1.05	499.79	338.58	0.15	2.32
WankinkoRiver	WankinkoRiverDS	7954	100-Year	Alternative 2A: Full Dam Removal	524	8.3	10.56	9.21	10.57	0.000303	1.09	479.71	336.35	0.16	2.26
WankinkoRiver	WankinkoRiverDS	7954	100-Year	Alternative 3: Hybrid Dam Removal	524	8.3	10.55	9.21	10.57	0.000307	1.1	477.77	336.11	0.16	2.25
															0
WankinkoRiver	WankinkoRiverDS	7742	2-Year	Existing Conditions + Gage	210	8.17	14.78	8.83	14.78	0.000001	0.1	2205.22	676.6	0.01	6.61
WankinkoRiver	WankinkoRiverDS	7742	2-Year	Alternative 1: Partial Dam Removal	210	8.17	9.68	8.83	9.7	0.000509	1.09	193.49	202.18	0.2	1.51
WankinkoRiver	WankinkoRiverDS	7742	2-Year	Alternative 2A: Full Dam Removal	210	8.17	9.68	8.83	9.7	0.000509	1.09	193.5	202.18	0.2	1.51
WankinkoRiver	WankinkoRiverDS	7742	2-Year	Alternative 3: Hybrid Dam Removal	210	8.17	9.68	8.83	9.7	0.000509	1.08	193.56	202.21	0.2	1.51
WankinkoRiver	WankinkoRiverDS	7742	10-Year	Existing Conditions + Gage	349	8.17	15.76	9.03	15.76	0.000001	0.13	2905.64	947.82	0.01	7.59
WankinkoRiver	WankinkoRiverDS	7742	10-Year	Alternative 1: Partial Dam Removal	349	8.17	10.07	9.03	10.1	0.000506	1.25	279.89	236.32	0.2	1.9
WankinkoRiver	WankinkoRiverDS	7742	10-Year	Alternative 2A: Full Dam Removal	349	8.17	10.06	9.03	10.08	0.000524	1.26	276.4	235.04	0.21	1.89
WankinkoRiver	WankinkoRiverDS	7742	10-Year	Alternative 3: Hybrid Dam Removal	349	8.17	10.05	9.03	10.08	0.000525	1.26	276.06	234.91	0.21	1.88
WankinkoRiver	WankinkoRiverDS	7742	50-Year	Existing Conditions + Gage	472	8.17	16.53	9.17	16.53	0.000001	0.15	3524.84	1086.68	0.01	8.36
WankinkoRiver	WankinkoRiverDS	7742	50-Year	Alternative 1: Partial Dam Removal	472	8.17	10.39	9.17	10.42	0.000483	1.3	361.98	281.35	0.2	2.22
WankinkoRiver	WankinkoRiverDS	7742	50-Year	Alternative 2A: Full Dam Removal	472	8.17	10.36	9.17	10.39	0.000523	1.34	352.97	275.27	0.21	2.19
WankinkoRiver	WankinkoRiverDS	7742	50-Year	Alternative 3: Hybrid Dam Removal	472	8.17	10.36	9.17	10.39	0.000519	1.33	353.72	275.77	0.21	2.19
WankinkoRiver	WankinkoRiverDS	7742	100-Year	Existing Conditions + Gage	524	8.17	16.83	9.22	16.83	0.000001	0.15	3784.21	1136.36	0.01	8.66
WankinkoRiver	WankinkoRiverDS	7742	100-Year	Alternative 1: Partial Dam Removal	524	8.17	10.53	9.22	10.56	0.00043	1.31	403.33	298.82	0.19	2.36
WankinkoRiver	WankinkoRiverDS	7742	100-Year	Alternative 2A: Full Dam Removal	524	8.17	10.46	9.22	10.49	0.000506	1.38	381.91	296.87	0.21	2.29
WankinkoRiver	WankinkoRiverDS	7742	100-Year	Alternative 3: Hybrid Dam Removal	524	8.17	10.46	9.22	10.49	0.000515	1.38	379.8	295.37	0.21	2.29
															0
WankinkoRiver	WankinkoRiverDS	7559	2-Year	Existing Conditions + Gage	210	8.01	14.78	8.83	14.78	0.000001	0.1	2187.05	595.18	0.01	6.77
WankinkoRiver	WankinkoRiverDS	7559	2-Year	Alternative 1: Partial Dam Removal	210	8.01	9.53	8.83	9.56	0.000986	1.43	146.99	166.92	0.27	1.52
WankinkoRiver	WankinkoRiverDS	7559	2-Year	Alternative 2A: Full Dam Removal	210	8.01	9.53	8.83	9.56	0.000986	1.43	146.99	166.92	0.27	1.52
WankinkoRiver	WankinkoRiverDS	7559	2-Year	Alternative 3: Hybrid Dam Removal	210	8.01	9.53	8.83	9.56	0.000984	1.43	147.08	166.97	0.27	1.52
WankinkoRiver	WankinkoRiverDS	7559	10-Year	Existing Conditions + Gage	349	8.01	15.76	9.06	15.76	0.000001	0.13	2713.53	768.05	0.01	7.75
WankinkoRiver	WankinkoRiverDS	7559	10-Year	Alternative 1: Partial Dam Removal	349	8.01	9.93	9.06	9.97	0.000911	1.58	220.21	201.63	0.27	1.92
WankinkoRiver	WankinkoRiverDS	7559	10-Year	Alternative 2A: Full Dam Removal	349	8.01	9.91	9.06	9.95	0.000961	1.62	215.93	199.83	0.27	1.9
WankinkoRiver	WankinkoRiverDS	7559	10-Year	Alternative 3: Hybrid Dam Removal	349	8.01	9.91	9.06	9.95	0.000966	1.62	215.51	199.65	0.27	1.9
WankinkoRiver	WankinkoRiverDS	7559	50-Year	Existing Conditions + Gage	472	8.01	16.53	9.21	16.53	0.000001	0.16	3548.99	949.87	0.01	8.52
WankinkoRiver	WankinkoRiverDS	7559	50-Year	Alternative 1: Partial Dam Removal	472	8.01	10.26	9.21	10.3	0.000921	1.6	294.62	267.62	0.27	2.25

WankinkoRiver	WankinkoRiverDS	7559	50-Year	Alternative 2A: Full Dam Removal	472	8.01	10.21	9.21	10.25	0.000991	1.67	283.02	255.79	0.28	2.2
WankinkoRiver	WankinkoRiverDS	7559	50-Year	Alternative 3: Hybrid Dam Removal	472	8.01	10.22	9.21	10.26	0.000984	1.66	283.99	256.64	0.28	2.21
WankinkoRiver	WankinkoRiverDS	7559	100-Year	Existing Conditions + Gage	524	8.01	16.83	9.28	16.83	0.000001	0.17	3850.4	1039.08	0.01	8.82
WankinkoRiver	WankinkoRiverDS	7559	100-Year	Alternative 1: Partial Dam Removal	524	8.01	10.41	9.28	10.45	0.000809	1.54	340.47	311.78	0.25	2.4
WankinkoRiver	WankinkoRiverDS	7559	100-Year	Alternative 2A: Full Dam Removal	524	8.01	10.31	9.28	10.36	0.001027	1.69	310.65	283.47	0.28	2.3
WankinkoRiver	WankinkoRiverDS	7559	100-Year	Alternative 3: Hybrid Dam Removal	524	8.01	10.3	9.28	10.35	0.001047	1.7	307.81	281.17	0.29	2.29
															0
WankinkoRiver	WankinkoRiverDS	7344	2-Year	Existing Conditions + Gage	210	7.59	14.78	8.69	14.78	0.000001	0.11	2001.76	835.63	0.01	7.19
WankinkoRiver	WankinkoRiverDS	7344	2-Year	Alternative 1: Partial Dam Removal	210	7.59	9.16	8.69	9.24	0.002653	2.25	93.51	113.15	0.44	1.57
WankinkoRiver	WankinkoRiverDS	7344	2-Year	Alternative 2A: Full Dam Removal	210	7.59	9.16	8.69	9.24	0.002651	2.25	93.53	113.16	0.44	1.57
WankinkoRiver	WankinkoRiverDS	7344	2-Year	Alternative 3: Hybrid Dam Removal	210	7.59	9.16	8.69	9.24	0.002629	2.24	93.83	113.36	0.43	1.57
WankinkoRiver	WankinkoRiverDS	7344	10-Year	Existing Conditions + Gage	349	7.59	15.76	8.95	15.76	0.000001	0.14	2836.85	860.14	0.01	8.17
WankinkoRiver	WankinkoRiverDS	7344	10-Year	Alternative 1: Partial Dam Removal	349	7.59	9.61	8.95	9.69	0.002033	2.31	150.78	142.79	0.4	2.02
WankinkoRiver	WankinkoRiverDS	7344	10-Year	Alternative 2A: Full Dam Removal	349	7.59	9.55	8.95	9.64	0.002344	2.44	142.96	139.1	0.42	1.96
WankinkoRiver	WankinkoRiverDS	7344	10-Year	Alternative 3: Hybrid Dam Removal	349	7.59	9.55	8.95	9.64	0.002379	2.45	142.18	138.75	0.43	1.96
WankinkoRiver	WankinkoRiverDS	7344	50-Year	Existing Conditions + Gage	472	7.59	16.53	9.14	16.53	0.000001	0.16	3499.14	869.1	0.01	8.94
WankinkoRiver	WankinkoRiverDS	7344	50-Year	Alternative 1: Partial Dam Removal	472	7.59	9.94	9.14	10.02	0.001889	2.32	203.45	181.74	0.39	2.35
WankinkoRiver	WankinkoRiverDS	7344	50-Year	Alternative 2A: Full Dam Removal	472	7.59	9.86	9.14	9.96	0.002151	2.5	189.15	166.94	0.41	2.27
WankinkoRiver	WankinkoRiverDS	7344	50-Year	Alternative 3: Hybrid Dam Removal	472	7.59	9.87	9.14	9.96	0.002116	2.48	190.6	168.08	0.41	2.28
WankinkoRiver	WankinkoRiverDS	7344	100-Year	Existing Conditions + Gage	524	7.59	16.83	9.21	16.83	0.000001	0.17	3766.15	871.05	0.01	9.24
WankinkoRiver	WankinkoRiverDS	7344	100-Year	Alternative 1: Partial Dam Removal	524	7.59	10.14	9.21	10.21	0.001648	2.15	243.94	220.82	0.36	2.55
WankinkoRiver	WankinkoRiverDS	7344	100-Year	Alternative 2A: Full Dam Removal	524	7.59	9.94	9.21	10.04	0.002336	2.58	203.04	181.29	0.43	2.35
WankinkoRiver	WankinkoRiverDS	7344	100-Year	Alternative 3: Hybrid Dam Removal	524	7.59	9.92	9.21	10.03	0.002436	2.63	199.44	178.91	0.44	2.33
															0
WankinkoRiver	WankinkoRiverDS	7045	2-Year	Existing Conditions + Gage	210	6.88	14.78		14.78	0	0.11	1986.19	359.59	0.01	7.9
WankinkoRiver	WankinkoRiverDS	7045	2-Year	Alternative 1: Partial Dam Removal	210	6.88	8.53		8.59	0.001762	1.94	107.97	119.2	0.36	1.65
WankinkoRiver	WankinkoRiverDS	7045	2-Year	Alternative 2A: Full Dam Removal	210	6.88	8.54		8.59	0.001759	1.94	108.08	119.35	0.36	1.66
WankinkoRiver	WankinkoRiverDS	7045	2-Year	Alternative 3: Hybrid Dam Removal	210	6.88	8.55		8.61	0.001706	1.91	110.15	122.27	0.35	1.67
WankinkoRiver	WankinkoRiverDS	7045	10-Year	Existing Conditions + Gage	349	6.88	15.76		15.76	0.000001	0.15	2340.46	363.68	0.01	8.88
WankinkoRiver	WankinkoRiverDS	7045	10-Year	Alternative 1: Partial Dam Removal	349	6.88	9.16		9.2	0.001276	1.56	223.29	268.8	0.3	2.28
WankinkoRiver	WankinkoRiverDS	7045	10-Year	Alternative 2A: Full Dam Removal	349	6.88	8.81		8.9	0.002579	2.37	147.15	160.57	0.44	1.93
WankinkoRiver	WankinkoRiverDS	7045	10-Year	Alternative 3: Hybrid Dam Removal	349	6.88	8.83		8.92	0.002464	2.32	150.23	163.44	0.43	1.95
WankinkoRiver	WankinkoRiverDS	7045	50-Year	Existing Conditions + Gage	472	6.88	16.53		16.53	0.000001	0.18	2622	370.77	0.01	9.65
WankinkoRiver	WankinkoRiverDS	7045	50-Year	Alternative 1: Partial Dam Removal	472	6.88	9.76		9.79	0.00039	1.22	386.82	277.45	0.18	2.88
WankinkoRiver	WankinkoRiverDS	7045	50-Year	Alternative 2A: Full Dam Removal	472	6.88	9.08		9.16	0.003342	2.36	200.13	267.56	0.48	2.2
WankinkoRiver	WankinkoRiverDS	7045	50-Year	Alternative 3: Hybrid Dam Removal	472	6.88	9.06		9.15	0.003656	2.42	194.72	267.26	0.5	2.18
WankinkoRiver	WankinkoRiverDS	7045	100-Year	Existing Conditions + Gage	524	6.88	16.83		16.83	0.000001	0.19	2736.06	372.65	0.01	9.95
WankinkoRiver	WankinkoRiverDS	7045	100-Year	Alternative 1: Partial Dam Removal	524	6.88	10.01		10.03	0.000283	1.15	455.59	280.96	0.16	3.13
WankinkoRiver	WankinkoRiverDS	7045	100-Year	Alternative 2A: Full Dam Removal	524	6.88	9.14		9.23	0.003185	2.42	216.48	268.44	0.48	2.26
WankinkoRiver	WankinkoRiverDS	7045	100-Year	Alternative 3: Hybrid Dam Removal	524	6.88	9.2		9.28	0.002529	2.26	232.28	269.29	0.43	2.32
															0
WankinkoRiver	WankinkoRiverDS	6844	2-Year	Existing Conditions + Gage	210	6.53	14.78		14.78	0	0.09	2341.51	418.25	0.01	8.25
WankinkoRiver	WankinkoRiverDS	6844	2-Year	Alternative 1: Partial Dam Removal	210	6.53	8.29		8.31	0.001067	1.23	171.21	257.62	0.27	1.76
WankinkoRiver	WankinkoRiverDS	6844	2-Year	Alternative 2A: Full Dam Removal	210	6.53	8.14	7.61	8.18	0.002361	1.56	134.41	255.29	0.38	1.61
WankinkoRiver	WankinkoRiverDS	6844	2-Year	Alternative 3: Hybrid Dam Removal	210	6.53	8.09	7.61	8.14	0.003426	1.75	120.02	254.38	0.45	1.56
WankinkoRiver	WankinkoRiverDS	6844	10-Year	Existing Conditions + Gage	349	6.53	15.76		15.76	0.000001	0.13	2755.9	429.94	0.01	9.23
WankinkoRiver	WankinkoRiverDS	6844	10-Year	Alternative 1: Partial Dam Removal	349	6.53	9.09		9.11	0.000213	0.91	384.49	270.82	0.13	2.56
WankinkoRiver	WankinkoRiverDS	6844	10-Year	Alternative 2A: Full Dam Removal	349	6.53	8.33	8	8.38	0.002437	1.92	181.45	258.3	0.4	1.8
WankinkoRiver	WankinkoRiverDS	6844	10-Year	Alternative 3: Hybrid Dam Removal	349	6.53	8.25		8.32	0.003548	2.16	161.79	257.03	0.48	1.72
WankinkoRiver	WankinkoRiverDS	6844	50-Year	Existing Conditions + Gage	472	6.53	16.53		16.53	0.000001	0.15	3099.62	483.65	0.01	10
WankinkoRiver	WankinkoRiverDS	6844	50-Year	Alternative 1: Partial Dam Removal	472	6.53	9.73		9.74	0.000118	0.84	560.42	283.07	0.11	3.2
WankinkoRiver	WankinkoRiverDS	6844	50-Year	Alternative 2A: Full Dam Removal	472	6.53	8.38	8.08	8.47	0.003571	2.43	194.21	259.14	0.49	1.85
WankinkoRiver	WankinkoRiverDS	6844	50-Year	Alternative 3: Hybrid Dam Removal	472	6.53	8.78		8.82	0.000861	1.57	300.78	265.8	0.26	2.25
WankinkoRiver	WankinkoRiverDS	6844	100-Year	Existing Conditions + Gage	524	6.53	16.83		16.83	0.000001	0.16	3256.58	539.77	0.01	10.3
WankinkoRiver	WankinkoRiverDS	6844	100-Year	Alternative 1: Partial Dam Removal	524	6.53	9.98		9.99	0.0001	0.83	632.67	288.92	0.1	3.45
WankinkoRiver	WankinkoRiverDS	6844	100-Year	Alternative 2A: Full Dam Removal	524	6.53	8.39	8.12	8.5	0.004171	2.65	197.43	259.35	0.54	1.86
WankinkoRiver	WankinkoRiverDS	6844	100-Year	Alternative 3: Hybrid Dam Removal	524	6.53	9.02		9.05	0.000575	1.44	363.67	269.58	0.22	2.49
															0
WankinkoRiver	WankinkoRiverDS	6696	2-Year	Existing Conditions + Gage	210	6.25	14.78		14.78	0	0.09	2379.97	377.5	0.01	8.53
WankinkoRiver	WankinkoRiverDS	6696	2-Year	Alternative 1: Partial Dam Removal	210	6.25	8.26		8.27	0.000123	0.63	332.19	266.98	0.1	2.01
WankinkoRiver	WankinkoRiverDS	6696	2-Year	Alternative 2A: Full Dam Removal	210	6.25	7.26	7.26	7.4	0.02027	2.97	70.66	257.17	1	1.01
WankinkoRiver	WankinkoRiverDS	6696	2-Year	Alternative 3: Hybrid Dam Removal	210	6.25	7.37		7.44	0.006845	2.14	98.03	258.17	0.61	1.12
WankinkoRiver	WankinkoRiverDS	6696	10-Year	Existing Conditions + Gage	349	6.25	15.76		15.76	0	0.13	2753.2	385.03	0.01	9.51
WankinkoRiver	WankinkoRiverDS	6696	10-Year	Alternative 1: Partial Dam Removal	349	6.25	9.08		9.09	0.000064	0.63	555.69	275.14	0.08	2.83
WankinkoRiver	WankinkoRiverDS	6696	10-Year	Alternative 2A: Full Dam Removal	349	6.25	7.36	7.36	7.57	0.020592	3.65	95.53	258.08	1.06	1.11
WankinkoRiver	WankinkoRiverDS	6696	10-Year	Alternative 3: Hybrid Dam Removal	349	6.25	8.13		8.16	0.000479	1.17	299.08	265.79	0.19	1.88
WankinkoRiver	WankinkoRiverDS	6696	50-Year	Existing Conditions + Gage	472	6.25	16.53		16.53	0.000001	0.15	3050.11	390.36	0.01	10.28
WankinkoRiver	WankinkoRiverDS	6696	50-Year	Alternative 1: Partial Dam Removal	472	6.25	9.72		9.73	0.000048	0.64	733.91	281.52	0.07	3.47
WankinkoRiver	WankinkoRiverDS	6696	50-Year	Alternative 2A: Full Dam Removal	472	6.25	7.6		7.74	0.007118	2.99	158.12	260.45	0.68	1.35
WankinkoRiver	WankinkoRiverDS	6696	50-Year	Alternative 3: Hybrid Dam Removal	472	6.25	8.74		8.76	0.000212	1.02	462.27	271.8	0.14	2.49
WankinkoRiver	WankinkoRiverDS	6696	100-Year	Existing Conditions + Gage	524	6.25	16.83		16.83	0.000001	0.17	3170.31	394.21	0.01	10.58
WankinkoRiver	WankinkoRiverDS	6696	100-Year	Alternative 1: Partial Dam Removal	524	6.25	9.98		9.98	0.000044	0.65	805.57	284	0.07	3.73
WankinkoRiver	WankinkoRiverDS	6696	100-Year	Alternative 2A: Full Dam Removal	524	6.25	7.72		7.84	0.00483	2.77	189.51	261.66	0.57	1.47
WankinkoRiver	WankinkoRiverDS	6696	100-Year	Alternative 3: Hybrid Dam Removal	524	6.25	8.99		9	0.000169	0.99	529.29	274.17	0.13	2.74
															0
WankinkoRiver	WankinkoRiverDS	6269	2-Year	Existing Conditions + Gage	210	4.14	14.78		14.78	0	0.08	2762.57	376.7	0	10.64
WankinkoRiver	WankinkoRiverDS	6269	2-Year	Alternative 1: Partial Dam Removal	210	4.14	8.25		8.25	0.000013	0.31	678.62	303.56	0.04	4.11
WankinkoRiver	WankinkoRiverDS	6269	2-Year	Alternative 2A: Full Dam Removal	210	4.14	6.81	5.19	6.82	0.000145	0.74	285.52	207.78	0.11	2.67
WankinkoRiver	WankinkoRiverDS	6269	2-Year	Alternative 3: Hybrid Dam Removal	210	4.14	7.33		7.33	0.000061	0.52	402.69	256.93	0.07	3.19
WankinkoRiver	WankinkoRiverDS	6269	10-Year	Existing Conditions + Gage	349	4.14	15.76		15.76	0	0.11	3163.89	440.81	0.01	11.62
WankinkoRiver	WankinkoRiverDS	6269	10-Year	Alternative 1: Partial Dam Removal	349	4.14	9.08		9.08	0.000013	0.38	929.88	304.58	0.04	4.94
WankinkoRiver	WankinkoRiverDS	6269	10-Year	Alternative 2A: Full Dam Removal	349	4.14	7.1	5.46	7.12	0.000229	1	349.27	226.55	0.14	2.96
WankinkoRiver	WankinkoRiverDS	6269	10-Year	Alternative 3: Hybrid Dam Removal	349	4.14	8.1		8.1	0.000047	0.55	633.26	303.36	0.07	3.96
WankinkoRiver	WankinkoRiverDS	6269	50-Year	Existing Conditions + Gage	472	4.14	16.52		16.53	0	0.14	3506.31	452.36	0.01	12.38
WankinkoRiver	WankinkoRiverDS	6269	50-Year	Alternative 1: Partial Dam Removal	472	4.14	9.72		9.72	0.000013	0.42	1125.45	305.37	0.04	5.58
WankinkoRiver	WankinkoRiverDS	6269	50-Year	Alternative 2A: Full Dam Removal	472	4.14	7.32		7.34	0.000309	1.18	400.85	254.2	0.17	3.18
WankinkoRiver	WankinkoRiverDS	6269	50-Year	Alternative 3: Hybrid Dam Removal	472	4.14	8.72		8.72	0.000036	0.57	821.22	304.14	0.06	4.58
WankinkoRiver	WankinkoRiverDS	6269	100-Year	Existing Conditions + Gage	524	4.14	16.83		16.83	0	0.15	3645.78	456	0.01	12.69
WankinkoRiver	WankinkoRiverDS	6269	100-Year	Alternative 1: Partial Dam Removal	524	4.14	9.97		9.97	0.000013	0.44	1202.98	305.68	0.04	5.83
WankinkoRiver	WankinkoRiverDS	6269	100-Year	Alternative 2A: Full Dam Removal	524	4.14	7.41		7.44	0.000353	1.23	425.55	278.55	0.18	3.27
WankinkoRiver	WankinkoRiverDS	6269	100-Year	Alternative 3: Hybrid Dam Removal	524	4.14	8.97		8.97	0.000033	0.58	896.8	304.44	0.06	4.83
															0
WankinkoRiver	WankinkoRiverDS	5965	2-Year	Existing Conditions + Gage	210	5.62	14.78	6.45	14.78	0	0.11	1990.7	651.67	0.01	9.16
WankinkoRiver	WankinkoRiverDS	5965	2-Year	Alternative 1: Partial Dam Removal	210	5.62	8.24	6.45	8.24	0.000039	0.49	431.19	217.49	0.06	2.62
WankinkoRiver	WankinkoRiverDS	5965	2-Year	Alternative 2A: Full Dam Removal	210	5.62	6.45	6.45	6.65	0.018198	3.55	59.13	152.53	1.01	0.83
WankinkoRiver	WankinkoRiverDS	5965	2-Year	Alternative 3: Hybrid Dam Removal	210	5.62	7.28	6.45	7.29	0.000337	0.94	224.04	213.8	0.16	1.66
WankinkoRiver	WankinkoRiverDS	5965	10-Year	Existing Conditions + Gage	349	5.62	15.76	6.63	15.76	0.000001	0.16	2268.18	700.24	0.01	10.14
WankinkoRiver	WankinkoRiverDS	5965	10-Year	Alternative 1: Partial Dam Removal	349	5.62	9.07	6.63	9.07	0.000034	0.57	612.15	220.66	0.06	3.45
WankinkoRiver	WankinkoRiverDS	5965	10-Year	Alternative 2A: Full Dam Removal	349	5.62	6.63	6.63	6.87	0.016599	3.95	88.45	181.83	1	1.01
WankinkoRiver	WankinkoRiverDS	5965	10-Year	Alternative 3: Hybrid Dam Removal	349	5.62	8.07	6.63	8.08	0.000145	0.89	393.86	216.83	0.12	2.45
WankinkoRiver	WankinkoRiverDS	5965	50-Year	Existing Conditions + Gage	472	5.62	16.52	6.76	16.53	0.000001	0.19	2488.76	729.67	0.01	10.9
WankinkoRiver	WankinkoRiverDS	5965	50-Year	Alternative 1: Partial Dam Removal	472	5.62	9.71	6.76	9.71	0.000032	0.63	754.38	223.12	0.06	4.09
WankinkoRiver	WankinkoRiverDS	5965	50-Year	Alternative 2A: Full Dam Removal	472	5.62	6.76	6.76	7.03	0.015629	4.19	112.63	202.23	0.99	1.14
WankinkoRiver	WankinkoRiverDS	5965	50-Year	Alternative 3: Hybrid Dam Removal	472	5.62	8.69	6.76	8.71	0.0001	0.89	530.15	219.23	0.1	3.07
WankinkoRiver	WankinkoRiverDS	5965	100-Year	Existing Conditions + Gage	524	5.62	16.83	6.8	16.83	0.000001	0.21	2579.88	759.77	0.01	11.21
WankinkoRiver	WankinkoRiverDS	5965	100-Year	Alternative 1: Partial Dam Removal	524	5.62	9.96	6.8	9.97	0.000031	0.65	811.1	224.08	0.06	4.34
WankinkoRiver	WankinkoRiverDS	5965	100-Year	Alternative 2A: Full Dam Removal	524	5.62	6.81	6.8	7.09	0.015204	4.26	123	211.02	0.98	1.19
WankinkoRiver	WankinkoRiverDS	5965	100-Year	Alternative 3: Hybrid Dam Removal	524	5.62	8.94	6.8	8.96	0.000089	0.9	585.07	220.19	0.1	3.32
															0
WankinkoRiver	WankinkoRiverDS	5566	2-Year	Existing Conditions + Gage	210	4.05	14.78	4.82	14.78	0	0.07	2854.44	407.28	0	10.73
WankinkoRiver	WankinkoRiverDS	5566	2-Year	Alternative 1: Partial Dam Removal	210	4.05	8.24	4.82	8.24	0.000006	0.26	806.05	252.07	0.03	4.19
WankinkoRiver	WankinkoRiverDS	5566	2-Year	Alternative 2A: Full Dam Removal	210	4.05	5.42	4.82	5.45	0.001061	1.45	144.85	169.96	0.28	1.37
WankinkoRiver	WankinkoRiverDS	5566	2-Year	Alternative 3: Hybrid Dam Removal	210	4.05	7.27	4.82	7.27	0.000018	0.37	567.86	240	0.04	3.22
WankinkoRiver	WankinkoRiverDS	5566	10-Year	Existing Conditions + Gage	349	4.05	15.76	5.01	15.76	0	0.11	3266.48	434.32	0.01	11.71
WankinkoRiver	WankinkoRiverDS	5566	10-Year	Alternative 1: Partial Dam Removal	349	4.05	9.06	5.01	9.06	0.000008	0.34	1018.52	262.58	0.03	5.01
WankinkoRiver	WankinkoRiverDS	5566	10-Year	Alternative 2A: Full Dam Removal	349	4.05	5.94	5.01	5.97	0.000722	1.4	250.13	232.89	0.24	1.89
WankinkoRiver	WankinkoRiverDS	5566	10-Year	Alternative 3: Hybrid Dam Removal	349	4.05	8.06	5.01	8.06	0.00002	0.46	761.03	249.8	0.05	4.01
WankinkoRiver	WankinkoRiverDS	5566	50-Year	Existing Conditions + Gage	472	4.05	16.52	5.15	16.52	0	0.13	3609.17	460.5	0.01	12.47
WankinkoRiver	WankinkoRiverDS	5566	50-Year	Alternative 1: Partial Dam Removal	472	4.05	9.7	5.15	9.71	0.000009	0.4	1189.43	270.75	0.03	5.65
WankinkoRiver	WankinkoRiverDS	5566	50-Year	Alternative 2A: Full Dam Removal	472	4.05	6.27	5.15	6.3	0.000554	1.44	328.81	240	0.22	2.22
WankinkoRiver	WankinkoRiverDS	5566	50-Year	Alternative 3: Hybrid Dam Removal	472	4.05	8.68	5.15	8.69	0.00002	0.51	919.94	257.82	0.05	4.63

WankinkoRiver	WankinkoRiverDS	5566	100-Year	Existing Conditions + Gage	524	4.05	16.83	5.2	16.83	0.000001	0.14	3752.5	478.14	0.01	12.78
WankinkoRiver	WankinkoRiverDS	5566	100-Year	Alternative 1: Partial Dam Removal	524	4.05	9.96	5.2	9.96	0.00001	0.42	1258.52	274	0.03	5.91
WankinkoRiver	WankinkoRiverDS	5566	100-Year	Alternative 2A: Full Dam Removal	524	4.05	6.4	5.2	6.43	0.000513	1.46	358.5	240	0.21	2.35
WankinkoRiver	WankinkoRiverDS	5566	100-Year	Alternative 3: Hybrid Dam Removal	524	4.05	8.93	5.2	8.94	0.00002	0.53	984.9	261	0.05	4.88
															0
WankinkoRiver	WankinkoRiverDS	5294	2-Year	Existing Conditions + Gage	210	3.21	14.78		14.78	0	0.06	3673.18	709.91	0	11.57
WankinkoRiver	WankinkoRiverDS	5294	2-Year	Alternative 1: Partial Dam Removal	210	3.21	8.24		8.24	0.000003	0.2	1056.3	296.98	0.02	5.03
WankinkoRiver	WankinkoRiverDS	5294	2-Year	Alternative 2A: Full Dam Removal	210	3.21	5.34		5.35	0.000169	0.75	280.55	223.8	0.12	2.13
WankinkoRiver	WankinkoRiverDS	5294	2-Year	Alternative 3: Hybrid Dam Removal	210	3.21	7.27		7.27	0.000007	0.27	778.71	275.44	0.03	4.06
WankinkoRiver	WankinkoRiverDS	5294	10-Year	Existing Conditions + Gage	349	3.21	15.76		15.76	0	0.08	4378.24	754.64	0.01	12.55
WankinkoRiver	WankinkoRiverDS	5294	10-Year	Alternative 1: Partial Dam Removal	349	3.21	9.06		9.06	0.000004	0.27	1308.96	315.34	0.02	5.85
WankinkoRiver	WankinkoRiverDS	5294	10-Year	Alternative 2A: Full Dam Removal	349	3.21	5.88		5.89	0.000153	0.84	413.04	255.22	0.12	2.67
WankinkoRiver	WankinkoRiverDS	5294	10-Year	Alternative 3: Hybrid Dam Removal	349	3.21	8.06		8.06	0.00001	0.35	1002.83	292.93	0.03	4.85
WankinkoRiver	WankinkoRiverDS	5294	50-Year	Existing Conditions + Gage	472	3.21	16.52		16.52	0	0.1	4977.86	798.3	0.01	13.31
WankinkoRiver	WankinkoRiverDS	5294	50-Year	Alternative 1: Partial Dam Removal	472	3.21	9.7		9.7	0.000005	0.31	1515.58	329.53	0.03	6.49
WankinkoRiver	WankinkoRiverDS	5294	50-Year	Alternative 2A: Full Dam Removal	472	3.21	6.21		6.23	0.000152	0.95	499.17	258.78	0.12	3
WankinkoRiver	WankinkoRiverDS	5294	50-Year	Alternative 3: Hybrid Dam Removal	472	3.21	8.68		8.68	0.000011	0.4	1190.6	306.84	0.04	5.47
WankinkoRiver	WankinkoRiverDS	5294	100-Year	Existing Conditions + Gage	524	3.21	16.83		16.83	0	0.1	5223.51	803.16	0.01	13.62
WankinkoRiver	WankinkoRiverDS	5294	100-Year	Alternative 1: Partial Dam Removal	524	3.21	9.96		9.96	0.000005	0.33	1599.88	335.19	0.03	6.75
WankinkoRiver	WankinkoRiverDS	5294	100-Year	Alternative 2A: Full Dam Removal	524	3.21	6.34		6.35	0.000153	0.99	531.68	260.11	0.12	3.13
WankinkoRiver	WankinkoRiverDS	5294	100-Year	Alternative 3: Hybrid Dam Removal	524	3.21	8.93		8.93	0.000011	0.41	1268.14	312.44	0.04	5.72
															0
WankinkoRiver	WankinkoRiverDS	5100	2-Year	Existing Conditions + Gage	210	2.62	14.78		14.78	0	0.05	3889.99	786.71	0	12.16
WankinkoRiver	WankinkoRiverDS	5100	2-Year	Alternative 1: Partial Dam Removal	210	2.62	8.24		8.24	0.000002	0.18	1162.16	305.62	0.02	5.62
WankinkoRiver	WankinkoRiverDS	5100	2-Year	Alternative 2A: Full Dam Removal	210	2.62	5.32		5.33	0.000086	0.59	358.93	248.33	0.09	2.7
WankinkoRiver	WankinkoRiverDS	5100	2-Year	Alternative 3: Hybrid Dam Removal	210	2.62	7.27		7.27	0.000005	0.24	875.37	285.57	0.02	4.65
WankinkoRiver	WankinkoRiverDS	5100	10-Year	Existing Conditions + Gage	349	2.62	15.76		15.76	0	0.08	4701.29	876.61	0.01	13.14
WankinkoRiver	WankinkoRiverDS	5100	10-Year	Alternative 1: Partial Dam Removal	349	2.62	9.06		9.06	0.000003	0.25	1421.49	322.94	0.02	6.44
WankinkoRiver	WankinkoRiverDS	5100	10-Year	Alternative 2A: Full Dam Removal	349	2.62	5.86		5.87	0.000084	0.71	494.91	255.58	0.09	3.24
WankinkoRiver	WankinkoRiverDS	5100	10-Year	Alternative 3: Hybrid Dam Removal	349	2.62	8.05		8.06	0.000007	0.32	1106.82	301.79	0.03	5.43
WankinkoRiver	WankinkoRiverDS	5100	50-Year	Existing Conditions + Gage	472	2.62	16.52		16.52	0	0.09	5407.07	980.13	0.01	13.9
WankinkoRiver	WankinkoRiverDS	5100	50-Year	Alternative 1: Partial Dam Removal	472	2.62	9.7		9.7	0.000004	0.29	1632.65	336.18	0.02	7.08
WankinkoRiver	WankinkoRiverDS	5100	50-Year	Alternative 2A: Full Dam Removal	472	2.62	6.19		6.2	0.000094	0.81	581.5	262.75	0.1	3.57
WankinkoRiver	WankinkoRiverDS	5100	50-Year	Alternative 3: Hybrid Dam Removal	472	2.62	8.68		8.68	0.000008	0.36	1299.85	314.96	0.03	6.06
WankinkoRiver	WankinkoRiverDS	5100	100-Year	Existing Conditions + Gage	524	2.62	16.83		16.83	0	0.1	5714.02	1014.25	0.01	14.21
WankinkoRiver	WankinkoRiverDS	5100	100-Year	Alternative 1: Partial Dam Removal	524	2.62	9.96		9.96	0.000004	0.3	1718.57	341.41	0.02	7.34
WankinkoRiver	WankinkoRiverDS	5100	100-Year	Alternative 2A: Full Dam Removal	524	2.62	6.32		6.33	0.000097	0.85	614.46	265.43	0.1	3.7
WankinkoRiver	WankinkoRiverDS	5100	100-Year	Alternative 3: Hybrid Dam Removal	524	2.62	8.93		8.93	0.000008	0.38	1379.37	320.2	0.03	6.31
															0
WankinkoRiver	WankinkoRiverDS	4851	2-Year	Existing Conditions + Gage	210	2.64	14.78	3.17	14.78	0	0.07	3392.46	1228.03	0	12.14
WankinkoRiver	WankinkoRiverDS	4851	2-Year	Alternative 1: Partial Dam Removal	210	2.64	8.24	3.17	8.24	0.000002	0.19	1167.15	306.98	0.02	5.6
WankinkoRiver	WankinkoRiverDS	4851	2-Year	Alternative 2A: Full Dam Removal	210	2.64	5.31	3.17	5.31	0.000045	0.55	382.5	179.74	0.07	2.67
WankinkoRiver	WankinkoRiverDS	4851	2-Year	Alternative 3: Hybrid Dam Removal	210	2.64	7.26	3.17	7.27	0.000006	0.25	871.64	301.47	0.03	4.62
WankinkoRiver	WankinkoRiverDS	4851	10-Year	Existing Conditions + Gage	349	2.64	15.76	3.35	15.76	0	0.1	3947.99	1445.92	0.01	13.12
WankinkoRiver	WankinkoRiverDS	4851	10-Year	Alternative 1: Partial Dam Removal	349	2.64	9.06	3.35	9.06	0.000004	0.26	1422.25	311.65	0.02	6.42
WankinkoRiver	WankinkoRiverDS	4851	10-Year	Alternative 2A: Full Dam Removal	349	2.64	5.84	3.35	5.85	0.000072	0.71	488.43	219.33	0.08	3.2
WankinkoRiver	WankinkoRiverDS	4851	10-Year	Alternative 3: Hybrid Dam Removal	349	2.64	8.05	3.35	8.05	0.000008	0.33	1110.88	305.93	0.03	5.41
WankinkoRiver	WankinkoRiverDS	4851	50-Year	Existing Conditions + Gage	472	2.64	16.52	3.49	16.52	0	0.12	6642.86	1531.22	0.01	13.88
WankinkoRiver	WankinkoRiverDS	4851	50-Year	Alternative 1: Partial Dam Removal	472	2.64	9.7	3.49	9.7	0.000004	0.31	1623.01	315.28	0.02	7.06
WankinkoRiver	WankinkoRiverDS	4851	50-Year	Alternative 2A: Full Dam Removal	472	2.64	6.17	3.49	6.18	0.000093	0.84	564.92	243.77	0.1	3.53
WankinkoRiver	WankinkoRiverDS	4851	50-Year	Alternative 3: Hybrid Dam Removal	472	2.64	8.68	3.49	8.68	0.000009	0.39	1303.4	309.48	0.03	6.04
WankinkoRiver	WankinkoRiverDS	4851	100-Year	Existing Conditions + Gage	524	2.64	16.83	3.55	16.83	0	0.13	7113.27	1535.94	0.01	14.19
WankinkoRiver	WankinkoRiverDS	4851	100-Year	Alternative 1: Partial Dam Removal	524	2.64	9.95	3.55	9.96	0.000005	0.33	1703.12	316.72	0.02	7.31
WankinkoRiver	WankinkoRiverDS	4851	100-Year	Alternative 2A: Full Dam Removal	524	2.64	6.29	3.55	6.31	0.000101	0.88	595.53	252.89	0.1	3.65
WankinkoRiver	WankinkoRiverDS	4851	100-Year	Alternative 3: Hybrid Dam Removal	524	2.64	8.93	3.55	8.93	0.000009	0.41	1381.04	310.9	0.03	6.29
															0
WankinkoRiver	WankinkoRiverDS	4717	2-Year	Existing Conditions + Gage	210	3.33	14.78	3.97	14.78	0	0.07	3140	1191.69	0	11.45
WankinkoRiver	WankinkoRiverDS	4717	2-Year	Alternative 1: Partial Dam Removal	210	3.33	8.23	3.97	8.24	0.000004	0.21	1004.72	312.31	0.02	4.9
WankinkoRiver	WankinkoRiverDS	4717	2-Year	Alternative 2A: Full Dam Removal	210	1.46	5.25	3.65	5.26	0.000622	0.82	254.71	164.76	0.12	3.79
WankinkoRiver	WankinkoRiverDS	4717	2-Year	Alternative 3: Hybrid Dam Removal	210	3.33	7.26	3.97	7.26	0.00001	0.3	718.77	306.06	0.03	3.93
WankinkoRiver	WankinkoRiverDS	4717	10-Year	Existing Conditions + Gage	349	3.33	15.76	4.2	15.76	0	0.1	4069.86	1528.14	0.01	12.43
WankinkoRiver	WankinkoRiverDS	4717	10-Year	Alternative 1: Partial Dam Removal	349	3.33	9.06	4.2	9.06	0.000005	0.28	1251.97	317.62	0.02	5.73
WankinkoRiver	WankinkoRiverDS	4717	10-Year	Alternative 2A: Full Dam Removal	349	1.46	5.76	3.91	5.78	0.000677	1.02	342.65	184.27	0.13	4.3
WankinkoRiver	WankinkoRiverDS	4717	10-Year	Alternative 3: Hybrid Dam Removal	349	3.33	8.05	4.2	8.05	0.000012	0.37	949.88	311.12	0.04	4.72
WankinkoRiver	WankinkoRiverDS	4717	50-Year	Existing Conditions + Gage	472	3.33	16.52	4.35	16.52	0	0.12	6544.01	1628.06	0.01	13.19
WankinkoRiver	WankinkoRiverDS	4717	50-Year	Alternative 1: Partial Dam Removal	472	3.33	9.7	4.35	9.7	0.000006	0.33	1447.01	321.74	0.03	6.37
WankinkoRiver	WankinkoRiverDS	4717	50-Year	Alternative 2A: Full Dam Removal	472	1.46	6.07	4.09	6.09	0.000745	1.18	408.44	253.31	0.14	4.61
WankinkoRiver	WankinkoRiverDS	4717	50-Year	Alternative 3: Hybrid Dam Removal	472	3.33	8.68	4.35	8.68	0.000012	0.42	1136.33	315.15	0.04	5.35
WankinkoRiver	WankinkoRiverDS	4717	100-Year	Existing Conditions + Gage	524	3.33	16.83	4.42	16.83	0	0.13	7049.83	1664.54	0.01	13.5
WankinkoRiver	WankinkoRiverDS	4717	100-Year	Alternative 1: Partial Dam Removal	524	3.33	9.95	4.42	9.96	0.000006	0.35	1524.94	323.37	0.03	6.62
WankinkoRiver	WankinkoRiverDS	4717	100-Year	Alternative 2A: Full Dam Removal	524	1.46	6.19	4.16	6.21	0.000762	1.23	438.08	279.92	0.14	4.73
WankinkoRiver	WankinkoRiverDS	4717	100-Year	Alternative 3: Hybrid Dam Removal	524	3.33	8.93	4.42	8.93	0.000012	0.44	1211.62	316.76	0.04	5.6
															0
WankinkoRiver	WankinkoRiverDS	4541	2-Year	Existing Conditions + Gage	210	3.79	14.78	4.59	14.78	0	0.07	3442.26	1120.35	0	10.99
WankinkoRiver	WankinkoRiverDS	4541	2-Year	Alternative 1: Partial Dam Removal	210	3.79	8.23	4.59	8.24	0.000004	0.22	954.73	309.66	0.02	4.44
WankinkoRiver	WankinkoRiverDS	4541	2-Year	Alternative 2A: Full Dam Removal	210	0.19	4.81	3.03	4.86	0.001658	1.96	117.42	93.83	0.21	4.62
WankinkoRiver	WankinkoRiverDS	4541	2-Year	Alternative 3: Hybrid Dam Removal	210	3.79	7.26	4.59	7.26	0.000014	0.32	659.61	296.86	0.04	3.47
WankinkoRiver	WankinkoRiverDS	4541	10-Year	Existing Conditions + Gage	349	3.79	15.76	4.86	15.76	0	0.09	5810.62	1516.95	0.01	11.97
WankinkoRiver	WankinkoRiverDS	4541	10-Year	Alternative 1: Partial Dam Removal	349	3.79	9.06	4.86	9.06	0.000006	0.29	1214.48	320.49	0.03	5.27
WankinkoRiver	WankinkoRiverDS	4541	10-Year	Alternative 2A: Full Dam Removal	349	0.19	5.34	3.66	5.4	0.001483	2.08	191.17	187.67	0.2	5.15
WankinkoRiver	WankinkoRiverDS	4541	10-Year	Alternative 3: Hybrid Dam Removal	349	3.79	8.05	4.86	8.05	0.000015	0.39	897.42	307.21	0.04	4.26
WankinkoRiver	WankinkoRiverDS	4541	50-Year	Existing Conditions + Gage	472	3.79	16.52	5.09	16.52	0	0.11	7035.5	1676.78	0.01	12.73
WankinkoRiver	WankinkoRiverDS	4541	50-Year	Alternative 1: Partial Dam Removal	472	3.79	9.7	5.09	9.7	0.000006	0.33	1422.38	328.91	0.03	5.91
WankinkoRiver	WankinkoRiverDS	4541	50-Year	Alternative 2A: Full Dam Removal	472	0.19	5.64	4.34	5.7	0.001495	2.22	254.82	229.48	0.2	5.45
WankinkoRiver	WankinkoRiverDS	4541	50-Year	Alternative 3: Hybrid Dam Removal	472	3.79	8.67	5.09	8.68	0.000015	0.43	1092.18	315.44	0.04	4.88
WankinkoRiver	WankinkoRiverDS	4541	100-Year	Existing Conditions + Gage	524	3.79	16.83	5.16	16.83	0	0.12	7553.82	1697.69	0.01	13.04
WankinkoRiver	WankinkoRiverDS	4541	100-Year	Alternative 1: Partial Dam Removal	524	3.79	9.95	5.16	9.95	0.000007	0.35	1506.13	331.75	0.03	6.16
WankinkoRiver	WankinkoRiverDS	4541	100-Year	Alternative 2A: Full Dam Removal	524	0.19	5.78	4.47	5.84	0.001377	2.18	287.9	250.07	0.2	5.59
WankinkoRiver	WankinkoRiverDS	4541	100-Year	Alternative 3: Hybrid Dam Removal	524	3.79	8.92	5.16	8.93	0.000014	0.45	1171.53	318.73	0.04	5.13
															0
WankinkoRiver	WankinkoRiverDS	4540.6	2-Year	Existing Conditions + Gage	210	3.99	14.78	4.89	14.78	0	0.07	3335.76	938.5	0	10.79
WankinkoRiver	WankinkoRiverDS	4540.6	2-Year	Alternative 1: Partial Dam Removal	210	3.99	8.23	4.89	8.24	0.000005	0.22	943.79	312.11	0.02	4.24
WankinkoRiver	WankinkoRiverDS	4540.6	2-Year	Alternative 2A: Full Dam Removal	210	-0.37	4.4	2.58	4.49	0.002819	2.52	88.12	56.89	0.27	4.77
WankinkoRiver	WankinkoRiverDS	4540.6	2-Year	Alternative 3: Hybrid Dam Removal	210	3.99	7.26	4.89	7.26	0.000016	0.33	646.04	299.52	0.04	3.27
WankinkoRiver	WankinkoRiverDS	4540.6	10-Year	Existing Conditions + Gage	349	3.99	15.76	5.09	15.76	0	0.1	3989.49	1233.43	0.01	11.77
WankinkoRiver	WankinkoRiverDS	4540.6	10-Year	Alternative 1: Partial Dam Removal	349	3.99	9.06	5.09	9.06	0.000006	0.29	1205.45	357.17	0.03	5.07
WankinkoRiver	WankinkoRiverDS	4540.6	10-Year	Alternative 2A: Full Dam Removal	349	-0.37	5.01	3.24	5.11	0.002614	2.78	148.01	153.37	0.27	5.38
WankinkoRiver	WankinkoRiverDS	4540.6	10-Year	Alternative 3: Hybrid Dam Removal	349	3.99	8.05	5.09	8.05	0.000016	0.39	885.87	309.7	0.04	4.06
WankinkoRiver	WankinkoRiverDS	4540.6	50-Year	Existing Conditions + Gage	472	3.99	16.52	5.22	16.52	0	0.12	4729.71	1558.35	0.01	12.53
WankinkoRiver	WankinkoRiverDS	4540.6	50-Year	Alternative 1: Partial Dam Removal	472	3.99	9.7	5.22	9.7	0.000007	0.33	1414.53	416.59	0.03	5.71
WankinkoRiver	WankinkoRiverDS	4540.6	50-Year	Alternative 2A: Full Dam Removal	472	-0.37	5.38	3.71	5.47	0.002138	2.69	217.55	207.07	0.25	5.75
WankinkoRiver	WankinkoRiverDS	4540.6	50-Year	Alternative 3: Hybrid Dam Removal	472	3.99	8.67	5.22	8.68	0.000015	0.44	1082.14	321.3	0.04	4.68
WankinkoRiver	WankinkoRiverDS	4540.6	100-Year	Existing Conditions + Gage	524	3.99	16.83	5.26	16.83	0	0.12	7392.87	1628.95	0.01	12.84
WankinkoRiver	WankinkoRiverDS	4540.6	100-Year	Alternative 1: Partial Dam Removal	524	3.99	9.95	5.26	9.95	0.000007	0.35	1498.68	440.11	0.03	5.96
WankinkoRiver	WankinkoRiverDS	4540.6	100-Year	Alternative 2A: Full Dam Removal	524	-0.37	5.59	3.92	5.66	0.001621	2.43	261.91	222.83	0.22	5.96
WankinkoRiver	WankinkoRiverDS	4540.6	100-Year	Alternative 3: Hybrid Dam Removal	524	3.99	8.92	5.26	8.93	0.000015	0.45	1162.08	344.66	0.04	4.93
															0
WankinkoRiver	WankinkoRiverDS	4540.4	2-Year	Existing Conditions + Gage	210	4.09	14.78	4.91	14.78	0	0.06	4890.77	1133.35	0	10.69
WankinkoRiver	WankinkoRiverDS	4540.4	2-Year	Alternative 1: Partial Dam Removal	210	4.09	8.23	4.91	8.24	0.000005	0.23	930.14	345.69	0.02	4.14
WankinkoRiver	WankinkoRiverDS	4540.4	2-Year	Alternative 2A: Full Dam Removal	210	-0.53	4.25	2.42	4.34	0.002743	2.5	89.32	57.87	0.26	4.78
WankinkoRiver	WankinkoRiverDS	4540.4	2-Year	Alternative 3: Hybrid Dam Removal	210	4.09	7.26	4.91	7.26	0.000016	0.33	634.22	297.8	0.04	3.17
WankinkoRiver	WankinkoRiverDS	4540.4	10-Year	Existing Conditions + Gage	349	4.09	15.76	5.09	15.76	0	0.09	6065.83	1294.97	0.01	11.67
WankinkoRiver	WankinkoRiverDS	4540.4	10-Year	Alternative 1: Partial Dam Removal	349	4.09	9.06	5.09	9.06	0.000006	0.29	1189.78	399.7	0.03	4.97
WankinkoRiver	WankinkoRiverDS	4540.4	10-Year	Alternative 2A: Full Dam Removal	349	-0.53	4.9	3.09	4.99	0.00228	2.62	157.59	162.31	0.25	5.43
WankinkoRiver	WankinkoRiverDS	4540.4	10-Year	Alternative 3: Hybrid Dam Removal	349	4.09	8.05	5.09	8.05	0.000016	0.4	872.53	333.47	0.04	3.96
WankinkoRiver	WankinkoRiverDS	4540.4	50-Year	Existing Conditions + Gage	472	4.09	16.52	5.2	16.52	0	0.11	7142.98	1538.39	0.01	12.43
WankinkoRiver	WankinkoRiverDS	4540.4	50-Year	Alternative 1: Partial Dam Removal	472	4.09	9.7	5.2	9.7	0.000007	0.34	1397.12	440.54	0.03	5.61
WankinkoRiver	WankinkoRiverDS	4540.4	50-Year	Alternative 2A: Full Dam Removal	472	-0.53	5.32	3.57	5.39	0.001664	2.42	237.36	208.84	0.22	5.85
WankinkoRiver	WankinkoRiverDS	4540.4	50-Year	Alternative 3: Hybrid Dam Removal	472	4.09	8.67	5.2	8.68	0.000016	0.44	1067.37	374.45	0.04	4.58
WankinkoRiver	WankinkoRiverDS	4540.4	100-Year	Existing Conditions + Gage	524	4.09	16.83	5.25	16.83	0	0.11	7622.58	1593.13	0.01	12.74
WankinkoRiver	WankinkoRiverDS	4540.4	100-Year	Alternative 1: Partial Dam Removal	524	4.09	9.95	5.25	9.95	0.000007	0.35	1480.23	455.97	0.03	5.86

WankinkoRiver	WankinkoRiverDS	4540.4	100-Year	Alternative 2A: Full Dam Removal	524	-0.53	5.55	3.88	5.6	0.001229	2.16	286.56	221.97	0.19	6.08
WankinkoRiver	WankinkoRiverDS	4540.4	100-Year	Alternative 3: Hybrid Dam Removal	524	4.09	8.92	5.25	8.93	0.000016	0.46	1146.68	390.85	0.04	4.83
															0
WankinkoRiver	WankinkoRiverDS	4540	2-Year	Existing Conditions + Gage	210	4.11	14.78	4.85	14.78	0	0.04	4923.28	864.95	0	10.67
WankinkoRiver	WankinkoRiverDS	4540	2-Year	Alternative 1: Partial Dam Removal	210	4.11	8.23	4.85	8.23	0.000005	0.19	1085.58	431.84	0.02	4.12
WankinkoRiver	WankinkoRiverDS	4540	2-Year	Alternative 2A: Full Dam Removal	210	-0.73	4.04	2.22	4.14	0.002964	2.59	83.92	44.43	0.27	4.77
WankinkoRiver	WankinkoRiverDS	4540	2-Year	Alternative 3: Hybrid Dam Removal	210	4.11	7.26	4.85	7.26	0.000019	0.31	676.04	390.84	0.04	3.15
WankinkoRiver	WankinkoRiverDS	4540	10-Year	Existing Conditions + Gage	349	4.11	15.76	5	15.76	0	0.06	5640.09	1038.88	0	11.65
WankinkoRiver	WankinkoRiverDS	4540	10-Year	Alternative 1: Partial Dam Removal	349	4.11	9.06	5	9.06	0.000005	0.24	1449.85	456.4	0.02	4.95
WankinkoRiver	WankinkoRiverDS	4540	10-Year	Alternative 2A: Full Dam Removal	349	-0.73	4.75	2.88	4.84	0.002416	2.72	154.78	166.7	0.26	5.48
WankinkoRiver	WankinkoRiverDS	4540	10-Year	Alternative 3: Hybrid Dam Removal	349	4.11	8.05	5	8.05	0.000016	0.35	1005.34	427.67	0.04	3.94
WankinkoRiver	WankinkoRiverDS	4540	50-Year	Existing Conditions + Gage	472	4.11	16.52	5.13	16.52	0	0.08	6211.6	1285.18	0	12.41
WankinkoRiver	WankinkoRiverDS	4540	50-Year	Alternative 1: Partial Dam Removal	472	4.11	9.7	5.13	9.7	0.000006	0.27	1752.17	497.43	0.03	5.59
WankinkoRiver	WankinkoRiverDS	4540	50-Year	Alternative 2A: Full Dam Removal	472	-0.73	5.24	3.35	5.3	0.001432	2.29	247.25	201.44	0.2	5.97
WankinkoRiver	WankinkoRiverDS	4540	50-Year	Alternative 3: Hybrid Dam Removal	472	4.11	8.67	5.13	8.68	0.000014	0.37	1277.38	441.67	0.04	4.56
WankinkoRiver	WankinkoRiverDS	4540	100-Year	Existing Conditions + Gage	524	4.11	16.83	5.17	16.83	0	0.08	6443.55	1361.08	0	12.72
WankinkoRiver	WankinkoRiverDS	4540	100-Year	Alternative 1: Partial Dam Removal	524	4.11	9.95	5.17	9.95	0.000006	0.28	1878.85	502.01	0.03	5.84
WankinkoRiver	WankinkoRiverDS	4540	100-Year	Alternative 2A: Full Dam Removal	524	-0.73	5.49	3.56	5.54	0.00103	2.02	299.93	213.59	0.17	6.22
WankinkoRiver	WankinkoRiverDS	4540	100-Year	Alternative 3: Hybrid Dam Removal	524	4.11	8.92	5.17	8.93	0.000013	0.38	1388.77	449.17	0.04	4.81
															0
WankinkoRiver	WankinkoRiverDS	4486	2-Year	Existing Conditions + Gage	210	3.68	14.78	4.53	14.78	0	0.04	5734.15	958.08	0	11.1
WankinkoRiver	WankinkoRiverDS	4486	2-Year	Alternative 1: Partial Dam Removal	210	3.68	8.23	4.53	8.23	0.000003	0.15	1435.6	582	0.02	4.55
WankinkoRiver	WankinkoRiverDS	4486	2-Year	Alternative 2A: Full Dam Removal	210	-1.17	3.51	1.79	3.63	0.003536	2.77	76.62	32.6	0.3	4.68
WankinkoRiver	WankinkoRiverDS	4486	2-Year	Alternative 3: Hybrid Dam Removal	210	3.68	7.26	4.53	7.26	0.000009	0.23	910.27	469.9	0.03	3.58
WankinkoRiver	WankinkoRiverDS	4486	10-Year	Existing Conditions + Gage	349	3.68	15.76	4.71	15.76	0	0.06	6521.97	1170.3	0	12.08
WankinkoRiver	WankinkoRiverDS	4486	10-Year	Alternative 1: Partial Dam Removal	349	3.68	9.06	4.71	9.06	0.000003	0.18	1915.45	582	0.02	5.38
WankinkoRiver	WankinkoRiverDS	4486	10-Year	Alternative 2A: Full Dam Removal	349	-1.17	4.43	2.45	4.52	0.002348	2.74	153.62	156.34	0.26	5.6
WankinkoRiver	WankinkoRiverDS	4486	10-Year	Alternative 3: Hybrid Dam Removal	349	3.68	8.05	4.71	8.05	0.000009	0.26	1326.84	582	0.03	4.37
WankinkoRiver	WankinkoRiverDS	4486	50-Year	Existing Conditions + Gage	472	3.68	16.52	4.84	16.52	0	0.07	7148.23	1384.85	0	12.84
WankinkoRiver	WankinkoRiverDS	4486	50-Year	Alternative 1: Partial Dam Removal	472	3.68	9.7	4.84	9.7	0.000003	0.21	2288.15	582	0.02	6.02
WankinkoRiver	WankinkoRiverDS	4486	50-Year	Alternative 2A: Full Dam Removal	472	-1.17	5.12	2.9	5.17	0.000948	1.96	278.41	190.93	0.17	6.29
WankinkoRiver	WankinkoRiverDS	4486	50-Year	Alternative 3: Hybrid Dam Removal	472	3.68	8.67	4.84	8.67	0.000007	0.28	1691.16	582	0.03	4.99
WankinkoRiver	WankinkoRiverDS	4486	100-Year	Existing Conditions + Gage	524	3.68	16.83	4.89	16.83	0	0.07	7403.37	1439.86	0	13.15
WankinkoRiver	WankinkoRiverDS	4486	100-Year	Alternative 1: Partial Dam Removal	524	3.68	9.95	4.89	9.95	0.000003	0.22	2435.77	585.04	0.02	6.27
WankinkoRiver	WankinkoRiverDS	4486	100-Year	Alternative 2A: Full Dam Removal	524	-1.17	5.42	3.07	5.46	0.000677	1.73	335.93	200.73	0.14	6.59
WankinkoRiver	WankinkoRiverDS	4486	100-Year	Alternative 3: Hybrid Dam Removal	524	3.68	8.92	4.89	8.93	0.000007	0.29	1836.91	582	0.03	5.24
															0
WankinkoRiver	WankinkoRiverDS	4452	2-Year	Existing Conditions + Gage	210	4.96	14.77	6.5	14.78	0.000008	0.62	339.6	875.92	0.04	9.81
WankinkoRiver	WankinkoRiverDS	4452	2-Year	Alternative 1: Partial Dam Removal	210	4.96	8.14	6.5	8.21	0.000524	2.17	96.85	432.53	0.24	3.18
WankinkoRiver	WankinkoRiverDS	4452	2-Year	Alternative 2A: Full Dam Removal	210	-1.57	2.91	1.39	3.05	0.004674	3.02	70.03	31.2	0.34	4.48
WankinkoRiver	WankinkoRiverDS	4452	2-Year	Alternative 3: Hybrid Dam Removal	210	3.66	7.14	5.82	7.23	0.004565	2.47	85.11	411.08	0.29	3.48
WankinkoRiver	WankinkoRiverDS	4452	10-Year	Existing Conditions + Gage	349	4.96	15.74	6.9	15.75	0.000016	0.93	375.08	1092.54	0.05	10.78
WankinkoRiver	WankinkoRiverDS	4452	10-Year	Alternative 1: Partial Dam Removal	349	4.96	8.9	6.9	9.02	0.000622	2.8	124.72	448.99	0.27	3.94
WankinkoRiver	WankinkoRiverDS	4452	10-Year	Alternative 2A: Full Dam Removal	349	-1.57	3.97	2.05	4.14	0.003521	3.32	106.51	38.39	0.31	5.54
WankinkoRiver	WankinkoRiverDS	4452	10-Year	Alternative 3: Hybrid Dam Removal	349	3.66	7.85	6.22	8	0.004865	3.14	111.17	426.4	0.32	4.19
WankinkoRiver	WankinkoRiverDS	4452	50-Year	Existing Conditions + Gage	472	4.96	16.5	7.22	16.52	0.000023	1.17	402.72	1397.88	0.06	11.54
WankinkoRiver	WankinkoRiverDS	4452	50-Year	Alternative 1: Partial Dam Removal	472	4.96	9.49	7.22	9.65	0.00067	3.23	146.25	552.08	0.28	4.53
WankinkoRiver	WankinkoRiverDS	4452	50-Year	Alternative 2A: Full Dam Removal	472	-1.57	4.77	2.5	4.96	0.002884	3.45	135.97	43.83	0.29	6.34
WankinkoRiver	WankinkoRiverDS	4452	50-Year	Alternative 3: Hybrid Dam Removal	472	3.66	8.42	6.54	8.61	0.004861	3.58	131.92	438.56	0.33	4.76
WankinkoRiver	WankinkoRiverDS	4452	100-Year	Existing Conditions + Gage	524	4.96	16.8	7.34	16.82	0.000026	1.27	413.78	1492.48	0.07	11.84
WankinkoRiver	WankinkoRiverDS	4452	100-Year	Alternative 1: Partial Dam Removal	524	4.96	9.72	7.34	9.9	0.000684	3.39	154.76	557.6	0.29	4.76
WankinkoRiver	WankinkoRiverDS	4452	100-Year	Alternative 2A: Full Dam Removal	524	-1.57	5.09	2.67	5.28	0.002709	3.5	147.38	118.82	0.29	6.66
WankinkoRiver	WankinkoRiverDS	4452	100-Year	Alternative 3: Hybrid Dam Removal	524	3.66	8.64	6.67	8.86	0.004833	3.74	140.23	443.3	0.34	4.98
															0
WankinkoRiver	WankinkoRiverDS	4390			Culvert										0
															0
WankinkoRiver	WankinkoRiverDS	4331	2-Year	Existing Conditions + Gage	210	5.98	14.76	7.13	14.77	0.000014	0.8	263.28	465.6	0.05	8.78
WankinkoRiver	WankinkoRiverDS	4331	2-Year	Alternative 1: Partial Dam Removal	210	5.98	7.04	7.13	7.72	0.060112	6.63	31.67	99.92	1.14	1.06
WankinkoRiver	WankinkoRiverDS	4331	2-Year	Alternative 2A: Full Dam Removal	210	-1.92	2.93	1.03	3.03	0.002874	2.6	81.12	33.73	0.27	4.85
WankinkoRiver	WankinkoRiverDS	4331	2-Year	Alternative 3: Hybrid Dam Removal	210	3.39	7.05	5.87	7.2	0.010916	3.07	68.34	100.33	0.36	3.66
WankinkoRiver	WankinkoRiverDS	4331	10-Year	Existing Conditions + Gage	349	5.98	15.72	7.6	15.74	0.000028	1.2	292	513.49	0.07	9.74
WankinkoRiver	WankinkoRiverDS	4331	10-Year	Alternative 1: Partial Dam Removal	349	5.98	7.46	7.59	8.42	0.053807	7.86	44.41	113.43	1.14	1.48
WankinkoRiver	WankinkoRiverDS	4331	10-Year	Alternative 2A: Full Dam Removal	349	-1.92	3.96	1.7	4.11	0.002715	3.1	111.94	40.68	0.28	5.88
WankinkoRiver	WankinkoRiverDS	4331	10-Year	Alternative 3: Hybrid Dam Removal	349	3.39	7.69	6.38	7.94	0.012957	3.99	87.54	121.43	0.41	4.3
WankinkoRiver	WankinkoRiverDS	4331	50-Year	Existing Conditions + Gage	472	5.98	16.46	7.95	16.5	0.00004	1.5	314.28	576.61	0.08	10.48
WankinkoRiver	WankinkoRiverDS	4331	50-Year	Alternative 1: Partial Dam Removal	472	5.98	7.78	7.96	8.97	0.051706	8.76	53.86	124.29	1.15	1.8
WankinkoRiver	WankinkoRiverDS	4331	50-Year	Alternative 2A: Full Dam Removal	472	-1.92	4.73	2.15	4.92	0.002648	3.46	134.99	45.88	0.28	6.65
WankinkoRiver	WankinkoRiverDS	4331	50-Year	Alternative 3: Hybrid Dam Removal	472	3.39	8.2	6.74	8.52	0.013764	4.6	102.67	137.46	0.44	4.81
WankinkoRiver	WankinkoRiverDS	4331	100-Year	Existing Conditions + Gage	524	5.98	16.76	8.1	16.8	0.000045	1.62	323.18	594.52	0.09	10.78
WankinkoRiver	WankinkoRiverDS	4331	100-Year	Alternative 1: Partial Dam Removal	524	5.98	7.9	8.11	9.19	0.050681	9.08	57.69	128.51	1.15	1.92
WankinkoRiver	WankinkoRiverDS	4331	100-Year	Alternative 2A: Full Dam Removal	524	-1.92	5.02	2.32	5.23	0.002629	3.59	143.95	47.9	0.28	6.94
WankinkoRiver	WankinkoRiverDS	4331	100-Year	Alternative 3: Hybrid Dam Removal	524	3.39	8.4	6.89	8.76	0.013966	4.82	108.7	142.33	0.45	5.01
															0
WankinkoRiver	WankinkoRiverDS	4300	2-Year	Existing Conditions + Gage	210	5.89	14.77	6.57	14.77	0	0.11	1895.84	448.41	0.01	8.88
WankinkoRiver	WankinkoRiverDS	4300	2-Year	Alternative 1: Partial Dam Removal	210	5.12	6.84	6.49	6.9	0.003267	1.94	108.27	156.12	0.41	1.72
WankinkoRiver	WankinkoRiverDS	4300	2-Year	Alternative 2A: Full Dam Removal	210	-2.01	2.84	0.94	2.94	0.00285	2.59	82.2	33.73	0.27	4.85
WankinkoRiver	WankinkoRiverDS	4300	2-Year	Alternative 3: Hybrid Dam Removal	210	3.32	7.03	6.07	7.05	0.001223	1.26	166.35	163.89	0.22	3.71
WankinkoRiver	WankinkoRiverDS	4300	10-Year	Existing Conditions + Gage	349	5.89	15.73	6.74	15.73	0.000001	0.16	2167.56	544.49	0.01	9.84
WankinkoRiver	WankinkoRiverDS	4300	10-Year	Alternative 1: Partial Dam Removal	349	5.12	7.57	6.67	7.61	0.000826	1.5	232.15	180.13	0.23	2.45
WankinkoRiver	WankinkoRiverDS	4300	10-Year	Alternative 2A: Full Dam Removal	349	-2.01	3.89	1.61	4.02	0.002429	2.94	121.23	40.8	0.26	5.9
WankinkoRiver	WankinkoRiverDS	4300	10-Year	Alternative 3: Hybrid Dam Removal	349	3.32	7.76	6.45	7.78	0.000482	1.19	295	185.85	0.16	4.44
WankinkoRiver	WankinkoRiverDS	4300	50-Year	Existing Conditions + Gage	472	5.89	16.48	6.86	16.48	0.000001	0.19	3127.68	610.41	0.01	10.59
WankinkoRiver	WankinkoRiverDS	4300	50-Year	Alternative 1: Partial Dam Removal	472	5.12	8.12	6.8	8.16	0.000475	1.4	336.53	194.69	0.19	3
WankinkoRiver	WankinkoRiverDS	4300	50-Year	Alternative 2A: Full Dam Removal	472	-2.01	4.68	2.06	4.82	0.002105	3.1	155.53	46.13	0.25	6.69
WankinkoRiver	WankinkoRiverDS	4300	50-Year	Alternative 3: Hybrid Dam Removal	472	3.32	8.32	6.6	8.34	0.000312	1.19	402.54	198.07	0.14	5
WankinkoRiver	WankinkoRiverDS	4300	100-Year	Existing Conditions + Gage	524	5.89	16.78	6.91	16.78	0.000001	0.2	3311.56	616.23	0.01	10.89
WankinkoRiver	WankinkoRiverDS	4300	100-Year	Alternative 1: Partial Dam Removal	524	5.12	8.34	6.85	8.37	0.0004	1.38	379.34	198.47	0.18	3.22
WankinkoRiver	WankinkoRiverDS	4300	100-Year	Alternative 2A: Full Dam Removal	524	-2.01	4.98	2.22	5.13	0.001986	3.14	170.04	48.2	0.25	6.99
WankinkoRiver	WankinkoRiverDS	4300	100-Year	Alternative 3: Hybrid Dam Removal	524	3.32	8.54	6.65	8.56	0.000272	1.2	446.66	201.9	0.13	5.22
															0
WankinkoRiver	WankinkoRiverDS	4272	2-Year	Existing Conditions + Gage	210	5	14.77	5.82	14.77	0	0.11	1978.97	443.4	0.01	9.77
WankinkoRiver	WankinkoRiverDS	4272	2-Year	Alternative 1: Partial Dam Removal	210	4.29	6.84	5.56	6.85	0.000261	0.88	238.08	168.13	0.13	2.55
WankinkoRiver	WankinkoRiverDS	4272	2-Year	Alternative 2A: Full Dam Removal	210	-2.1	2.74	0.86	2.85	0.002879	2.6	81.82	33.3	0.27	4.84
WankinkoRiver	WankinkoRiverDS	4272	2-Year	Alternative 3: Hybrid Dam Removal	210	3.26	7.02	5.44	7.03	0.000185	0.74	283.77	175.43	0.1	3.76
WankinkoRiver	WankinkoRiverDS	4272	10-Year	Existing Conditions + Gage	349	5	15.73	6.04	15.73	0.000001	0.16	2234.96	504.19	0.01	10.73
WankinkoRiver	WankinkoRiverDS	4272	10-Year	Alternative 1: Partial Dam Removal	349	4.29	7.57	5.75	7.58	0.00019	0.95	368.84	188.82	0.12	3.28
WankinkoRiver	WankinkoRiverDS	4272	10-Year	Alternative 2A: Full Dam Removal	349	-2.1	3.8	1.52	3.94	0.002438	2.95	120.71	39.98	0.26	5.9
WankinkoRiver	WankinkoRiverDS	4272	10-Year	Alternative 3: Hybrid Dam Removal	349	3.26	7.76	5.63	7.77	0.000139	0.84	419.55	193.85	0.1	4.5
WankinkoRiver	WankinkoRiverDS	4272	50-Year	Existing Conditions + Gage	472	5	16.48	6.21	16.48	0.000001	0.18	3198.63	627.73	0.01	11.48
WankinkoRiver	WankinkoRiverDS	4272	50-Year	Alternative 1: Partial Dam Removal	472	4.29	8.13	5.9	8.14	0.000159	0.99	477.59	202.18	0.11	3.84
WankinkoRiver	WankinkoRiverDS	4272	50-Year	Alternative 2A: Full Dam Removal	472	-2.1	4.6	1.97	4.75	0.002113	3.11	154.7	45.02	0.25	6.7
WankinkoRiver	WankinkoRiverDS	4272	50-Year	Alternative 3: Hybrid Dam Removal	472	3.26	8.32	5.78	8.33	0.000117	0.9	531.43	204.89	0.09	5.06
WankinkoRiver	WankinkoRiverDS	4272	100-Year	Existing Conditions + Gage	524	5	16.78	6.27	16.78	0.000001	0.2	3387.58	633.63	0.01	11.78
WankinkoRiver	WankinkoRiverDS	4272	100-Year	Alternative 1: Partial Dam Removal	524	4.29	8.34	5.96	8.36	0.000147	1	521.98	205.22	0.11	4.05
WankinkoRiver	WankinkoRiverDS	4272	100-Year	Alternative 2A: Full Dam Removal	524	-2.1	4.92	2.13	5.07	0.001996	3.16	169.02	46.98	0.25	7.02
WankinkoRiver	WankinkoRiverDS	4272	100-Year	Alternative 3: Hybrid Dam Removal	524	3.26	8.54	5.84	8.55	0.000111	0.92	576.98	207.7	0.09	5.28
															0
WankinkoRiver	WankinkoRiverDS	4230	2-Year	Existing Conditions + Gage	210	5.68	14.77	7.08	14.77	0.000001	0.15	1425.29	410.9	0.01	9.09
WankinkoRiver	WankinkoRiverDS	4230	2-Year	Alternative 1: Partial Dam Removal	210	3.09	6.58	5.67	6.77	0.007764	3.47	60.59	39.28	0.45	3.49
WankinkoRiver	WankinkoRiverDS	4230	2-Year	Alternative 2A: Full Dam Removal	210	-2.23	2.61	0.72	2.72	0.002867	2.59	82.05	33.7	0.27	4.84
WankinkoRiver	WankinkoRiverDS	4230	2-Year	Alternative 3: Hybrid Dam Removal	210	3	6.82	5.65	6.97	0.010921	3.05	68.79	47.28	0.37	3.82
WankinkoRiver	WankinkoRiverDS	4230	10-Year	Existing Conditions + Gage	349	5.68	15.73	7.42	15.73	0.000001	0.21	1636.7	470.29	0.01	10.05
WankinkoRiver	WankinkoRiverDS	4230	10-Year	Alternative 1: Partial Dam Removal	349	3.09	7.19	6.27	7.48	0.008338	4.34	80.51	57.53	0.49	4.1
WankinkoRiver	WankinkoRiverDS	4230	10-Year	Alternative 2A: Full Dam Removal	349	-2.23	3.7	1.39	3.83	0.002349	2.91	122.59	41.03	0.26	5.93
WankinkoRiver	WankinkoRiverDS	4230	10-Year	Alternative 3: Hybrid Dam Removal	349	3	7.45	6.26	7.68	0.011966	3.9	89.53	63.28	0.42	4.45
WankinkoRiver	WankinkoRiverDS	4230	50-Year	Existing Conditions + Gage	472	5.68	16.48	7.66	16.48	0.000002	0.26	1801.22	571.13	0.02	10.8
WankinkoRiver	WankinkoRiverDS	4230	50-Year	Alternative 1: Partial Dam Removal	472	3.09	7.63	6.6	8.01	0.008662	4.96	95.15	67.04	0.52	4.54
WankinkoRiver	WankinkoRiverDS	4230	50-Year	Alternative 2A: Full Dam Removal	472	-2.23	4.52	1.84	4.66	0.001994	3.04	158.35	46.54	0.25	6.75
WankinkoRiver	WankinkoRiverDS	4230	50-Year	Alternative 3: Hybrid Dam Removal	472	3	7.91	6.59	8.22	0.012557	4.5	104.78	72.98	0.45	4.91
WankinkoRiver	WankinkoRiverDS	4230	100-Year	Existing Conditions + Gage	524	5.68	16.78	7.76	16.78	0.000002	0.28	1867.04	608.37	0.02	11.1
WankinkoRiver	WankinkoRiverDS	4230	100-Year	Alternative 1: Partial Dam Removal	524	3.09	7.8	6.73	8.22	0.008769	5.2	100.82	70.65	0.53	4.71

WankinkoRiver	WankinkoRiverDS	4230	100-Year	Alternative 2A: Full Dam Removal	524	-2.23	4.83	2	4.98	0.001871	3.08	173.46	48.68	0.24	7.06
WankinkoRiver	WankinkoRiverDS	4230	100-Year	Alternative 3: Hybrid Dam Removal	524	3	8.09	6.73	8.44	0.01273	4.73	110.74	76.81	0.46	5.09
															0
WankinkoRiver	WankinkoRiverDS	4188			Inl Struct										0
															0
WankinkoRiver	WankinkoRiverDS	4051	2-Year	Alternative 1: Partial Dam Removal	210	0	3.17	2.82	3.61	0.025349	5.35	39.23	24.82	0.74	3.17
WankinkoRiver	WankinkoRiverDS	4051	2-Year	Alternative 2A: Full Dam Removal	210	-2.73	0.75	0.75	1.65	0.044765	7.58	27.7	27.27	1	3.48
WankinkoRiver	WankinkoRiverDS	4051	2-Year	Alternative 3: Hybrid Dam Removal	210	0	3.6	2.82	3.88	0.027336	4.2	50.01	28.16	0.53	3.6
WankinkoRiver	WankinkoRiverDS	4051	10-Year	Alternative 1: Partial Dam Removal	349	0	3.72	3.42	4.4	0.027552	6.58	53.1	29	0.8	3.72
WankinkoRiver	WankinkoRiverDS	4051	10-Year	Alternative 2A: Full Dam Removal	349	-2.73	1.52	1.52	2.66	0.040602	8.54	40.94	33.03	0.99	4.25
WankinkoRiver	WankinkoRiverDS	4051	10-Year	Alternative 3: Hybrid Dam Removal	349	0	4.25	3.42	4.68	0.029276	5.25	67	32.57	0.57	4.25
WankinkoRiver	WankinkoRiverDS	4051	50-Year	Alternative 1: Partial Dam Removal	472	0	4.04	3.84	4.97	0.031313	7.71	61.49	31.18	0.87	4.04
WankinkoRiver	WankinkoRiverDS	4051	50-Year	Alternative 2A: Full Dam Removal	472	-2.73	2.07	2.07	3.4	0.036237	9.3	51.53	36.66	0.97	4.8
WankinkoRiver	WankinkoRiverDS	4051	50-Year	Alternative 3: Hybrid Dam Removal	472	0	4.69	3.85	5.25	0.031552	6.04	79.35	35.62	0.61	4.69
WankinkoRiver	WankinkoRiverDS	4051	100-Year	Alternative 1: Partial Dam Removal	524	0	4.16	4.01	5.19	0.033189	8.18	64.47	31.93	0.91	4.16
WankinkoRiver	WankinkoRiverDS	4051	100-Year	Alternative 2A: Full Dam Removal	524	-2.73	2.28	2.28	3.69	0.034813	9.57	55.97	38.09	0.96	5.01
WankinkoRiver	WankinkoRiverDS	4051	100-Year	Alternative 3: Hybrid Dam Removal	524	0	4.85	4.01	5.48	0.032562	6.35	84.08	36.85	0.62	4.85
															0
WankinkoRiver	WankinkoRiverDS	4034	2-Year	Alternative 1: Partial Dam Removal	210	-0.43	2.32	2.32	3.01	0.049141	6.66	31.54	22.97	1	2.75
WankinkoRiver	WankinkoRiverDS	4034	2-Year	Alternative 3: Hybrid Dam Removal	210	-0.43	2.32	2.32	3.01	0.110566	6.66	31.54	22.97	1	2.75
WankinkoRiver	WankinkoRiverDS	4034	10-Year	Alternative 1: Partial Dam Removal	349	-0.43	2.93	2.93	3.79	0.045707	7.43	46.98	27.42	1	3.36
WankinkoRiver	WankinkoRiverDS	4034	10-Year	Alternative 3: Hybrid Dam Removal	349	-0.43	2.93	2.93	3.79	0.102844	7.43	46.98	27.42	1	3.36
WankinkoRiver	WankinkoRiverDS	4034	50-Year	Alternative 1: Partial Dam Removal	472	-0.43	3.36	3.36	4.34	0.043789	7.92	59.62	30.58	1	3.79
WankinkoRiver	WankinkoRiverDS	4034	50-Year	Alternative 3: Hybrid Dam Removal	472	-0.43	3.36	3.36	4.34	0.098548	7.92	59.62	30.58	1	3.79
WankinkoRiver	WankinkoRiverDS	4034	100-Year	Alternative 1: Partial Dam Removal	524	-0.43	3.53	3.53	4.55	0.043322	8.1	64.66	31.76	1	3.96
WankinkoRiver	WankinkoRiverDS	4034	100-Year	Alternative 3: Hybrid Dam Removal	524	-0.43	3.53	3.53	4.55	0.09752	8.1	64.65	31.76	1	3.96
															0
WankinkoRiver	WankinkoRiverDS	4033	2-Year	Existing Conditions + Gage	210	-2.32	-0.07		0.05	0.001862	2.74	76.78	51.3	0.39	2.25
WankinkoRiver	WankinkoRiverDS	4033	2-Year	Alternative 1: Partial Dam Removal	210	-2.32	-0.07	-0.78	0.05	0.001862	2.74	76.78	51.3	0.39	2.25
WankinkoRiver	WankinkoRiverDS	4033	2-Year	Alternative 2A: Full Dam Removal	210	-2.78	-0.02	-0.91	0.08	0.003287	2.42	86.61	51.38	0.33	2.76
WankinkoRiver	WankinkoRiverDS	4033	2-Year	Alternative 3: Hybrid Dam Removal	210	-2.32	-0.07	-0.78	0.05	0.001862	2.74	76.78	51.3	0.39	2.25
WankinkoRiver	WankinkoRiverDS	4033	10-Year	Existing Conditions + Gage	349	-2.32	0.3		0.5	0.00255	3.65	95.49	51.87	0.47	2.62
WankinkoRiver	WankinkoRiverDS	4033	10-Year	Alternative 1: Partial Dam Removal	349	-2.32	0.3	-0.45	0.5	0.00255	3.65	95.49	51.87	0.47	2.62
WankinkoRiver	WankinkoRiverDS	4033	10-Year	Alternative 2A: Full Dam Removal	349	-2.78	0.38	-0.6	0.54	0.004563	3.26	106.89	52	0.4	3.16
WankinkoRiver	WankinkoRiverDS	4033	10-Year	Alternative 3: Hybrid Dam Removal	349	-2.32	0.3	-0.45	0.5	0.00255	3.65	95.49	51.87	0.47	2.62
WankinkoRiver	WankinkoRiverDS	4033	50-Year	Existing Conditions + Gage	472	-2.32	0.64		0.91	0.002703	4.17	113.29	52.41	0.5	2.96
WankinkoRiver	WankinkoRiverDS	4033	50-Year	Alternative 1: Partial Dam Removal	472	-2.32	0.64	-0.19	0.91	0.002703	4.17	113.29	52.41	0.5	2.96
WankinkoRiver	WankinkoRiverDS	4033	50-Year	Alternative 2A: Full Dam Removal	472	-2.78	0.75	-0.33	0.97	0.004836	3.73	126.38	52.53	0.42	3.53
WankinkoRiver	WankinkoRiverDS	4033	50-Year	Alternative 3: Hybrid Dam Removal	472	-2.32	0.64	-0.19	0.91	0.002703	4.17	113.29	52.41	0.5	2.96
WankinkoRiver	WankinkoRiverDS	4033	100-Year	Existing Conditions + Gage	524	-2.32	0.78		1.07	0.002733	4.35	120.51	52.56	0.51	3.1
WankinkoRiver	WankinkoRiverDS	4033	100-Year	Alternative 1: Partial Dam Removal	524	-2.32	0.78	-0.09	1.07	0.002733	4.35	120.51	52.56	0.51	3.1
WankinkoRiver	WankinkoRiverDS	4033	100-Year	Alternative 2A: Full Dam Removal	524	-2.78	0.91	-0.24	1.14	0.004842	3.89	134.68	52.69	0.43	3.69
WankinkoRiver	WankinkoRiverDS	4033	100-Year	Alternative 3: Hybrid Dam Removal	524	-2.32	0.78	-0.09	1.07	0.002733	4.35	120.51	52.56	0.51	3.1
															0
WankinkoRiver	WankinkoRiverDS	4023	2-Year	Existing Conditions + Gage	210	-2.81	-0.03		0	0.000299	1.32	158.91	80.62	0.17	2.78
WankinkoRiver	WankinkoRiverDS	4023	2-Year	Alternative 1: Partial Dam Removal	210	-2.81	-0.03		0	0.000299	1.32	158.91	80.62	0.17	2.78
WankinkoRiver	WankinkoRiverDS	4023	2-Year	Alternative 2A: Full Dam Removal	210	-2.81	0		0.03	0.000665	1.43	146.98	80.68	0.19	2.81
WankinkoRiver	WankinkoRiverDS	4023	2-Year	Alternative 3: Hybrid Dam Removal	210	-2.81	-0.03		0	0.000299	1.32	158.91	80.62	0.17	2.78
WankinkoRiver	WankinkoRiverDS	4023	10-Year	Existing Conditions + Gage	349	-2.81	0.36		0.42	0.000461	1.83	190.77	81.93	0.21	3.17
WankinkoRiver	WankinkoRiverDS	4023	10-Year	Alternative 1: Partial Dam Removal	349	-2.81	0.36		0.42	0.000461	1.83	190.77	81.93	0.21	3.17
WankinkoRiver	WankinkoRiverDS	4023	10-Year	Alternative 2A: Full Dam Removal	349	-2.81	0.41		0.47	0.000933	1.93	180.38	82.1	0.23	3.22
WankinkoRiver	WankinkoRiverDS	4023	10-Year	Alternative 3: Hybrid Dam Removal	349	-2.81	0.36		0.42	0.000461	1.83	190.77	81.93	0.21	3.17
WankinkoRiver	WankinkoRiverDS	4023	50-Year	Existing Conditions + Gage	472	-2.81	0.73		0.8	0.000532	2.14	220.61	83.2	0.23	3.54
WankinkoRiver	WankinkoRiverDS	4023	50-Year	Alternative 1: Partial Dam Removal	472	-2.81	0.73		0.8	0.000532	2.14	220.61	83.2	0.23	3.54
WankinkoRiver	WankinkoRiverDS	4023	50-Year	Alternative 2A: Full Dam Removal	472	-2.81	0.8		0.88	0.000996	2.22	212.47	83.49	0.25	3.61
WankinkoRiver	WankinkoRiverDS	4023	50-Year	Alternative 3: Hybrid Dam Removal	472	-2.81	0.73		0.8	0.000532	2.14	220.61	83.2	0.23	3.54
WankinkoRiver	WankinkoRiverDS	4023	100-Year	Existing Conditions + Gage	524	-2.81	0.87		0.95	0.000551	2.25	232.76	83.78	0.24	3.68
WankinkoRiver	WankinkoRiverDS	4023	100-Year	Alternative 1: Partial Dam Removal	524	-2.81	0.87		0.95	0.000551	2.25	232.76	83.78	0.24	3.68
WankinkoRiver	WankinkoRiverDS	4023	100-Year	Alternative 2A: Full Dam Removal	524	-2.81	0.96		1.05	0.001002	2.32	226.19	84.15	0.25	3.77
WankinkoRiver	WankinkoRiverDS	4023	100-Year	Alternative 3: Hybrid Dam Removal	524	-2.81	0.87		0.95	0.000551	2.25	232.76	83.78	0.24	3.68
															0
WankinkoRiver	WankinkoRiverDS	3909	2-Year	Existing Conditions + Gage	210	-2.4	-0.18		-0.08	0.001031	2.5	84.16	38.6	0.3	2.22
WankinkoRiver	WankinkoRiverDS	3909	2-Year	Alternative 1: Partial Dam Removal	210	-2.4	-0.18		-0.08	0.001031	2.5	84.16	38.6	0.3	2.22
WankinkoRiver	WankinkoRiverDS	3909	2-Year	Alternative 2A: Full Dam Removal	210	-2.4	-0.18	-1.39	-0.08	0.001031	2.5	84.16	38.6	0.3	2.22
WankinkoRiver	WankinkoRiverDS	3909	2-Year	Alternative 3: Hybrid Dam Removal	210	-2.4	-0.18		-0.08	0.001031	2.5	84.16	38.6	0.3	2.22
WankinkoRiver	WankinkoRiverDS	3909	10-Year	Existing Conditions + Gage	349	-2.4	0.05		0.27	0.002071	3.75	96.81	115.53	0.43	2.45
WankinkoRiver	WankinkoRiverDS	3909	10-Year	Alternative 1: Partial Dam Removal	349	-2.4	0.05		0.27	0.002071	3.75	96.81	115.53	0.43	2.45
WankinkoRiver	WankinkoRiverDS	3909	10-Year	Alternative 2A: Full Dam Removal	349	-2.4	0.05	-1	0.27	0.002076	3.76	92.92	115.53	0.43	2.45
WankinkoRiver	WankinkoRiverDS	3909	10-Year	Alternative 3: Hybrid Dam Removal	349	-2.4	0.05		0.27	0.002071	3.75	96.81	115.53	0.43	2.45
WankinkoRiver	WankinkoRiverDS	3909	50-Year	Existing Conditions + Gage	472	-2.4	0.3		0.61	0.002689	4.53	125.42	118.07	0.49	2.7
WankinkoRiver	WankinkoRiverDS	3909	50-Year	Alternative 1: Partial Dam Removal	472	-2.4	0.3		0.61	0.002689	4.53	125.42	118.07	0.49	2.7
WankinkoRiver	WankinkoRiverDS	3909	50-Year	Alternative 2A: Full Dam Removal	472	-2.4	0.29	-0.69	0.62	0.002808	4.62	102.17	118.01	0.5	2.69
WankinkoRiver	WankinkoRiverDS	3909	50-Year	Alternative 3: Hybrid Dam Removal	472	-2.4	0.3		0.61	0.002689	4.53	125.42	118.07	0.49	2.7
WankinkoRiver	WankinkoRiverDS	3909	100-Year	Existing Conditions + Gage	524	-2.4	0.4		0.75	0.002854	4.77	138.4	119.2	0.51	2.8
WankinkoRiver	WankinkoRiverDS	3909	100-Year	Alternative 1: Partial Dam Removal	524	-2.4	0.4		0.75	0.002854	4.77	138.4	119.2	0.51	2.8
WankinkoRiver	WankinkoRiverDS	3909	100-Year	Alternative 2A: Full Dam Removal	524	-2.4	0.4	-0.57	0.77	0.003057	4.93	106.26	119.11	0.52	2.8
WankinkoRiver	WankinkoRiverDS	3909	100-Year	Alternative 3: Hybrid Dam Removal	524	-2.4	0.4		0.75	0.002854	4.77	138.4	119.2	0.51	2.8
															0
WankinkoRiver	WankinkoRiverDS	3745	2-Year	Existing Conditions + Gage	210	-3.45	-0.27		-0.21	0.000534	2.05	102.54	39.74	0.22	3.18
WankinkoRiver	WankinkoRiverDS	3745	2-Year	Alternative 1: Partial Dam Removal	210	-3.45	-0.27		-0.21	0.000534	2.05	102.54	39.74	0.22	3.18
WankinkoRiver	WankinkoRiverDS	3745	2-Year	Alternative 2A: Full Dam Removal	210	-3.45	-0.27		-0.21	0.000534	2.05	102.54	39.74	0.22	3.18
WankinkoRiver	WankinkoRiverDS	3745	2-Year	Alternative 3: Hybrid Dam Removal	210	-3.45	-0.27		-0.21	0.000534	2.05	102.54	39.74	0.22	3.18
WankinkoRiver	WankinkoRiverDS	3745	10-Year	Existing Conditions + Gage	349	-3.45	-0.18		-0.01	0.001321	3.29	106.16	39.78	0.35	3.27
WankinkoRiver	WankinkoRiverDS	3745	10-Year	Alternative 1: Partial Dam Removal	349	-3.45	-0.18		-0.01	0.001321	3.29	106.16	39.78	0.35	3.27
WankinkoRiver	WankinkoRiverDS	3745	10-Year	Alternative 2A: Full Dam Removal	349	-3.45	-0.18		-0.01	0.001321	3.29	106.16	39.78	0.35	3.27
WankinkoRiver	WankinkoRiverDS	3745	10-Year	Alternative 3: Hybrid Dam Removal	349	-3.45	-0.18		-0.01	0.001321	3.29	106.16	39.78	0.35	3.27
WankinkoRiver	WankinkoRiverDS	3745	50-Year	Existing Conditions + Gage	472	-3.45	-0.08		0.21	0.002139	4.28	110.32	39.82	0.45	3.37
WankinkoRiver	WankinkoRiverDS	3745	50-Year	Alternative 1: Partial Dam Removal	472	-3.45	-0.08		0.21	0.002139	4.28	110.32	39.82	0.45	3.37
WankinkoRiver	WankinkoRiverDS	3745	50-Year	Alternative 2A: Full Dam Removal	472	-3.45	-0.08		0.21	0.002139	4.28	110.32	39.82	0.45	3.37
WankinkoRiver	WankinkoRiverDS	3745	50-Year	Alternative 3: Hybrid Dam Removal	472	-3.45	-0.08		0.21	0.002139	4.28	110.32	39.82	0.45	3.37
WankinkoRiver	WankinkoRiverDS	3745	100-Year	Existing Conditions + Gage	524	-3.45	-0.03		0.31	0.002495	4.67	112.26	39.84	0.49	3.42
WankinkoRiver	WankinkoRiverDS	3745	100-Year	Alternative 1: Partial Dam Removal	524	-3.45	-0.03		0.31	0.002495	4.67	112.26	39.84	0.49	3.42
WankinkoRiver	WankinkoRiverDS	3745	100-Year	Alternative 2A: Full Dam Removal	524	-3.45	-0.03		0.31	0.002495	4.67	112.26	39.84	0.49	3.42
WankinkoRiver	WankinkoRiverDS	3745	100-Year	Alternative 3: Hybrid Dam Removal	524	-3.45	-0.03		0.31	0.002495	4.67	112.26	39.84	0.49	3.42
															0
WankinkoRiver	WankinkoRiverDS	3586	2-Year	Existing Conditions + Gage	210	-3.02	-0.29		-0.27	0.000219	1.17	179.83	88.9	0.14	2.73
WankinkoRiver	WankinkoRiverDS	3586	2-Year	Alternative 1: Partial Dam Removal	210	-3.02	-0.29		-0.27	0.000219	1.17	179.83	88.9	0.14	2.73
WankinkoRiver	WankinkoRiverDS	3586	2-Year	Alternative 2A: Full Dam Removal	210	-3.02	-0.29		-0.27	0.000219	1.17	179.83	88.9	0.14	2.73
WankinkoRiver	WankinkoRiverDS	3586	2-Year	Alternative 3: Hybrid Dam Removal	210	-3.02	-0.29		-0.27	0.000219	1.17	179.83	88.9	0.14	2.73
WankinkoRiver	WankinkoRiverDS	3586	10-Year	Existing Conditions + Gage	349	-3.02	-0.23		-0.18	0.000558	1.88	185.28	90.07	0.23	2.79
WankinkoRiver	WankinkoRiverDS	3586	10-Year	Alternative 1: Partial Dam Removal	349	-3.02	-0.23		-0.18	0.000558	1.88	185.28	90.07	0.23	2.79
WankinkoRiver	WankinkoRiverDS	3586	10-Year	Alternative 2A: Full Dam Removal	349	-3.02	-0.23		-0.18	0.000558	1.88	185.28	90.07	0.23	2.79
WankinkoRiver	WankinkoRiverDS	3586	10-Year	Alternative 3: Hybrid Dam Removal	349	-3.02	-0.23		-0.18	0.000558	1.88	185.28	90.07	0.23	2.79
WankinkoRiver	WankinkoRiverDS	3586	50-Year	Existing Conditions + Gage	472	-3.02	-0.16		-0.06	0.000928	2.46	192.15	91.9	0.3	2.86
WankinkoRiver	WankinkoRiverDS	3586	50-Year	Alternative 1: Partial Dam Removal	472	-3.02	-0.16		-0.06	0.000928	2.46	192.15	91.9	0.3	2.86
WankinkoRiver	WankinkoRiverDS	3586	50-Year	Alternative 2A: Full Dam Removal	472	-3.02	-0.16		-0.06	0.000928	2.46	192.15	91.9	0.3	2.86
WankinkoRiver	WankinkoRiverDS	3586	50-Year	Alternative 3: Hybrid Dam Removal	472	-3.02	-0.16		-0.06	0.000928	2.46	192.15	91.9	0.3	2.86
WankinkoRiver	WankinkoRiverDS	3586	100-Year	Existing Conditions + Gage	524	-3.02	-0.12		-0.01	0.001092	2.68	195.59	92.8	0.33	2.9
WankinkoRiver	WankinkoRiverDS	3586	100-Year	Alternative 1: Partial Dam Removal	524	-3.02	-0.12		-0.01	0.001092	2.68	195.59	92.8	0.33	2.9
WankinkoRiver	WankinkoRiverDS	3586	100-Year	Alternative 2A: Full Dam Removal	524	-3.02	-0.12		-0.01	0.001092	2.68	195.59	92.8	0.33	2.9
WankinkoRiver	WankinkoRiverDS	3586	100-Year	Alternative 3: Hybrid Dam Removal	524	-3.02	-0.12		-0.01	0.001092	2.68	195.59	92.8	0.33	2.9
															0
WankinkoRiver	WankinkoRiverDS	3430	2-Year	Existing Conditions + Gage	210	-3.8	-0.32		-0.3	0.00015	0.93	226.85	120.25	0.12	3.48
WankinkoRiver	WankinkoRiverDS	3430	2-Year	Alternative 1: Partial Dam Removal	210	-3.8	-0.32		-0.3	0.00015	0.93	226.85	120.25	0.12	3.48
WankinkoRiver	WankinkoRiverDS	3430	2-Year	Alternative 2A: Full Dam Removal	210	-3.8	-0.32		-0.3	0.00015	0.93	226.85	120.25	0.12	3.48
WankinkoRiver	WankinkoRiverDS	3430	2-Year	Alternative 3: Hybrid Dam Removal	210	-3.8	-0.32		-0.3	0.00015	0.93	226.85	120.25	0.12	3.48
WankinkoRiver	WankinkoRiverDS	3430	10-Year	Existing Conditions + Gage	349	-3.8	-0.29		-0.26	0.000402	1.52	229.7	121	0.19	3.51
WankinkoRiver	WankinkoRiverDS	3430	10-Year	Alternative 1: Partial Dam Removal	349	-3.8	-0.29		-0.26	0.000402	1.52	229.7	121	0.19	3.51
WankinkoRiver	WankinkoRiverDS	3430	10-Year	Alternative 2A: Full Dam Removal	349	-3.8	-0.29		-0.26	0.000402	1.52	229.7	121	0.19	3.51
WankinkoRiver	WankinkoRiverDS	3430	10-Year	Alternative 3: Hybrid Dam Removal	349	-3.8	-0.29		-0.26	0.000402	1.52	229.7	121	0.19	3.51
WankinkoRiver	WankinkoRiverDS	3430	50-Year	Existing Conditions + Gage	472	-3.8	-0.26		-0.2	0.000703	2.02	233.49	121.98	0.26	3.54

WankinkoRiver	WankinkoRiverDS	3430	50-Year	Alternative 1: Partial Dam Removal	472	-3.8	-0.26		-0.2	0.000703	2.02	233.49	121.98	0.26	3.54
WankinkoRiver	WankinkoRiverDS	3430	50-Year	Alternative 2A: Full Dam Removal	472	-3.8	-0.26		-0.2	0.000703	2.02	233.49	121.98	0.26	3.54
WankinkoRiver	WankinkoRiverDS	3430	50-Year	Alternative 3: Hybrid Dam Removal	472	-3.8	-0.26		-0.2	0.000703	2.02	233.49	121.98	0.26	3.54
WankinkoRiver	WankinkoRiverDS	3430	100-Year	Existing Conditions + Gage	524	-3.8	-0.25		-0.17	0.000847	2.23	235.48	122.5	0.28	3.55
WankinkoRiver	WankinkoRiverDS	3430	100-Year	Alternative 1: Partial Dam Removal	524	-3.8	-0.25		-0.17	0.000847	2.23	235.48	122.5	0.28	3.55
WankinkoRiver	WankinkoRiverDS	3430	100-Year	Alternative 2A: Full Dam Removal	524	-3.8	-0.25		-0.17	0.000847	2.23	235.48	122.5	0.28	3.55
WankinkoRiver	WankinkoRiverDS	3430	100-Year	Alternative 3: Hybrid Dam Removal	524	-3.8	-0.25		-0.17	0.000847	2.23	235.48	122.5	0.28	3.55
															0
WankinkoRiver	WankinkoRiverDS	3374	2-Year	Existing Conditions + Gage	210	-4.1	-0.31		-0.31	0.000049	0.52	404.91	223.63	0.07	3.79
WankinkoRiver	WankinkoRiverDS	3374	2-Year	Alternative 1: Partial Dam Removal	210	-4.1	-0.31		-0.31	0.000049	0.52	404.91	223.63	0.07	3.79
WankinkoRiver	WankinkoRiverDS	3374	2-Year	Alternative 2A: Full Dam Removal	210	-4.1	-0.31		-0.31	0.000049	0.52	404.91	223.63	0.07	3.79
WankinkoRiver	WankinkoRiverDS	3374	2-Year	Alternative 3: Hybrid Dam Removal	210	-4.1	-0.31		-0.31	0.000049	0.52	404.91	223.63	0.07	3.79
WankinkoRiver	WankinkoRiverDS	3374	10-Year	Existing Conditions + Gage	349	-4.1	-0.29		-0.28	0.000132	0.85	410.99	226.06	0.11	3.81
WankinkoRiver	WankinkoRiverDS	3374	10-Year	Alternative 1: Partial Dam Removal	349	-4.1	-0.29		-0.28	0.000132	0.85	410.99	226.06	0.11	3.81
WankinkoRiver	WankinkoRiverDS	3374	10-Year	Alternative 2A: Full Dam Removal	349	-4.1	-0.29		-0.28	0.000132	0.85	410.99	226.06	0.11	3.81
WankinkoRiver	WankinkoRiverDS	3374	10-Year	Alternative 3: Hybrid Dam Removal	349	-4.1	-0.29		-0.28	0.000132	0.85	410.99	226.06	0.11	3.81
WankinkoRiver	WankinkoRiverDS	3374	50-Year	Existing Conditions + Gage	472	-4.1	-0.25		-0.23	0.00023	1.13	419.1	229.26	0.15	3.85
WankinkoRiver	WankinkoRiverDS	3374	50-Year	Alternative 1: Partial Dam Removal	472	-4.1	-0.25		-0.23	0.00023	1.13	419.1	229.26	0.15	3.85
WankinkoRiver	WankinkoRiverDS	3374	50-Year	Alternative 2A: Full Dam Removal	472	-4.1	-0.25		-0.23	0.00023	1.13	419.1	229.26	0.15	3.85
WankinkoRiver	WankinkoRiverDS	3374	50-Year	Alternative 3: Hybrid Dam Removal	472	-4.1	-0.25		-0.23	0.00023	1.13	419.1	229.26	0.15	3.85
WankinkoRiver	WankinkoRiverDS	3374	100-Year	Existing Conditions + Gage	524	-4.1	-0.23		-0.21	0.000277	1.24	423.36	230.92	0.16	3.87
WankinkoRiver	WankinkoRiverDS	3374	100-Year	Alternative 1: Partial Dam Removal	524	-4.1	-0.23		-0.21	0.000277	1.24	423.36	230.92	0.16	3.87
WankinkoRiver	WankinkoRiverDS	3374	100-Year	Alternative 2A: Full Dam Removal	524	-4.1	-0.23		-0.21	0.000277	1.24	423.37	230.92	0.16	3.87
WankinkoRiver	WankinkoRiverDS	3374	100-Year	Alternative 3: Hybrid Dam Removal	524	-4.1	-0.23		-0.21	0.000277	1.24	423.36	230.92	0.16	3.87
															0
WankinkoRiver	WankinkoRiverDS	3252	2-Year	Existing Conditions + Gage	210	-6.02	-0.31		-0.31	0.000005	0.23	914.53	306.93	0.02	5.71
WankinkoRiver	WankinkoRiverDS	3252	2-Year	Alternative 1: Partial Dam Removal	210	-6.02	-0.31		-0.31	0.000005	0.23	914.53	306.93	0.02	5.71
WankinkoRiver	WankinkoRiverDS	3252	2-Year	Alternative 2A: Full Dam Removal	210	-6.02	-0.31		-0.31	0.000005	0.23	914.53	306.93	0.02	5.71
WankinkoRiver	WankinkoRiverDS	3252	2-Year	Alternative 3: Hybrid Dam Removal	210	-6.02	-0.31		-0.31	0.000005	0.23	914.53	306.93	0.02	5.71
WankinkoRiver	WankinkoRiverDS	3252	10-Year	Existing Conditions + Gage	349	-6.02	-0.29		-0.28	0.000013	0.38	923.33	308.15	0.04	5.73
WankinkoRiver	WankinkoRiverDS	3252	10-Year	Alternative 1: Partial Dam Removal	349	-6.02	-0.29		-0.28	0.000013	0.38	923.33	308.15	0.04	5.73
WankinkoRiver	WankinkoRiverDS	3252	10-Year	Alternative 2A: Full Dam Removal	349	-6.02	-0.29		-0.28	0.000013	0.38	923.33	308.15	0.04	5.73
WankinkoRiver	WankinkoRiverDS	3252	10-Year	Alternative 3: Hybrid Dam Removal	349	-6.02	-0.29		-0.28	0.000013	0.38	923.33	308.15	0.04	5.73
WankinkoRiver	WankinkoRiverDS	3252	50-Year	Existing Conditions + Gage	472	-6.02	-0.25		-0.24	0.000024	0.5	934.89	309.81	0.05	5.77
WankinkoRiver	WankinkoRiverDS	3252	50-Year	Alternative 1: Partial Dam Removal	472	-6.02	-0.25		-0.24	0.000024	0.5	934.89	309.81	0.05	5.77
WankinkoRiver	WankinkoRiverDS	3252	50-Year	Alternative 2A: Full Dam Removal	472	-6.02	-0.25		-0.24	0.000024	0.5	934.89	309.81	0.05	5.77
WankinkoRiver	WankinkoRiverDS	3252	50-Year	Alternative 3: Hybrid Dam Removal	472	-6.02	-0.25		-0.24	0.000024	0.5	934.89	309.81	0.05	5.77
WankinkoRiver	WankinkoRiverDS	3252	100-Year	Existing Conditions + Gage	524	-6.02	-0.23		-0.22	0.000029	0.56	940.9	310.67	0.06	5.79
WankinkoRiver	WankinkoRiverDS	3252	100-Year	Alternative 1: Partial Dam Removal	524	-6.02	-0.23		-0.22	0.000029	0.56	940.9	310.67	0.06	5.79
WankinkoRiver	WankinkoRiverDS	3252	100-Year	Alternative 2A: Full Dam Removal	524	-6.02	-0.23		-0.22	0.000029	0.56	940.9	310.67	0.06	5.79
WankinkoRiver	WankinkoRiverDS	3252	100-Year	Alternative 3: Hybrid Dam Removal	524	-6.02	-0.23		-0.22	0.000029	0.56	940.9	310.67	0.06	5.79
															0
WankinkoRiver	WankinkoRiverDS	3135	2-Year	Existing Conditions + Gage	210	-8.18	-0.31		-0.31	0	0.09	2449.64	470.1	0.01	7.87
WankinkoRiver	WankinkoRiverDS	3135	2-Year	Alternative 1: Partial Dam Removal	210	-8.18	-0.31		-0.31	0	0.09	2449.64	470.1	0.01	7.87
WankinkoRiver	WankinkoRiverDS	3135	2-Year	Alternative 2A: Full Dam Removal	210	-8.18	-0.31		-0.31	0	0.09	2449.64	470.1	0.01	7.87
WankinkoRiver	WankinkoRiverDS	3135	2-Year	Alternative 3: Hybrid Dam Removal	210	-8.18	-0.31		-0.31	0	0.09	2449.64	470.1	0.01	7.87
WankinkoRiver	WankinkoRiverDS	3135	10-Year	Existing Conditions + Gage	349	-8.18	-0.28		-0.28	0.000001	0.14	2463.4	470.53	0.01	7.9
WankinkoRiver	WankinkoRiverDS	3135	10-Year	Alternative 1: Partial Dam Removal	349	-8.18	-0.28		-0.28	0.000001	0.14	2463.4	470.53	0.01	7.9
WankinkoRiver	WankinkoRiverDS	3135	10-Year	Alternative 2A: Full Dam Removal	349	-8.18	-0.28		-0.28	0.000001	0.14	2463.4	470.53	0.01	7.9
WankinkoRiver	WankinkoRiverDS	3135	10-Year	Alternative 3: Hybrid Dam Removal	349	-8.18	-0.28		-0.28	0.000001	0.14	2463.4	470.53	0.01	7.9
WankinkoRiver	WankinkoRiverDS	3135	50-Year	Existing Conditions + Gage	472	-8.18	-0.25		-0.25	0.000002	0.19	2481.42	471.1	0.01	7.93
WankinkoRiver	WankinkoRiverDS	3135	50-Year	Alternative 1: Partial Dam Removal	472	-8.18	-0.25		-0.25	0.000002	0.19	2481.41	471.1	0.01	7.93
WankinkoRiver	WankinkoRiverDS	3135	50-Year	Alternative 2A: Full Dam Removal	472	-8.18	-0.25		-0.25	0.000002	0.19	2481.41	471.1	0.01	7.93
WankinkoRiver	WankinkoRiverDS	3135	50-Year	Alternative 3: Hybrid Dam Removal	472	-8.18	-0.25		-0.25	0.000002	0.19	2481.41	471.1	0.01	7.93
WankinkoRiver	WankinkoRiverDS	3135	100-Year	Existing Conditions + Gage	524	-8.18	-0.23		-0.23	0.000002	0.21	2490.74	471.39	0.02	7.95
WankinkoRiver	WankinkoRiverDS	3135	100-Year	Alternative 1: Partial Dam Removal	524	-8.18	-0.23		-0.23	0.000002	0.21	2490.74	471.39	0.02	7.95
WankinkoRiver	WankinkoRiverDS	3135	100-Year	Alternative 2A: Full Dam Removal	524	-8.18	-0.23		-0.23	0.000002	0.21	2490.74	471.39	0.02	7.95
WankinkoRiver	WankinkoRiverDS	3135	100-Year	Alternative 3: Hybrid Dam Removal	524	-8.18	-0.23		-0.23	0.000002	0.21	2490.74	471.39	0.02	7.95
															0
WankinkoRiver	WankinkoRiverDS	2871	2-Year	Existing Conditions + Gage	210	-9.29	-0.31		-0.31	0	0.07	2866.46	513.1	0.01	8.98
WankinkoRiver	WankinkoRiverDS	2871	2-Year	Alternative 1: Partial Dam Removal	210	-9.29	-0.31		-0.31	0	0.07	2866.46	513.1	0.01	8.98
WankinkoRiver	WankinkoRiverDS	2871	2-Year	Alternative 2A: Full Dam Removal	210	-9.29	-0.31		-0.31	0	0.07	2866.46	513.1	0.01	8.98
WankinkoRiver	WankinkoRiverDS	2871	2-Year	Alternative 3: Hybrid Dam Removal	210	-9.29	-0.31		-0.31	0	0.07	2866.46	513.1	0.01	8.98
WankinkoRiver	WankinkoRiverDS	2871	10-Year	Existing Conditions + Gage	349	-9.29	-0.28		-0.28	0.000001	0.12	2881.46	514.33	0.01	9.01
WankinkoRiver	WankinkoRiverDS	2871	10-Year	Alternative 1: Partial Dam Removal	349	-9.29	-0.28		-0.28	0.000001	0.12	2881.46	514.33	0.01	9.01
WankinkoRiver	WankinkoRiverDS	2871	10-Year	Alternative 2A: Full Dam Removal	349	-9.29	-0.28		-0.28	0.000001	0.12	2881.46	514.33	0.01	9.01
WankinkoRiver	WankinkoRiverDS	2871	10-Year	Alternative 3: Hybrid Dam Removal	349	-9.29	-0.28		-0.28	0.000001	0.12	2881.46	514.33	0.01	9.01
WankinkoRiver	WankinkoRiverDS	2871	50-Year	Existing Conditions + Gage	472	-9.29	-0.25		-0.25	0.000001	0.16	2901.1	515.02	0.01	9.04
WankinkoRiver	WankinkoRiverDS	2871	50-Year	Alternative 1: Partial Dam Removal	472	-9.29	-0.25		-0.25	0.000001	0.16	2901.1	515.02	0.01	9.04
WankinkoRiver	WankinkoRiverDS	2871	50-Year	Alternative 2A: Full Dam Removal	472	-9.29	-0.25		-0.25	0.000001	0.16	2901.1	515.02	0.01	9.04
WankinkoRiver	WankinkoRiverDS	2871	50-Year	Alternative 3: Hybrid Dam Removal	472	-9.29	-0.25		-0.25	0.000001	0.16	2901.1	515.02	0.01	9.04
WankinkoRiver	WankinkoRiverDS	2871	100-Year	Existing Conditions + Gage	524	-9.29	-0.23		-0.23	0.000001	0.18	2911.27	515.38	0.01	9.06
WankinkoRiver	WankinkoRiverDS	2871	100-Year	Alternative 1: Partial Dam Removal	524	-9.29	-0.23		-0.23	0.000001	0.18	2911.27	515.38	0.01	9.06
WankinkoRiver	WankinkoRiverDS	2871	100-Year	Alternative 2A: Full Dam Removal	524	-9.29	-0.23		-0.23	0.000001	0.18	2911.27	515.38	0.01	9.06
WankinkoRiver	WankinkoRiverDS	2871	100-Year	Alternative 3: Hybrid Dam Removal	524	-9.29	-0.23		-0.23	0.000001	0.18	2911.27	515.38	0.01	9.06
															0
WankinkoRiver	WankinkoRiverDS	2556	2-Year	Existing Conditions + Gage	210	-8.18	-0.31		-0.31	0	0.09	2434.07	474.51	0.01	7.87
WankinkoRiver	WankinkoRiverDS	2556	2-Year	Alternative 1: Partial Dam Removal	210	-8.18	-0.31		-0.31	0	0.09	2434.07	474.51	0.01	7.87
WankinkoRiver	WankinkoRiverDS	2556	2-Year	Alternative 2A: Full Dam Removal	210	-8.18	-0.31		-0.31	0	0.09	2434.07	474.51	0.01	7.87
WankinkoRiver	WankinkoRiverDS	2556	2-Year	Alternative 3: Hybrid Dam Removal	210	-8.18	-0.31		-0.31	0	0.09	2434.07	474.51	0.01	7.87
WankinkoRiver	WankinkoRiverDS	2556	10-Year	Existing Conditions + Gage	349	-8.18	-0.28		-0.28	0.000001	0.14	2447.82	475.03	0.01	7.9
WankinkoRiver	WankinkoRiverDS	2556	10-Year	Alternative 1: Partial Dam Removal	349	-8.18	-0.28		-0.28	0.000001	0.14	2447.82	475.03	0.01	7.9
WankinkoRiver	WankinkoRiverDS	2556	10-Year	Alternative 2A: Full Dam Removal	349	-8.18	-0.28		-0.28	0.000001	0.14	2447.82	475.03	0.01	7.9
WankinkoRiver	WankinkoRiverDS	2556	10-Year	Alternative 3: Hybrid Dam Removal	349	-8.18	-0.28		-0.28	0.000001	0.14	2447.82	475.03	0.01	7.9
WankinkoRiver	WankinkoRiverDS	2556	50-Year	Existing Conditions + Gage	472	-8.18	-0.25		-0.25	0.000002	0.19	2465.84	475.72	0.01	7.93
WankinkoRiver	WankinkoRiverDS	2556	50-Year	Alternative 1: Partial Dam Removal	472	-8.18	-0.25		-0.25	0.000002	0.19	2465.84	475.72	0.01	7.93
WankinkoRiver	WankinkoRiverDS	2556	50-Year	Alternative 2A: Full Dam Removal	472	-8.18	-0.25		-0.25	0.000002	0.19	2465.84	475.72	0.01	7.93
WankinkoRiver	WankinkoRiverDS	2556	50-Year	Alternative 3: Hybrid Dam Removal	472	-8.18	-0.25		-0.25	0.000002	0.19	2465.84	475.72	0.01	7.93
WankinkoRiver	WankinkoRiverDS	2556	100-Year	Existing Conditions + Gage	524	-8.18	-0.23		-0.23	0.000002	0.21	2475.17	476.08	0.02	7.95
WankinkoRiver	WankinkoRiverDS	2556	100-Year	Alternative 1: Partial Dam Removal	524	-8.18	-0.23		-0.23	0.000002	0.21	2475.17	476.08	0.02	7.95
WankinkoRiver	WankinkoRiverDS	2556	100-Year	Alternative 2A: Full Dam Removal	524	-8.18	-0.23		-0.23	0.000002	0.21	2475.17	476.08	0.02	7.95
WankinkoRiver	WankinkoRiverDS	2556	100-Year	Alternative 3: Hybrid Dam Removal	524	-8.18	-0.23		-0.23	0.000002	0.21	2475.17	476.08	0.02	7.95
															0
WankinkoRiver	WankinkoRiverDS	2354	2-Year	Existing Conditions + Gage	210	-5.96	-0.31		-0.31	0	0.1	2662.71	772.09	0.01	5.65
WankinkoRiver	WankinkoRiverDS	2354	2-Year	Alternative 1: Partial Dam Removal	210	-5.96	-0.31		-0.31	0	0.1	2662.71	772.09	0.01	5.65
WankinkoRiver	WankinkoRiverDS	2354	2-Year	Alternative 2A: Full Dam Removal	210	-5.96	-0.31		-0.31	0	0.1	2662.71	772.09	0.01	5.65
WankinkoRiver	WankinkoRiverDS	2354	2-Year	Alternative 3: Hybrid Dam Removal	210	-5.96	-0.31		-0.31	0	0.1	2662.71	772.09	0.01	5.65
WankinkoRiver	WankinkoRiverDS	2354	10-Year	Existing Conditions + Gage	349	-5.96	-0.28		-0.28	0.000001	0.16	2684.99	774.65	0.01	5.68
WankinkoRiver	WankinkoRiverDS	2354	10-Year	Alternative 1: Partial Dam Removal	349	-5.96	-0.28		-0.28	0.000001	0.16	2684.99	774.65	0.01	5.68
WankinkoRiver	WankinkoRiverDS	2354	10-Year	Alternative 2A: Full Dam Removal	349	-5.96	-0.28		-0.28	0.000001	0.16	2684.99	774.65	0.01	5.68
WankinkoRiver	WankinkoRiverDS	2354	10-Year	Alternative 3: Hybrid Dam Removal	349	-5.96	-0.28		-0.28	0.000001	0.16	2684.99	774.65	0.01	5.68
WankinkoRiver	WankinkoRiverDS	2354	50-Year	Existing Conditions + Gage	472	-5.96	-0.25		-0.25	0.000002	0.21	2714.21	776.57	0.02	5.71
WankinkoRiver	WankinkoRiverDS	2354	50-Year	Alternative 1: Partial Dam Removal	472	-5.96	-0.25		-0.25	0.000002	0.21	2714.21	776.57	0.02	5.71
WankinkoRiver	WankinkoRiverDS	2354	50-Year	Alternative 2A: Full Dam Removal	472	-5.96	-0.25		-0.25	0.000002	0.21	2714.21	776.57	0.02	5.71
WankinkoRiver	WankinkoRiverDS	2354	50-Year	Alternative 3: Hybrid Dam Removal	472	-5.96	-0.25		-0.25	0.000002	0.21	2714.21	776.57	0.02	5.71
WankinkoRiver	WankinkoRiverDS	2354	100-Year	Existing Conditions + Gage	524	-5.96	-0.23		-0.23	0.000003	0.23	2729.37	777.56	0.02	5.73
WankinkoRiver	WankinkoRiverDS	2354	100-Year	Alternative 1: Partial Dam Removal	524	-5.96	-0.23		-0.23	0.000003	0.23	2729.36	777.56	0.02	5.73
WankinkoRiver	WankinkoRiverDS	2354	100-Year	Alternative 2A: Full Dam Removal	524	-5.96	-0.23		-0.23	0.000003	0.23	2729.37	777.56	0.02	5.73
WankinkoRiver	WankinkoRiverDS	2354	100-Year	Alternative 3: Hybrid Dam Removal	524	-5.96	-0.23		-0.23	0.000003	0.23	2729.36	777.56	0.02	5.73
															0
WankinkoRiver	WankinkoRiverDS	2148	2-Year	Existing Conditions + Gage	210	-5.12	-0.31		-0.31	0.000004	0.2	1066.57	349.62	0.02	4.81
WankinkoRiver	WankinkoRiverDS	2148	2-Year	Alternative 1: Partial Dam Removal	210	-5.12	-0.31		-0.31	0.000004	0.2	1066.57	349.62	0.02	4.81
WankinkoRiver	WankinkoRiverDS	2148	2-Year	Alternative 2A: Full Dam Removal	210	-5.12	-0.31		-0.31	0.000004	0.2	1066.57	349.62	0.02	4.81
WankinkoRiver	WankinkoRiverDS	2148	2-Year	Alternative 3: Hybrid Dam Removal	210	-5.12	-0.31		-0.31	0.000004	0.2	1066.57	349.62	0.02	4.81
WankinkoRiver	WankinkoRiverDS	2148	10-Year	Existing Conditions + Gage	349	-5.12	-0.29		-0.29	0.00001	0.32	1076.21	350.32	0.03	4.83
WankinkoRiver	WankinkoRiverDS	2148	10-Year	Alternative 1: Partial Dam Removal	349	-5.12	-0.29		-0.29	0.00001	0.32	1076.21	350.32	0.03	4.83
WankinkoRiver	WankinkoRiverDS	2148	10-Year	Alternative 2A: Full Dam Removal	349	-5.12	-0.29		-0.29	0.00001	0.32	1076.21	350.32	0.03	4.83
WankinkoRiver	WankinkoRiverDS	2148	10-Year	Alternative 3: Hybrid Dam Removal	349	-5.12	-0.29		-0.29	0.00001	0.32	1076.21	350.32	0.03	4.83
WankinkoRiver	WankinkoRiverDS	2148	50-Year	Existing Conditions + Gage	472	-5.12	-0.25		-0.25	0.000017	0.43	1088.88	351.24	0.04	4.87
WankinkoRiver	WankinkoRiverDS	2148	50-Year	Alternative 1: Partial Dam Removal	472	-5.12	-0.25		-0.25	0.000017	0.43	1088.88	351.24	0.04	4.87
WankinkoRiver	WankinkoRiverDS	2148	50-Year	Alternative 2A: Full Dam Removal	472	-5.12	-0.25		-0.25	0.000017	0.43	1088.88	351.24	0.04	4.87

WankinkoRiver	WankinkoRiverDS	2148	50-Year	Alternative 3: Hybrid Dam Removal	472	-5.12	-0.25		-0.25	0.000017	0.43	1088.88	351.24	0.04	4.87
WankinkoRiver	WankinkoRiverDS	2148	100-Year	Existing Conditions + Gage	524	-5.12	-0.23		-0.23	0.000021	0.48	1095.47	351.71	0.05	4.89
WankinkoRiver	WankinkoRiverDS	2148	100-Year	Alternative 1: Partial Dam Removal	524	-5.12	-0.23		-0.23	0.000021	0.48	1095.47	351.71	0.05	4.89
WankinkoRiver	WankinkoRiverDS	2148	100-Year	Alternative 2A: Full Dam Removal	524	-5.12	-0.23		-0.23	0.000021	0.48	1095.47	351.71	0.05	4.89
WankinkoRiver	WankinkoRiverDS	2148	100-Year	Alternative 3: Hybrid Dam Removal	524	-5.12	-0.23		-0.23	0.000021	0.48	1095.47	351.71	0.05	4.89
															0
WankinkoRiver	WankinkoRiverDS	1907	2-Year	Existing Conditions + Gage	210	-5.1	-0.31		-0.31	0.000001	0.13	1657.78	446.91	0.01	4.79
WankinkoRiver	WankinkoRiverDS	1907	2-Year	Alternative 1: Partial Dam Removal	210	-5.1	-0.31		-0.31	0.000001	0.13	1657.78	446.91	0.01	4.79
WankinkoRiver	WankinkoRiverDS	1907	2-Year	Alternative 2A: Full Dam Removal	210	-5.1	-0.31		-0.31	0.000001	0.13	1657.78	446.91	0.01	4.79
WankinkoRiver	WankinkoRiverDS	1907	2-Year	Alternative 3: Hybrid Dam Removal	210	-5.1	-0.31		-0.31	0.000001	0.13	1657.78	446.91	0.01	4.79
WankinkoRiver	WankinkoRiverDS	1907	10-Year	Existing Conditions + Gage	349	-5.1	-0.29		-0.29	0.000003	0.21	1669.95	447.38	0.02	4.81
WankinkoRiver	WankinkoRiverDS	1907	10-Year	Alternative 1: Partial Dam Removal	349	-5.1	-0.29		-0.29	0.000003	0.21	1669.95	447.38	0.02	4.81
WankinkoRiver	WankinkoRiverDS	1907	10-Year	Alternative 2A: Full Dam Removal	349	-5.1	-0.29		-0.29	0.000003	0.21	1669.95	447.38	0.02	4.81
WankinkoRiver	WankinkoRiverDS	1907	10-Year	Alternative 3: Hybrid Dam Removal	349	-5.1	-0.29		-0.29	0.000003	0.21	1669.95	447.38	0.02	4.81
WankinkoRiver	WankinkoRiverDS	1907	50-Year	Existing Conditions + Gage	472	-5.1	-0.25		-0.25	0.000005	0.28	1685.95	449	0.03	4.85
WankinkoRiver	WankinkoRiverDS	1907	50-Year	Alternative 1: Partial Dam Removal	472	-5.1	-0.25		-0.25	0.000005	0.28	1685.95	449	0.03	4.85
WankinkoRiver	WankinkoRiverDS	1907	50-Year	Alternative 2A: Full Dam Removal	472	-5.1	-0.25		-0.25	0.000005	0.28	1685.95	449	0.03	4.85
WankinkoRiver	WankinkoRiverDS	1907	50-Year	Alternative 3: Hybrid Dam Removal	472	-5.1	-0.25		-0.25	0.000005	0.28	1685.95	449	0.03	4.85
WankinkoRiver	WankinkoRiverDS	1907	100-Year	Existing Conditions + Gage	524	-5.1	-0.23		-0.23	0.000007	0.31	1694.29	450.01	0.03	4.87
WankinkoRiver	WankinkoRiverDS	1907	100-Year	Alternative 1: Partial Dam Removal	524	-5.1	-0.23		-0.23	0.000007	0.31	1694.28	450.01	0.03	4.87
WankinkoRiver	WankinkoRiverDS	1907	100-Year	Alternative 2A: Full Dam Removal	524	-5.1	-0.23		-0.23	0.000007	0.31	1694.29	450.01	0.03	4.87
WankinkoRiver	WankinkoRiverDS	1907	100-Year	Alternative 3: Hybrid Dam Removal	524	-5.1	-0.23		-0.23	0.000007	0.31	1694.28	450.01	0.03	4.87
															0
WankinkoRiver	WankinkoRiverDS	1629	2-Year	Existing Conditions + Gage	210	-8.02	-0.31		-0.31	0.000001	0.12	1820.12	391.84	0.01	7.71
WankinkoRiver	WankinkoRiverDS	1629	2-Year	Alternative 1: Partial Dam Removal	210	-8.02	-0.31		-0.31	0.000001	0.12	1820.12	391.84	0.01	7.71
WankinkoRiver	WankinkoRiverDS	1629	2-Year	Alternative 2A: Full Dam Removal	210	-8.02	-0.31		-0.31	0.000001	0.12	1820.12	391.84	0.01	7.71
WankinkoRiver	WankinkoRiverDS	1629	2-Year	Alternative 3: Hybrid Dam Removal	210	-8.02	-0.31		-0.31	0.000001	0.12	1820.12	391.84	0.01	7.71
WankinkoRiver	WankinkoRiverDS	1629	10-Year	Existing Conditions + Gage	349	-8.02	-0.29		-0.29	0.000002	0.19	1830.65	392.55	0.02	7.73
WankinkoRiver	WankinkoRiverDS	1629	10-Year	Alternative 1: Partial Dam Removal	349	-8.02	-0.29		-0.29	0.000002	0.19	1830.65	392.55	0.02	7.73
WankinkoRiver	WankinkoRiverDS	1629	10-Year	Alternative 2A: Full Dam Removal	349	-8.02	-0.29		-0.29	0.000002	0.19	1830.65	392.55	0.02	7.73
WankinkoRiver	WankinkoRiverDS	1629	10-Year	Alternative 3: Hybrid Dam Removal	349	-8.02	-0.29		-0.29	0.000002	0.19	1830.65	392.55	0.02	7.73
WankinkoRiver	WankinkoRiverDS	1629	50-Year	Existing Conditions + Gage	472	-8.02	-0.25		-0.25	0.000003	0.26	1844.51	393.49	0.02	7.77
WankinkoRiver	WankinkoRiverDS	1629	50-Year	Alternative 1: Partial Dam Removal	472	-8.02	-0.25		-0.25	0.000003	0.26	1844.51	393.49	0.02	7.77
WankinkoRiver	WankinkoRiverDS	1629	50-Year	Alternative 2A: Full Dam Removal	472	-8.02	-0.25		-0.25	0.000003	0.26	1844.51	393.49	0.02	7.77
WankinkoRiver	WankinkoRiverDS	1629	50-Year	Alternative 3: Hybrid Dam Removal	472	-8.02	-0.25		-0.25	0.000003	0.26	1844.51	393.49	0.02	7.77
WankinkoRiver	WankinkoRiverDS	1629	100-Year	Existing Conditions + Gage	524	-8.02	-0.23		-0.23	0.000004	0.28	1851.72	393.97	0.02	7.79
WankinkoRiver	WankinkoRiverDS	1629	100-Year	Alternative 1: Partial Dam Removal	524	-8.02	-0.23		-0.23	0.000004	0.28	1851.72	393.97	0.02	7.79
WankinkoRiver	WankinkoRiverDS	1629	100-Year	Alternative 2A: Full Dam Removal	524	-8.02	-0.23		-0.23	0.000004	0.28	1851.72	393.97	0.02	7.79
WankinkoRiver	WankinkoRiverDS	1629	100-Year	Alternative 3: Hybrid Dam Removal	524	-8.02	-0.23		-0.23	0.000004	0.28	1851.72	393.97	0.02	7.79
															0
WankinkoRiver	WankinkoRiverDS	1489	2-Year	Existing Conditions + Gage	210	-7.84	-0.31		-0.31	0.000001	0.11	1855.55	430.91	0.01	7.53
WankinkoRiver	WankinkoRiverDS	1489	2-Year	Alternative 1: Partial Dam Removal	210	-7.84	-0.31		-0.31	0.000001	0.11	1855.55	430.91	0.01	7.53
WankinkoRiver	WankinkoRiverDS	1489	2-Year	Alternative 2A: Full Dam Removal	210	-7.84	-0.31		-0.31	0.000001	0.11	1855.55	430.91	0.01	7.53
WankinkoRiver	WankinkoRiverDS	1489	2-Year	Alternative 3: Hybrid Dam Removal	210	-7.84	-0.31		-0.31	0.000001	0.11	1855.55	430.91	0.01	7.53
WankinkoRiver	WankinkoRiverDS	1489	10-Year	Existing Conditions + Gage	349	-7.84	-0.29		-0.29	0.000002	0.19	1867.06	431.82	0.02	7.55
WankinkoRiver	WankinkoRiverDS	1489	10-Year	Alternative 1: Partial Dam Removal	349	-7.84	-0.29		-0.29	0.000002	0.19	1867.06	431.82	0.02	7.55
WankinkoRiver	WankinkoRiverDS	1489	10-Year	Alternative 2A: Full Dam Removal	349	-7.84	-0.29		-0.29	0.000002	0.19	1867.06	431.82	0.02	7.55
WankinkoRiver	WankinkoRiverDS	1489	10-Year	Alternative 3: Hybrid Dam Removal	349	-7.84	-0.29		-0.29	0.000002	0.19	1867.06	431.82	0.02	7.55
WankinkoRiver	WankinkoRiverDS	1489	50-Year	Existing Conditions + Gage	472	-7.84	-0.25		-0.25	0.000004	0.25	1882.22	433.02	0.02	7.59
WankinkoRiver	WankinkoRiverDS	1489	50-Year	Alternative 1: Partial Dam Removal	472	-7.84	-0.25		-0.25	0.000004	0.25	1882.22	433.02	0.02	7.59
WankinkoRiver	WankinkoRiverDS	1489	50-Year	Alternative 2A: Full Dam Removal	472	-7.84	-0.25		-0.25	0.000004	0.25	1882.22	433.02	0.02	7.59
WankinkoRiver	WankinkoRiverDS	1489	50-Year	Alternative 3: Hybrid Dam Removal	472	-7.84	-0.25		-0.25	0.000004	0.25	1882.22	433.02	0.02	7.59
WankinkoRiver	WankinkoRiverDS	1489	100-Year	Existing Conditions + Gage	524	-7.84	-0.23		-0.23	0.000004	0.28	1890.11	433.64	0.02	7.61
WankinkoRiver	WankinkoRiverDS	1489	100-Year	Alternative 1: Partial Dam Removal	524	-7.84	-0.23		-0.23	0.000004	0.28	1890.11	433.64	0.02	7.61
WankinkoRiver	WankinkoRiverDS	1489	100-Year	Alternative 2A: Full Dam Removal	524	-7.84	-0.23		-0.23	0.000004	0.28	1890.11	433.64	0.02	7.61
WankinkoRiver	WankinkoRiverDS	1489	100-Year	Alternative 3: Hybrid Dam Removal	524	-7.84	-0.23		-0.23	0.000004	0.28	1890.11	433.64	0.02	7.61
															0
WankinkoRiver	WankinkoRiverDS	1364	2-Year	Existing Conditions + Gage	210	-3.79	-0.32		-0.32	0.000013	0.31	686.26	308.48	0.04	3.47
WankinkoRiver	WankinkoRiverDS	1364	2-Year	Alternative 1: Partial Dam Removal	210	-3.79	-0.32		-0.32	0.000013	0.31	686.26	308.48	0.04	3.47
WankinkoRiver	WankinkoRiverDS	1364	2-Year	Alternative 2A: Full Dam Removal	210	-3.79	-0.32		-0.32	0.000013	0.31	686.26	308.48	0.04	3.47
WankinkoRiver	WankinkoRiverDS	1364	2-Year	Alternative 3: Hybrid Dam Removal	210	-3.79	-0.32		-0.32	0.000013	0.31	686.26	308.48	0.04	3.47
WankinkoRiver	WankinkoRiverDS	1364	10-Year	Existing Conditions + Gage	349	-3.79	-0.29		-0.29	0.000034	0.51	693.64	309.94	0.06	3.5
WankinkoRiver	WankinkoRiverDS	1364	10-Year	Alternative 1: Partial Dam Removal	349	-3.79	-0.29		-0.29	0.000034	0.51	693.64	309.94	0.06	3.5
WankinkoRiver	WankinkoRiverDS	1364	10-Year	Alternative 2A: Full Dam Removal	349	-3.79	-0.29		-0.29	0.000034	0.51	693.64	309.94	0.06	3.5
WankinkoRiver	WankinkoRiverDS	1364	10-Year	Alternative 3: Hybrid Dam Removal	349	-3.79	-0.29		-0.29	0.000034	0.51	693.64	309.94	0.06	3.5
WankinkoRiver	WankinkoRiverDS	1364	50-Year	Existing Conditions + Gage	472	-3.79	-0.26		-0.25	0.00006	0.68	703.45	311.87	0.08	3.53
WankinkoRiver	WankinkoRiverDS	1364	50-Year	Alternative 1: Partial Dam Removal	472	-3.79	-0.26		-0.25	0.00006	0.68	703.45	311.87	0.08	3.53
WankinkoRiver	WankinkoRiverDS	1364	50-Year	Alternative 2A: Full Dam Removal	472	-3.79	-0.26		-0.25	0.00006	0.68	703.45	311.87	0.08	3.53
WankinkoRiver	WankinkoRiverDS	1364	50-Year	Alternative 3: Hybrid Dam Removal	472	-3.79	-0.26		-0.25	0.00006	0.68	703.45	311.87	0.08	3.53
WankinkoRiver	WankinkoRiverDS	1364	100-Year	Existing Conditions + Gage	524	-3.79	-0.24		-0.24	0.000072	0.75	708.6	312.88	0.09	3.55
WankinkoRiver	WankinkoRiverDS	1364	100-Year	Alternative 1: Partial Dam Removal	524	-3.79	-0.24		-0.24	0.000072	0.75	708.6	312.88	0.09	3.55
WankinkoRiver	WankinkoRiverDS	1364	100-Year	Alternative 2A: Full Dam Removal	524	-3.79	-0.24		-0.24	0.000072	0.75	708.6	312.88	0.09	3.55
WankinkoRiver	WankinkoRiverDS	1364	100-Year	Alternative 3: Hybrid Dam Removal	524	-3.79	-0.24		-0.24	0.000072	0.75	708.6	312.88	0.09	3.55
															0
WankinkoRiver	WankinkoRiverDS	1226	2-Year	Existing Conditions + Gage	210	-2.29	-0.34	-1.48	-0.32	0.000276	0.99	214.68	280.29	0.15	1.95
WankinkoRiver	WankinkoRiverDS	1226	2-Year	Alternative 1: Partial Dam Removal	210	-2.29	-0.34	-1.48	-0.32	0.000276	0.99	214.68	280.29	0.15	1.95
WankinkoRiver	WankinkoRiverDS	1226	2-Year	Alternative 2A: Full Dam Removal	210	-2.29	-0.34	-1.48	-0.32	0.000276	0.99	214.68	280.29	0.15	1.95
WankinkoRiver	WankinkoRiverDS	1226	2-Year	Alternative 3: Hybrid Dam Removal	210	-2.29	-0.34	-1.48	-0.32	0.000276	0.99	214.68	280.29	0.15	1.95
WankinkoRiver	WankinkoRiverDS	1226	10-Year	Existing Conditions + Gage	349	-2.29	-0.35	-1.26	-0.31	0.000784	1.67	212.68	279.62	0.26	1.94
WankinkoRiver	WankinkoRiverDS	1226	10-Year	Alternative 1: Partial Dam Removal	349	-2.29	-0.35	-1.26	-0.31	0.000784	1.67	212.68	279.62	0.26	1.94
WankinkoRiver	WankinkoRiverDS	1226	10-Year	Alternative 2A: Full Dam Removal	349	-2.29	-0.35	-1.26	-0.31	0.000784	1.67	212.68	279.62	0.26	1.94
WankinkoRiver	WankinkoRiverDS	1226	10-Year	Alternative 3: Hybrid Dam Removal	349	-2.29	-0.35	-1.26	-0.31	0.000784	1.67	212.68	279.62	0.26	1.94
WankinkoRiver	WankinkoRiverDS	1226	50-Year	Existing Conditions + Gage	472	-2.29	-0.37	-1.12	-0.28	0.001489	2.28	209.93	278.71	0.35	1.92
WankinkoRiver	WankinkoRiverDS	1226	50-Year	Alternative 1: Partial Dam Removal	472	-2.29	-0.37	-1.12	-0.28	0.001489	2.28	209.93	278.71	0.35	1.92
WankinkoRiver	WankinkoRiverDS	1226	50-Year	Alternative 2A: Full Dam Removal	472	-2.29	-0.37	-1.12	-0.28	0.001489	2.28	209.93	278.71	0.35	1.92
WankinkoRiver	WankinkoRiverDS	1226	50-Year	Alternative 3: Hybrid Dam Removal	472	-2.29	-0.37	-1.12	-0.28	0.001489	2.28	209.93	278.71	0.35	1.92
WankinkoRiver	WankinkoRiverDS	1226	100-Year	Existing Conditions + Gage	524	-2.29	-0.37	-1.06	-0.27	0.001873	2.55	208.45	278.22	0.39	1.92
WankinkoRiver	WankinkoRiverDS	1226	100-Year	Alternative 1: Partial Dam Removal	524	-2.29	-0.37	-1.06	-0.27	0.001873	2.55	208.45	278.22	0.39	1.92
WankinkoRiver	WankinkoRiverDS	1226	100-Year	Alternative 2A: Full Dam Removal	524	-2.29	-0.37	-1.06	-0.27	0.001873	2.55	208.45	278.22	0.39	1.92
WankinkoRiver	WankinkoRiverDS	1226	100-Year	Alternative 3: Hybrid Dam Removal	524	-2.29	-0.37	-1.06	-0.27	0.001873	2.55	208.45	278.22	0.39	1.92
															0
WankinkoRiver	WankinkoRiverDS	1112	2-Year	Existing Conditions + Gage	210	-4.3	-0.33		-0.33	0.00001	0.27	929.75	444.25	0.03	3.97
WankinkoRiver	WankinkoRiverDS	1112	2-Year	Alternative 1: Partial Dam Removal	210	-4.3	-0.33		-0.33	0.00001	0.27	929.75	444.25	0.03	3.97
WankinkoRiver	WankinkoRiverDS	1112	2-Year	Alternative 2A: Full Dam Removal	210	-4.3	-0.33		-0.33	0.00001	0.27	929.75	444.25	0.03	3.97
WankinkoRiver	WankinkoRiverDS	1112	2-Year	Alternative 3: Hybrid Dam Removal	210	-4.3	-0.33		-0.33	0.00001	0.27	929.75	444.25	0.03	3.97
WankinkoRiver	WankinkoRiverDS	1112	10-Year	Existing Conditions + Gage	349	-4.3	-0.33		-0.33	0.000028	0.45	929.91	444.26	0.05	3.97
WankinkoRiver	WankinkoRiverDS	1112	10-Year	Alternative 1: Partial Dam Removal	349	-4.3	-0.33		-0.33	0.000028	0.45	929.91	444.26	0.05	3.97
WankinkoRiver	WankinkoRiverDS	1112	10-Year	Alternative 2A: Full Dam Removal	349	-4.3	-0.33		-0.33	0.000028	0.45	929.91	444.26	0.05	3.97
WankinkoRiver	WankinkoRiverDS	1112	10-Year	Alternative 3: Hybrid Dam Removal	349	-4.3	-0.33		-0.33	0.000028	0.45	929.91	444.26	0.05	3.97
WankinkoRiver	WankinkoRiverDS	1112	50-Year	Existing Conditions + Gage	472	-4.3	-0.33		-0.32	0.00005	0.61	930.12	444.28	0.07	3.97
WankinkoRiver	WankinkoRiverDS	1112	50-Year	Alternative 1: Partial Dam Removal	472	-4.3	-0.33		-0.32	0.00005	0.61	930.12	444.28	0.07	3.97
WankinkoRiver	WankinkoRiverDS	1112	50-Year	Alternative 2A: Full Dam Removal	472	-4.3	-0.33		-0.32	0.00005	0.61	930.12	444.28	0.07	3.97
WankinkoRiver	WankinkoRiverDS	1112	50-Year	Alternative 3: Hybrid Dam Removal	472	-4.3	-0.33		-0.32	0.00005	0.61	930.12	444.28	0.07	3.97
WankinkoRiver	WankinkoRiverDS	1112	100-Year	Existing Conditions + Gage	524	-4.3	-0.33		-0.32	0.000062	0.68	930.22	444.28	0.08	3.97
WankinkoRiver	WankinkoRiverDS	1112	100-Year	Alternative 1: Partial Dam Removal	524	-4.3	-0.33		-0.32	0.000062	0.68	930.22	444.28	0.08	3.97
WankinkoRiver	WankinkoRiverDS	1112	100-Year	Alternative 2A: Full Dam Removal	524	-4.3	-0.33		-0.32	0.000062	0.68	930.22	444.28	0.08	3.97
WankinkoRiver	WankinkoRiverDS	1112	100-Year	Alternative 3: Hybrid Dam Removal	524	-4.3	-0.33		-0.32	0.000062	0.68	930.22	444.28	0.08	3.97
															0
WankinkoRiver	WankinkoRiverDS	1000	2-Year	Existing Conditions + Gage	210	-4.41	-0.33	-3.7	-0.33	0.000003	0.18	1332.6	511.64	0.02	4.08
WankinkoRiver	WankinkoRiverDS	1000	2-Year	Alternative 1: Partial Dam Removal	210	-4.41	-0.33	-3.7	-0.33	0.000003	0.18	1332.6	511.64	0.02	4.08
WankinkoRiver	WankinkoRiverDS	1000	2-Year	Alternative 2A: Full Dam Removal	210	-4.41	-0.33	-3.7	-0.33	0.000003	0.18	1332.6	511.64	0.02	4.08
WankinkoRiver	WankinkoRiverDS	1000	2-Year	Alternative 3: Hybrid Dam Removal	210	-4.41	-0.33	-3.7	-0.33	0.000003	0.18	1332.6	511.64	0.02	4.08
WankinkoRiver	WankinkoRiverDS	1000	10-Year	Existing Conditions + Gage	349	-4.41	-0.33	-3.53	-0.33	0.00001	0.3	1332.6	511.64	0.03	4.08
WankinkoRiver	WankinkoRiverDS	1000	10-Year	Alternative 1: Partial Dam Removal	349	-4.41	-0.33	-3.53	-0.33	0.00001	0.3	1332.6	511.64	0.03	4.08
WankinkoRiver	WankinkoRiverDS	1000	10-Year	Alternative 2A: Full Dam Removal	349	-4.41	-0.33	-3.54	-0.33	0.00001	0.3	1332.6	511.64	0.03	4.08
WankinkoRiver	WankinkoRiverDS	1000	10-Year	Alternative 3: Hybrid Dam Removal	349	-4.41	-0.33	-3.53	-0.33	0.00001	0.3	1332.6	511.64	0.03	4.08
WankinkoRiver	WankinkoRiverDS	1000	50-Year	Existing Conditions + Gage	472	-4.41	-0.33	-3.41	-0.33	0.000018	0.41	1332.6	511.64	0.04	4.08
WankinkoRiver	WankinkoRiverDS	1000	50-Year	Alternative 1: Partial Dam Removal	472	-4.41	-0.33	-3.41	-0.33	0.000018	0.41	1332.6	511.64	0.04	4.08
WankinkoRiver	WankinkoRiverDS	1000	50-Year	Alternative 2A: Full Dam Removal	472	-4.41	-0.33	-3.41	-0.33	0.000018	0.41	1332.6	511.64	0.04	4.08
WankinkoRiver	WankinkoRiverDS	1000	50-Year	Alternative 3: Hybrid Dam Removal	472	-4.41	-0.33	-3.41	-0.33	0.000018	0.41	1332.6	511.64	0.04	4.08
WankinkoRiver	WankinkoRiverDS	1000	100-Year	Existing Conditions + Gage	524	-4.41	-0.33	-3.36	-0.33	0.000022	0.46	1332.6	511.64	0.05	4.08

WankinkoRiver	WankinkoRiverDS	1000	100-Year	Alternative 1: Partial Dam Removal	524	-4.41	-0.33	-3.36	-0.33	0.000022	0.46	1332.6	511.64	0.05	4.08
WankinkoRiver	WankinkoRiverDS	1000	100-Year	Alternative 2A: Full Dam Removal	524	-4.41	-0.33	-3.36	-0.33	0.000022	0.46	1332.6	511.64	0.05	4.08
WankinkoRiver	WankinkoRiverDS	1000	100-Year	Alternative 3: Hybrid Dam Removal	524	-4.41	-0.33	-3.36	-0.33	0.000022	0.46	1332.6	511.64	0.05	4.08
															0
HarlowBrook	HarlowBrook	4572	2-Year	Existing Conditions + Gage	82	14.3	15.64	14.87	15.68	0.000952	1.66	79.15	162.66	0.27	1.34
HarlowBrook	HarlowBrook	4572	2-Year	Alternative 1: Partial Dam Removal	82	14.3	15.64	14.87	15.67	0.000975	1.67	78.54	162.3	0.28	1.34
HarlowBrook	HarlowBrook	4572	2-Year	Alternative 2A: Full Dam Removal	82	14.3	15.64	14.87	15.67	0.000975	1.67	78.54	162.3	0.28	1.34
HarlowBrook	HarlowBrook	4572	2-Year	Alternative 3: Hybrid Dam Removal	82	14.3	15.64	14.87	15.67	0.000975	1.67	78.54	162.3	0.28	1.34
HarlowBrook	HarlowBrook	4572	10-Year	Existing Conditions + Gage	136	14.3	16.15	15.06	16.19	0.000725	1.85	139.69	190.62	0.25	1.85
HarlowBrook	HarlowBrook	4572	10-Year	Alternative 1: Partial Dam Removal	136	14.3	15.9	15.06	15.96	0.001334	2.25	98.99	172.3	0.34	1.6
HarlowBrook	HarlowBrook	4572	10-Year	Alternative 2A: Full Dam Removal	136	14.3	15.9	15.06	15.96	0.001334	2.25	98.99	172.3	0.34	1.6
HarlowBrook	HarlowBrook	4572	10-Year	Alternative 3: Hybrid Dam Removal	136	14.3	15.9	15.06	15.96	0.001334	2.25	98.99	172.3	0.34	1.6
HarlowBrook	HarlowBrook	4572	50-Year	Existing Conditions + Gage	183	14.3	16.82	15.2	16.83	0.000195	1.21	364.82	211.02	0.14	2.52
HarlowBrook	HarlowBrook	4572	50-Year	Alternative 1: Partial Dam Removal	183	14.3	16.12	15.2	16.2	0.001531	2.66	117.32	189.56	0.37	1.82
HarlowBrook	HarlowBrook	4572	50-Year	Alternative 2A: Full Dam Removal	183	14.3	16.12	15.2	16.2	0.001531	2.66	117.32	189.56	0.37	1.82
HarlowBrook	HarlowBrook	4572	50-Year	Alternative 3: Hybrid Dam Removal	183	14.3	16.12	15.2	16.2	0.001531	2.66	117.32	189.56	0.37	1.82
HarlowBrook	HarlowBrook	4572	100-Year	Existing Conditions + Gage	204	14.3	17.12	15.26	17.13	0.000156	1.17	428.32	216.51	0.13	2.82
HarlowBrook	HarlowBrook	4572	100-Year	Alternative 1: Partial Dam Removal	204	14.3	16.22	15.26	16.3	0.001396	2.65	148.2	197.18	0.36	1.92
HarlowBrook	HarlowBrook	4572	100-Year	Alternative 2A: Full Dam Removal	204	14.3	16.22	15.26	16.3	0.001396	2.65	148.2	197.18	0.36	1.92
HarlowBrook	HarlowBrook	4572	100-Year	Alternative 3: Hybrid Dam Removal	204	14.3	16.22	15.26	16.3	0.001396	2.65	148.2	197.18	0.36	1.92
															0
HarlowBrook	HarlowBrook	4426	2-Year	Existing Conditions + Gage	82	14.25	15.54	14.82	15.55	0.000729	1.19	187.18	259.04	0.23	1.29
HarlowBrook	HarlowBrook	4426	2-Year	Alternative 1: Partial Dam Removal	82	14.25	15.53	14.82	15.53	0.000769	1.2	184.1	258.74	0.23	1.28
HarlowBrook	HarlowBrook	4426	2-Year	Alternative 2A: Full Dam Removal	82	14.25	15.53	14.82	15.53	0.000769	1.2	184.1	258.74	0.23	1.28
HarlowBrook	HarlowBrook	4426	2-Year	Alternative 3: Hybrid Dam Removal	82	14.25	15.53	14.82	15.53	0.000769	1.2	184.1	258.74	0.23	1.28
HarlowBrook	HarlowBrook	4426	10-Year	Existing Conditions + Gage	136	14.25	16.1	14.96	16.11	0.000357	1.17	317.87	274.8	0.17	1.85
HarlowBrook	HarlowBrook	4426	10-Year	Alternative 1: Partial Dam Removal	136	14.25	15.78	14.96	15.79	0.000865	1.52	242.33	268.08	0.26	1.53
HarlowBrook	HarlowBrook	4426	10-Year	Alternative 2A: Full Dam Removal	136	14.25	15.78	14.96	15.79	0.000865	1.52	242.33	268.08	0.26	1.53
HarlowBrook	HarlowBrook	4426	10-Year	Alternative 3: Hybrid Dam Removal	136	14.25	15.78	14.96	15.79	0.000865	1.52	242.33	268.08	0.26	1.53
HarlowBrook	HarlowBrook	4426	50-Year	Existing Conditions + Gage	183	14.25	16.8	15.05	16.81	0.000165	1.04	485.73	288.97	0.13	2.55
HarlowBrook	HarlowBrook	4426	50-Year	Alternative 1: Partial Dam Removal	183	14.25	16.01	15.05	16.02	0.000824	1.69	295.18	272.45	0.26	1.76
HarlowBrook	HarlowBrook	4426	50-Year	Alternative 2A: Full Dam Removal	183	14.25	16.01	15.05	16.02	0.000824	1.69	295.18	272.45	0.26	1.76
HarlowBrook	HarlowBrook	4426	50-Year	Alternative 3: Hybrid Dam Removal	183	14.25	16.01	15.05	16.02	0.000824	1.69	295.18	272.45	0.26	1.76
HarlowBrook	HarlowBrook	4426	100-Year	Existing Conditions + Gage	204	14.25	17.1	15.06	17.11	0.000129	1	559.13	294.78	0.11	2.85
HarlowBrook	HarlowBrook	4426	100-Year	Alternative 1: Partial Dam Removal	204	14.25	16.12	15.06	16.13	0.000773	1.73	321.74	275.62	0.26	1.87
HarlowBrook	HarlowBrook	4426	100-Year	Alternative 2A: Full Dam Removal	204	14.25	16.12	15.06	16.13	0.000773	1.73	321.74	275.62	0.26	1.87
HarlowBrook	HarlowBrook	4426	100-Year	Alternative 3: Hybrid Dam Removal	204	14.25	16.12	15.06	16.13	0.000773	1.73	321.74	275.62	0.26	1.87
															0
HarlowBrook	HarlowBrook	4285	2-Year	Existing Conditions + Gage	82	14.48	15.44	14.76	15.44	0.000775	0.87	205.01	352.23	0.22	0.96
HarlowBrook	HarlowBrook	4285	2-Year	Alternative 1: Partial Dam Removal	82	14.48	15.42	14.76	15.42	0.000867	0.9	197.94	349.75	0.23	0.94
HarlowBrook	HarlowBrook	4285	2-Year	Alternative 2A: Full Dam Removal	82	14.48	15.42	14.76	15.42	0.000867	0.9	197.94	349.75	0.23	0.94
HarlowBrook	HarlowBrook	4285	2-Year	Alternative 3: Hybrid Dam Removal	82	14.48	15.42	14.76	15.42	0.000867	0.9	197.94	349.75	0.23	0.94
HarlowBrook	HarlowBrook	4285	10-Year	Existing Conditions + Gage	136	14.48	16.07	14.88	16.07	0.000221	0.75	414.68	423.07	0.13	1.59
HarlowBrook	HarlowBrook	4285	10-Year	Alternative 1: Partial Dam Removal	136	14.48	15.67	14.88	15.67	0.000797	1.09	277.94	375.91	0.23	1.19
HarlowBrook	HarlowBrook	4285	10-Year	Alternative 2A: Full Dam Removal	136	14.48	15.67	14.88	15.67	0.000797	1.09	277.94	375.91	0.23	1.19
HarlowBrook	HarlowBrook	4285	10-Year	Alternative 3: Hybrid Dam Removal	136	14.48	15.67	14.88	15.67	0.000797	1.09	277.94	375.91	0.23	1.19
HarlowBrook	HarlowBrook	4285	50-Year	Existing Conditions + Gage	183	14.48	16.79	14.94	16.79	0.000083	0.65	679.4	526.94	0.09	2.31
HarlowBrook	HarlowBrook	4285	50-Year	Alternative 1: Partial Dam Removal	183	14.48	15.91	14.94	15.91	0.000645	1.15	359.85	408.08	0.22	1.43
HarlowBrook	HarlowBrook	4285	50-Year	Alternative 2A: Full Dam Removal	183	14.48	15.91	14.94	15.91	0.000645	1.15	359.85	408.08	0.22	1.43
HarlowBrook	HarlowBrook	4285	50-Year	Alternative 3: Hybrid Dam Removal	183	14.48	15.91	14.94	15.91	0.000645	1.15	359.85	408.08	0.22	1.43
HarlowBrook	HarlowBrook	4285	100-Year	Existing Conditions + Gage	204	14.48	17.09	14.97	17.09	0.000048	0.55	987.23	547.19	0.07	2.61
HarlowBrook	HarlowBrook	4285	100-Year	Alternative 1: Partial Dam Removal	204	14.48	16.03	14.97	16.04	0.000548	1.15	402.92	419.74	0.2	1.55
HarlowBrook	HarlowBrook	4285	100-Year	Alternative 2A: Full Dam Removal	204	14.48	16.03	14.97	16.04	0.000548	1.15	402.92	419.74	0.2	1.55
HarlowBrook	HarlowBrook	4285	100-Year	Alternative 3: Hybrid Dam Removal	204	14.48	16.03	14.97	16.04	0.000548	1.15	402.92	419.74	0.2	1.55
															0
HarlowBrook	HarlowBrook	4210	2-Year	Existing Conditions + Gage	82	14	15.42	14.62	15.42	0.000151	0.63	270.65	407.45	0.11	1.42
HarlowBrook	HarlowBrook	4210	2-Year	Alternative 1: Partial Dam Removal	82	14	15.39	14.62	15.4	0.000166	0.65	261.54	404.24	0.11	1.39
HarlowBrook	HarlowBrook	4210	2-Year	Alternative 2A: Full Dam Removal	82	14	15.39	14.62	15.4	0.000166	0.65	261.54	404.24	0.11	1.39
HarlowBrook	HarlowBrook	4210	2-Year	Alternative 3: Hybrid Dam Removal	82	14	15.39	14.62	15.4	0.000166	0.65	261.54	404.24	0.11	1.39
HarlowBrook	HarlowBrook	4210	10-Year	Existing Conditions + Gage	136	14	16.06	14.74	16.06	0.000068	0.58	533.66	497.29	0.08	2.06
HarlowBrook	HarlowBrook	4210	10-Year	Alternative 1: Partial Dam Removal	136	14	15.64	14.74	15.65	0.000197	0.82	355.22	441.27	0.13	1.64
HarlowBrook	HarlowBrook	4210	10-Year	Alternative 2A: Full Dam Removal	136	14	15.64	14.74	15.65	0.000197	0.82	355.22	441.27	0.13	1.64
HarlowBrook	HarlowBrook	4210	10-Year	Alternative 3: Hybrid Dam Removal	136	14	15.64	14.74	15.65	0.000197	0.82	355.22	441.27	0.13	1.64
HarlowBrook	HarlowBrook	4210	50-Year	Existing Conditions + Gage	183	14	16.78	14.82	16.79	0.00003	0.49	858.19	527.8	0.06	2.78
HarlowBrook	HarlowBrook	4210	50-Year	Alternative 1: Partial Dam Removal	183	14	15.88	14.82	15.89	0.00019	0.91	457.21	489.19	0.13	1.88
HarlowBrook	HarlowBrook	4210	50-Year	Alternative 2A: Full Dam Removal	183	14	15.88	14.82	15.89	0.00019	0.91	457.21	489.19	0.13	1.88
HarlowBrook	HarlowBrook	4210	50-Year	Alternative 3: Hybrid Dam Removal	183	14	15.88	14.82	15.89	0.00019	0.91	457.21	489.19	0.13	1.88
HarlowBrook	HarlowBrook	4210	100-Year	Existing Conditions + Gage	204	14	17.09	14.86	17.09	0.000021	0.44	1125.15	544.99	0.05	3.09
HarlowBrook	HarlowBrook	4210	100-Year	Alternative 1: Partial Dam Removal	204	14	16.01	14.86	16.02	0.000171	0.91	513.02	495.08	0.12	2.01
HarlowBrook	HarlowBrook	4210	100-Year	Alternative 2A: Full Dam Removal	204	14	16.01	14.86	16.02	0.000171	0.91	513.02	495.08	0.12	2.01
HarlowBrook	HarlowBrook	4210	100-Year	Alternative 3: Hybrid Dam Removal	204	14	16.01	14.86	16.02	0.000171	0.91	513.02	495.08	0.12	2.01
															0
HarlowBrook	HarlowBrook	4146	2-Year	Existing Conditions + Gage	82	13.63	15.4		15.41	0.000283	0.85	279.42	478.29	0.15	1.77
HarlowBrook	HarlowBrook	4146	2-Year	Alternative 1: Partial Dam Removal	82	13.63	15.37		15.38	0.000316	0.88	266.87	469.16	0.15	1.74
HarlowBrook	HarlowBrook	4146	2-Year	Alternative 2A: Full Dam Removal	82	13.63	15.37		15.38	0.000316	0.88	266.87	469.16	0.15	1.74
HarlowBrook	HarlowBrook	4146	2-Year	Alternative 3: Hybrid Dam Removal	82	13.63	15.37		15.38	0.000316	0.88	266.87	469.16	0.15	1.74
HarlowBrook	HarlowBrook	4146	10-Year	Existing Conditions + Gage	136	13.63	16.05		16.06	0.000089	0.66	639.73	601.66	0.09	2.42
HarlowBrook	HarlowBrook	4146	10-Year	Alternative 1: Partial Dam Removal	136	13.63	15.62		15.63	0.00033	1.04	391.17	535.26	0.16	1.99
HarlowBrook	HarlowBrook	4146	10-Year	Alternative 2A: Full Dam Removal	136	13.63	15.62		15.63	0.00033	1.04	391.17	535.26	0.16	1.99
HarlowBrook	HarlowBrook	4146	10-Year	Alternative 3: Hybrid Dam Removal	136	13.63	15.62		15.63	0.00033	1.04	391.17	535.26	0.16	1.99
HarlowBrook	HarlowBrook	4146	50-Year	Existing Conditions + Gage	183	13.63	16.78		16.78	0.000033	0.51	1092.36	631.58	0.06	3.15
HarlowBrook	HarlowBrook	4146	50-Year	Alternative 1: Partial Dam Removal	183	13.63	15.87		15.88	0.000274	1.07	530.27	586.05	0.15	2.24
HarlowBrook	HarlowBrook	4146	50-Year	Alternative 2A: Full Dam Removal	183	13.63	15.87		15.88	0.000274	1.07	530.27	586.05	0.15	2.24
HarlowBrook	HarlowBrook	4146	50-Year	Alternative 3: Hybrid Dam Removal	183	13.63	15.87		15.88	0.000274	1.07	530.27	586.05	0.15	2.24
HarlowBrook	HarlowBrook	4146	100-Year	Existing Conditions + Gage	204	13.63	17.09		17.09	0.000025	0.48	1289.6	650.6	0.05	3.46
HarlowBrook	HarlowBrook	4146	100-Year	Alternative 1: Partial Dam Removal	204	13.63	16		16	0.000232	1.04	607.2	598.22	0.14	2.37
HarlowBrook	HarlowBrook	4146	100-Year	Alternative 2A: Full Dam Removal	204	13.63	16		16	0.000232	1.04	607.2	598.22	0.14	2.37
HarlowBrook	HarlowBrook	4146	100-Year	Alternative 3: Hybrid Dam Removal	204	13.63	16		16	0.000232	1.04	607.2	598.22	0.14	2.37
															0
HarlowBrook	HarlowBrook	4093	2-Year	Existing Conditions + Gage	82	14.22	15.39	14.74	15.39	0.000253	0.61	342.72	621.07	0.13	1.17
HarlowBrook	HarlowBrook	4093	2-Year	Alternative 1: Partial Dam Removal	82	14.22	15.36	14.74	15.36	0.000293	0.64	326.82	615.94	0.14	1.14
HarlowBrook	HarlowBrook	4093	2-Year	Alternative 2A: Full Dam Removal	82	14.22	15.36	14.74	15.36	0.000293	0.64	326.82	615.94	0.14	1.14
HarlowBrook	HarlowBrook	4093	2-Year	Alternative 3: Hybrid Dam Removal	82	14.22	15.36	14.74	15.36	0.000293	0.64	326.82	615.94	0.14	1.14
HarlowBrook	HarlowBrook	4093	10-Year	Existing Conditions + Gage	136	14.22	16.05	14.82	16.05	0.000065	0.48	738.99	685.03	0.07	1.83
HarlowBrook	HarlowBrook	4093	10-Year	Alternative 1: Partial Dam Removal	136	14.22	15.61	14.82	15.61	0.000263	0.75	470.88	659.66	0.14	1.39
HarlowBrook	HarlowBrook	4093	10-Year	Alternative 2A: Full Dam Removal	136	14.22	15.61	14.82	15.61	0.000263	0.75	470.88	659.66	0.14	1.39
HarlowBrook	HarlowBrook	4093	10-Year	Alternative 3: Hybrid Dam Removal	136	14.22	15.61	14.82	15.61	0.000263	0.75	470.88	659.66	0.14	1.39
HarlowBrook	HarlowBrook	4093	50-Year	Existing Conditions + Gage	183	14.22	16.78	14.85	16.78	0.000025	0.4	1192.95	707.48	0.05	2.56
HarlowBrook	HarlowBrook	4093	50-Year	Alternative 1: Partial Dam Removal	183	14.22	15.86	14.85	15.86	0.000203	0.78	621.82	678	0.13	1.64
HarlowBrook	HarlowBrook	4093	50-Year	Alternative 2A: Full Dam Removal	183	14.22	15.86	14.85	15.86	0.000203	0.78	621.82	678	0.13	1.64
HarlowBrook	HarlowBrook	4093	50-Year	Alternative 3: Hybrid Dam Removal	183	14.22	15.86	14.85	15.86	0.000203	0.78	621.82	678	0.13	1.64
HarlowBrook	HarlowBrook	4093	100-Year	Existing Conditions + Gage	204	14.22	17.09	14.87	17.09	0.000019	0.38	1388.84	733.24	0.04	2.87
HarlowBrook	HarlowBrook	4093	100-Year	Alternative 1: Partial Dam Removal	204	14.22	15.99	14.87	15.99	0.000171	0.77	702.44	683.65	0.12	1.77
HarlowBrook	HarlowBrook	4093	100-Year	Alternative 2A: Full Dam Removal	204	14.22	15.99	14.87	15.99	0.000171	0.77	702.44	683.65	0.12	1.77
HarlowBrook	HarlowBrook	4093	100-Year	Alternative 3: Hybrid Dam Removal	204	14.22	15.99	14.87	15.99	0.000171	0.77	702.44	683.65	0.12	1.77
															0
HarlowBrook	HarlowBrook	4069	2-Year	Existing Conditions + Gage	82	14.34	15.38	14.75	15.39	0.000192	0.49	388.62	736.39	0.11	1.04
HarlowBrook	HarlowBrook	4069	2-Year	Alternative 1: Partial Dam Removal	82	14.34	15.36	14.75	15.36	0.000223	0.51	368.47	730.23	0.12	1.02
HarlowBrook	HarlowBrook	4069	2-Year	Alternative 2A: Full Dam Removal	82	14.34	15.36	14.75	15.36	0.000223	0.51	368.47	730.23	0.12	1.02
HarlowBrook	HarlowBrook	4069	2-Year	Alternative 3: Hybrid Dam Removal	82	14.34	15.36	14.75	15.36	0.000223	0.51	368.47	730.23	0.12	1.02
HarlowBrook	HarlowBrook	4069	10-Year	Existing Conditions + Gage	136	14.34	16.05	14.81	16.05	0.000042	0.38	865.43	799.74	0.06	1.71
HarlowBrook	HarlowBrook	4069	10-Year	Alternative 1: Partial Dam Removal	136	14.34	15.6	14.81	15.61	0.000183	0.59	544.01	751.79	0.11	1.26
HarlowBrook	HarlowBrook	4069	10-Year	Alternative 2A: Full Dam Removal	136	14.34	15.6	14.81	15.61	0.000183	0.59	544.01	751.79	0.11	1.26
HarlowBrook	HarlowBrook	4069	10-Year	Alternative 3: Hybrid Dam Removal	136	14.34	15.6	14.81	15.61	0.000183	0.59	544.01	751.79	0.11	1.26
HarlowBrook	HarlowBrook	4069	50-Year	Existing Conditions + Gage	183	14.34	16.78	14.88	16.78	0.000015	0.31	1419.11	831.87	0.04	2.44
HarlowBrook	HarlowBrook	4069	50-Year	Alternative 1: Partial Dam Removal	183	14.34	15.86	14.88	15.86	0.000132	0.6	722.59	770.63	0.1	1.52
HarlowBrook	HarlowBrook	4069	50-Year	Alternative 2A: Full Dam Removal	183	14.34	15.86	14.88	15.86	0.000132	0.6	722.59	770.63	0.1	1.52
HarlowBrook	HarlowBrook	4069	50-Year	Alternative 3: Hybrid Dam Removal	183	14.34	15.86	14.88	15.86	0.000132	0.6	722.59	770.63	0.1	1.52
HarlowBrook	HarlowBrook	4069	100-Year	Existing Conditions + Gage	204	14.34	17.09	14.9	17.09	0.000011	0.28	1776.65	857.06	0.03	2.75
HarlowBrook	HarlowBrook	4069	100-Year	Alternative 1: Partial Dam Removal	204	14.34	15.99	14.9	15.99	0.000109	0.59	819.62	794.75	0.09	1.65
HarlowBrook	HarlowBrook	4069	100-Year	Alternative 2A: Full Dam Removal	204	14.34	15.99	14.9	15.99	0.000109	0.59	819.62	794.75	0.09	1.65

HarlowBrook	HarlowBrook	4069	100-Year	Alternative 3: Hybrid Dam Removal	204	14.34	15.99	14.9	15.99	0.000109	0.59	819.62	794.75	0.09	1.65
															0
HarlowBrook	HarlowBrook	4053	2-Year	Existing Conditions + Gage	82	14.59	15.38	14.75	15.38	0.000314	0.58	375.86	697.27	0.14	0.79
HarlowBrook	HarlowBrook	4053	2-Year	Alternative 1: Partial Dam Removal	82	14.59	15.35	14.75	15.35	0.000376	0.61	356.06	692.78	0.15	0.76
HarlowBrook	HarlowBrook	4053	2-Year	Alternative 2A: Full Dam Removal	82	14.59	15.35	14.75	15.35	0.000376	0.61	356.06	692.78	0.15	0.76
HarlowBrook	HarlowBrook	4053	2-Year	Alternative 3: Hybrid Dam Removal	82	14.59	15.35	14.75	15.35	0.000376	0.61	356.06	692.78	0.15	0.76
HarlowBrook	HarlowBrook	4053	10-Year	Existing Conditions + Gage	136	14.59	16.05	14.84	16.05	0.000064	0.45	835.26	736.55	0.07	1.46
HarlowBrook	HarlowBrook	4053	10-Year	Alternative 1: Partial Dam Removal	136	14.59	15.6	14.84	15.6	0.000296	0.71	526.18	719.91	0.14	1.01
HarlowBrook	HarlowBrook	4053	10-Year	Alternative 2A: Full Dam Removal	136	14.59	15.6	14.84	15.6	0.000296	0.71	526.18	719.91	0.14	1.01
HarlowBrook	HarlowBrook	4053	10-Year	Alternative 3: Hybrid Dam Removal	136	14.59	15.6	14.84	15.6	0.000296	0.71	526.18	719.91	0.14	1.01
HarlowBrook	HarlowBrook	4053	50-Year	Existing Conditions + Gage	183	14.59	16.78	14.9	16.78	0.000025	0.38	1360.34	785.78	0.05	2.19
HarlowBrook	HarlowBrook	4053	50-Year	Alternative 1: Partial Dam Removal	183	14.59	15.85	14.9	15.85	0.000209	0.72	699.91	730.04	0.13	1.26
HarlowBrook	HarlowBrook	4053	50-Year	Alternative 2A: Full Dam Removal	183	14.59	15.85	14.9	15.85	0.000209	0.72	699.91	730.04	0.13	1.26
HarlowBrook	HarlowBrook	4053	50-Year	Alternative 3: Hybrid Dam Removal	183	14.59	15.85	14.9	15.85	0.000209	0.72	699.91	730.04	0.13	1.26
HarlowBrook	HarlowBrook	4053	100-Year	Existing Conditions + Gage	204	14.59	17.09	14.91	17.09	0.000018	0.36	1589.03	797.02	0.04	2.5
HarlowBrook	HarlowBrook	4053	100-Year	Alternative 1: Partial Dam Removal	204	14.59	15.99	14.91	15.99	0.000173	0.71	791.86	734.73	0.12	1.4
HarlowBrook	HarlowBrook	4053	100-Year	Alternative 2A: Full Dam Removal	204	14.59	15.99	14.91	15.99	0.000173	0.71	791.86	734.73	0.12	1.4
HarlowBrook	HarlowBrook	4053	100-Year	Alternative 3: Hybrid Dam Removal	204	14.59	15.99	14.91	15.99	0.000173	0.71	791.86	734.73	0.12	1.4
															0
HarlowBrook	HarlowBrook	4028	2-Year	Existing Conditions + Gage	82	14.62	15.36	14.89	15.37	0.001497	1.22	180.02	403.6	0.3	0.74
HarlowBrook	HarlowBrook	4028	2-Year	Alternative 1: Partial Dam Removal	82	14.62	15.33	14.89	15.33	0.001861	1.3	167.09	397.55	0.33	0.71
HarlowBrook	HarlowBrook	4028	2-Year	Alternative 2A: Full Dam Removal	82	14.62	15.33	14.89	15.33	0.001861	1.3	167.09	397.55	0.33	0.71
HarlowBrook	HarlowBrook	4028	2-Year	Alternative 3: Hybrid Dam Removal	82	14.62	15.33	14.89	15.33	0.001861	1.3	167.09	397.55	0.33	0.71
HarlowBrook	HarlowBrook	4028	10-Year	Existing Conditions + Gage	136	14.62	16.04	15	16.05	0.000213	0.81	470.96	506.89	0.13	1.42
HarlowBrook	HarlowBrook	4028	10-Year	Alternative 1: Partial Dam Removal	136	14.62	15.58	15	15.59	0.001226	1.4	267.24	436.7	0.29	0.96
HarlowBrook	HarlowBrook	4028	10-Year	Alternative 2A: Full Dam Removal	136	14.62	15.58	15	15.59	0.001226	1.4	267.24	436.7	0.29	0.96
HarlowBrook	HarlowBrook	4028	10-Year	Alternative 3: Hybrid Dam Removal	136	14.62	15.58	15	15.59	0.001226	1.4	267.24	436.7	0.29	0.96
HarlowBrook	HarlowBrook	4028	50-Year	Existing Conditions + Gage	183	14.62	16.78	15.08	16.78	0.000067	0.62	870.31	645.8	0.08	2.16
HarlowBrook	HarlowBrook	4028	50-Year	Alternative 1: Partial Dam Removal	183	14.62	15.84	15.08	15.85	0.000754	1.34	377.06	475.26	0.24	1.22
HarlowBrook	HarlowBrook	4028	50-Year	Alternative 2A: Full Dam Removal	183	14.62	15.84	15.08	15.85	0.000754	1.34	377.06	475.26	0.24	1.22
HarlowBrook	HarlowBrook	4028	50-Year	Alternative 3: Hybrid Dam Removal	183	14.62	15.84	15.08	15.85	0.000754	1.34	377.06	475.26	0.24	1.22
HarlowBrook	HarlowBrook	4028	100-Year	Existing Conditions + Gage	204	14.62	17.09	15.1	17.09	0.000043	0.55	1135.1	674.63	0.07	2.47
HarlowBrook	HarlowBrook	4028	100-Year	Alternative 1: Partial Dam Removal	204	14.62	15.97	15.1	15.98	0.00059	1.29	437.85	489.66	0.22	1.35
HarlowBrook	HarlowBrook	4028	100-Year	Alternative 2A: Full Dam Removal	204	14.62	15.97	15.1	15.98	0.00059	1.29	437.85	489.66	0.22	1.35
HarlowBrook	HarlowBrook	4028	100-Year	Alternative 3: Hybrid Dam Removal	204	14.62	15.97	15.1	15.98	0.00059	1.29	437.85	489.66	0.22	1.35
															0
HarlowBrook	HarlowBrook	3982	2-Year	Existing Conditions + Gage	82	14.51	15.31	14.7	15.32	0.00084	0.83	209.71	367.64	0.22	0.8
HarlowBrook	HarlowBrook	3982	2-Year	Alternative 1: Partial Dam Removal	82	14.51	15.26	14.7	15.27	0.001103	0.9	192.98	363.07	0.25	0.75
HarlowBrook	HarlowBrook	3982	2-Year	Alternative 2A: Full Dam Removal	82	14.51	15.26	14.7	15.27	0.001103	0.9	192.98	363.07	0.25	0.75
HarlowBrook	HarlowBrook	3982	2-Year	Alternative 3: Hybrid Dam Removal	82	14.51	15.26	14.7	15.27	0.001103	0.9	192.98	363.07	0.25	0.75
HarlowBrook	HarlowBrook	3982	10-Year	Existing Conditions + Gage	136	14.51	16.04	14.81	16.04	0.000151	0.66	477.77	428.44	0.11	1.53
HarlowBrook	HarlowBrook	3982	10-Year	Alternative 1: Partial Dam Removal	136	14.51	15.54	14.81	15.54	0.000773	1.03	291.02	384.7	0.23	1.03
HarlowBrook	HarlowBrook	3982	10-Year	Alternative 2A: Full Dam Removal	136	14.51	15.54	14.81	15.54	0.000773	1.03	291.02	384.7	0.23	1.03
HarlowBrook	HarlowBrook	3982	10-Year	Alternative 3: Hybrid Dam Removal	136	14.51	15.54	14.81	15.54	0.000773	1.03	291.02	384.7	0.23	1.03
HarlowBrook	HarlowBrook	3982	50-Year	Existing Conditions + Gage	183	14.51	16.77	14.88	16.78	0.000058	0.57	785.56	509.19	0.07	2.26
HarlowBrook	HarlowBrook	3982	50-Year	Alternative 1: Partial Dam Removal	183	14.51	15.81	14.88	15.82	0.000527	1.06	391.02	408.69	0.2	1.3
HarlowBrook	HarlowBrook	3982	50-Year	Alternative 2A: Full Dam Removal	183	14.51	15.81	14.88	15.82	0.000527	1.06	391.02	408.69	0.2	1.3
HarlowBrook	HarlowBrook	3982	50-Year	Alternative 3: Hybrid Dam Removal	183	14.51	15.81	14.88	15.82	0.000527	1.06	391.02	408.69	0.2	1.3
HarlowBrook	HarlowBrook	3982	100-Year	Existing Conditions + Gage	204	14.51	17.08	14.92	17.09	0.00004	0.53	1026.96	702.09	0.06	2.57
HarlowBrook	HarlowBrook	3982	100-Year	Alternative 1: Partial Dam Removal	204	14.51	15.95	14.92	15.96	0.000429	1.05	444.7	422.96	0.18	1.44
HarlowBrook	HarlowBrook	3982	100-Year	Alternative 2A: Full Dam Removal	204	14.51	15.95	14.92	15.96	0.000429	1.05	444.7	422.96	0.18	1.44
HarlowBrook	HarlowBrook	3982	100-Year	Alternative 3: Hybrid Dam Removal	204	14.51	15.95	14.92	15.96	0.000429	1.05	444.7	422.96	0.18	1.44
															0
HarlowBrook	HarlowBrook	3907	2-Year	Existing Conditions + Gage	82	13.98	15.26		15.27	0.000451	1.05	234.54	379.95	0.19	1.28
HarlowBrook	HarlowBrook	3907	2-Year	Alternative 1: Partial Dam Removal	82	13.98	15.2		15.21	0.000577	1.14	211.61	366.18	0.21	1.22
HarlowBrook	HarlowBrook	3907	2-Year	Alternative 2A: Full Dam Removal	82	13.98	15.2		15.21	0.000577	1.14	211.61	366.18	0.21	1.22
HarlowBrook	HarlowBrook	3907	2-Year	Alternative 3: Hybrid Dam Removal	82	13.98	15.2		15.21	0.000577	1.14	211.61	366.18	0.21	1.22
HarlowBrook	HarlowBrook	3907	10-Year	Existing Conditions + Gage	136	13.98	16.03		16.03	0.000107	0.75	544.63	428.11	0.1	2.05
HarlowBrook	HarlowBrook	3907	10-Year	Alternative 1: Partial Dam Removal	136	13.98	15.49		15.5	0.000504	1.27	322.43	400.45	0.2	1.51
HarlowBrook	HarlowBrook	3907	10-Year	Alternative 2A: Full Dam Removal	136	13.98	15.49		15.5	0.000504	1.27	322.43	400.45	0.2	1.51
HarlowBrook	HarlowBrook	3907	10-Year	Alternative 3: Hybrid Dam Removal	136	13.98	15.49		15.5	0.000504	1.27	322.43	400.45	0.2	1.51
HarlowBrook	HarlowBrook	3907	50-Year	Existing Conditions + Gage	183	13.98	16.77		16.77	0.000048	0.63	885.48	506.01	0.07	2.79
HarlowBrook	HarlowBrook	3907	50-Year	Alternative 1: Partial Dam Removal	183	13.98	15.78		15.78	0.000369	1.25	439.33	414.42	0.18	1.8
HarlowBrook	HarlowBrook	3907	50-Year	Alternative 2A: Full Dam Removal	183	13.98	15.78		15.78	0.000369	1.25	439.33	414.42	0.18	1.8
HarlowBrook	HarlowBrook	3907	50-Year	Alternative 3: Hybrid Dam Removal	183	13.98	15.78		15.78	0.000369	1.25	439.33	414.42	0.18	1.8
HarlowBrook	HarlowBrook	3907	100-Year	Existing Conditions + Gage	204	13.98	17.08		17.08	0.000039	0.61	1046.4	530.11	0.06	3.1
HarlowBrook	HarlowBrook	3907	100-Year	Alternative 1: Partial Dam Removal	204	13.98	15.92		15.93	0.000312	1.22	500.44	424.37	0.17	1.94
HarlowBrook	HarlowBrook	3907	100-Year	Alternative 2A: Full Dam Removal	204	13.98	15.92		15.93	0.000312	1.22	500.44	424.37	0.17	1.94
HarlowBrook	HarlowBrook	3907	100-Year	Alternative 3: Hybrid Dam Removal	204	13.98	15.92		15.93	0.000312	1.22	500.44	424.37	0.17	1.94
															0
HarlowBrook	HarlowBrook	3824	2-Year	Existing Conditions + Gage	82	13.9	15.22	14.73	15.23	0.000656	1.02	162.1	282.44	0.21	1.32
HarlowBrook	HarlowBrook	3824	2-Year	Alternative 1: Partial Dam Removal	82	13.9	15.14	14.73	15.15	0.001019	1.18	139.27	276.52	0.26	1.24
HarlowBrook	HarlowBrook	3824	2-Year	Alternative 2A: Full Dam Removal	82	13.9	15.14	14.73	15.15	0.001019	1.18	139.27	276.52	0.26	1.24
HarlowBrook	HarlowBrook	3824	2-Year	Alternative 3: Hybrid Dam Removal	82	13.9	15.14	14.73	15.15	0.001019	1.18	139.27	276.52	0.26	1.24
HarlowBrook	HarlowBrook	3824	10-Year	Existing Conditions + Gage	136	13.9	16.01	14.84	16.02	0.000117	0.71	407.43	318.8	0.1	2.11
HarlowBrook	HarlowBrook	3824	10-Year	Alternative 1: Partial Dam Removal	136	13.9	15.44	14.84	15.45	0.000688	1.25	226.21	302.69	0.23	1.54
HarlowBrook	HarlowBrook	3824	10-Year	Alternative 2A: Full Dam Removal	136	13.9	15.44	14.84	15.45	0.000688	1.25	226.21	302.69	0.23	1.54
HarlowBrook	HarlowBrook	3824	10-Year	Alternative 3: Hybrid Dam Removal	136	13.9	15.44	14.84	15.45	0.000688	1.25	226.21	302.69	0.23	1.54
HarlowBrook	HarlowBrook	3824	50-Year	Existing Conditions + Gage	183	13.9	16.77	14.89	16.77	0.000049	0.6	651.9	336.3	0.07	2.87
HarlowBrook	HarlowBrook	3824	50-Year	Alternative 1: Partial Dam Removal	183	13.9	15.74	14.89	15.75	0.000447	1.21	319.93	315.18	0.19	1.84
HarlowBrook	HarlowBrook	3824	50-Year	Alternative 2A: Full Dam Removal	183	13.9	15.74	14.89	15.75	0.000447	1.21	319.93	315.18	0.19	1.84
HarlowBrook	HarlowBrook	3824	50-Year	Alternative 3: Hybrid Dam Removal	183	13.9	15.74	14.89	15.75	0.000447	1.21	319.93	315.18	0.19	1.84
HarlowBrook	HarlowBrook	3824	100-Year	Existing Conditions + Gage	204	13.9	17.08	14.88	17.08	0.000039	0.58	754.25	414.4	0.06	3.18
HarlowBrook	HarlowBrook	3824	100-Year	Alternative 1: Partial Dam Removal	204	13.9	15.89	14.88	15.9	0.000362	1.17	367.95	316.41	0.18	1.99
HarlowBrook	HarlowBrook	3824	100-Year	Alternative 2A: Full Dam Removal	204	13.9	15.89	14.88	15.9	0.000362	1.17	367.95	316.41	0.18	1.99
HarlowBrook	HarlowBrook	3824	100-Year	Alternative 3: Hybrid Dam Removal	204	13.9	15.89	14.88	15.9	0.000362	1.17	367.95	316.41	0.18	1.99
															0
HarlowBrook	HarlowBrook	3766	2-Year	Existing Conditions + Gage	82	13.6	15.19		15.2	0.000317	1.02	176.38	243.56	0.16	1.59
HarlowBrook	HarlowBrook	3766	2-Year	Alternative 1: Partial Dam Removal	82	13.6	15.1		15.11	0.000444	1.15	153.84	240.59	0.19	1.5
HarlowBrook	HarlowBrook	3766	2-Year	Alternative 2A: Full Dam Removal	82	13.6	15.1		15.11	0.000444	1.15	153.84	240.59	0.19	1.5
HarlowBrook	HarlowBrook	3766	2-Year	Alternative 3: Hybrid Dam Removal	82	13.6	15.1		15.11	0.000444	1.15	153.84	240.59	0.19	1.5
HarlowBrook	HarlowBrook	3766	10-Year	Existing Conditions + Gage	136	13.6	16.01		16.01	0.000113	0.85	389.86	295.54	0.1	2.41
HarlowBrook	HarlowBrook	3766	10-Year	Alternative 1: Partial Dam Removal	136	13.6	15.4		15.42	0.00045	1.35	228.12	250.65	0.2	1.8
HarlowBrook	HarlowBrook	3766	10-Year	Alternative 2A: Full Dam Removal	136	13.6	15.4		15.42	0.00045	1.35	228.12	250.65	0.2	1.8
HarlowBrook	HarlowBrook	3766	10-Year	Alternative 3: Hybrid Dam Removal	136	13.6	15.4		15.42	0.00045	1.35	228.12	250.65	0.2	1.8
HarlowBrook	HarlowBrook	3766	50-Year	Existing Conditions + Gage	183	13.6	16.76		16.77	0.000055	0.73	616.69	304.84	0.08	3.16
HarlowBrook	HarlowBrook	3766	50-Year	Alternative 1: Partial Dam Removal	183	13.6	15.71		15.73	0.000367	1.38	306.96	262.62	0.18	2.11
HarlowBrook	HarlowBrook	3766	50-Year	Alternative 2A: Full Dam Removal	183	13.6	15.71		15.73	0.000367	1.38	306.96	262.62	0.18	2.11
HarlowBrook	HarlowBrook	3766	50-Year	Alternative 3: Hybrid Dam Removal	183	13.6	15.71		15.73	0.000367	1.38	306.96	262.62	0.18	2.11
HarlowBrook	HarlowBrook	3766	100-Year	Existing Conditions + Gage	204	13.6	17.07		17.08	0.000045	0.71	712.32	308.07	0.07	3.47
HarlowBrook	HarlowBrook	3766	100-Year	Alternative 1: Partial Dam Removal	204	13.6	15.86		15.88	0.000331	1.39	348.85	281.23	0.18	2.26
HarlowBrook	HarlowBrook	3766	100-Year	Alternative 2A: Full Dam Removal	204	13.6	15.86		15.88	0.000331	1.39	348.85	281.23	0.18	2.26
HarlowBrook	HarlowBrook	3766	100-Year	Alternative 3: Hybrid Dam Removal	204	13.6	15.86		15.88	0.000331	1.39	348.85	281.23	0.18	2.26
															0
HarlowBrook	HarlowBrook	3697	2-Year	Existing Conditions + Gage	82	13.89	15.14	14.75	15.16	0.001313	1.62	129.23	206.06	0.31	1.25
HarlowBrook	HarlowBrook	3697	2-Year	Alternative 1: Partial Dam Removal	82	13.89	15.03	14.75	15.06	0.002329	1.95	105.54	195.44	0.4	1.14
HarlowBrook	HarlowBrook	3697	2-Year	Alternative 2A: Full Dam Removal	82	13.89	15.03	14.75	15.06	0.002329	1.95	105.54	195.44	0.4	1.14
HarlowBrook	HarlowBrook	3697	2-Year	Alternative 3: Hybrid Dam Removal	82	13.89	15.03	14.75	15.06	0.002329	1.95	105.54	195.44	0.4	1.14
HarlowBrook	HarlowBrook	3697	10-Year	Existing Conditions + Gage	136	13.89	15.99	14.85	16	0.000257	1.13	319.04	240.15	0.15	2.1
HarlowBrook	HarlowBrook	3697	10-Year	Alternative 1: Partial Dam Removal	136	13.89	15.34	14.85	15.37	0.001631	2.06	169.62	213.22	0.35	1.45
HarlowBrook	HarlowBrook	3697	10-Year	Alternative 2A: Full Dam Removal	136	13.89	15.34	14.85	15.37	0.001631	2.06	169.62	213.22	0.35	1.45
HarlowBrook	HarlowBrook	3697	10-Year	Alternative 3: Hybrid Dam Removal	136	13.89	15.34	14.85	15.37	0.001631	2.06	169.62	213.22	0.35	1.45
HarlowBrook	HarlowBrook	3697	50-Year	Existing Conditions + Gage	183	13.89	16.75	14.93	16.76	0.000112	0.95	510.22	270.83	0.11	2.86
HarlowBrook	HarlowBrook	3697	50-Year	Alternative 1: Partial Dam Removal	183	13.89	15.66	14.93	15.69	0.001052	1.98	240.79	227.18	0.3	1.77
HarlowBrook	HarlowBrook	3697	50-Year	Alternative 2A: Full Dam Removal	183	13.89	15.66	14.93	15.69	0.001052	1.98	240.79	227.18	0.3	1.77
HarlowBrook	HarlowBrook	3697	50-Year	Alternative 3: Hybrid Dam Removal	183	13.89	15.66	14.93	15.69	0.001052	1.98	240.79	227.18	0.3	1.77
HarlowBrook	HarlowBrook	3697	100-Year	Existing Conditions + Gage	204	13.89	17.07	14.97	17.07	0.000088	0.92	594.7	294.98	0.1	3.18
HarlowBrook	HarlowBrook	3697	100-Year	Alternative 1: Partial Dam Removal	204	13.89	15.82	14.97	15.85	0.000887	1.96	277.85	239.72	0.28	1.93
HarlowBrook	HarlowBrook	3697	100-Year	Alternative 2A: Full Dam Removal	204	13.89	15.82	14.97	15.85	0.000887	1.96	277.85	239.72	0.28	1.93
HarlowBrook	HarlowBrook	3697	100-Year	Alternative 3: Hybrid Dam Removal	204	13.89	15.82	14.97	15.85	0.000887	1.96	277.85	239.72	0.28	1.93
															0

HarlowBrook	HarlowBrook	3620	2-Year	Existing Conditions + Gage	82	13.32	15.09	14.36	15.11	0.000423	1.27	183.39	261.15	0.19	1.77
HarlowBrook	HarlowBrook	3620	2-Year	Alternative 1: Partial Dam Removal	82	13.32	14.93	14.36	14.95	0.000769	1.58	141.76	241.62	0.25	1.61
HarlowBrook	HarlowBrook	3620	2-Year	Alternative 2A: Full Dam Removal	82	13.32	14.93	14.36	14.95	0.000769	1.58	141.76	241.62	0.25	1.61
HarlowBrook	HarlowBrook	3620	2-Year	Alternative 3: Hybrid Dam Removal	82	13.32	14.93	14.36	14.95	0.000769	1.58	141.76	241.62	0.25	1.61
HarlowBrook	HarlowBrook	3620	10-Year	Existing Conditions + Gage	136	13.32	15.98	14.58	15.99	0.000116	0.92	431.66	292.55	0.11	2.66
HarlowBrook	HarlowBrook	3620	10-Year	Alternative 1: Partial Dam Removal	136	13.32	15.26	14.58	15.29	0.000661	1.71	227.95	267.74	0.24	1.94
HarlowBrook	HarlowBrook	3620	10-Year	Alternative 2A: Full Dam Removal	136	13.32	15.26	14.58	15.29	0.000661	1.71	227.95	267.74	0.24	1.94
HarlowBrook	HarlowBrook	3620	10-Year	Alternative 3: Hybrid Dam Removal	136	13.32	15.26	14.58	15.29	0.000661	1.71	227.95	267.74	0.24	1.94
HarlowBrook	HarlowBrook	3620	50-Year	Existing Conditions + Gage	183	13.32	16.75	14.65	16.75	0.000059	0.8	661.06	315.54	0.08	3.43
HarlowBrook	HarlowBrook	3620	50-Year	Alternative 1: Partial Dam Removal	183	13.32	15.61	14.65	15.63	0.000467	1.64	324.48	284.94	0.21	2.29
HarlowBrook	HarlowBrook	3620	50-Year	Alternative 2A: Full Dam Removal	183	13.32	15.61	14.65	15.63	0.000467	1.64	324.48	284.94	0.21	2.29
HarlowBrook	HarlowBrook	3620	50-Year	Alternative 3: Hybrid Dam Removal	183	13.32	15.61	14.65	15.63	0.000467	1.64	324.48	284.94	0.21	2.29
HarlowBrook	HarlowBrook	3620	100-Year	Existing Conditions + Gage	204	13.32	17.06	14.78	17.07	0.000051	0.79	760.11	343.04	0.08	3.74
HarlowBrook	HarlowBrook	3620	100-Year	Alternative 1: Partial Dam Removal	204	13.32	15.78	14.78	15.8	0.000397	1.6	373.35	290.56	0.2	2.46
HarlowBrook	HarlowBrook	3620	100-Year	Alternative 2A: Full Dam Removal	204	13.32	15.78	14.78	15.8	0.000397	1.6	373.35	290.56	0.2	2.46
HarlowBrook	HarlowBrook	3620	100-Year	Alternative 3: Hybrid Dam Removal	204	13.32	15.78	14.78	15.8	0.000397	1.6	373.35	290.56	0.2	2.46
															0
HarlowBrook	HarlowBrook	3519	2-Year	Existing Conditions + Gage	82	13.23	15.06		15.07	0.000305	0.99	206.88	284.29	0.16	1.83
HarlowBrook	HarlowBrook	3519	2-Year	Alternative 1: Partial Dam Removal	82	13.23	14.87		14.88	0.000644	1.28	152.55	269.87	0.22	1.64
HarlowBrook	HarlowBrook	3519	2-Year	Alternative 2A: Full Dam Removal	82	13.23	14.87		14.88	0.000644	1.28	152.55	269.87	0.22	1.64
HarlowBrook	HarlowBrook	3519	2-Year	Alternative 3: Hybrid Dam Removal	82	13.23	14.87		14.88	0.000644	1.28	152.55	269.87	0.22	1.64
HarlowBrook	HarlowBrook	3519	10-Year	Existing Conditions + Gage	136	13.23	15.97		15.98	0.000079	0.73	483.22	314.04	0.09	2.74
HarlowBrook	HarlowBrook	3519	10-Year	Alternative 1: Partial Dam Removal	136	13.23	15.21		15.23	0.000515	1.39	249.57	294.78	0.21	1.98
HarlowBrook	HarlowBrook	3519	10-Year	Alternative 2A: Full Dam Removal	136	13.23	15.21		15.23	0.000515	1.39	249.57	294.78	0.21	1.98
HarlowBrook	HarlowBrook	3519	10-Year	Alternative 3: Hybrid Dam Removal	136	13.23	15.21		15.23	0.000515	1.39	249.57	294.78	0.21	1.98
HarlowBrook	HarlowBrook	3519	50-Year	Existing Conditions + Gage	183	13.23	16.75		16.75	0.000041	0.65	732.37	339.04	0.07	3.52
HarlowBrook	HarlowBrook	3519	50-Year	Alternative 1: Partial Dam Removal	183	13.23	15.58		15.59	0.000336	1.31	360.37	307.08	0.18	2.35
HarlowBrook	HarlowBrook	3519	50-Year	Alternative 2A: Full Dam Removal	183	13.23	15.58		15.59	0.000336	1.31	360.37	307.08	0.18	2.35
HarlowBrook	HarlowBrook	3519	50-Year	Alternative 3: Hybrid Dam Removal	183	13.23	15.58		15.59	0.000336	1.31	360.37	307.08	0.18	2.35
HarlowBrook	HarlowBrook	3519	100-Year	Existing Conditions + Gage	204	13.23	17.06		17.06	0.000034	0.63	846.7	387.77	0.06	3.83
HarlowBrook	HarlowBrook	3519	100-Year	Alternative 1: Partial Dam Removal	204	13.23	15.75		15.76	0.000278	1.27	414.3	309.42	0.16	2.52
HarlowBrook	HarlowBrook	3519	100-Year	Alternative 2A: Full Dam Removal	204	13.23	15.75		15.76	0.000278	1.27	414.3	309.42	0.16	2.52
HarlowBrook	HarlowBrook	3519	100-Year	Alternative 3: Hybrid Dam Removal	204	13.23	15.75		15.76	0.000278	1.27	414.3	309.42	0.16	2.52
															0
HarlowBrook	HarlowBrook	3361	2-Year	Existing Conditions + Gage	82	13.35	15.01		15.02	0.00033	1.14	208.72	266.98	0.17	1.66
HarlowBrook	HarlowBrook	3361	2-Year	Alternative 1: Partial Dam Removal	82	13.35	14.74		14.77	0.000848	1.59	140.9	240.88	0.26	1.39
HarlowBrook	HarlowBrook	3361	2-Year	Alternative 2A: Full Dam Removal	82	13.35	14.74		14.77	0.000848	1.59	140.9	240.88	0.26	1.39
HarlowBrook	HarlowBrook	3361	2-Year	Alternative 3: Hybrid Dam Removal	82	13.35	14.74		14.77	0.000848	1.59	140.9	240.88	0.26	1.39
HarlowBrook	HarlowBrook	3361	10-Year	Existing Conditions + Gage	136	13.35	15.96		15.96	0.000087	0.82	481.44	294.16	0.09	2.61
HarlowBrook	HarlowBrook	3361	10-Year	Alternative 1: Partial Dam Removal	136	13.35	15.11		15.13	0.000663	1.69	236.51	276.78	0.24	1.76
HarlowBrook	HarlowBrook	3361	10-Year	Alternative 2A: Full Dam Removal	136	13.35	15.11		15.13	0.000663	1.69	236.51	276.78	0.24	1.76
HarlowBrook	HarlowBrook	3361	10-Year	Alternative 3: Hybrid Dam Removal	136	13.35	15.11		15.13	0.000663	1.69	236.51	276.78	0.24	1.76
HarlowBrook	HarlowBrook	3361	50-Year	Existing Conditions + Gage	183	13.35	16.74		16.74	0.000049	0.74	714.76	313.65	0.07	3.39
HarlowBrook	HarlowBrook	3361	50-Year	Alternative 1: Partial Dam Removal	183	13.35	15.52		15.53	0.0004	1.53	352	289.94	0.19	2.17
HarlowBrook	HarlowBrook	3361	50-Year	Alternative 2A: Full Dam Removal	183	13.35	15.52		15.53	0.0004	1.53	352	289.94	0.19	2.17
HarlowBrook	HarlowBrook	3361	50-Year	Alternative 3: Hybrid Dam Removal	183	13.35	15.52		15.53	0.0004	1.53	352	289.94	0.19	2.17
HarlowBrook	HarlowBrook	3361	100-Year	Existing Conditions + Gage	204	13.35	17.05		17.06	0.000041	0.72	818.35	345.35	0.07	3.7
HarlowBrook	HarlowBrook	3361	100-Year	Alternative 1: Partial Dam Removal	204	13.35	15.7		15.72	0.000327	1.47	406.08	291.81	0.18	2.35
HarlowBrook	HarlowBrook	3361	100-Year	Alternative 2A: Full Dam Removal	204	13.35	15.7		15.72	0.000327	1.47	406.08	291.81	0.18	2.35
HarlowBrook	HarlowBrook	3361	100-Year	Alternative 3: Hybrid Dam Removal	204	13.35	15.7		15.72	0.000327	1.47	406.08	291.81	0.18	2.35
															0
HarlowBrook	HarlowBrook	3293	2-Year	Existing Conditions + Gage	82	13.53	14.99	14.29	15	0.000288	0.96	250.36	297.9	0.15	1.46
HarlowBrook	HarlowBrook	3293	2-Year	Alternative 1: Partial Dam Removal	82	13.53	14.68	14.29	14.7	0.001068	1.52	159.95	287.76	0.28	1.15
HarlowBrook	HarlowBrook	3293	2-Year	Alternative 2A: Full Dam Removal	82	13.53	14.68	14.29	14.7	0.001068	1.52	159.95	287.76	0.28	1.15
HarlowBrook	HarlowBrook	3293	2-Year	Alternative 3: Hybrid Dam Removal	82	13.53	14.68	14.29	14.7	0.001068	1.52	159.95	287.76	0.28	1.15
HarlowBrook	HarlowBrook	3293	10-Year	Existing Conditions + Gage	136	13.53	15.96	14.4	15.96	0.000072	0.7	549.75	338.22	0.08	2.43
HarlowBrook	HarlowBrook	3293	10-Year	Alternative 1: Partial Dam Removal	136	13.53	15.08	14.4	15.09	0.000594	1.44	275.38	299.26	0.22	1.55
HarlowBrook	HarlowBrook	3293	10-Year	Alternative 2A: Full Dam Removal	136	13.53	15.08	14.4	15.09	0.000594	1.44	275.38	299.26	0.22	1.55
HarlowBrook	HarlowBrook	3293	10-Year	Alternative 3: Hybrid Dam Removal	136	13.53	15.08	14.4	15.09	0.000594	1.44	275.38	299.26	0.22	1.55
HarlowBrook	HarlowBrook	3293	50-Year	Existing Conditions + Gage	183	13.53	16.74	14.48	16.74	0.000039	0.64	840.36	468.46	0.07	3.21
HarlowBrook	HarlowBrook	3293	50-Year	Alternative 1: Partial Dam Removal	183	13.53	15.5	14.48	15.51	0.000335	1.3	403.06	307.06	0.17	1.97
HarlowBrook	HarlowBrook	3293	50-Year	Alternative 2A: Full Dam Removal	183	13.53	15.5	14.48	15.51	0.000335	1.3	403.06	307.06	0.17	1.97
HarlowBrook	HarlowBrook	3293	50-Year	Alternative 3: Hybrid Dam Removal	183	13.53	15.5	14.48	15.51	0.000335	1.3	403.06	307.06	0.17	1.97
HarlowBrook	HarlowBrook	3293	100-Year	Existing Conditions + Gage	204	13.53	17.05	14.57	17.05	0.000033	0.63	998.63	682.4	0.06	3.52
HarlowBrook	HarlowBrook	3293	100-Year	Alternative 1: Partial Dam Removal	204	13.53	15.69	14.57	15.69	0.000273	1.26	461.79	314.98	0.16	2.16
HarlowBrook	HarlowBrook	3293	100-Year	Alternative 2A: Full Dam Removal	204	13.53	15.69	14.57	15.69	0.000273	1.26	461.79	314.98	0.16	2.16
HarlowBrook	HarlowBrook	3293	100-Year	Alternative 3: Hybrid Dam Removal	204	13.53	15.69	14.57	15.69	0.000273	1.26	461.79	314.98	0.16	2.16
															0
HarlowBrook	HarlowBrook	3063	2-Year	Existing Conditions + Gage	82	13.39	14.94	13.8	14.94	0.000156	0.78	358.14	405.31	0.12	1.55
HarlowBrook	HarlowBrook	3063	2-Year	Alternative 1: Partial Dam Removal	82	13.39	14.35	13.8	14.37	0.001561	1.71	153.1	284.61	0.33	0.96
HarlowBrook	HarlowBrook	3063	2-Year	Alternative 2A: Full Dam Removal	82	13.39	14.35	13.8	14.37	0.001561	1.71	153.1	284.61	0.33	0.96
HarlowBrook	HarlowBrook	3063	2-Year	Alternative 3: Hybrid Dam Removal	82	13.39	14.35	13.8	14.37	0.001561	1.71	153.1	284.61	0.33	0.96
HarlowBrook	HarlowBrook	3063	10-Year	Existing Conditions + Gage	136	13.39	15.94	13.98	15.94	0.000042	0.58	820.39	634.1	0.07	2.55
HarlowBrook	HarlowBrook	3063	10-Year	Alternative 1: Partial Dam Removal	136	13.39	14.95	13.98	14.96	0.000415	1.27	362.02	406.78	0.19	1.56
HarlowBrook	HarlowBrook	3063	10-Year	Alternative 2A: Full Dam Removal	136	13.39	14.95	13.98	14.96	0.000415	1.27	362.02	406.78	0.19	1.56
HarlowBrook	HarlowBrook	3063	10-Year	Alternative 3: Hybrid Dam Removal	136	13.39	14.95	13.98	14.96	0.000415	1.27	362.02	406.78	0.19	1.56
HarlowBrook	HarlowBrook	3063	50-Year	Existing Conditions + Gage	183	13.39	16.73	14.05	16.73	0.000021	0.49	1343.48	862.05	0.05	3.34
HarlowBrook	HarlowBrook	3063	50-Year	Alternative 1: Partial Dam Removal	183	13.39	15.43	14.05	15.44	0.000205	1.09	565.54	480.47	0.14	2.04
HarlowBrook	HarlowBrook	3063	50-Year	Alternative 2A: Full Dam Removal	183	13.39	15.43	14.05	15.44	0.000205	1.09	565.54	480.47	0.14	2.04
HarlowBrook	HarlowBrook	3063	50-Year	Alternative 3: Hybrid Dam Removal	183	13.39	15.43	14.05	15.44	0.000205	1.09	565.54	480.47	0.14	2.04
HarlowBrook	HarlowBrook	3063	100-Year	Existing Conditions + Gage	204	13.39	17.05	14.09	17.05	0.000017	0.47	1607.1	1030.15	0.04	3.66
HarlowBrook	HarlowBrook	3063	100-Year	Alternative 1: Partial Dam Removal	204	13.39	15.63	14.09	15.64	0.000162	1.03	660.07	536.68	0.13	2.24
HarlowBrook	HarlowBrook	3063	100-Year	Alternative 2A: Full Dam Removal	204	13.39	15.63	14.09	15.64	0.000162	1.03	660.07	536.68	0.13	2.24
HarlowBrook	HarlowBrook	3063	100-Year	Alternative 3: Hybrid Dam Removal	204	13.39	15.63	14.09	15.64	0.000162	1.03	660.07	536.68	0.13	2.24
															0
HarlowBrook	HarlowBrook	2964	2-Year	Existing Conditions + Gage	82	13.18	14.93	13.38	14.93	0.000063	0.52	479.59	448	0.07	1.75
HarlowBrook	HarlowBrook	2964	2-Year	Alternative 1: Partial Dam Removal	82	13.18	14.29	13.38	14.29	0.000421	0.94	231.35	323.9	0.18	1.11
HarlowBrook	HarlowBrook	2964	2-Year	Alternative 2A: Full Dam Removal	82	13.18	14.29	13.38	14.29	0.000421	0.94	231.35	323.9	0.18	1.11
HarlowBrook	HarlowBrook	2964	2-Year	Alternative 3: Hybrid Dam Removal	82	13.18	14.29	13.38	14.29	0.000421	0.94	231.35	323.9	0.18	1.11
HarlowBrook	HarlowBrook	2964	10-Year	Existing Conditions + Gage	136	13.18	15.94	13.53	15.94	0.000023	0.44	1079.3	726.15	0.05	2.76
HarlowBrook	HarlowBrook	2964	10-Year	Alternative 1: Partial Dam Removal	136	13.18	14.93	13.53	14.93	0.000175	0.87	477.62	447.02	0.12	1.75
HarlowBrook	HarlowBrook	2964	10-Year	Alternative 2A: Full Dam Removal	136	13.18	14.93	13.53	14.93	0.000175	0.87	477.62	447.02	0.12	1.75
HarlowBrook	HarlowBrook	2964	10-Year	Alternative 3: Hybrid Dam Removal	136	13.18	14.93	13.53	14.93	0.000175	0.87	477.62	447.02	0.12	1.75
HarlowBrook	HarlowBrook	2964	50-Year	Existing Conditions + Gage	183	13.18	16.73	13.61	16.73	0.000012	0.38	1690.35	891.12	0.04	3.55
HarlowBrook	HarlowBrook	2964	50-Year	Alternative 1: Partial Dam Removal	183	13.18	15.42	13.61	15.42	0.000109	0.83	735.07	603.63	0.1	2.24
HarlowBrook	HarlowBrook	2964	50-Year	Alternative 2A: Full Dam Removal	183	13.18	15.42	13.61	15.42	0.000109	0.83	735.07	603.63	0.1	2.24
HarlowBrook	HarlowBrook	2964	50-Year	Alternative 3: Hybrid Dam Removal	183	13.18	15.42	13.61	15.42	0.000109	0.83	735.07	603.63	0.1	2.24
HarlowBrook	HarlowBrook	2964	100-Year	Existing Conditions + Gage	204	13.18	17.05	13.65	17.05	0.00001	0.37	1956.75	950.62	0.03	3.87
HarlowBrook	HarlowBrook	2964	100-Year	Alternative 1: Partial Dam Removal	204	13.18	15.62	13.65	15.63	0.000088	0.79	863.23	652.73	0.09	2.44
HarlowBrook	HarlowBrook	2964	100-Year	Alternative 2A: Full Dam Removal	204	13.18	15.62	13.65	15.63	0.000088	0.79	863.23	652.73	0.09	2.44
HarlowBrook	HarlowBrook	2964	100-Year	Alternative 3: Hybrid Dam Removal	204	13.18	15.62	13.65	15.63	0.000088	0.79	863.23	652.73	0.09	2.44
															0
HarlowBrook	HarlowBrook	2904	2-Year	Existing Conditions + Gage	82	12.54	14.93	13.02	14.93	0.000015	0.31	264.5	258.22	0.04	2.39
HarlowBrook	HarlowBrook	2904	2-Year	Alternative 1: Partial Dam Removal	82	12.54	14.28	13.02	14.29	0.000054	0.46	179.39	227.8	0.07	1.74
HarlowBrook	HarlowBrook	2904	2-Year	Alternative 2A: Full Dam Removal	82	12.54	14.28	13.02	14.29	0.000054	0.46	179.39	227.8	0.07	1.74
HarlowBrook	HarlowBrook	2904	2-Year	Alternative 3: Hybrid Dam Removal	82	12.54	14.28	13.02	14.29	0.000054	0.46	179.39	227.8	0.07	1.74
HarlowBrook	HarlowBrook	2904	10-Year	Existing Conditions + Gage	136	12.54	15.94	13.14	15.94	0.000011	0.34	465.07	529.35	0.03	3.4
HarlowBrook	HarlowBrook	2904	10-Year	Alternative 1: Partial Dam Removal	136	12.54	14.92	13.14	14.92	0.000043	0.52	263.34	257.24	0.06	2.38
HarlowBrook	HarlowBrook	2904	10-Year	Alternative 2A: Full Dam Removal	136	12.54	14.92	13.14	14.92	0.000043	0.52	263.34	257.24	0.06	2.38
HarlowBrook	HarlowBrook	2904	10-Year	Alternative 3: Hybrid Dam Removal	136	12.54	14.92	13.14	14.92	0.000043	0.52	263.34	257.24	0.06	2.38
HarlowBrook	HarlowBrook	2904	50-Year	Existing Conditions + Gage	183	12.54	16.73	13.22	16.73	0.000008	0.35	650.32	707.45	0.03	4.19
HarlowBrook	HarlowBrook	2904	50-Year	Alternative 1: Partial Dam Removal	183	12.54	15.41	13.22	15.42	0.000037	0.56	345.68	382.49	0.06	2.87
HarlowBrook	HarlowBrook	2904	50-Year	Alternative 2A: Full Dam Removal	183	12.54	15.41	13.22	15.42	0.000037	0.56	345.68	382.49	0.06	2.87
HarlowBrook	HarlowBrook	2904	50-Year	Alternative 3: Hybrid Dam Removal	183	12.54	15.41	13.22	15.42	0.000037	0.56	345.68	382.49	0.06	2.87
HarlowBrook	HarlowBrook	2904	100-Year	Existing Conditions + Gage	204	12.54	17.04	13.25	17.05	0.000008	0.36	726.51	788.56	0.03	4.5
HarlowBrook	HarlowBrook	2904	100-Year	Alternative 1: Partial Dam Removal	204	12.54	15.62	13.25	15.62	0.000035	0.58	391.61	414.44	0.06	3.08
HarlowBrook	HarlowBrook	2904	100-Year	Alternative 2A: Full Dam Removal	204	12.54	15.62	13.25	15.62	0.000035	0.58	391.61	414.44	0.06	3.08
HarlowBrook	HarlowBrook	2904	100-Year	Alternative 3: Hybrid Dam Removal	204	12.54	15.62	13.25	15.62	0.000035	0.58	391.61	414.44	0.06	3.08
															0
HarlowBrook	HarlowBrook	2725			Culvert										0
															0

HarlowBrook	HarlowBrook	2561	2-Year	Existing Conditions + Gage	82	12.33	14.77	13.21	14.81	0.000404	1.77	46.24	640.41	0.2	2.44
HarlowBrook	HarlowBrook	2561	2-Year	Alternative 1: Partial Dam Removal	82	12.33	13.58	13.21	13.78	0.004042	3.54	23.18	249.78	0.57	1.25
HarlowBrook	HarlowBrook	2561	2-Year	Alternative 2A: Full Dam Removal	82	12.33	13.58	13.21	13.78	0.004042	3.54	23.18	249.78	0.57	1.25
HarlowBrook	HarlowBrook	2561	2-Year	Alternative 3: Hybrid Dam Removal	82	12.33	13.58	13.21	13.78	0.004042	3.54	23.18	249.78	0.57	1.25
HarlowBrook	HarlowBrook	2561	10-Year	Existing Conditions + Gage	136	12.33	15.73	13.54	15.8	0.000356	2.09	65.07	933.97	0.2	3.4
HarlowBrook	HarlowBrook	2561	10-Year	Alternative 1: Partial Dam Removal	136	12.33	13.79	13.54	14.18	0.006522	5	27.2	325.19	0.75	1.46
HarlowBrook	HarlowBrook	2561	10-Year	Alternative 2A: Full Dam Removal	136	12.33	13.79	13.54	14.18	0.006522	5	27.2	325.19	0.75	1.46
HarlowBrook	HarlowBrook	2561	10-Year	Alternative 3: Hybrid Dam Removal	136	12.33	13.79	13.54	14.18	0.006522	5	27.2	325.19	0.75	1.46
HarlowBrook	HarlowBrook	2561	50-Year	Existing Conditions + Gage	183	12.33	16.49	13.79	16.57	0.000327	2.29	79.8	1114.31	0.2	4.16
HarlowBrook	HarlowBrook	2561	50-Year	Alternative 1: Partial Dam Removal	183	12.33	13.88	13.79	14.5	0.009478	6.3	29.06	369.45	0.91	1.55
HarlowBrook	HarlowBrook	2561	50-Year	Alternative 2A: Full Dam Removal	183	12.33	13.88	13.79	14.5	0.009478	6.3	29.06	369.45	0.91	1.55
HarlowBrook	HarlowBrook	2561	50-Year	Alternative 3: Hybrid Dam Removal	183	12.33	13.88	13.79	14.5	0.009478	6.3	29.06	369.45	0.91	1.55
HarlowBrook	HarlowBrook	2561	100-Year	Existing Conditions + Gage	204	12.33	16.79	13.9	16.88	0.00032	2.38	85.71	1161.06	0.2	4.46
HarlowBrook	HarlowBrook	2561	100-Year	Alternative 1: Partial Dam Removal	204	12.33	13.9	13.9	14.65	0.011302	6.93	29.42	373.8	0.99	1.57
HarlowBrook	HarlowBrook	2561	100-Year	Alternative 2A: Full Dam Removal	204	12.33	13.9	13.9	14.65	0.011302	6.93	29.42	373.8	0.99	1.57
HarlowBrook	HarlowBrook	2561	100-Year	Alternative 3: Hybrid Dam Removal	204	12.33	13.9	13.9	14.65	0.011302	6.93	29.42	373.8	0.99	1.57
															0
HarlowBrook	HarlowBrook	2492	2-Year	Existing Conditions + Gage	82	12.3	14.78	13.03	14.79	0.000026	0.32	266.7	479.26	0.05	2.48
HarlowBrook	HarlowBrook	2492	2-Year	Alternative 1: Partial Dam Removal	82	12.3	13.52	13.03	13.55	0.001297	1.37	59.67	88.09	0.29	1.22
HarlowBrook	HarlowBrook	2492	2-Year	Alternative 2A: Full Dam Removal	82	12.3	13.52	13.03	13.55	0.001297	1.37	59.67	88.09	0.29	1.22
HarlowBrook	HarlowBrook	2492	2-Year	Alternative 3: Hybrid Dam Removal	82	12.3	13.52	13.03	13.55	0.001297	1.37	59.67	88.09	0.29	1.22
HarlowBrook	HarlowBrook	2492	10-Year	Existing Conditions + Gage	136	12.3	15.76	13.21	15.76	0.000012	0.31	499.39	682	0.04	3.46
HarlowBrook	HarlowBrook	2492	10-Year	Alternative 1: Partial Dam Removal	136	12.3	13.75	13.21	13.79	0.001797	1.66	81.94	132.96	0.35	1.45
HarlowBrook	HarlowBrook	2492	10-Year	Alternative 2A: Full Dam Removal	136	12.3	13.75	13.21	13.79	0.001797	1.66	81.94	132.96	0.35	1.45
HarlowBrook	HarlowBrook	2492	10-Year	Alternative 3: Hybrid Dam Removal	136	12.3	13.75	13.21	13.79	0.001797	1.66	81.94	132.96	0.35	1.45
HarlowBrook	HarlowBrook	2492	50-Year	Existing Conditions + Gage	183	12.3	16.53	13.32	16.53	0.000005	0.24	1470.3	758.29	0.02	4.23
HarlowBrook	HarlowBrook	2492	50-Year	Alternative 1: Partial Dam Removal	183	12.3	13.89	13.32	13.94	0.002132	1.81	101	175.01	0.38	1.59
HarlowBrook	HarlowBrook	2492	50-Year	Alternative 2A: Full Dam Removal	183	12.3	13.89	13.32	13.94	0.002132	1.81	101	175.01	0.38	1.59
HarlowBrook	HarlowBrook	2492	50-Year	Alternative 3: Hybrid Dam Removal	183	12.3	13.89	13.32	13.94	0.002132	1.81	101	175.01	0.38	1.59
HarlowBrook	HarlowBrook	2492	100-Year	Existing Conditions + Gage	204	12.3	16.84	13.38	16.84	0.000004	0.23	1702.06	829.27	0.02	4.54
HarlowBrook	HarlowBrook	2492	100-Year	Alternative 1: Partial Dam Removal	204	12.3	13.95	13.38	14.01	0.002219	1.86	109.66	191.16	0.39	1.65
HarlowBrook	HarlowBrook	2492	100-Year	Alternative 2A: Full Dam Removal	204	12.3	13.95	13.38	14.01	0.002219	1.86	109.66	191.16	0.39	1.65
HarlowBrook	HarlowBrook	2492	100-Year	Alternative 3: Hybrid Dam Removal	204	12.3	13.95	13.38	14.01	0.002219	1.86	109.66	191.16	0.39	1.65
															0
HarlowBrook	HarlowBrook	2413	2-Year	Existing Conditions + Gage	82	12.26	14.78	12.91	14.78	0.000015	0.28	490.8	484.29	0.04	2.52
HarlowBrook	HarlowBrook	2413	2-Year	Alternative 1: Partial Dam Removal	82	12.26	13.43	12.91	13.45	0.001096	1.2	68.52	119.74	0.27	1.17
HarlowBrook	HarlowBrook	2413	2-Year	Alternative 2A: Full Dam Removal	82	12.26	13.43	12.91	13.45	0.001096	1.2	68.52	119.74	0.27	1.17
HarlowBrook	HarlowBrook	2413	2-Year	Alternative 3: Hybrid Dam Removal	82	12.26	13.43	12.91	13.45	0.001096	1.2	68.52	119.74	0.27	1.17
HarlowBrook	HarlowBrook	2413	10-Year	Existing Conditions + Gage	136	12.26	15.76	13.09	15.76	0.000007	0.25	1052.44	586.15	0.03	3.5
HarlowBrook	HarlowBrook	2413	10-Year	Alternative 1: Partial Dam Removal	136	12.26	13.63	13.09	13.67	0.001255	1.47	95.23	171.85	0.3	1.37
HarlowBrook	HarlowBrook	2413	10-Year	Alternative 2A: Full Dam Removal	136	12.26	13.63	13.09	13.67	0.001255	1.47	95.23	171.85	0.3	1.37
HarlowBrook	HarlowBrook	2413	10-Year	Alternative 3: Hybrid Dam Removal	136	12.26	13.63	13.09	13.67	0.001255	1.47	95.23	171.85	0.3	1.37
HarlowBrook	HarlowBrook	2413	50-Year	Existing Conditions + Gage	183	12.26	16.53	13.21	16.53	0.000005	0.25	1515.86	622.24	0.02	4.27
HarlowBrook	HarlowBrook	2413	50-Year	Alternative 1: Partial Dam Removal	183	12.26	13.76	13.21	13.81	0.001379	1.67	118.39	217.18	0.32	1.5
HarlowBrook	HarlowBrook	2413	50-Year	Alternative 2A: Full Dam Removal	183	12.26	13.76	13.21	13.81	0.001379	1.67	118.39	217.18	0.32	(ft)
HarlowBrook	HarlowBrook	2413	50-Year	Alternative 3: Hybrid Dam Removal	183	12.26	13.76	13.21	13.81	0.001379	1.67	118.39	217.18	0.32	1.5
HarlowBrook	HarlowBrook	2413	100-Year	Existing Conditions + Gage	204	12.26	16.83	13.24	16.84	0.000004	0.25	1711.17	651.19	0.02	4.57
HarlowBrook	HarlowBrook	2413	100-Year	Alternative 1: Partial Dam Removal	204	12.26	13.82	13.24	13.86	0.00142	1.75	129.91	255.98	0.32	1.56
HarlowBrook	HarlowBrook	2413	100-Year	Alternative 2A: Full Dam Removal	204	12.26	13.82	13.24	13.86	0.00142	1.75	129.91	255.98	0.32	1.56
HarlowBrook	HarlowBrook	2413	100-Year	Alternative 3: Hybrid Dam Removal	204	12.26	13.82	13.24	13.86	0.00142	1.75	129.91	255.98	0.32	1.56
															0
HarlowBrook	HarlowBrook	1878	2-Year	Existing Conditions + Gage	82	11.98	14.78		14.78	0.000002	0.12	710.58	343.66	0.01	2.8
HarlowBrook	HarlowBrook	1878	2-Year	Alternative 1: Partial Dam Removal	82	11.98	12.61		12.63	0.002276	1.19	68.73	191.53	0.35	0.63
HarlowBrook	HarlowBrook	1878	2-Year	Alternative 2A: Full Dam Removal	82	11.98	12.61		12.63	0.002276	1.19	68.73	191.53	0.35	0.63
HarlowBrook	HarlowBrook	1878	2-Year	Alternative 3: Hybrid Dam Removal	82	11.98	12.61		12.63	0.002276	1.19	68.73	191.53	0.35	0.63
HarlowBrook	HarlowBrook	1878	10-Year	Existing Conditions + Gage	136	11.98	15.76		15.76	0.000002	0.13	1058.01	363.65	0.01	3.78
HarlowBrook	HarlowBrook	1878	10-Year	Alternative 1: Partial Dam Removal	136	11.98	12.76		12.79	0.002205	1.38	98.63	216.03	0.36	0.78
HarlowBrook	HarlowBrook	1878	10-Year	Alternative 2A: Full Dam Removal	136	11.98	12.76		12.79	0.002205	1.38	98.63	216.03	0.36	0.78
HarlowBrook	HarlowBrook	1878	10-Year	Alternative 3: Hybrid Dam Removal	136	11.98	12.76		12.79	0.002205	1.38	98.63	216.03	0.36	0.78
HarlowBrook	HarlowBrook	1878	50-Year	Existing Conditions + Gage	183	11.98	16.53		16.53	0.000001	0.14	1339.46	372.24	0.01	4.55
HarlowBrook	HarlowBrook	1878	50-Year	Alternative 1: Partial Dam Removal	183	11.98	12.86		12.9	0.002151	1.49	122.54	233.78	0.36	0.88
HarlowBrook	HarlowBrook	1878	50-Year	Alternative 2A: Full Dam Removal	183	11.98	12.86		12.9	0.002151	1.49	122.54	233.78	0.36	0.88
HarlowBrook	HarlowBrook	1878	50-Year	Alternative 3: Hybrid Dam Removal	183	11.98	12.86		12.9	0.002151	1.49	122.54	233.78	0.36	0.88
HarlowBrook	HarlowBrook	1878	100-Year	Existing Conditions + Gage	204	11.98	16.83		16.83	0.000001	0.14	1455.28	380.98	0.01	4.85
HarlowBrook	HarlowBrook	1878	100-Year	Alternative 1: Partial Dam Removal	204	11.98	12.91		12.94	0.002133	1.54	132.72	240.95	0.37	0.93
HarlowBrook	HarlowBrook	1878	100-Year	Alternative 2A: Full Dam Removal	204	11.98	12.91		12.94	0.002133	1.54	132.72	240.95	0.37	0.93
HarlowBrook	HarlowBrook	1878	100-Year	Alternative 3: Hybrid Dam Removal	204	11.98	12.91		12.94	0.002133	1.54	132.72	240.95	0.37	0.93
															0
HarlowBrook	HarlowBrook	1665	2-Year	Existing Conditions + Gage	82	11.62	14.78		14.78	0.000001	0.06	1318.63	566.52	0.01	3.16
HarlowBrook	HarlowBrook	1665	2-Year	Alternative 1: Partial Dam Removal	82	11.62	12.34		12.35	0.00083	0.74	110.62	295.3	0.21	0.72
HarlowBrook	HarlowBrook	1665	2-Year	Alternative 2A: Full Dam Removal	82	11.62	12.34		12.35	0.00083	0.74	110.62	295.3	0.21	0.72
HarlowBrook	HarlowBrook	1665	2-Year	Alternative 3: Hybrid Dam Removal	82	11.62	12.34		12.35	0.00083	0.74	110.62	295.3	0.21	0.72
HarlowBrook	HarlowBrook	1665	10-Year	Existing Conditions + Gage	136	11.62	15.76		15.76	0	0.07	1888.11	604.25	0.01	4.14
HarlowBrook	HarlowBrook	1665	10-Year	Alternative 1: Partial Dam Removal	136	11.62	12.53		12.54	0.000702	0.79	171.21	363.7	0.2	0.91
HarlowBrook	HarlowBrook	1665	10-Year	Alternative 2A: Full Dam Removal	136	11.62	12.53		12.54	0.000702	0.79	171.21	363.7	0.2	0.91
HarlowBrook	HarlowBrook	1665	10-Year	Alternative 3: Hybrid Dam Removal	136	11.62	12.53		12.54	0.000702	0.79	171.21	363.7	0.2	0.91
HarlowBrook	HarlowBrook	1665	50-Year	Existing Conditions + Gage	183	11.62	16.53		16.53	0	0.08	2361.9	638.48	0.01	4.91
HarlowBrook	HarlowBrook	1665	50-Year	Alternative 1: Partial Dam Removal	183	11.62	12.65		12.66	0.000626	0.83	219.26	396.72	0.2	1.03
HarlowBrook	HarlowBrook	1665	50-Year	Alternative 2A: Full Dam Removal	183	11.62	12.65		12.66	0.000626	0.83	219.26	396.72	0.2	1.03
HarlowBrook	HarlowBrook	1665	50-Year	Alternative 3: Hybrid Dam Removal	183	11.62	12.65		12.66	0.000626	0.83	219.26	396.72	0.2	1.03
HarlowBrook	HarlowBrook	1665	100-Year	Existing Conditions + Gage	204	11.62	16.83		16.83	0	0.08	2560.39	658.92	0.01	5.21
HarlowBrook	HarlowBrook	1665	100-Year	Alternative 1: Partial Dam Removal	204	11.62	12.7		12.71	0.000611	0.85	238.64	409.25	0.2	1.08
HarlowBrook	HarlowBrook	1665	100-Year	Alternative 2A: Full Dam Removal	204	11.62	12.7		12.71	0.000611	0.85	238.64	409.25	0.2	1.08
HarlowBrook	HarlowBrook	1665	100-Year	Alternative 3: Hybrid Dam Removal	204	11.62	12.7		12.71	0.000611	0.85	238.64	409.25	0.2	1.08
															0
HarlowBrook	HarlowBrook	1521	2-Year	Existing Conditions + Gage	82	11.28	14.78	11.85	14.78	0.000002	0.14	598.44	756.28	0.02	3.5
HarlowBrook	HarlowBrook	1521	2-Year	Alternative 1: Partial Dam Removal	82	11.28	12.09	11.85	12.14	0.00349	1.7	48.14	108.39	0.45	0.81
HarlowBrook	HarlowBrook	1521	2-Year	Alternative 2A: Full Dam Removal	82	11.28	12.09	11.85	12.14	0.00349	1.7	48.14	108.39	0.45	0.81
HarlowBrook	HarlowBrook	1521	2-Year	Alternative 3: Hybrid Dam Removal	82	11.28	12.09	11.85	12.14	0.00349	1.7	48.14	108.39	0.45	0.81
HarlowBrook	HarlowBrook	1521	10-Year	Existing Conditions + Gage	136	11.28	15.76	12	15.76	0.000002	0.16	865.11	886.73	0.02	4.48
HarlowBrook	HarlowBrook	1521	10-Year	Alternative 1: Partial Dam Removal	136	11.28	12.29	12	12.35	0.003312	1.9	71.7	132.09	0.45	1.01
HarlowBrook	HarlowBrook	1521	10-Year	Alternative 2A: Full Dam Removal	136	11.28	12.29	12	12.35	0.003312	1.9	71.7	132.09	0.45	1.01
HarlowBrook	HarlowBrook	1521	10-Year	Alternative 3: Hybrid Dam Removal	136	11.28	12.29	12	12.35	0.003312	1.9	71.7	132.09	0.45	1.01
HarlowBrook	HarlowBrook	1521	50-Year	Existing Conditions + Gage	183	11.28	16.53	12.1	16.53	0.000002	0.17	1101.67	929.37	0.02	5.25
HarlowBrook	HarlowBrook	1521	50-Year	Alternative 1: Partial Dam Removal	183	11.28	12.42	12.1	12.48	0.003216	2.04	89.52	144.16	0.46	1.14
HarlowBrook	HarlowBrook	1521	50-Year	Alternative 2A: Full Dam Removal	183	11.28	12.42	12.1	12.48	0.003216	2.04	89.52	144.16	0.46	1.14
HarlowBrook	HarlowBrook	1521	50-Year	Alternative 3: Hybrid Dam Removal	183	11.28	12.42	12.1	12.48	0.003216	2.04	89.52	144.16	0.46	1.14
HarlowBrook	HarlowBrook	1521	100-Year	Existing Conditions + Gage	204	11.28	16.83	12.14	16.83	0.000002	0.18	1199.84	939.86	0.02	5.55
HarlowBrook	HarlowBrook	1521	100-Year	Alternative 1: Partial Dam Removal	204	11.28	12.47	12.14	12.54	0.003214	2.11	96.7	148.5	0.46	1.19
HarlowBrook	HarlowBrook	1521	100-Year	Alternative 2A: Full Dam Removal	204	11.28	12.47	12.14	12.54	0.003214	2.11	96.7	148.5	0.46	1.19
HarlowBrook	HarlowBrook	1521	100-Year	Alternative 3: Hybrid Dam Removal	204	11.28	12.47	12.14	12.54	0.003214	2.11	96.7	148.5	0.46	1.19
															0
HarlowBrook	HarlowBrook	1188	2-Year	Existing Conditions + Gage	82	10.52	14.78		14.78	0	0.05	1880.56	1077.23	0.01	4.26
HarlowBrook	HarlowBrook	1188	2-Year	Alternative 1: Partial Dam Removal	82	10.52	11.38	11.03	11.4	0.001514	1.15	71.59	156.23	0.3	0.86
HarlowBrook	HarlowBrook	1188	2-Year	Alternative 2A: Full Dam Removal	82	10.52	11.38	11.03	11.4	0.001514	1.15	71.59	156.24	0.3	0.86
HarlowBrook	HarlowBrook	1188	2-Year	Alternative 3: Hybrid Dam Removal	82	10.52	11.38	11.03	11.4	0.001514	1.15	71.59	156.23	0.3	0.86
HarlowBrook	HarlowBrook	1188	10-Year	Existing Conditions + Gage	136	10.52	15.76		15.76	0	0.05	3015.53	1208.51	0.01	5.24
HarlowBrook	HarlowBrook	1188	10-Year	Alternative 1: Partial Dam Removal	136	10.52	11.55	11.15	11.58	0.001651	1.34	101.26	185.71	0.32	1.03
HarlowBrook	HarlowBrook	1188	10-Year	Alternative 2A: Full Dam Removal	136	10.52	11.55	11.15	11.58	0.001651	1.34	101.26	185.71	0.32	1.03
HarlowBrook	HarlowBrook	1188	10-Year	Alternative 3: Hybrid Dam Removal	136	10.52	11.55	11.15	11.58	0.001651	1.34	101.26	185.71	0.32	1.03
HarlowBrook	HarlowBrook	1188	50-Year	Existing Conditions + Gage	183	10.52	16.53		16.53	0	0.05	3959.69	1271.14	0	6.01
HarlowBrook	HarlowBrook	1188	50-Year	Alternative 1: Partial Dam Removal	183	10.52	11.67	11.24	11.7	0.001751	1.48	123.72	205.21	0.34	1.15
HarlowBrook	HarlowBrook	1188	50-Year	Alternative 2A: Full Dam Removal	183	10.52	11.67	11.24	11.7	0.001751	1.48	123.72	205.21	0.34	1.15
HarlowBrook	HarlowBrook	1188	50-Year	Alternative 3: Hybrid Dam Removal	183	10.52	11.67	11.24	11.7	0.001751	1.48	123.72	205.21	0.34	1.15
HarlowBrook	HarlowBrook	1188	100-Year	Existing Conditions + Gage	204	10.52	16.83		16.83	0	0.05	4350.91	1277.29	0	6.31
HarlowBrook	HarlowBrook	1188	100-Year	Alternative 1: Partial Dam Removal	204	10.52	11.72	11.27	11.76	0.001749	1.52	134.29	213.78	0.34	1.2
HarlowBrook	HarlowBrook	1188	100-Year	Alternative 2A: Full Dam Removal	204	10.52	11.72	11.27	11.76	0.001749	1.52	134.29	213.78	0.34	1.2
HarlowBrook	HarlowBrook	1188	100-Year	Alternative 3: Hybrid Dam Removal	204	10.52	11.72	11.27	11.76	0.001749	1.52	134.29	213.78	0.34	1.2
															0
HarlowBrook	HarlowBrook	1000	2-Year	Existing Conditions + Gage	82	10.06	14.78		14.78	0	0.04	2080.21	769.32	0	4.72
HarlowBrook	HarlowBrook	1000	2-Year	Alternative 1: Partial Dam Removal	82	10.06	10.53	10.53	10.67	0.02202	2.99	27.42	105.65	1.03	0.47

HarlowBrook	HarlowBrook	1000	2-Year	Alternative 2A: Full Dam Removal	82	10.06	10.53	10.53	10.67	0.022023	2.99	27.42	105.64	1.03	0.47
HarlowBrook	HarlowBrook	1000	2-Year	Alternative 3: Hybrid Dam Removal	82	10.06	10.53	10.53	10.67	0.02202	2.99	27.42	105.64	1.03	0.47
HarlowBrook	HarlowBrook	1000	10-Year	Existing Conditions + Gage	136	10.06	15.76		15.76	0	0.05	2925.04	939.04	0	5.7
HarlowBrook	HarlowBrook	1000	10-Year	Alternative 1: Partial Dam Removal	136	10.06	10.66	10.66	10.82	0.019633	3.25	41.8	130.24	1.01	0.6
HarlowBrook	HarlowBrook	1000	10-Year	Alternative 2A: Full Dam Removal	136	10.06	10.66	10.66	10.82	0.019633	3.25	41.8	130.24	1.01	0.6
HarlowBrook	HarlowBrook	1000	10-Year	Alternative 3: Hybrid Dam Removal	136	10.06	10.66	10.66	10.82	0.019633	3.25	41.8	130.24	1.01	0.6
HarlowBrook	HarlowBrook	1000	50-Year	Existing Conditions + Gage	183	10.06	16.53		16.53	0	0.06	3676.79	1017.31	0	6.47
HarlowBrook	HarlowBrook	1000	50-Year	Alternative 1: Partial Dam Removal	183	10.06	10.74	10.74	10.92	0.018878	3.45	52.98	146.54	1.01	0.68
HarlowBrook	HarlowBrook	1000	50-Year	Alternative 2A: Full Dam Removal	183	10.06	10.74	10.74	10.92	0.018878	3.45	52.98	146.54	1.01	0.68
HarlowBrook	HarlowBrook	1000	50-Year	Alternative 3: Hybrid Dam Removal	183	10.06	10.74	10.74	10.92	0.018878	3.45	52.98	146.54	1.01	0.68
HarlowBrook	HarlowBrook	1000	100-Year	Existing Conditions + Gage	204	10.06	16.83		16.83	0	0.06	3992.21	1033.46	0	6.77
HarlowBrook	HarlowBrook	1000	100-Year	Alternative 1: Partial Dam Removal	204	10.06	10.77	10.77	10.96	0.018504	3.52	57.91	153.17	1.01	0.71
HarlowBrook	HarlowBrook	1000	100-Year	Alternative 2A: Full Dam Removal	204	10.06	10.77	10.77	10.96	0.018504	3.52	57.91	153.17	1.01	0.71
HarlowBrook	HarlowBrook	1000	100-Year	Alternative 3: Hybrid Dam Removal	204	10.06	10.77	10.77	10.96	0.018504	3.52	57.91	153.17	1.01	0.71

Appendix D

Advisory Committee and Public Meeting Sign-In Sheets

MEETING SIGN IN SHEET

Parker Mills Pond Dam Assessment Project — **Tremont Nail Factory**
Public Meeting #2 – Alternatives Analysis — **September 15, 2022**

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