

# **Aqua Survey, Inc.**

## **Volume I**

**Technical Report on the Sampling and Testing of Sediment  
for the Nordic Aquafarms Pipeline Corridor Dredging,  
Belfast and Northport, ME  
File Number NAE-2019-01481**

### **Prepared for:**

**Nordic Aquafarms, Inc.  
511 Congress Street, Suite 500  
Portland, ME 04101**

### **Issued:**

**August 27, 2020**

**ASI Job No. 40-126**

*469 Point Breeze Road  
Flemington, NJ 08822*

*Phone: 908-788-8700  
Fax: 908-788-9165  
mail@aquasurvey.com  
www.aquasurvey.com*



# Table of Contents

<b>Volume I</b>		<b>Page</b>
<b>Table of Contents</b> .....		2
<b>Information Page</b> .....		3
<b>Signature Page</b> .....		4
<b>I. Introduction</b> .....		5
<b>II. Correspondence</b> .....		5
<b>III. Test Administration</b> .....		26
A. Sponsor .....		26
B. Testing Facilities .....		26
C. Dates of Experimentation .....		26
D. Study Participants .....		26
<b>IV. Materials and Methods</b> .....		26
A. Sampling and Homogenization.....		26
B. Physical and Total Organic Carbon Analyses .....		27
C. Chemical Analyses.....		28
<b>V. Physical and Chemical Analysis Results</b> .....		28

## Figures and Tables

Table 1	DGPS Coordinates .....	29
Figure 1	Sample Location Map .....	30
Tables 2a-b	Sample Identification and Analysis Required.....	31
Table 3	Grain Size Distribution, Percent Moisture and TOC .....	33
	Chemical Analysis Tables Information Page.....	34
Tables 4a-c	Chemical Analysis of Bulk Sediment (CENAE RIM) .....	35
Tables 5a-c	Chemical Analysis of Elutriate (CENAE RIM).....	47
Table 6	Chemical Analysis of Site Blank (CENAE RIM).....	56
Table 7	Mercury Analysis of All Bulk Sediment Samples (CENAE RIM) .....	59

## Appendices

<b>Appendix A:</b> Core Sampling Logs .....	61
<b>Appendix B:</b> Photographs.....	73
<b>Appendix C:</b> Chains of Custody .....	88
<b>Appendix D:</b> Sample Use Forms .....	93
<b>Appendix E:</b> Percent Moisture and Grain Size Distribution Raw Data .....	124
<b>Appendix F:</b> TOC Raw Data and SRM Control Chart.....	213
<b>Appendix G:</b> CENAE RIM QC Summary Tables.....	226

**Volume II:** Enthalpy Analytical Chemical Analysis of the Sediment, Elutriate and Site Blank

## **Information Page**

**Technical Report on the Sampling and Testing of Sediment  
for the Nordic Aquafarms Pipeline Corridor Dredging,  
Belfast and Northport, ME  
File Number NAE-2019-01481**

### **STUDY INITIATION DATE**

**July 21, 2020**

### **STUDY COMPLETION DATE**

**August 27, 2020**

### **PERFORMING LABORATORY**

**Aqua Survey, Inc.  
469 Point Breeze Road  
Flemington, New Jersey 08822**

### **SPONSOR**

**Nordic Aquafarms, Inc.  
511 Congress Street, Suite 500  
Portland, ME 04101**

### **LABORATORY PROJECT ID**

**ASI Study No. 40-126**

# Signature Page

**Technical Report on the Sampling and Testing of Sediment  
for the Nordic Aquafarms Pipeline Corridor Dredging,  
Belfast and Northport, ME  
File Number NAE-2019-01481**

**ASI Job # 40-126**

**Prepared for:**

**Nordic Aquafarms, Inc.  
511 Congress Street, Suite 500  
Portland, ME 04101**

This report, as well as all records and raw data were audited and found to be an accurate reflection of the study. Copies of raw data will be maintained by Aqua Survey, Inc, 469 Point Breeze Road, Flemington, New Jersey, 08822.



Cheryl Hall  
Quality Assurance Officer

8/27/20  
Date



Michelle Thomas  
Laboratory Manager

8/27/20  
Date



Jon Doi, Ph.D.  
Executive Vice President

8/27/20  
Date

## **I. INTRODUCTION**

The objective of this project was to collect and analyze sediment for the Nordic Aquafarms Pipeline dredging project located in Belfast and Northport, ME. This work was conducted in accordance with the technical manual “The Regional Implementation Manual for the Evaluation of Dredged Material Proposed for Disposal in New England Waters” (RIM) dated May 6, 2004, and the “Sampling and Analysis plan for the Nordic Aquafarms Pipeline Corridor Dredging, Belfast and Northport, ME, File Number NAE-2019-01481,” dated June 18, 2020.

ASI performed all sampling and physical analyses of the sediments. Chemical analyses of the sediment and elutriate were performed by Enthalpy Analytical located in Hampton, NH.

## **II. CORRESPONDENCE**

The following pages provide correspondence relevant to this project.

**FINAL** Sampling and Analysis Plan for the Nordic Aquafarms Pipeline Corridor Dredging, Belfast and Northport, ME, File Number NAE-2019-01481

1. **Project Description:** Nordic Aquafarms, Inc. (“Nordic”) is proposing to construct a large, land-based salmon farm in Belfast, ME. The facility would use saltwater drawn from Penobscot Bay along with freshwater drawn from on-site wells and from the City of Belfast. Following treatment, water used in the farm would be discharged back into Penobscot Bay. The project design includes a pair of 30 inch intake pipes and a single 36 inch discharge pipe. The proposed pipeline corridor would exit the eastern side of the farm site and cross approximately 850 ft of intertidal mudflat just north of the discharge from the Little River (Figure 1). The pipeline corridor would extend an additional 5,550 ft in the subtidal upper Penobscot Bay. The pipeline would be fully buried for the 850 ft intertidal portion of the corridor and the first 1,850 ft of the subtidal corridor, and partially buried for 400 ft as it transitions to being anchored directly on the bottom for the last 3,300 ft of corridor in deeper waters.

A conceptual cross section of a fully buried portion of the pipeline is shown in Figure 1. Mechanical dredging is proposed to remove the existing sediment to create the trench where the pipes will be laid. The dredged material is proposed to be temporarily sidecast, and then mechanically placed as cover material once the pipes are installed. Any material remaining in the sidecast pile once the original elevation is achieved over the pipe trench is proposed to be dredged, transported to shore by barge, and offloaded for upland disposal. A total of approximately 36,000 cubic yards of sediment is anticipated to require removal for trench construction, and Nordic proposes to replace as much of that material as possible once the pipeline is installed, minimizing the amount of material requiring upland disposal.

A sampling and analysis plan (SAP) is generally prepared to determine the suitability of dredged material from a proposed project for beneficial use or disposal at an in-water site. The Nordic project does not propose in-water disposal for the dredged sediment, only temporary sidecasting immediately adjacent to the pipeline corridor before the material is used as backfill within the original dredge footprint. However, given the amount of material to be dredged (36,000 cubic yards), the large project footprint (extending over 3,000 ft in the intertidal and subtidal), and the documented mercury contamination in surficial sediments throughout upper Penobscot Bay, characterization of the proposed dredged material is required under section 404 of the Clean Water Act to identify any special handling conditions that would be necessary to minimize potential impacts to the water column and benthic community. All sampling and analysis activities described in this plan shall follow the requirements set forth in the “Regional Implementation Manual for the Evaluation of Dredged Material Proposed for Disposal in New England Waters” (RIM) dated May 6, 2004.

2. **Conceptual Site Model:** NAE reviewed data already collected as part of the design of the aquafarm, adjacent land-use information, previous sampling and testing performed in support of dredging the Federal navigation channels in Searsport and Belfast, and the data collected as part of the Penobscot River Mercury Study to develop a conceptual site model (CSM) for the proposed dredging of the Nordic project. This CSM was used to understand the dynamics of the system and to identify potential sources of contamination, site-specific contaminants of concern, exposure pathways, and biological receptors in order to inform this sampling and analysis plan.

The proposed Nordic pipeline corridor is located on the western shore of the upper portion of Penobscot Bay just south of Belfast Harbor (Figure 2). The pipeline corridor crosses a large tidal flat that forms the delta at the mouth of Little River which discharges just to the south. From the edge of the tidal flat, the pipeline corridor follows the nearly uniformly sloping bathymetry to the east. Depths at mean lower low water (MLLW) reach -34 ft where the pipeline will begin to transition from full burial, -38 ft where the pipeline will be fully exposed on the seafloor (terminus of any required dredging), and -54 ft at the end of the pipeline corridor.

Hydraulic influences in the vicinity of the pipeline corridor include the nearly 11 ft tidal range, discharge from the Penobscot River approximately 10 miles to the northeast of the corridor, and limited discharge from the reservoir/Little River just to the south. At its location in the upper reaches of the bay, the pipeline corridor is out of the influence of long-period ocean swell, but the wide expanse of the upper portions of Penobscot Bay provides enough fetch (up to 8 miles) for the generation of short-period, wind-driven waves.

The absence of long-period waves coupled with the tidal flat and gently sloped bathymetry indicate the corridor is subject more to depositional than erosive forces. This is also supported by the investigations already performed by Nordic. Cores collected along the pipeline corridor generally revealed a layer of soft, high-water content sediment less than a foot in thickness with a significant fine-grained fraction indicative of more recent deposition (Figure 3). This surficial layer was underlain by a uniform silty clay considered to be a Pleistocene marine mud or glaciomarine sediment. The distinctive pock mark features found in Penobscot Bay are not present along the pipeline corridor, beginning just east of the terminus of the proposed pipeline.

With limited sources of sediment input, the deposition rate within Penobscot Bay is considered to be relatively low. This is supported by the long maintenance dredging cycle for the constructed channels in nearby Belfast and Searsport Harbors and by data collected as part of the Penobscot River Mercury Study as described below.

**FINAL** Sampling and Analysis Plan for the Nordic Aquafarms Pipeline Corridor Dredging, Belfast and Northport, ME, File Number NAE-2019-01481

There are one documented and multiple potential sources of sediment contamination for the upper portion of Penobscot Bay where the pipeline corridor would be located. The documented source is the now-closed HoltraChem plant approximately 25 miles upriver in Orrington, Maine which released significant quantities of mercury into the Penobscot River, contaminating sediments of the river and bay. Other potential sources in the area include the port facilities, urban development, and industrial discharges (Figure 2).

The Penobscot River Mercury Study (PRMS) has involved multiple phases of sediment and biota sampling in the lower Penobscot River as well as in Penobscot Bay (PRMS 2008, 2013). Conducted as a remedial investigation, sediment cores were sectioned into very thin (1-2 cm) layers for analysis of mercury concentrations in surficial sediments, to not only characterize contaminant distribution and availability for biota uptake, but also to aid in source identification and natural rates of burial and mixing. Representative mercury concentrations of surficial sediment are presented for coring locations in upper Penobscot Bay in the vicinity of the Nordic pipeline corridor in Figure 3. The study concluded that releases of mercury from the HoltraChem plant from 1967 through the early 1970's was the primary source of the sediment contamination. This sediment contamination along with elevated tissue concentrations of mercury has led to closure of portions of the Penobscot River and upper Penobscot Bay to shellfishing and lobster/crab fishing (PRMS 2013).

The high vertical resolution analysis of the distribution of mercury concentrations in sediment cores as part of the PRMS provided a very clear understanding of the sediment contamination in the upper portions of the bay. Depth profiles of mercury concentrations in the sediment from the PRMS are presented on a map of the upper bay in Figure 4. All locations in this area revealed peak concentrations within the upper foot of sediment, and decreased significantly by 2 ft into the sediment to concentrations assumed representative of native sediment outside of anthropogenic influences.

For the two stations closest to the Nordic pipeline corridor (ES7 and ES8 in Figure 4), peak concentrations of total mercury in the upper foot of sediment were approximately 500 ng/g, approaching or exceeding the target remediation goal for surficial sediments (450 ng/g total mercury) defined in the PRMS. Sedimentation rates in this area were estimated at 2 to 3 mm/year based on radiological dating, making the burial depth of peak concentrations consistent with the peak releases of mercury in the late 1960's and early 1970's (PRMS 2013).

Water quality in much of Penobscot Bay is classified as SB, including the vicinity of the Nordic pipeline corridor. Class SB waters are designated for primary and secondary contact recreational activities; shellfish harvesting for controlled relay and depuration; and habitat for marine fish and wildlife. Class SB waters are

**FINAL** Sampling and Analysis Plan for the Nordic Aquafarms Pipeline Corridor Dredging, Belfast and Northport, ME, File Number NAE-2019-01481

deemed suitable for aquacultural uses, navigation, and industrial cooling, but areas of upper Penobscot Bay have been closed to shellfishing (Figure 2).

Based on the review of available data, the surficial sediment was given a moderate to high risk ranking according to the matrix below (adapted from USACE 2018); there are documented elevated mercury concentrations in this portion of Penobscot Bay from a known source as well as other potential sources of contamination. The underlying sediment (assumed native material) was given a low-moderate risk ranking given its expected isolation from the sources of contamination and the background mercury concentrations documented in the PRMS profiles.

<b>Rank</b>	<b>Guidelines</b>
Low	Few or no sources of contamination. Data available to verify no significant potential for adverse biological effects.
Low-Moderate	Few or no sources of contamination but existing data is insufficient to confirm ranking.
Moderate	Contamination sources exist within the vicinity of the project with the potential to produce chemical concentrations that may cause adverse biological effects.
High	Known sources of contamination within the project area and historical data exists that has previously failed biological testing.

Based on the understanding of the sediment regime developed in the CSM, the sampling program has been designed to characterize the sediments that will be disturbed along the pipeline corridor with the objective of assessing potential impacts to the benthic community or water column during the dredge-sidecast-return process. Smaller construction projects that utilize temporary, adjacent displacement of sediment while the construction takes place can often support the assumption of limited potential for environmental impacts given the similarity of the disturbed and adjacent sediment. However, based on the results of the PRMS, it is assumed that is not the case along the pipeline corridor, with 10-fold differences in mercury concentrations expected over several inches of depth within the sediment.

It should be noted that the sampling program described below has not been designed with the remedial investigation objectives of the PRMS, e.g. precisely defining the burial depth of the peak mercury concentration and the expected time of its deposition. Rather, this sampling program used the findings of the PRMS as a conceptual basis of contaminant distribution and has been designed to conservatively define the depth transition from overlying, more recently deposited surficial sediment to the underlying native material that can be used to evaluate the dredged material and dewatering discharge. Further, as other potential sources of sediment contamination were identified for this area (beyond

**FINAL** Sampling and Analysis Plan for the Nordic Aquafarms Pipeline Corridor Dredging, Belfast and Northport, ME, File Number NAE-2019-01481

the mercury that was the focus of the PRMS), the sampling program includes additional analyses as part of the characterization.

3. **Sample Collection:** Sediment cores and water samples will be collected at 11 locations set along the centerline of the pipeline corridor as shown in Figure 6 and with the locations presented in Table 1 with the following requirements:

- All core samples shall be collected to the proposed dredge depth, or a minimum of 3 ft below any apparent surficial sediment layer.
- Upon collection all cores shall be measured and maintained in an upright position for a minimum of 15 minutes to allow any fine-grained material to settle. After a core has settled it shall be re-measured before any overlying water is drained. All cores shall be split lengthwise, photographed with a stadia rod for scale, and described in accordance with ASTM D 2488 (Standard Practice for Description and Identification of Soils).
- Water samples shall be collected using a non-contaminating pump or discrete water sampler for the elutriate testing. Given the proximity of the stations, all water for the elutriate testing can be collected from Station NAE6. As the water depth at this station is less than -30 ft MLLW the applicant shall collect the entire sample from the mid-depth range of the water column.
- Vessel positioning shall be achieved using a Global Positioning System (GPS) that has been calibrated on site using a known reference point. The required horizontal accuracy at each sample location shall be 10 feet or less. Water depths at each location are to be determined with an accuracy of  $\pm 0.1$  foot (relative to MLLW). All sample data including date, time, latitude, longitude, GPS accuracy, measured water depth, tidal correction, core penetration and recovery shall be recorded in a sampling log (Figure 7 or equivalent) and provided to NAE with the Applicant's core descriptions and photographs. All coordinate data shall be reported in geographic NAD 83 decimal degree format. All depth data shall be reported in tenths of feet.

Once cores have been fully logged and photographed, they can be sectioned into a minimum of three separate samples for laboratory analyses for each core as follows:

- **Surficial Layer** - Any surficial sediment layer (generally described as a "wet, soft, silty brown mud" in the Normandeau core logs provided by Ransom Consulting LLC that typically ranged in thickness from 7 to 10 inches for cores collected along the pipeline corridor) should be sampled as a separate unit. If no definable surficial layer is present, the upper 1 ft should be sampled.
- **Transition Layer** - This layer is intended to capture the transition between surficial sediment and the underlying native material. It is generally expected to be the 1 ft layer beneath the surficial layer, but it can be

**FINAL** Sampling and Analysis Plan for the Nordic Aquafarms Pipeline Corridor Dredging, Belfast and Northport, ME, File Number NAE-2019-01481

increased in length if there is identifiable mixing of surficial sediment beyond 1 ft.

- Deeper Layer – A consistent underlying unit described as a firm, dark brown clay with silt was identified in most of the Normandeau core logs along the pipeline corridor provided by Ransom Consulting LLC. The remaining core material from this deeper layer can be composited into a single sample.
- Additional Sampling – Any distinct layer of material beneath the surficial layer with apparent anthropogenic influence (staining, oily, odiferous) should be noted and sampled as a separate unit regardless of the depth within the core.

All sediment and water samples held for testing shall be stored in accordance with the requirements in Table 2 (from Table 8-2 in "Evaluation of Dredged Material Proposed for Ocean Disposal Testing Manual" (Green Book) dated February 1991). Sample chain of custody forms shall be maintained by the Applicant and submitted to NAE with the data package described in Section 5 of this SAP.

4. **Sample Analysis:** All sediment and water samples from the dredge area shall undergo physical, chemical, and elutriate analysis as specified in Table 1 and described in the sections below. All laboratories used for this project shall have an approved Laboratory Quality Assurance Plan (LQAP) on file with NAE. Any data produced by a lab without an approved LQAP will not be accepted. The RIM, a list of laboratories with approved LQAPs, and the reporting format and requirements for electronic submission of data are available for download through the NAE website: <http://www.nae.usace.army.mil/Missions/Regulatory/Dredged-Material-Program/>.

**Grain Size and Bulk Sediment Chemistry:** All sediment samples from the proposed dredge footprint shall undergo physical testing and chemical analysis as specified in Table 1. Testing parameters, analytical methods, and reporting limits to be used are outlined in Table 3. The listed analytical methods are recommended but can be replaced by other methods that will provide the required reporting limits. Additional guidance on the physical and chemical analysis of sediments can be found in chapter 5 of the RIM.

**Elutriate Chemistry:** Elutriate samples shall be prepared from the dredge area sediment and water samples as specified in Table 1. The elutriate samples shall undergo chemical analysis according to the testing parameters, analytical methods, and reporting limits outlined in Table 4. The listed analytical methods are recommended but can be replaced by other methods that will give the required reporting limits. Additional guidance can be found in Section 6.1 of the RIM and Section 9.4 of the Green Book.

5. **Reporting Requirements:** All sediment testing data is required to be submitted electronically in the electronic data deliverable (EDD) format available on the NAE website (<http://www.nae.usace.army.mil/Missions/Disposal-Area-Monitoring-System-DAMOS/Electronic-Data-Deliverables.aspx>). Hard copy data submission is also required but may be substituted with a printer friendly, easy-to-read format (e.g., PDF, MS Word). Any analytes not detected shall be reported as half the method detection limit (MDL) and qualified with a “U”. RIM quality control summary tables are required to be submitted with each project dataset. These tables are found in Appendix II of the RIM.

6. **Contact Information:** Questions about this plan should be directed to Steven Wolf (phone: 978-318-8241 office; 978-201-1928 mobile; e-mail: [steven.wolf@usace.army.mil](mailto:steven.wolf@usace.army.mil)).

Prepared by:



---

Steven Wolf  
DAMOS Program Manager  
Environmental Resources Section

**7. References:**

PRMS 2008, 2013. Penobscot River Mercury Study, Phase 1 and Phase 2 Reports. <https://www.penobscotmercurystudy.com/>

USEPA/USACE 1998. Evaluation of Dredged Material Proposed for Discharge in Water of the U.S. – Testing Manual. Environmental Protection Agency, Office of Water and Department of the Army, United States Army Corps of Engineers. Washington, D.C.

USEPA/USACE 2004. Regional Implementation Manual for the Evaluation of Dredged Material Proposed for Disposal in New England Waters. U.S. EPA Region 1, Boston, MA/U.S. Army Corps of Engineers, New England District, Concord, MA.

USACE 2018. Dredged Material Evaluation and Disposal Procedures, User Manual. Dredged Material Management Program, U.S. Army Corps of Engineers, Seattle District.

**FINAL** Sampling and Analysis Plan for the Nordic Aquafarms Pipeline Corridor  
Dredging, Belfast and Northport, ME, File Number NAE-2019-01481

**TABLE 1: SAMPLE LOCATIONS AND REQUIRED LABORATORY ANALYSES**

<b>Core Location Name</b>	<b>Station Location (all are along centerline)</b>	<b>Layer</b>	<b>grain size</b>	<b>% moisture</b>	<b>TOC</b>	<b>mercury</b>	<b>metals</b>	<b>PAHs</b>	<b>PCBs</b>	<b>Pesticides</b>	<b>Elutriate</b>
<b>NAE1</b>	<b>6+50</b>	surface	√	√	√	√	√	√	√	√	√
		transition	√	√	√	√	√	√	√	√	
		deep	√	√	√	√	√	√	√	√	
<b>NAE2</b>	<b>8+00</b>	surface	√	√		√					
		transition	√	√		√					
		deep	√	√		√					
<b>NAE3</b>	<b>10+00</b>	surface	√	√	√	√	√	√	√	√	√
		transition	√	√	√	√	√	√	√	√	
		deep	√	√	√	√	√	√	√	√	
<b>NAE4</b>	<b>12+00</b>	surface	√	√		√					
		transition	√	√		√					
		deep	√	√		√					
<b>NAE5</b>	<b>14+00</b>	surface	√	√		√					
		transition	√	√		√					
		deep	√	√		√					
<b>NAE6</b>	<b>16+50</b>	surface	√	√	√	√	√	√	√	√	√
		transition	√	√	√	√	√	√	√	√	
		deep	√	√	√	√	√	√	√	√	
<b>NAE7</b>	<b>20+00</b>	surface	√	√		√					
		transition	√	√		√					
		deep	√	√		√					
<b>NAE8</b>	<b>24+00</b>	surface	√	√		√					
		transition	√	√		√					
		deep	√	√		√					
<b>NAE9</b>	<b>28+00</b>	surface	√	√	√	√	√	√	√	√	√
		transition	√	√	√	√	√	√	√	√	
		deep	√	√	√	√	√	√	√	√	
<b>NAE10</b>	<b>32+00</b>	surface	√	√		√					
		transition	√	√		√					
		deep	√	√		√					
<b>NAE11</b>	<b>36+00</b>	surface	√	√		√					
		transition	√	√		√					
		deep	√	√		√					

**FINAL** Sampling and Analysis Plan for the Nordic Aquafarms Pipeline Corridor Dredging, Belfast and Northport, ME, File Number NAE-2019-01481

**TABLE 2: RECOMMENDED PROCEDURES FOR SAMPLE COLLECTION, PRESERVATION, AND STORAGE**

<b>Analyses</b>	<b>Collection Method</b>	<b>Sample Volume</b>	<b>Container</b>	<b>Preservation Technique</b>	<b>Storage Conditions</b>	<b>Holding Time<sup>d</sup></b>
<b>Sediment</b>						
<b>Chemical/Physical Analyses</b>						
Metals	Grab/corer	200 mL	Precleaned polyethylene jar <sup>c</sup>	Dry ice <sup>c</sup>	≤ 20° C <sup>c</sup>	Hg - 30 days Others - 6 Months <sup>d</sup>
Organic Compounds	Grab/corer	475 mL	Solvent-rinsed glass jar with Teflon lid <sup>c</sup>	Dry ice <sup>c</sup>	≤ 20° C/dark <sup>d</sup>	10 days <sup>d</sup>
Particle Size	Grab/corer	75 mL	Whirl-pac bag <sup>c</sup>	Dry ice <sup>c</sup>	≤ 20° C <sup>c</sup>	Undetermined
Total Organic Carbon	Grab/corer	3 L	Heat treated glass vial with Teflon lined lid <sup>c</sup>	Dry ice or freezer storage for extended storages; otherwise refrigerate	≤ 20° C <sup>c</sup>	Undetermined
Sediment From Which Elutriate is Prepared	Grab/corer	Dependant on tests performed	Glass with Teflon lined lid	Completely fill and Refrigerate	≤ 4° C/dark/airtight	Undetermined
<b>Water and Elutriate</b>						
<b>Chemical/Physical Analyses</b>						
Metals	Discrete sampler or pump	1 L	Acid-rinsed polyethylene or glass jar	pH <2 with HNO <sub>3</sub> <sup>d</sup>	4° C 2° C <sup>d</sup>	Hg - 28 days Others - 6 Months <sup>h</sup>
Organics	Discrete sampler or pump	4 L	Amber glass bottle <sup>d</sup>	Airtight seal; refrigerate	4° C 2° C <sup>d</sup>	5 days <sup>d</sup>

<sup>b</sup> These holding times are for sediment, water, and tissue based on guidance that is sometimes administrative rather than technical in nature. There are no promulgated, scientifically based holding time criteria for sediments, tissues, or elutriates. References should be consulted if holding times for sample extracts are desired. Holding times are from the time of sample collection.

<sup>c</sup> NOAA (1989).

<sup>d</sup> Tetra Tech (1986a)

<sup>h</sup> Plumb (1981).

**FINAL** Sampling and Analysis Plan for the Nordic Aquafarms Pipeline Corridor  
Dredging, Belfast and Northport, ME, File Number NAE-2019-01481

**TABLE 3: BULK SEDIMENT TESTING PARAMETERS**

<u>Parameter</u>	<u>Analytical Method</u>	<u>Reporting Limit (mg/kg)</u>
<b>Metals</b>		
Arsenic	6010B, 6020, 7060, 7061	0.4
Cadmium	6010B, 6020, 7130, 7131	0.07
Chromium	6010B, 6020, 7190, 7191	0.5
Copper	6010B, 6020, 7210	0.5
Lead	6010B, 6020, 7420, 7421	0.5
Mercury	7471	0.02
Nickel	6010B, 6020, 7520	0.5
Zinc	6010B, 6020, 7950	1.0
<b>PCBs (total by NOAA summation of congeners)</b>		
See next page	8082A	0.001
<b>Pesticides</b>		
Aldrin	NOAA (1993), 8081B	0.001
cis- & trans-Chlordane	Heptachlor epoxide	
4,4'-DDT, DDD, DDE	Hexachlorobenzene	
Dieldrin	Lindane	
α & β Endosulfan	Methoxychlor	
Endrin	cis- & trans-Nonachlor	
Heptachlor	Oxychlordane	
	Toxaphene	0.025
<b>Polycyclic Aromatic Hydrocarbons (PAHs)</b>		
Acenaphthene	8270C-SIM	0.01
Acenaphthylene	Chrysene	
Anthracene	Dibenzo(a,h)anthracene	
Benzo(a)anthracene	Fluoranthene	
Benzo(a)pyrene	Fluorene	
Benzo(b)fluoranthene	Indeno(1, 2, 3-cd)pyrene	
Benzo(k)fluoranthene	Naphthalene	
Benzo(g, h, i)perylene	Phenanthrene	
	Pyrene	
<b>Total Organic Carbon</b>	Plumb (1981), APHA (1995)	0.1%
<b>Percent Moisture</b>	Plumb (1981), EPA (1992), PSEP (1986)	1.0%
<b>Grain Size</b>	Wet Sieve (#4, 10, 40, 200)	

**FINAL** Sampling and Analysis Plan for the Nordic Aquafarms Pipeline Corridor  
Dredging, Belfast and Northport, ME, File Number NAE-2019-01481

**TABLE 3: BULK SEDIMENT TESTING PARAMETERS (CONTINUED)**

PCB CONGENERS

Analytical Method: NOAA (1993), 8082A

Reporting Limit: 1 ppb

Congeners:

8*	2,4' diCB
18*	2,2',5 triCB
28*	2,4,4' triCB
44*	2,2',3,5' tetraCB
49	2,2',4',5 tetraCB
52*	2,2',5,5' tetraCB
66*	2,3',4,4' tetraCB
87	2,2',3,4,5' pentaCB
101*	2,2',4,5,5' pentaCB
105*	2,3,3',4,4' pentaCB
118*	2,3',4,4',5 pentaCB
128*	2,3,3',4,4' hexaCB
138*	2,2',3,4,4',5' hexaCB
153*	2,2',4,4',5,5' hexaCB
170*	2,2',3,3',4,4',5 heptaCB
180*	2,2',3,4,4',5,5' heptaCB
183	2,2',3,4,4',5',6 heptaCB
184	2,2',3,4,4',6,6' heptaCB
187*	2,2',3,4',5,5',6 heptaCB
195*	2,2',3,3',4,4',5,6 octaCB
206*	2,2',3,3',4,4',5,5',6 nonaCB
209*	2,2',3,3',4,4',5,5',6,6' decaCB

\* denotes a congener to be used in estimating Total PCB. To calculate Total PCB, sum the concentrations of all eighteen congeners marked with a "\*" and multiply by 2.

The specified methods are recommendations only. Other acceptable methodologies capable of meeting the Reporting Limits can be used. Sample preparation methodologies (e.g. extraction and cleanup) and sample size may need to be modified to achieve the required Reporting Limits.

**FINAL** Sampling and Analysis Plan for the Nordic Aquafarms Pipeline Corridor  
Dredging, Belfast and Northport, ME, File Number NAE-2019-01481

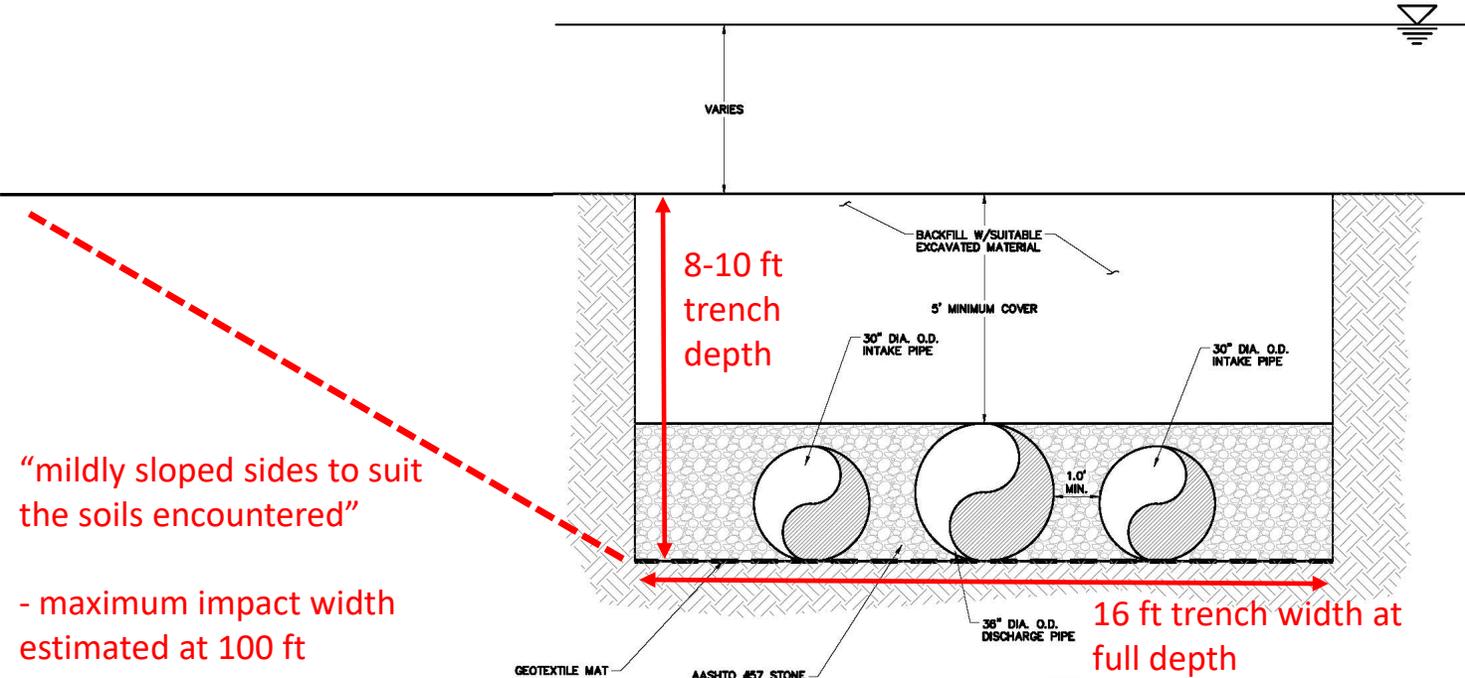
**TABLE 4: ELUTRIATE TESTING PARAMETERS**

<u>Parameter</u>	<u>Recommended Analytical Method</u>	<u>Reporting Limit (µg/l)</u>
<b>Metals</b>		
Arsenic	200.9, 1632	1.0
Cadmium	200.9, 1637	1.0
Chromium (VI)	218.6, 1636	1.0
Copper	200.9, 1639, 1640	0.6
Lead	200.9, 1639, 1640	1.0
Mercury	245.7, 1631	0.4
Nickel	200.9, 1639, 1640	1.0
Selenium	200.9, 1639	1.0
Silver	200.9	0.5
Zinc	200.9, 1639	1.0
<b>PCBs (total, by either of these methods)</b>		
	3510B, 8080A, NYSDEC	0.006
<b>Pentachlorophenol</b>	3501B, 8270C	2.60
<b>Pesticides</b>	3510B, 8080A	
Aldrin		0.26
Chlordane		0.02
Chlorpyrifos		0.002
Dieldrin		0.14
4, 4'-DDT		0.03
α & β Endosulfan		0.007
Endrin		0.007
Heptachlor		0.01
Heptachlor epoxide		0.01
Lindane		0.26
Toxaphene		0.04

Reference:

NYSDEC. 1991. Analytical Method for the Determination of PCB Congeners by Fused Silica Capillary Column Gas Chromatography with Electron Capture Detector. NYSDEC #91-11.

**Figure 1 – Proposed Intake/Discharge Pipeline Route for Nordic Aquafarms, Inc.**  
 (from information provided by Ransom Consulting, LLC)

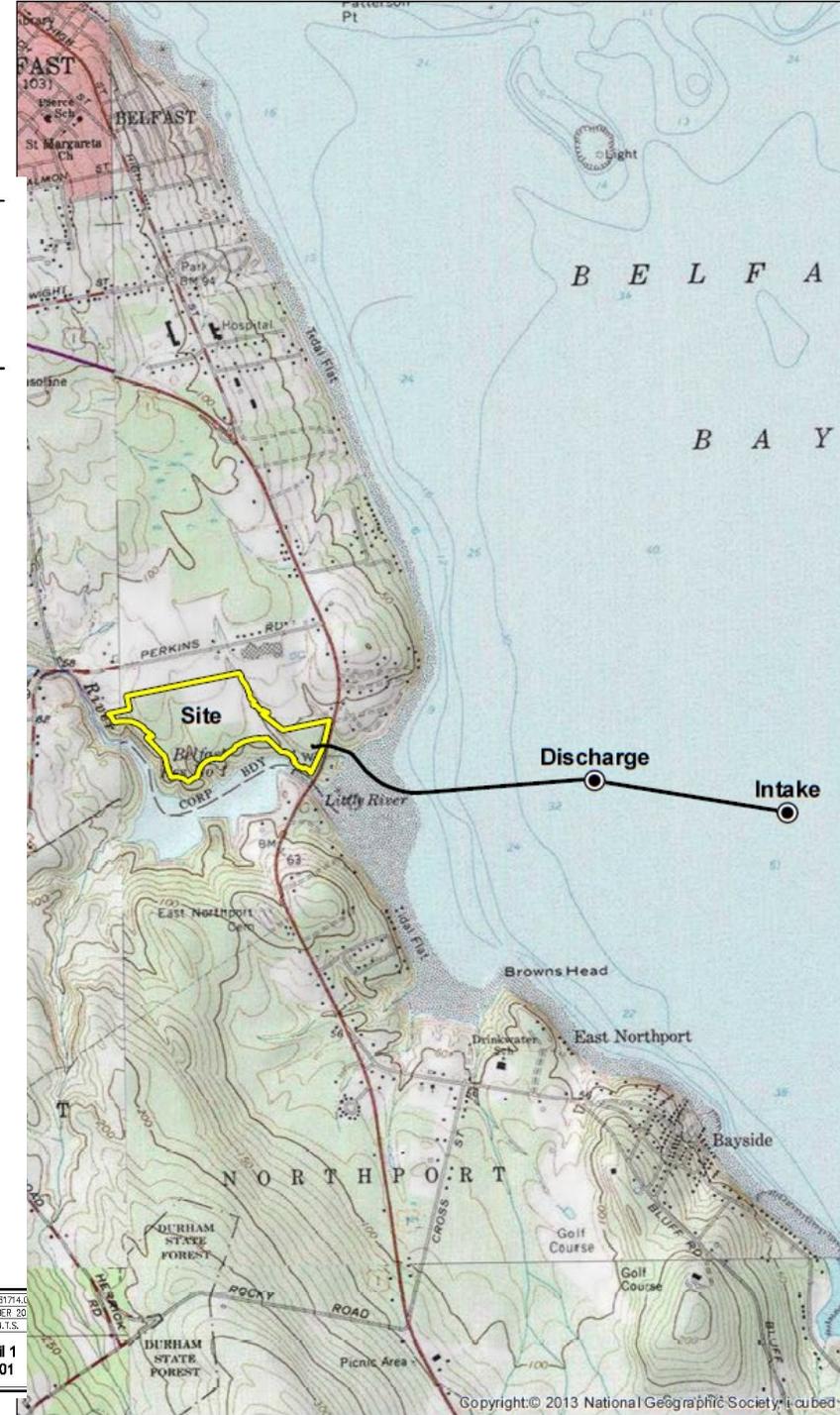


“mildly sloped sides to suit the soils encountered”

- maximum impact width estimated at 100 ft including trench and sidecast material

**1**  
**CS501**  
**INTERTIDAL & SURF ZONES**  
**(STATIONS 5+00 TO 32+00)**

NOT TO SCALE  
 CONCEPTUAL NOT FOR CONSTRUCTION



**Legend**

- Site Boundary
- Ocean Pipelines

- Notes
- Data Source: USGS National Map Seamless Server, 24K
  - USGS Quad 7.5 Minute Searsport & Belfast 1976 (revised 1979)
  - Latitude: 44° 23' 43" N  
 Longitude: 68° 59' 39" W  
 UTM Northing: 4615777 mN  
 UTM Easting: 900444 mE

**Scale and Orientation**

0 1,000 2,000  
 1 inch = 2,000 feet

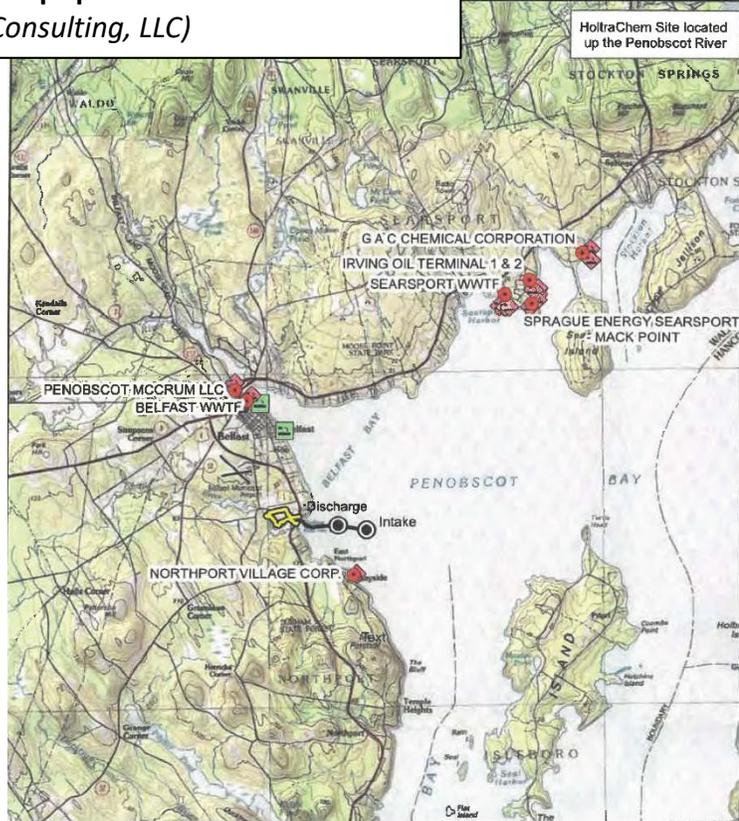
**Prepared For**  
 Nordic Aquafarms, Inc.  
 159 High Street  
 Belfast, Maine

**Site Address**  
 Proposed Aquaculture Facility  
 285 Northport Avenue  
 Belfast, Maine

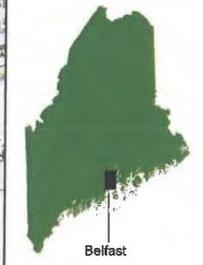
**171.05027** | **Apr 2019**  
 19  
 Site Location Map

 41 Hutchins Drive Portland, Maine 04102 904.226.4552   www.woodardcurran.com COMMITMENT & INTEGRITY DRIVE RESULTS	INTERTIDAL & SURF ZONES (STATIONS 5+00 TO 32+00)		CIAMBRO	JOB NO: 0231714.0 DATE: OCTOBER 2019 SCALE: N.T.S.
	DESIGNED BY: DRAWN BY:	CHECKED BY: 0231714.00-SS01 - CS501.dwg	NAF BELFAST	Detail 1 CS501

Figure 2 – Wastewater outfalls and surficial total mercury concentrations in the vicinity of the proposed Nordic Aquafarms pipeline route (from information provided by Ransom Consulting, LLC)



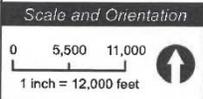
**RANSOM**  
Consulting Engineers and Scientists  
Regional Locator Map



- Legend**
- Site Boundary
  - Nordic Ocean Pipelines
  - Waste Water Treatment Facilities
  - Waste Water Outfalls
  - Combined Sewer Overflows

**Notes**

1. Data Sources: Maine DEP GIS Unit; USGS National Map Seamless Server, 24K
2. USGS Quad: 7.5 Minute Searsport & Belfast 1976 (revised 1979)
3. Latitude: 44° 23' 43" N  
Longitude: 68° 59' 39" W  
UTM Northing: 4915777 mN  
UTM Easting: 500444 mE



**Prepared For**  
Nordic Aquafarms, Inc.  
159 High Street  
Belfast, Maine

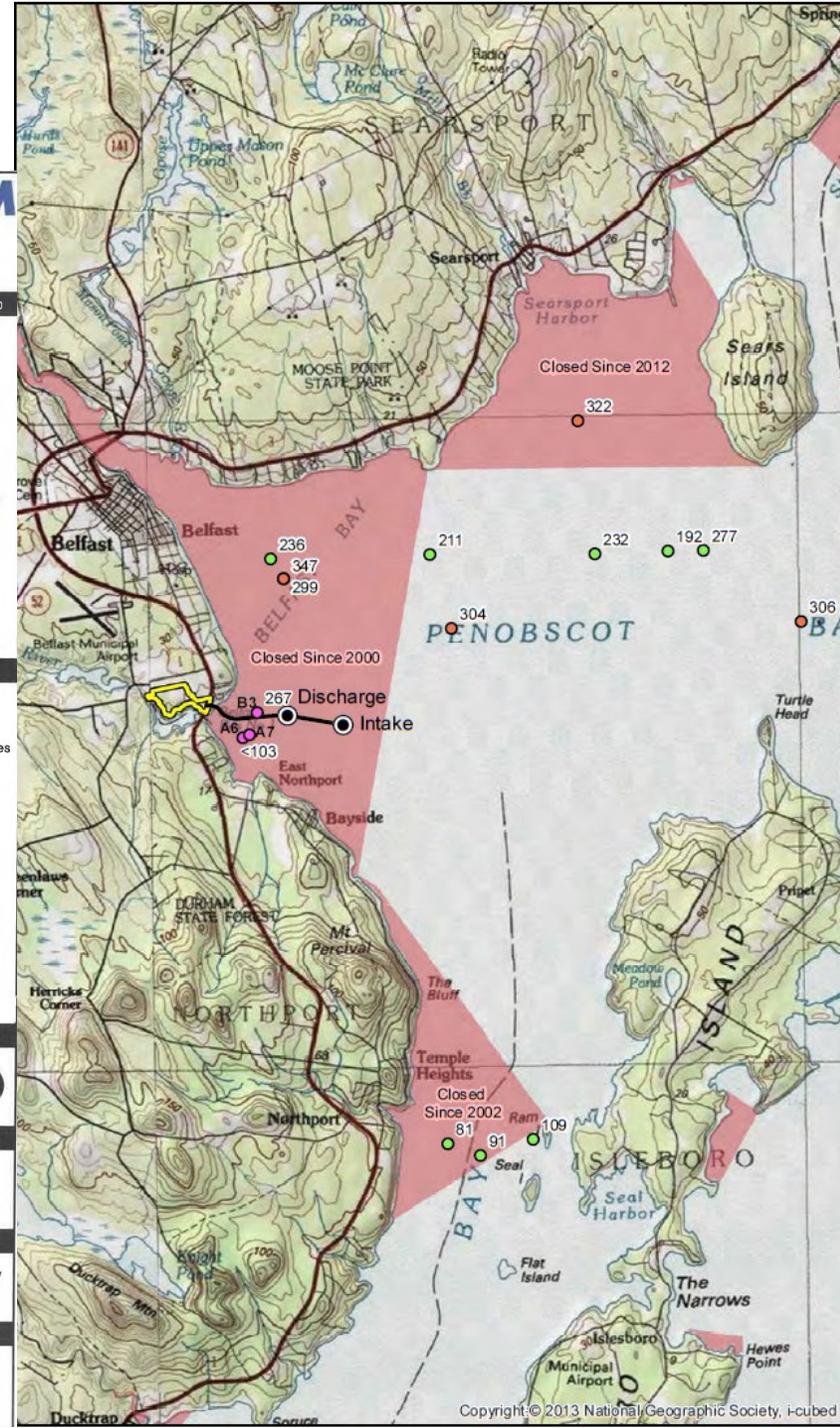
**Site Address**  
Proposed Aquaculture Facility  
285 Northport Avenue  
Belfast, Maine

**Potential Contaminant Sources to NW Penobscot Bay**  
171.05027 | Mar 2020

**Waste Water Outfalls**

Facility Name	MEPDES ID	Outfall Name	Outfall ID
BELFAST WWTF	ME0101532	FRONT STREET	001
BELFAST WWTF	ME0101532	FRONT STREET	001
G A C CHEMICAL CORPORATION	ME0001830	MINOR OUTFALL	002
G A C CHEMICAL CORPORATION	ME0001830	MINOR OUTFALL	004
IRVING OIL TERMINAL 1	ME0002461	MINOR OUTFALL	001
IRVING OIL TERMINAL 1	ME0002461	MINOR OUTFALL	002
IRVING OIL TERMINAL 1	ME0002461	HYDROSTATIC WATER	003
IRVING OIL TERMINAL 2	ME0021181	MINOR OUTFALL	001
IRVING OIL TERMINAL 2	ME0021181	HYDROSTATIC WATER	002
NORTHPORT VILLAGE CORP.	ME0100901	MINOR OUTFALL	001
PENOBSCOT MCCRUM LLC	ME0023043	MINOR OUTFALL	001
SEARSPORT WWTF	ME0101966	MINOR OUTFALL	001
SPRAGUE ENERGY SEARSPORT - MACK POINT	ME0002208	MINOR OUTFALL	003
SPRAGUE ENERGY SEARSPORT - MACK POINT	ME0002208	MINOR OUTFALL	001
SPRAGUE ENERGY SEARSPORT - MACK POINT	ME0002208	MINOR OUTFALL	008
SPRAGUE ENERGY SEARSPORT - MACK POINT	ME0002208	MINOR OUTFALL	002
SPRAGUE ENERGY SEARSPORT - MACK POINT	ME0002208	MINOR OUTFALL	004

Sampling and Analysis Plan for the Proposed Nordic Aquafarms NAE-2019-01481 Draft 01JUN2020



**RANSOM**  
Consulting Engineers and Scientists

**Legend & Notes**

- Site Boundary
- Nordic Ocean Pipelines
- 2007 Sample Location THg ng/g d.w. 0-3 cm
- 2009 Sample Location THg ng/g d.w. 0-3 cm
- 2018 Sample Location THg ng/g d.w. B3 = 0-6.42 ft A6/A7 = 2 core comp. = 0-3.75 ft
- Closed Shellfishing Grounds (2/28/2020)

**Notes**

1. Data Sources: Penobscot River Mercury Study (April 2013); Nordic Aquafarms SLODA permit (May 2019); Maine Dept. of Marine Resources
2. USGS Quad: 7.5 Minute Searsport & Belfast 1976 (revised 1979), from USGS National Map Seamless Server
3. Latitude: 44° 23' 43" N  
Longitude: 68° 59' 39" W  
UTM Northing: 4915777 mN  
UTM Easting: 500444 mE

**Scale and Orientation**

**Prepared For**  
Nordic Aquafarms, Inc.  
159 High Street  
Belfast, Maine

**Site Address**  
Proposed Aquaculture Facility  
285 Northport Avenue  
Belfast, Maine

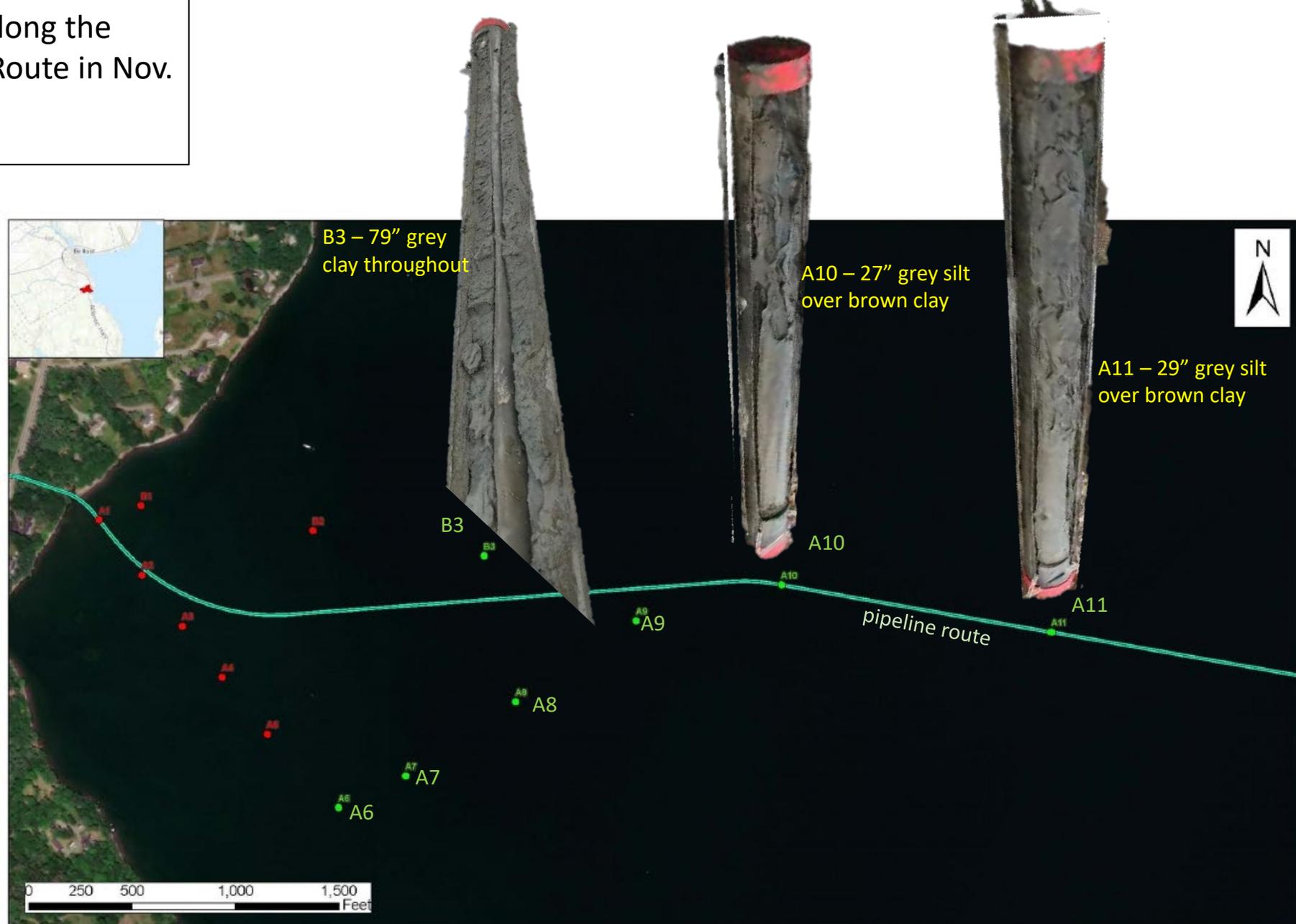
**171.05027 | Mar 2020**

**Potential Contaminant Sources to NW Penobscot Bay**  
171.05027 | Mar 2020

Copyright © 2013 National Geographic Society, i-cubed

20  
Offshore Sediment - Total Mercury

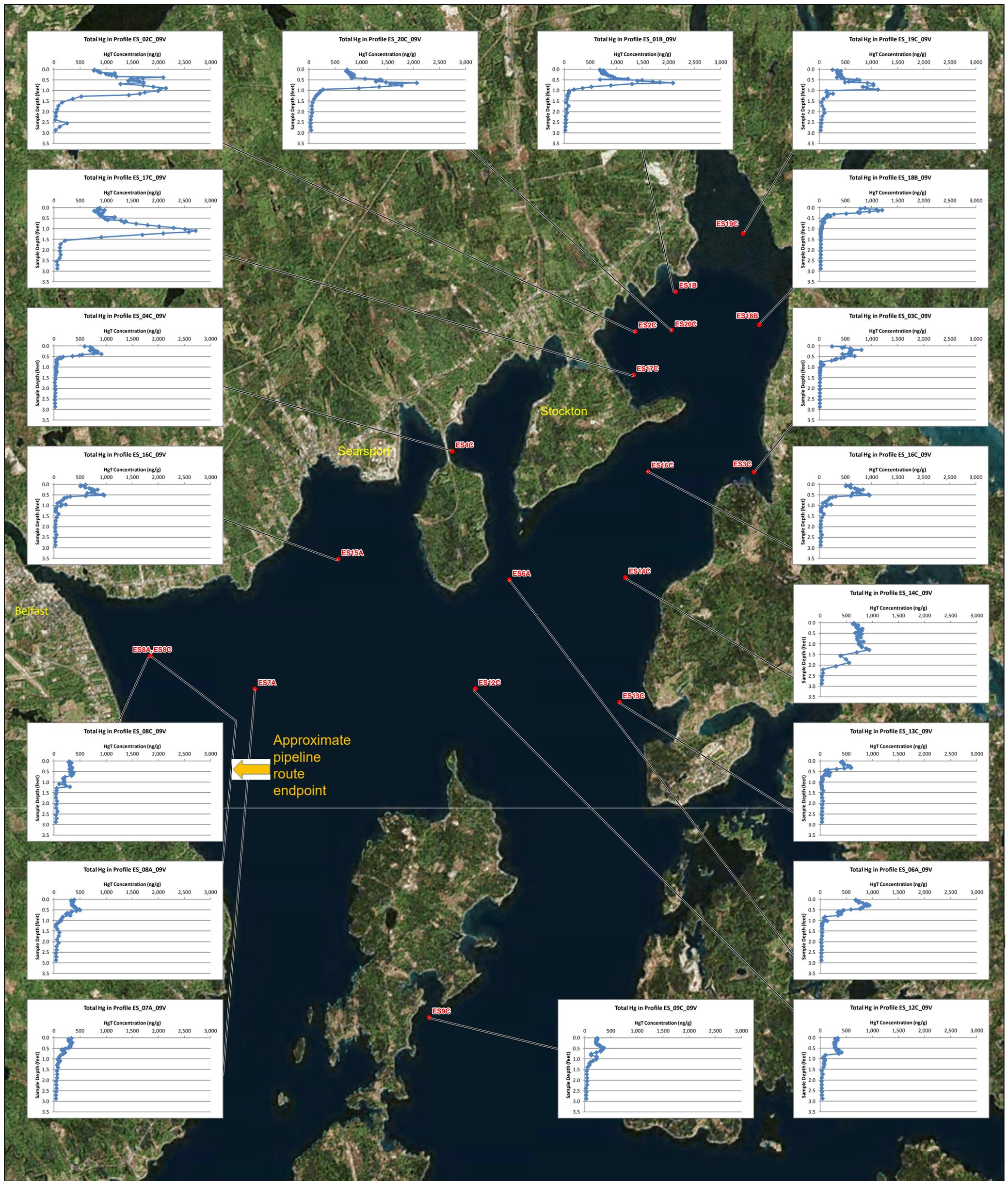
Figure 3 – Example Cores Collected along the Proposed Intake/Discharge Pipeline Route in Nov. 2018  
 (from information provided by Ransom Consulting, LLC)



Sampling and Analysis Plan for the Proposed Nordic Aquafarms NAE-2019-01481 Draft 01JUN2020

**Nordic Aquafarms**  
**Belfast, Maine**  
**Sediment Sample Locations**

- Sediment Location Sampled
- Sediment Location Not Sampled
- Current Pipeline Route



Sampling and Analysis Plan for the Proposed Nordic Aquafarms NAE-2019-01481 27MAY2020

Figure 4 – Total mercury concentrations in surficial sediment of upper Penobscot Bay (from information provided in the 2013 Penobscot River Mercury Study)

DRAFT

M:\Projects\Searsport\Figures\Searsport\_SamplingSites.pdf  
M:\Projects\Searsport\MXD\Searsport\_SamplingSites.mxd  
August 21, 2014 DWN: PDM CHKD: BRB

0 5,000 Feet



FIGURE 1

Figure 5 – Conceptual site model of potential sources of sediment contamination, exposure pathways, and receptors

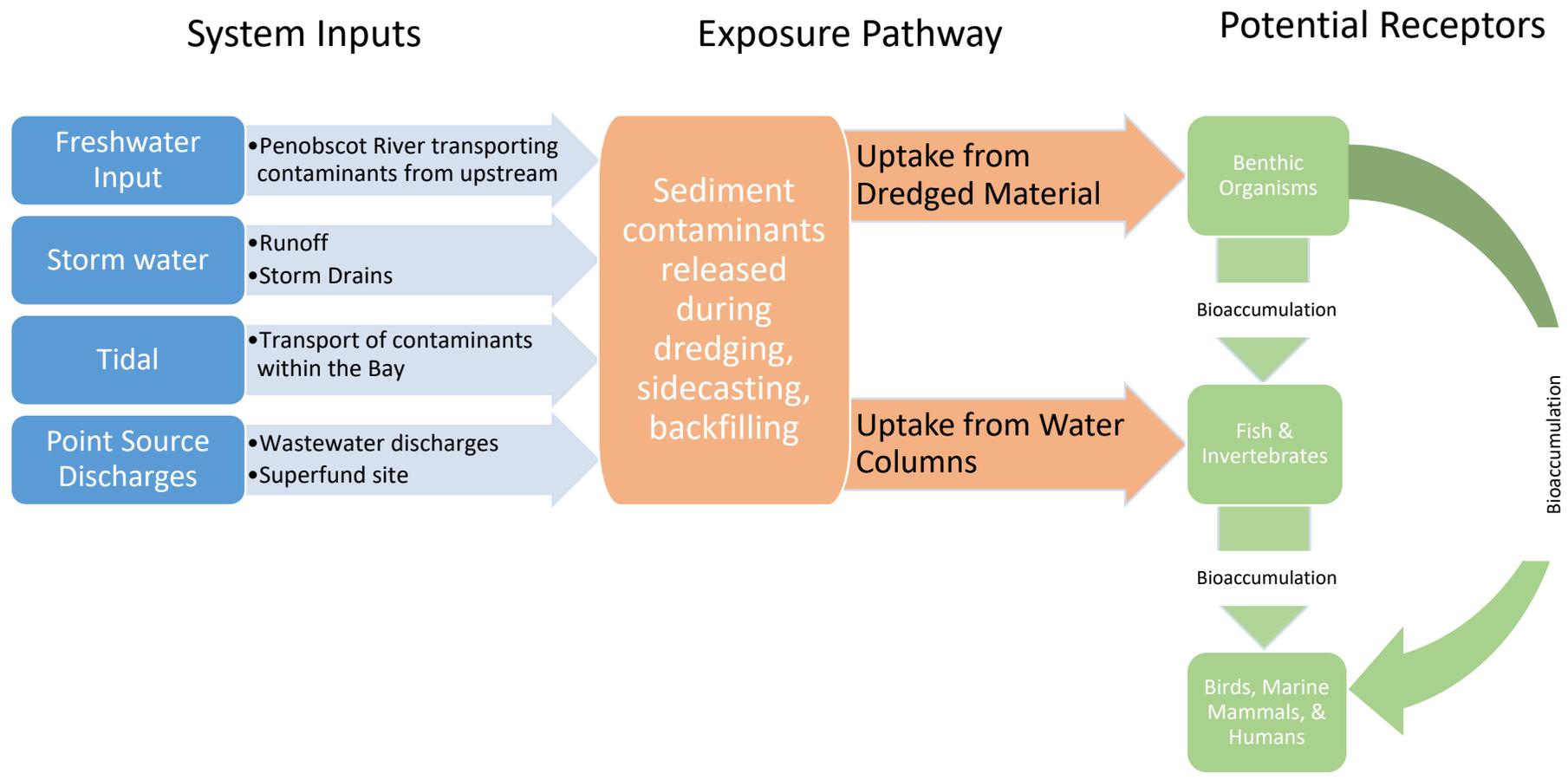
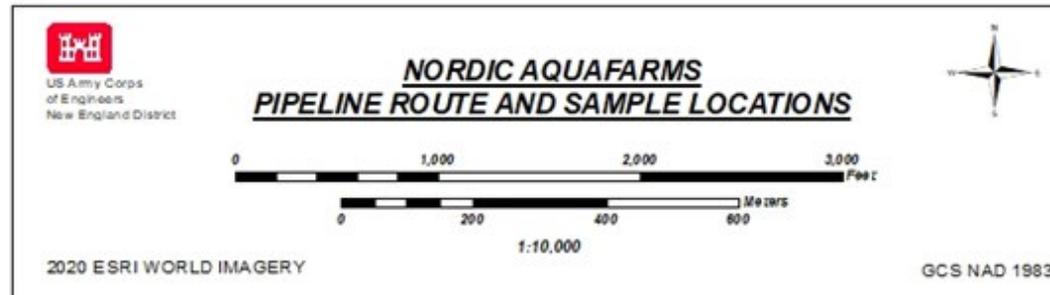


Figure 6 – Sediment sampling locations along the pipeline corridor

(NAE specified locations using pipeline route provided by Ransom Consulting, LLC)



**FIGURE 7: EXAMPLE CORE LOG DATA SHEET**

PROJECT: \_\_\_\_\_ DATE: \_\_\_\_\_

SAMPLING PERSONNEL: \_\_\_\_\_

SEA STATE: \_\_\_\_\_ WEATHER CODE: \_\_\_\_\_

LOCATION METHOD: \_\_\_\_\_

SAMPLE ID: \_\_\_\_\_ SAMPLER TYPE: \_\_\_\_\_

TIME: \_\_\_\_\_

SOUNDING: \_\_\_\_\_ CORRECTED DEPTH: \_\_\_\_\_

COORDINATES: N \_\_\_\_\_ E \_\_\_\_\_

PENETRATION/RECOVERY: \_\_\_\_\_ NO. OF ATTEMPTS: \_\_\_\_\_

MATERIAL DESCRIPTION: \_\_\_\_\_

CORE PHOTO:	NOTES:
<p><i>Insert core photograph with scale</i></p>	<p><i>Insert field notes and ASTM description of core</i></p>

### III. TEST ADMINISTRATION

#### A. Sponsor

Nordic Aquafarms, Inc.  
511 Congress Street, Suite 500  
Portland, ME 04101

#### B. Testing Facilities

Aqua Survey, Inc. (ASI)  
469 Point Breeze Road  
Flemington, NJ 08822

Enthalpy Analytical  
1 Lafayette Road, Unit 6  
Hampton, NH 03843

#### C. Dates of Experimentation

Date of Study Initiation: July 21, 2020  
Date of Study Completion: August 27, 2020

#### D. Study Participants

Jon Doi, Ph.D.	Executive Vice President
Thomas Dolce	Field Operations Manager
Andrew Froening	Field Operations Support
Cheryl Hall	Quality Assurance Officer
Elizabeth Horn	Staff Scientist
Willard Reasoner	Field Operations Specialist
Michelle Thomas	Laboratory Manager

### IV. MATERIALS AND METHODS

All sampling and testing were performed in accordance with the technical manual “The Regional Implementation Manual for the Evaluation of Dredged Material Proposed for Disposal in New England Waters” (RIM) dated May 6, 2004, and the “Sampling and Analysis Plan for the Nordic Aquafarms Pipeline Corridor Dredging, Belfast and Northport, ME, File Number NAE-2019-01481,” dated June 18, 2020.

#### A. Sampling and Homogenization

Test sediments from ten locations and site water were collected by Aqua Survey personnel from along the centerline of the Nordic Aquafarms pipeline corridor located in Penobscot Bay, between Belfast and Northport, ME, on July 21 and 22, 2020. Location NAE1 was not sampled because the area was visibly rocky when seen at low tide, as well as a dispute with property owners that all parties involved agreed to be avoided.

The vessel used for sampling, the R/V Prattis, was positioned using a Trimble SPS 855 Differential Global Positioning System (DGPS). Sediment collection was performed using a Rossfelder P-3 vibracore with flexible plastic core liners.

Please refer to Table 1 for Sample Locations and DGPS coordinates.

Sediment collection included sampling to the project depth of 23.0 feet MLLW including 2.0 foot overdredge or to a minimum of 3 feet below any surficial sediment layer. The majority of the sample collection followed the latter. A site map is provided in Figure 1.

The cores were inspected, photographed and its characteristics were recorded on Sediment Core Logs. Each core was then split into three sections- “A”- surficial layer, “B”- transition layer, and “C”- deeper layer.

Each core layer was homogenized in the field using a stainless steel mixer and aliquots were reserved for the appropriate physical and chemical analyses required.

Sediment samples preserved for chemical analyses were placed in appropriate containers (glass or plastic), put in coolers on ice and were picked up by Enthalpy lab courier.

Sediment samples reserved for grain size and TOC analyses were placed in appropriate plastic containers and kept in coolers with ice.

All samples were received at ASI in Flemington, NJ under chain of custody, on ice, and stored at 2-4 °C until testing. Upon arrival they were also assigned unique ASI sample numbers.

Site water was also collected for this project at location NAE6. A submersible oil-free pump was used to collect the water at the mid depth range of the water column. Water samples were placed in appropriate containers (glass or plastic), put in coolers on ice and were picked up by Enthalpy lab courier.

See Tables 1a and 1b for Sample Identification, ASI Sample Number, Collection Depth, and Analyses Required.

The appendices contain all supporting documentation including ASI sampling logs (Appendix A), photographs (Appendix B), chains of custody (Appendix C), sample use forms (Appendix D), percent moisture and grain size distribution graphs and raw data (Appendix E) and TOC raw data (Appendix F).

## **B. Physical and Total Organic Carbon Analysis**

Guidance followed for percent moisture and grain size analyses was the *Standard Test Method for Particle-Size Analysis of Soils*, Designation ASTM D422-63, reapproved 2007. See Appendix E for the grain size distribution and percent moisture raw data.

Total Organic Carbon (TOC) was also determined based on the guidance from

EPA Office of Solids Waste and Emergency Response SW-846 Method No. 9060 (Volume IC, Chapter 5, Revision 0, 9/86). The instrument for this analysis was the Dohrmann TOC Boat Sampler, Model 183 (Serial number 98202003), which was connected to the Dohrmann Apollo 9000 TOC Analyzer. Raw data and a standard reference material control chart can be found in Appendix F.

### **C. Chemical Analyses**

Sub-samples of the core layers and the site water were shipped to the analytical laboratory by courier. Following chain-of-custody procedures, the samples were placed in appropriate containers and put into coolers with ice packs.

Enthalpy Analytical performed the chemical analysis of the sediment and elutriate.

## **V. PHYSICAL AND CHEMICAL ANALYSIS RESULTS**

The results of the analyses are as follows:

Table 3: Physical Analyses (Grain Size Distribution, Percent Moisture and TOC)

Tables 4a-c: Chemical Analysis of Bulk Sediment (CENAE RIM)

Tables 5a-c: Chemical Analysis of Elutriate (CENAE RIM)

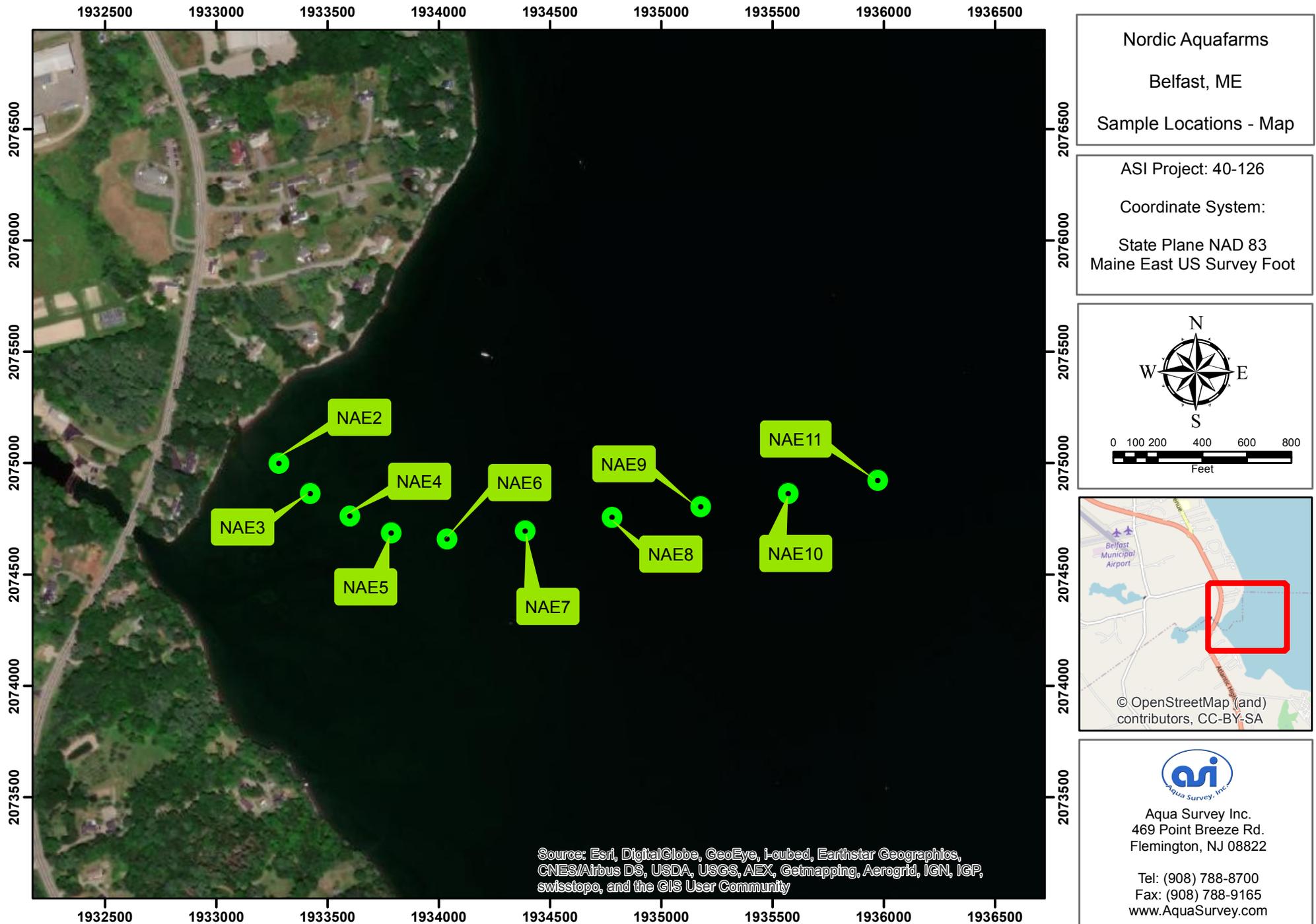
Table 6: Chemical Analysis of Site Blank (CENAE RIM)

Table 7: Mercury Analysis of All Bulk Sediment Samples (CENAE RIM)

**Table 1. DGPS Coordinates**

<b>Location</b>	<b>Northings</b>	<b>Eastings</b>	<b>Latitude</b>	<b>Longitude</b>
NAE1	-	-	-	-
NAE2	265863.4	857169.8	44.394613210	-68.986214125
NAE3	265718.3	857298.9	44.394615312	-68.985720201
NAE4	265602.8	857469.5	44.394301250	-68.985064884
NAE5	265514.3	857648.4	44.394061385	-68.984378431
NAE6	265467.9	857895.6	44.393938108	-68.983431628
NAE7	265480.1	858247.9	44.393977272	-68.982084051
NAE8	265512.0	858641.5	44.394071124	-68.980578906
NAE9	265531.1	859041.7	44.394129951	-68.979048219
NAE10	265560.9	859437.6	44.394218040	-68.977534219
NAE11	265590.7	859841.6	44.394306238	-68.975989224
Site Water	265467.9	857895.6	44.393938108	-68.983431628

Figure 1. Site Map



**Table 2a. Sample Identification and Physical/TOC Analysis Required**

Location	Layer	Depth	Sample ID #	Grain Size	% Moisture	TOC
NAE2a	Surface	0.0'-0.7'	20200424a	X	X	
NAE2b	Transition	0.7'-1.3'	20200424b	X	X	
NAE2c	Deep	1.3'-1.7'	20200424c	X	X	
NAE3a	Surface	0.0'-1.0'	20200425a	X	X	X
NAE3b	Transition	1.0'-3.9'	20200425b	X	X	X
NAE3c	Deep	3.9'-4.9'	20200425c	X	X	X
NAE4a	Surface	0.0'-0.6'	20200426a	X	X	
NAE4b	Transition	0.6'-2.9'	20200426b	X	X	
NAE4c	Deep	2.9'-4.5'	20200426c	X	X	
NAE5a	Surface	0.0'-0.7'	20200427a	X	X	
NAE5b	Transition	0.7'-1.3'	20200427b	X	X	
NAE5c	Deep	1.3'-2.6'	20200427c	X	X	
NAE6a	Surface	0.0'-1.2'	20200428a	X	X	X
NAE6b	Transition	1.2'-3.6'	20200428b	X	X	X
NAE6c	Deep	3.6'-4.6'	20200428c	X	X	X
NAE7a	Surface	0.0'-0.6'	20200429a	X	X	
NAE7b	Transition	0.6'-3.0'	20200429b	X	X	
NAE7c	Deep	3.0'-5.1'	20200429c	X	X	
NAE8a	Surface	0.0'-0.6'	20200430a	X	X	
NAE8b	Transition	0.6'-4.2'	20200430b	X	X	
NAE8c	Deep	4.2'-8.0'	20200430c	X	X	
NAE9a	Surface	0.0'-1.0'	20200431a	X	X	X
NAE9b	Transition	1.0'-5.0'	20200431b	X	X	X
NAE9c	Deep	5.0'-8.7'	20200431c	X	X	X
NAE10a	Surface	0.0'-1.0'	20200432a	X	X	
NAE10b	Transition	1.0'-4.5'	20200432b	X	X	
NAE10c	Deep	4.5'-7.9'	20200432c	X	X	
NAE11a	Surface	0.0'-1.0'	20200433a	X	X	
NAE11b	Transition	1.0'-4.5'	20200433b	X	X	
NAE11c	Deep	4.5'-8.0'	20200433c	X	X	

**Table 2b. Sample Identification and Chemical Analysis Required**

Location	Layer	Depth	Sample ID #	Mercury	Metals	PAHs	Pesticides	PCBs	Elutriate
NAE2a	Surface	0.0'-0.7'	20200424a	X					
NAE2b	Transition	0.7'-1.3'	20200424b	X					
NAE2c	Deep	1.3'-1.7'	20200424c	X					
NAE3a	Surface	0.0'-1.0'	20200425a	X	X	X	X	X	X
NAE3b	Transition	1.0'-3.9'	20200425b	X	X	X	X	X	
NAE3c	Deep	3.9'-4.9'	20200425c	X	X	X	X	X	
NAE4a	Surface	0.0'-0.6'	20200426a	X					
NAE4b	Transition	0.6'-2.9'	20200426b	X					
NAE4c	Deep	2.9'-4.5'	20200426c	X					
NAE5a	Surface	0.0'-0.7'	20200427a	X					
NAE5b	Transition	0.7'-1.3'	20200427b	X					
NAE5c	Deep	1.3'-2.6'	20200427c	X					
NAE6a	Surface	0.0'-1.2'	20200428a	X	X	X	X	X	X
NAE6b	Transition	1.2'-3.6'	20200428b	X	X	X	X	X	
NAE6c	Deep	3.6'-4.6'	20200428c	X	X	X	X	X	
NAE7a	Surface	0.0'-0.6'	20200429a	X					
NAE7b	Transition	0.6'-3.0'	20200429b	X					
NAE7c	Deep	3.0'-5.1'	20200429c	X					
NAE8a	Surface	0.0'-0.6'	20200430a	X					
NAE8b	Transition	0.6'-4.2'	20200430b	X					
NAE8c	Deep	4.2'-8.0'	20200430c	X					
NAE9a	Surface	0.0'-1.0'	20200431a	X	X	X	X	X	X
NAE9b	Transition	1.0'-5.0'	20200431b	X	X	X	X	X	
NAE9c	Deep	5.0'-8.7'	20200431c	X	X	X	X	X	
NAE10a	Surface	0.0'-1.0'	20200432a	X					
NAE10b	Transition	1.0'-4.5'	20200432b	X					
NAE10c	Deep	4.5'-7.9'	20200432c	X					
NAE11a	Surface	0.0'-1.0'	20200433a	X					
NAE11b	Transition	1.0'-4.5'	20200433b	X					
NAE11c	Deep	4.5'-8.0'	20200433c	X					

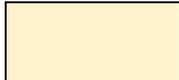
**Table 3. Grain Size Distribution, Percent Moisture, and TOC**

Sample Name	ASI Number	% Gravel		% Sand			% Fines		% Moisture	TOC	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		ppm	% Dry Wt
NAE2A	20200424a	3.3	17.3	13.7	28.4	25.5	8.7	3.1	14.95		
NAE2B	20200424b	8.6	36.7	15.1	20.0	11.8	5.8	2.0	10.81		
NAE2C	20200424c	16.1	60.3	11.3	8.3	2.8	0.7	0.5	8.58		
NAE3A	20200425a	5.3	26.0	15.6	18.8	19.2	10.5	4.6	11.47	3,517	0.35
NAE3B	20200425b	3.6	19.1	13.2	13.7	14.1	27.9	8.4	11.54	2,841	0.28
NAE3C	20200425c	5.6	24.0	10.7	15.1	12.4	24.0	8.2	11.69	2,764	0.28
NAE4A	20200426a	0.8	10.9	18.0	40.2	26.5	2.4	1.2	17.17		
NAE4B	20200426b	0.6	3.9	4.0	8.7	28.8	37.1	16.9	17.53		
NAE4C	20200426c	3.5	15.8	7.2	8.6	31.0	24.8	9.1	12.37		
NAE5A	20200427a	0.0	3.1	8.5	35.9	37.2	12.9	2.4	15.63		
NAE5B	20200427b	21.6	35.2	13.1	18.5	7.4	3.2	1.0	11.41		
NAE5C	20200427c	9.2	41.3	20.0	21.2	3.9	3.4	1.0	9.73		
NAE6A	20200428a	14.3	29.3	18.2	22.7	11.5	3.2	0.8	10.67	4,694	0.47
NAE6B	20200428b	1.2	11.6	14.1	14.3	39.5	16.3	3.0	20.59	5,922	0.59
NAE6C	20200428c	1.3	9.4	10.8	23.7	40.2	12.2	2.4	17.87	4,701	0.47
NAE7A	20200429a	1.4	11.2	13.6	28.3	23.5	13.6	8.4	20.92		
NAE7B	20200429b	0.8	5.8	8.1	34.9	39.9	6.9	3.6	21.68		
NAE7C	20200429c	6.1	27.7	15.6	29.3	14.5	4.9	1.9	13.30		
NAE8A	20200430a	0.9	3.1	0.8	3.3	16.4	56.1	19.4	48.97		
NAE8B	20200430b	0.0	0.0	0.6	2.2	30.1	52.1	15.0	36.09		
NAE8B	20200430b dup	0.0	0.0	0.6	2.6	29.6	54.3	12.9	36.86		
NAE8B	20200430b trp	0.0	0.0	0.5	1.9	30.4	54.2	13.0	36.41		
NAE8C	20200430c	0.0	0.0	0.4	1.0	14.2	67.1	17.3	42.04		
NAE9A	20200431a	0.0	0.0	0.4	0.9	2.1	52.6	44.0	58.24	25,252	2.53
NAE9B	20200431b	0.0	0.0	0.4	1.2	3.2	51.5	43.7	50.96	24,167	2.42
NAE9C	20200431c	0.9	3.9	2.3	5.6	9.3	53.1	24.9	40.00	22,135	2.21
NAE10A	20200432a	0.0	0.0	0.4	0.3	0.9	49.7	48.7	58.69		
NAE10B	20200432b	0.0	0.0	0.6	1.4	1.3	43.6	53.1	54.81		
NAE10C	20200432c	0.0	0.3	1.1	2.8	14.2	45.3	36.3	41.89		
NAE11A	20200433A	0.0	0.0	0.0	0.1	0.4	61.6	37.9	62.92		
NAE11B	20200433b	0.0	0.0	0.1	0.7	1.6	40.9	56.7	54.53		
NAE11C	20200433c	0.0	0.0	0.0	1.0	1.4	38.7	58.9	51.20		
NAE11C	20200433c dup	0.0	0.0	0.4	0.8	1.5	38.5	58.8	51.24		
NAE11C	20200433c trp	0.0	0.0	0.0	0.7	1.5	38.8	59.0	51.35		

## Chemical Analysis Tables Information Page

### List of Data Qualifiers:

- J4 = The Relative Percent Difference (RPD) between the Laboratory Control Sample Duplicate (LCSD) and LCS are above the method or project specified limit.
- J5 = Matrix Spike (MS) %R is below the method or project specified limit.
- J7 = The RPD between the Matrix Spike Duplicate (MSD) and MS are above the method or project specified limit.
- J14 = Estimated value less than reporting limit but greater than the MDL.
- U = Not detected.

 QL (Quantitation/Reporting Limit) or MDL (Method Detection Limit) is shaded pale yellow if it exceeds the CENAE RIM Reporting Limit.

**Table 4a. PAH Analysis of Bulk Sediment (CENAE RIM)**

ASI Job #: 40-126  Core Location Name ASI ID # Enthalpy ID #	CAS No.	RIM Reporting Limit	Enthalpy MDL	Bulk Sediment (Units: µg/kg)			Bulk Sediment (Units: µg/kg)			Bulk Sediment (Units: µg/kg)		
		ppb (µg/kg)		NAE3a (Surface)			NAE3b (Transition)			NAE3c (Deep)		
				20200425a			20200425b			20200425c		
				34272-026			34272-028			34272-029		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Acenaphthene	83-32-9	10	3.1	1.55	9.00	U	1.55	9.00	U	1.55	10.0	U
Acenaphthylene	208-96-8	10	3.4	1.70	9.00	U	1.70	9.00	U	1.70	10.0	U
Anthracene	120-12-7	10	3.3	1.65	9.00	U	1.65	9.00	U	1.65	10.0	U
Benzo(a)anthracene (1,2- Benzanthracene)	56-55-3	10	4.5	2.25	9.00	U	2.25	9.00	U	2.25	10.0	U
Benzo(a)pyrene	50-32-8	10	4.8	2.40	9.00	U	2.40	9.00	U	2.40	10.0	U
Benzo(b)fluoranthene (3,4- Benzofluoranthene)	205-99-2	10	4.1	2.05	9.00	U	2.05	9.00	U	2.05	10.0	U
Benzo(k)fluoranthene	207-08-9	10	4.4	2.20	9.00	U	2.20	9.00	U	2.20	10.0	U
Benzo(g,h,i)perylene	191-24-2	10	3.9	1.95	9.00	U	1.95	9.00	U	1.95	10.0	U
Chrysene	218-01-9	10	4.2	2.10	9.00	U	2.10	9.00	U	2.10	10.0	U
Dibenz(a,h)anthracene	53-70-3	10	3.9	1.95	9.00	U	1.95	9.00	U	1.95	10.0	U
Fluoranthene	206-44-0	10	6.6	3.30	9.00	U	3.30	9.00	U	3.30	10.0	U
Fluorene	86-73-7	10	3.4	1.70	9.00	U	1.70	9.00	U	1.70	10.0	U
Ideno(1,2,3-cd)pyrene	193-39-5	10	3.5	1.75	9.00	U	1.75	9.00	U	1.75	10.0	U
Naphthalene	91-20-3	10	2.9	1.45	9.00	U	1.45	9.00	U	1.45	10.0	U
Phenanthrene	85-01-8	10	8.6	4.30	9.00	U	4.30	9.00	U	4.30	10.0	U
Pyrene	129-00-0	10	5.0	2.50	9.00	U	2.50	9.00	U	2.50	10.0	U

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

**Table 4a - continued. Pesticide Analysis of Bulk Sediment (CENAE RIM)**

ASI Job #: 40-126		RIM Reporting Limit	Enthalpy MDL	Bulk Sediment (Units: µg/kg)			Bulk Sediment (Units: µg/kg)			Bulk Sediment (Units: µg/kg)		
Core Location Name:		ppb (µg/kg)		NAE3a (Surface)			NAE3b (Transition)			NAE3c (Deep)		
ASI ID #:				20200425a			20200425b			20200425c		
Enthalpy ID #:				34272-026			34272-028			34272-029		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Aldrin	309-00-2	1	0.25	0.125	0.400	UJ4	0.125	0.400	UJ4	0.125	0.400	UJ4
cis-Chlordane (α)	5103-71-9	1	0.078	0.039	0.400	U	0.039	0.400	U	0.039	0.400	U
trans-Chlordane (γ)	5103-74-2	1	0.17	0.085	0.400	U	0.085	0.400	U	0.085	0.400	U
Chlordane (cis and trans) (α and γ)				0.124			0.124			0.124		
4,4'-DDT	50-29-3	1	0.10	0.050	0.700	U	0.050	0.700	U	0.050	0.800	U
4,4'-DDE	72-55-9	1	0.076	0.038	0.700	U	0.038	0.700	U	0.038	0.800	U
4,4'-DDD	72-54-8	1	0.065	0.033	0.700	U	0.033	0.700	U	0.033	0.800	U
Dieldrin	60-57-1	1	0.093	0.047	0.700	U	0.047	0.700	U	0.047	0.800	U
Endosulfan I (α)	959-98-8	1	0.12	0.060	0.700	U	0.060	0.700	U	0.060	0.800	U
Endosulfan II (β)	33213-65-9	1	0.18	0.090	0.700	U	0.090	0.700	U	0.090	0.800	U
I and II (α and β) Endosulfan				0.150			0.150			0.150		
Endrin	72-20-8	1	0.088	0.140	0.700	J14	0.044	0.700	U	0.044	0.800	U
Heptachlor	76-44-8	1	0.14	0.070	0.400	UJ7	0.070	0.400	U	0.070	0.400	U
Heptachlor epoxide	1024-57-3	1	0.29	0.145	0.400	UJ7	0.145	0.400	U	0.145	0.400	U
Hexachlorobenzene	118-74-1	1	0.39	0.195	0.400	U	0.195	0.400	U	0.195	0.400	U
Lindane (gamma-HCH) (gamma-BHC)	58-89-9	1	0.13	0.065	0.400	UJ7	0.065	0.400	U	0.065	0.400	U
Methoxychlor	72-43-5	1	1.6	0.800	3.70	U	0.800	3.70	U	0.800	3.80	U
cis-Nonachlor	5103-73-1	1	0.061	0.031	0.400	U	0.031	0.400	U	0.031	0.400	U
trans-Nonachlor	39765-80-5	1	0.095	0.048	0.400	UJ7	0.048	0.400	U	0.048	0.400	U
cis- and trans- Nonachlor				0.078			0.078			0.078		
Oxychlordane	27304-13-8	1	0.21	0.105	0.400	UJ4	0.105	0.400	UJ4	0.105	0.400	UJ4
Toxaphene	8001-35-2	25	4.4	2.20	37.0	U	2.20	37.3	U	2.20	38.4	U

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

**Table 4a - continued. Metal Analysis of of Bulk Sediment (CENAE RIM)**

ASI Job #: 40-126		RIM Reporting Limit	Enthalpy MDL	Bulk Sediment (Units: mg/kg)			Bulk Sediment (Units: mg/kg)			Bulk Sediment (Units: mg/kg)		
Core Location Name:		ppm (mg/kg)		NAE3a (Surface)			NAE3b (Transition)			NAE3c (Deep)		
ASI ID #:				20200425a			20200425b			20200425c		
Enthalpy ID #:				34272-026			34272-028			34272-029		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Arsenic	7440-38-2	0.4	0.06	17.0	0.070		13.0	0.070		10.9	0.070	
Cadmium	7440-43-9	0.07	0.0046	0.300	0.040		0.260	0.040		0.210	0.040	
Chromium, total	7440-47-3	0.5	0.041	26.2	0.070		27.3	0.070		28.0	0.070	
Copper	7440-50-8	0.5	0.024	21.3	0.070		31.9	0.070		37.3	0.070	
Lead	7439-92-1	0.5	0.0053	7.71	0.040		13.1	0.040		8.67	0.040	
Mercury	7439-97-6	0.02	0.0011	0.00055	0.010	U	0.00055	0.010	U	0.00055	0.010	U
Nickel	7440-02-0	0.5	0.045	31.5	0.200		39.9	0.200		48.4	0.200	
Zinc	7440-66-6	1.0	0.079	42.9	0.700		68.8	0.700		74.2	0.700	
Percent Moisture		1.0%	0.1	10.0	0.100		10.6	0.100		13.1	0.100	

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

**Table 4a - continued. PCB Congener Analysis of of Bulk Sediment (CENAE RIM)**

ASI Job #: 40-126		CAS No.	RIM Reporting Limit	Enthalpy MDL	Bulk Sediment (Units: µg/kg)			Bulk Sediment (Units: µg/kg)			Bulk Sediment (Units: µg/kg)		
Core Location Name:			ppb (µg/kg)	NAE3a (Surface)			NAE3b (Transition)			NAE3c (Deep)			
ASI ID #:				20200425a			20200425b			20200425c			
Enthalpy ID #:				34272-026			34272-028			34272-029			
Analyte Name					Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
PCB-008*	2,4'-DiCB	34883-43-7	1.0	0.14	0.070	0.400	U	0.070	0.400	U	0.070	0.400	U
PCB-018*	2,2',5'-TrCB	37680-65-2	1.0	0.15	0.075	0.400	U	0.075	0.400	U	0.150	0.400	J14
PCB-028*	2,4,4'-TrCB	7012-37-5	1.0	0.18	0.090	0.400	U	0.090	0.400	U	0.090	0.400	U
PCB-044*	2,2',3,5'-TeCB	41464-39-5	1.0	0.16	0.080	0.400	U	0.080	0.400	U	0.080	0.400	U
PCB-049	2,2',4,5'-CB	41464-40-8	1.0	0.15	0.075	0.400	U	0.075	0.400	U	0.075	0.400	U
PCB-052*	2,2',5,5'-TeCB	35693-99-3	1.0	0.18	0.090	0.400	U	0.090	0.400	U	0.090	0.400	U
PCB-066*	2,3',4,4'-TeCB	32598-10-0	1.0	0.16	0.080	0.400	U	0.080	0.400	U	0.080	0.400	U
PCB-087	2,2',3,4,5'-PeCB	38380-02-8	1.0	0.20	0.100	0.400	U	0.100	0.400	U	0.100	0.400	U
PCB-101*	2,2',4,5,5'-PeCB	37680-73-2	1.0	0.16	0.160	0.400	J14	0.080	0.400	U	0.080	0.400	U
PCB-105*	2,3,3',4,4'-PeCB	32598-14-4	1.0	0.21	0.105	0.400	U	0.105	0.400	U	0.105	0.400	U
PCB-118*	2,3',4,4',5'-PeCB	31508-00-6	1.0	0.14	0.070	0.400	U	0.070	0.400	U	0.070	0.400	U
PCB-128*	2,2',3,3',4,4'-HxCB	38380-07-3	1.0	0.19	0.095	0.400	U	0.095	0.400	U	0.095	0.400	U
PCB-138*	2,2',3,4,4',5'-HxCB	35065-28-2	1.0	0.19	0.095	0.400	U	0.095	0.400	U	0.095	0.400	U
PCB-153*	2,2',4,4',5,5'-HxCB	35065-27-1	1.0	0.16	0.080	0.400	U	0.080	0.400	U	0.080	0.400	U
PCB-170*	2,2',3,3',4,4',5'-HpCB	35065-30-6	1.0	0.13	0.065	0.400	U	0.065	0.400	U	0.065	0.400	U
PCB-180*	2,2',3,4,4',5,5'-HpCB	35065-29-3	1.0	0.10	0.050	0.400	U	0.050	0.400	U	0.050	0.400	U
PCB-183	2,2',3,4,4',5',6'-HpCB	52663-69-1	1.0	0.08	0.040	0.400	U	0.040	0.400	U	0.040	0.400	U
PCB-184	2,2',3,4,4',6,6'-HpCB	74472-48-3	1.0	0.14	0.070	0.400	U	0.070	0.400	U	0.070	0.400	U
PCB-187*	2,2',3,4',5,5',6'-HpCB	52663-68-0	1.0	0.15	0.075	0.400	U	0.075	0.400	U	0.075	0.400	U
PCB-195*	2,2',3,3',4,4',5,6'-OcCB	52663-78-2	1.0	0.19	0.095	0.400	U	0.095	0.400	U	0.095	0.400	U
PCB-206*	2,2',3,3',4,4',5,5',6'-NoCB	40186-72-9	1.0	0.19	0.095	0.400	U	0.095	0.400	U	0.095	0.400	U
PCB-209*	DecaCB	2051-24-3	1.0	0.20	0.100	0.400	U	0.100	0.400	U	0.400	0.400	
PCBs <sup>2</sup>					3.14			2.98			3.73		

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

<sup>2</sup> Total by NOAA summation of congeners. Sum of eighteen congeners marked with a "\*", multiplied by 2.

**Table 4b. PAH Analysis of Bulk Sediment (CENAE RIM)**

ASI Job #: 40-126  Core Location Name ASI ID # Enthalpy ID #	CAS No.	RIM Reporting Limit	Enthalpy MDL	Bulk Sediment (Units: µg/kg)			Bulk Sediment (Units: µg/kg)			Bulk Sediment (Units: µg/kg)		
		ppb (µg/kg)		NAE6a (Surface)			NAE6b (Transition)			NAE6c (Deep)		
				20200428a			20200428b			20200428c		
				34272-031			34272-033			34272-034		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Acenaphthene	83-32-9	10	3.1	1.55	9.00	U	1.55	9.00	U	1.55	9.00	U
Acenaphthylene	208-96-8	10	3.4	1.70	9.00	U	1.70	9.00	U	1.70	9.00	U
Anthracene	120-12-7	10	3.3	1.65	9.00	U	1.65	9.00	U	1.65	9.00	U
Benzo(a)anthracene (1,2- Benzanthracene)	56-55-3	10	4.5	6.90	9.00	J14	2.25	9.00	U	2.25	9.00	U
Benzo(a)pyrene	50-32-8	10	4.8	5.70	9.00	J14	2.40	9.00	U	2.40	9.00	U
Benzo(b)fluoranthene (3,4- Benzofluoranthene)	205-99-2	10	4.1	5.10	9.00	J14	2.05	9.00	U	2.05	9.00	U
Benzo(k)fluoranthene	207-08-9	10	4.4	4.80	9.00	J14	2.20	9.00	U	2.20	9.00	U
Benzo(g,h,i)perylene	191-24-2	10	3.9	1.95	9.00	U	1.95	9.00	U	1.95	9.00	U
Chrysene	218-01-9	10	4.2	5.60	9.00	J14	2.10	9.00	U	2.10	9.00	U
Dibenz(a,h)anthracene	53-70-3	10	3.9	1.95	9.00	U	1.95	9.00	U	1.95	9.00	U
Fluoranthene	206-44-0	10	6.6	11.5	9.00		3.30	9.00	U	3.30	9.00	U
Fluorene	86-73-7	10	3.4	1.70	9.00	U	1.70	9.00	U	1.70	9.00	U
Ideno(1,2,3-cd)pyrene	193-39-5	10	3.5	1.75	9.00	U	1.75	9.00	U	1.75	9.00	U
Naphthalene	91-20-3	10	2.9	1.45	9.00	U	1.45	9.00	U	1.45	9.00	U
Phenanthrene	85-01-8	10	8.6	4.30	9.00	U	4.30	9.00	U	4.30	9.00	U
Pyrene	129-00-0	10	5.0	10.0	9.00		2.50	9.00	U	2.50	9.00	U

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

**Table 4b - continued. Pesticide Analysis of Bulk Sediment (CENAE RIM)**

ASI Job #: 40-126		RIM Reporting Limit	Enthalpy MDL	Bulk Sediment (Units: µg/kg)			Bulk Sediment (Units: µg/kg)			Bulk Sediment (Units: µg/kg)		
Core Location Name:		ppb (µg/kg)		NAE6a (Surface)			NAE6b (Transition)			NAE6c (Deep)		
ASI ID #:				20200428a			20200428b			20200428c		
Enthalpy ID #:				34272-031			34272-033			34272-034		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Aldrin	309-00-2	1	0.25	0.125	0.400	UJ4	0.125	0.300	UJ4	0.125	0.400	UJ4
cis-Chlordane (α)	5103-71-9	1	0.078	0.039	0.400	U	0.039	0.300	U	0.039	0.400	U
trans-Chlordane (γ)	5103-74-2	1	0.17	0.085	0.400	U	0.085	0.300	U	0.085	0.400	U
Chlordane (cis and trans) (α and γ)				0.124			0.124			0.124		
4,4'-DDT	50-29-3	1	0.10	0.050	0.800	U	0.050	0.700	U	0.050	0.900	U
4,4'-DDE	72-55-9	1	0.076	0.038	0.800	U	0.038	0.700	U	0.038	0.900	U
4,4'-DDD	72-54-8	1	0.065	0.033	0.800	U	0.033	0.700	U	0.033	0.900	U
Dieldrin	60-57-1	1	0.093	0.047	0.800	U	0.047	0.700	U	0.047	0.900	U
Endosulfan I (α)	959-98-8	1	0.12	0.060	0.800	U	0.060	0.700	U	0.060	0.900	U
Endosulfan II (β)	33213-65-9	1	0.18	0.090	0.800	U	0.090	0.700	U	0.090	0.900	U
I and II (α and β) Endosulfan				0.150			0.150			0.150		
Endrin	72-20-8	1	0.088	0.044	0.800	U	0.044	0.700	U	0.044	0.900	U
Heptachlor	76-44-8	1	0.14	0.070	0.400	U	0.070	0.300	U	0.070	0.400	U
Heptachlor epoxide	1024-57-3	1	0.29	0.145	0.400	U	0.145	0.300	U	0.145	0.400	U
Hexachlorobenzene	118-74-1	1	0.39	0.195	0.400	U	0.195	0.300	U	0.195	0.400	U
Lindane (gamma-HCH) (gamma-BHC)	58-89-9	1	0.13	0.065	0.400	U	0.065	0.300	U	0.065	0.400	U
Methoxychlor	72-43-5	1	1.6	0.800	3.80	U	0.800	3.40	U	0.800	4.30	U
cis-Nonachlor	5103-73-1	1	0.061	0.031	0.400	U	0.031	0.300	U	0.031	0.400	U
trans-Nonachlor	39765-80-5	1	0.095	0.048	0.400	U	0.048	0.300	U	0.048	0.400	U
cis- and trans- Nonachlor				0.078			0.078			0.078		
Oxychlordane	27304-13-8	1	0.21	0.105	0.400	UJ4	0.105	0.300	UJ4	0.105	0.400	UJ4
Toxaphene	8001-35-2	25	4.4	2.20	37.9	U	2.20	34.4	U	2.20	43.0	U

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

**Table 4b - continued. Metal Analysis of of Bulk Sediment (CENAE RIM)**

ASI Job #: 40-126		RIM Reporting Limit	Enthalpy MDL	Bulk Sediment (Units: mg/kg)			Bulk Sediment (Units: mg/kg)			Bulk Sediment (Units: mg/kg)		
Core Location Name:		ppm (mg/kg)		NAE6a (Surface)			NAE6b (Transition)			NAE6c (Deep)		
ASI ID #:				20200428a			20200428b			20200428c		
Enthalpy ID #:				34272-031			34272-033			34272-034		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Arsenic	7440-38-2	0.4	0.06	5.04	0.070		3.60	0.080		3.15	0.080	
Cadmium	7440-43-9	0.07	0.0046	0.068	0.040		0.110	0.040		0.076	0.040	
Chromium, total	7440-47-3	0.5	0.041	23.9	0.070		24.9	0.080		21.3	0.080	
Copper	7440-50-8	0.5	0.024	6.02	0.070		5.15	0.080		4.39	0.080	
Lead	7439-92-1	0.5	0.0053	3.77	0.040		2.99	0.040		2.85	0.040	
Mercury	7439-97-6	0.02	0.0011	0.00055	0.010	U	0.00055	0.010	U	0.00055	0.010	U
Nickel	7440-02-0	0.5	0.045	15.3	0.200		17.4	0.200		15.4	0.200	
Zinc	7440-66-6	1.0	0.079	39.8	0.700		28.6	0.800		36.6	0.800	
Percent Moisture		1.0%	0.1	12.0	0.100		16.8	0.100		22.6	0.100	

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

**Table 4b - continued. PCB Congener Analysis of of Bulk Sediment (CENAE RIM)**

ASI Job #: 40-126		CAS No.	RIM Reporting Limit	Enthalpy MDL	Bulk Sediment (Units: µg/kg)			Bulk Sediment (Units: µg/kg)			Bulk Sediment (Units: µg/kg)		
Core Location Name:			ppb (µg/kg)	NAE6a (Surface)			NAE6b (Transition)			NAE6c (Deep)			
ASI ID #:				20200428a			20200428b			20200428c			
Enthalpy ID #:				34272-031			34272-033			34272-034			
Analyte Name					Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
PCB-008*	2,4'-DiCB	34883-43-7	1.0	0.14	0.070	0.400	U	0.070	0.300	U	0.070	0.400	U
PCB-018*	2,2',5'-TrCB	37680-65-2	1.0	0.15	0.075	0.400	U	0.075	0.300	U	0.075	0.400	U
PCB-028*	2,4,4'-TrCB	7012-37-5	1.0	0.18	0.090	0.400	U	0.090	0.300	U	0.090	0.400	U
PCB-044*	2,2',3,5'-TeCB	41464-39-5	1.0	0.16	0.080	0.400	U	0.080	0.300	U	0.080	0.400	U
PCB-049	2,2',4,5'-CB	41464-40-8	1.0	0.15	0.075	0.400	U	0.075	0.300	U	0.075	0.400	U
PCB-052*	2,2',5,5'-TeCB	35693-99-3	1.0	0.18	0.090	0.400	U	0.090	0.300	U	0.090	0.400	U
PCB-066*	2,3',4,4'-TeCB	32598-10-0	1.0	0.16	0.080	0.400	U	0.080	0.300	U	0.080	0.400	U
PCB-087	2,2',3,4,5'-PeCB	38380-02-8	1.0	0.20	0.100	0.400	U	0.260	0.300	J14	0.100	0.400	U
PCB-101*	2,2',4,5,5'-PeCB	37680-73-2	1.0	0.16	0.080	0.400	U	0.080	0.300	U	0.080	0.400	U
PCB-105*	2,3,3',4,4'-PeCB	32598-14-4	1.0	0.21	0.105	0.400	U	0.105	0.300	U	0.105	0.400	U
PCB-118*	2,3',4,4',5'-PeCB	31508-00-6	1.0	0.14	0.070	0.400	U	0.070	0.300	U	0.070	0.400	U
PCB-128*	2,2',3,3',4,4'-HxCB	38380-07-3	1.0	0.19	0.095	0.400	U	0.095	0.300	U	0.095	0.400	U
PCB-138*	2,2',3,4,4',5'-HxCB	35065-28-2	1.0	0.19	0.095	0.400	U	0.095	0.300	U	0.095	0.400	U
PCB-153*	2,2',4,4',5,5'-HxCB	35065-27-1	1.0	0.16	0.080	0.400	U	0.080	0.300	U	0.080	0.400	U
PCB-170*	2,2',3,3',4,4',5'-HpCB	35065-30-6	1.0	0.13	0.065	0.400	U	0.065	0.300	U	0.140	0.400	J14
PCB-180*	2,2',3,4,4',5,5'-HpCB	35065-29-3	1.0	0.10	0.050	0.400	U	0.050	0.300	U	0.050	0.400	U
PCB-183	2,2',3,4,4',5',6'-HpCB	52663-69-1	1.0	0.08	0.040	0.400	U	0.040	0.300	U	0.040	0.400	U
PCB-184	2,2',3,4,4',6,6'-HpCB	74472-48-3	1.0	0.14	0.070	0.400	U	0.070	0.300	U	0.070	0.400	U
PCB-187*	2,2',3,4',5,5',6'-HpCB	52663-68-0	1.0	0.15	0.075	0.400	U	0.075	0.300	U	0.075	0.400	U
PCB-195*	2,2',3,3',4,4',5,6'-OcCB	52663-78-2	1.0	0.19	0.280	0.400	J14	0.095	0.300	U	0.095	0.400	U
PCB-206*	2,2',3,3',4,4',5,5',6'-NoCB	40186-72-9	1.0	0.19	0.095	0.400	U	0.095	0.300	U	0.095	0.400	U
PCB-209*	DecaCB	2051-24-3	1.0	0.20	0.270	0.400	J14	0.100	0.300	U	0.400	0.400	
PCBs <sup>2</sup>					3.69			2.98			3.73		

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

<sup>2</sup> Total by NOAA summation of congeners. Sum of eighteen congeners marked with a "\*", multiplied by 2.

**Table 4c. PAH Analysis of Bulk Sediment (CENAE RIM)**

ASI Job #: 40-126  Core Location Name ASI ID # Enthalpy ID #	CAS No.	RIM Reporting Limit	Enthalpy MDL	Bulk Sediment (Units: µg/kg)			Bulk Sediment (Units: µg/kg)			Bulk Sediment (Units: µg/kg)		
		ppb (µg/kg)		NAE9a (Surface)			NAE9b (Transition)			NAE9c (Deep)		
				20200431a			20200431b			20200431c		
				34272-035			34272-037			34272-038		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Acenaphthene	83-32-9	10	3.1	1.55	10.0	U	1.55	10.0	U	1.55	10.0	U
Acenaphthylene	208-96-8	10	3.4	16.7	10.0		1.70	10.0	U	1.70	10.0	U
Anthracene	120-12-7	10	3.3	12.4	10.0		1.65	10.0	U	1.65	10.0	U
Benzo(a)anthracene (1,2- Benzanthracene)	56-55-3	10	4.5	63.4	10.0		2.25	10.0	U	2.25	10.0	U
Benzo(a)pyrene	50-32-8	10	4.8	64.9	10.0		2.40	10.0	U	2.40	10.0	U
Benzo(b)fluoranthene (3,4- Benzofluoranthene)	205-99-2	10	4.1	66.6	10.0		2.05	10.0	U	2.05	10.0	U
Benzo(k)fluoranthene	207-08-9	10	4.4	66.7	10.0		2.20	10.0	U	2.20	10.0	U
Benzo(g,h,i)perylene	191-24-2	10	3.9	47.7	10.0		1.95	10.0	U	1.95	10.0	U
Chrysene	218-01-9	10	4.2	57.9	10.0		2.10	10.0	U	2.10	10.0	U
Dibenz(a,h)anthracene	53-70-3	10	3.9	15.4	10.0		1.95	10.0	U	1.95	10.0	U
Fluoranthene	206-44-0	10	6.6	112	10.0		3.30	10.0	U	3.30	10.0	U
Fluorene	86-73-7	10	3.4	4.20	10.0	J14	1.70	10.0	U	1.70	10.0	U
Ideno(1,2,3-cd)pyrene	193-39-5	10	3.5	44.3	10.0		1.75	10.0	U	1.75	10.0	U
Naphthalene	91-20-3	10	2.9	4.70	10.0	J14	1.45	10.0	U	1.45	10.0	U
Phenanthrene	85-01-8	10	8.6	49.6	10.0		4.30	10.0	U	4.30	10.0	U
Pyrene	129-00-0	10	5.0	113	10.0		6.70	10.0	J14	2.50	10.0	U

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

**Table 4c - continued. Pesticide Analysis of Bulk Sediment (CENAE RIM)**

ASI Job #: 40-126		RIM Reporting Limit	Enthalpy MDL	Bulk Sediment (Units: µg/kg)			Bulk Sediment (Units: µg/kg)			Bulk Sediment (Units: µg/kg)		
Core Location Name:		ppb (µg/kg)		NAE9a (Surface)			NAE9b (Transition)			NAE9c (Deep)		
ASI ID #:				20200431a			20200431b			20200431c		
Enthalpy ID #:				34272-035			34272-037			34272-038		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Aldrin	309-00-2	1	0.25	0.125	0.400	UJ4	0.125	0.300	UJ4	0.125	0.400	UJ4
cis-Chlordane (α)	5103-71-9	1	0.078	0.039	0.400	U	0.039	0.300	U	0.150	0.400	J14
trans-Chlordane (γ)	5103-74-2	1	0.17	0.085	0.400	U	0.085	0.300	U	0.085	0.400	U
Chlordane (cis and trans) (α and γ)				0.124			0.124			0.235		
4,4'-DDT	50-29-3	1	0.10	0.050	0.800	U	0.050	0.700	U	0.050	0.800	U
4,4'-DDE	72-55-9	1	0.076	0.038	0.800	U	0.038	0.700	U	0.038	0.800	U
4,4'-DDD	72-54-8	1	0.065	0.033	0.800	U	0.033	0.700	U	0.033	0.800	U
Dieldrin	60-57-1	1	0.093	0.047	0.800	U	0.047	0.700	U	0.047	0.800	U
Endosulfan I (α)	959-98-8	1	0.12	0.060	0.800	U	0.060	0.700	U	0.060	0.800	U
Endosulfan II (β)	33213-65-9	1	0.18	0.090	0.800	U	0.090	0.700	U	0.090	0.800	U
I and II (α and β) Endosulfan				0.150			0.150			0.150		
Endrin	72-20-8	1	0.088	0.044	0.800	U	0.044	0.700	U	0.044	0.800	U
Heptachlor	76-44-8	1	0.14	0.070	0.400	U	0.070	0.300	U	0.070	0.400	U
Heptachlor epoxide	1024-57-3	1	0.29	0.145	0.400	U	0.145	0.300	U	0.145	0.400	U
Hexachlorobenzene	118-74-1	1	0.39	0.195	0.400	U	0.195	0.300	U	0.195	0.400	U
Lindane (gamma-HCH) (gamma-BHC)	58-89-9	1	0.13	0.065	0.400	U	0.065	0.300	U	0.065	0.400	U
Methoxychlor	72-43-5	1	1.6	0.800	3.80	U	0.800	3.30	U	0.800	3.90	U
cis-Nonachlor	5103-73-1	1	0.061	0.031	0.400	U	0.031	0.300	U	0.031	0.400	U
trans-Nonachlor	39765-80-5	1	0.095	0.048	0.400	U	0.048	0.300	U	0.048	0.400	U
cis- and trans- Nonachlor				0.078			0.078			0.078		
Oxychlordane	27304-13-8	1	0.21	0.105	0.400	UJ4	0.105	0.300	UJ4	0.105	0.400	UJ4
Toxaphene	8001-35-2	25	4.4	2.20	38.4	U	2.20	32.9	U	2.20	38.8	U

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

**Table 4c - continued. Metal Analysis of of Bulk Sediment (CENAE RIM)**

ASI Job #: 40-126		RIM Reporting Limit	Enthalpy MDL	Bulk Sediment (Units: mg/kg)			Bulk Sediment (Units: mg/kg)			Bulk Sediment (Units: mg/kg)		
Core Location Name:		ppm (mg/kg)		NAE9a (Surface)			NAE9b (Transition)			NAE9c (Deep)		
ASI ID #:				20200431a			20200431b			20200431c		
Enthalpy ID #:				34272-035			34272-037			34272-038		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Arsenic	7440-38-2	0.4	0.06	15.5	0.200		13.7	0.100		12.5	0.100	
Cadmium	7440-43-9	0.07	0.0046	0.130	0.070		0.120	0.070		0.200	0.060	
Chromium, total	7440-47-3	0.5	0.041	44.8	0.200		39.9	0.100		31.5	0.100	
Copper	7440-50-8	0.5	0.024	16.0	0.200		11.9	0.100		10.3	0.100	
Lead	7439-92-1	0.5	0.0053	24.3	0.070		13.3	0.070		8.87	0.060	
Mercury	7439-97-6	0.02	0.0011	0.142	0.010		0.02	0.010		0.012	0.010	
Nickel	7440-02-0	0.5	0.045	31.9	0.400		29.5	0.300		23.2	0.300	
Zinc	7440-66-6	1.0	0.079	75.5	2.00		66.2	1.00		45.4	1.00	
Percent Moisture		1.0%	0.1	59.9	0.100		53.2	0.100		42.7	0.100	

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

**Table 4c - continued. PCB Congener Analysis of of Bulk Sediment (CENAE RIM)**

ASI Job #: 40-126		CAS No.	RIM Reporting Limit	Enthalpy MDL	Bulk Sediment (Units: µg/kg)			Bulk Sediment (Units: µg/kg)			Bulk Sediment (Units: µg/kg)		
Core Location Name:			ppb (µg/kg)	NAE9a (Surface)			NAE9b (Transition)			NAE9c (Deep)			
ASI ID #:				20200431a			20200431b			20200431c			
Enthalpy ID #:				34272-035			34272-037			34272-038			
Analyte Name					Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
PCB-008*	2,4'-DiCB	34883-43-7	1.0	0.14	0.070	0.400	U	0.070	0.400	U	0.070	0.400	U
PCB-018*	2,2',5'-TrCB	37680-65-2	1.0	0.15	0.075	0.400	U	0.075	0.400	U	0.075	0.400	U
PCB-028*	2,4,4'-TrCB	7012-37-5	1.0	0.18	0.090	0.400	U	0.090	0.400	U	0.090	0.400	U
PCB-044*	2,2',3,5'-TeCB	41464-39-5	1.0	0.16	0.080	0.400	U	0.080	0.400	U	0.080	0.400	U
PCB-049	2,2',4,5'-CB	41464-40-8	1.0	0.15	0.075	0.400	U	0.075	0.400	U	0.075	0.400	U
PCB-052*	2,2',5,5'-TeCB	35693-99-3	1.0	0.18	0.090	0.400	U	0.090	0.400	U	0.090	0.400	U
PCB-066*	2,3',4,4'-TeCB	32598-10-0	1.0	0.16	0.080	0.400	U	0.080	0.400	U	0.080	0.400	U
PCB-087	2,2',3,4,5'-PeCB	38380-02-8	1.0	0.20	0.100	0.400	U	0.260	0.400	J14	0.100	0.400	U
PCB-101*	2,2',4,5,5'-PeCB	37680-73-2	1.0	0.16	0.220	0.400	J14	0.080	0.400	U	0.080	0.400	U
PCB-105*	2,3,3',4,4'-PeCB	32598-14-4	1.0	0.21	0.105	0.400	U	0.105	0.400	U	0.105	0.400	U
PCB-118*	2,3',4,4',5'-PeCB	31508-00-6	1.0	0.14	0.070	0.400	U	0.070	0.400	U	0.070	0.400	U
PCB-128*	2,2',3,3',4,4'-HxCB	38380-07-3	1.0	0.19	0.095	0.400	U	0.095	0.400	U	0.095	0.400	U
PCB-138*	2,2',3,4,4',5'-HxCB	35065-28-2	1.0	0.19	0.095	0.400	U	0.095	0.400	U	0.095	0.400	U
PCB-153*	2,2',4,4',5,5'-HxCB	35065-27-1	1.0	0.16	0.260	0.400	J14	0.080	0.400	U	0.080	0.400	U
PCB-170*	2,2',3,3',4,4',5'-HpCB	35065-30-6	1.0	0.13	0.065	0.400	U	0.065	0.400	U	0.065	0.400	U
PCB-180*	2,2',3,4,4',5,5'-HpCB	35065-29-3	1.0	0.10	0.050	0.400	U	0.050	0.400	U	0.050	0.400	U
PCB-183	2,2',3,4,4',5',6'-HpCB	52663-69-1	1.0	0.08	0.040	0.400	U	0.040	0.400	U	0.040	0.400	U
PCB-184	2,2',3,4,4',6,6'-HpCB	74472-48-3	1.0	0.14	0.070	0.400	U	0.070	0.400	U	0.070	0.400	U
PCB-187*	2,2',3,4',5,5',6'-HpCB	52663-68-0	1.0	0.15	0.075	0.400	U	0.075	0.400	U	0.075	0.400	U
PCB-195*	2,2',3,3',4,4',5,6'-OcCB	52663-78-2	1.0	0.19	0.095	0.400	U	0.095	0.400	U	0.270	0.400	J14
PCB-206*	2,2',3,3',4,4',5,5',6'-NoCB	40186-72-9	1.0	0.19	0.095	0.400	U	0.095	0.400	U	0.095	0.400	U
PCB-209*	DecaCB	2051-24-3	1.0	0.20	0.100	0.400	U	0.100	0.400	U	0.400	1.00	
PCBs <sup>2</sup>					3.62			2.98			3.93		

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

<sup>2</sup> Total by NOAA summation of congeners. Sum of eighteen congeners marked with a "\*", multiplied by 2.

**Table 5a. Pentachlorophenol Analysis of Elutriate (CENAE RIM)**

ASI Job #: 40-126		RIM Reporting Limit	Enthalpy MDL	Elutriate (Units: µg/L)			Elutriate (Units: µg/L)			Elutriate (Units: µg/L)		
Core Location Name:		ppb (µg/L)		NAE3a (Surface) Rep 1			NAE3a (Surface) Rep 2			NAE3a (Surface) Rep 3		
ASI ID #:				20200425a			20200425a			20200425a		
Enthalpy ID #:				34274-048			34274-049			34274-050		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Pentachlorophenol	87-86-5	2.60	1.9	0.950	2.30	U	0.950	2.30	U	0.950	2.30	U

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

**Table 5a - continued. Pesticide Analysis of Elutriate (CENAE RIM)**

ASI Job #: 40-126		RIM Reporting Limit	Enthalpy MDL	Elutriate (Units: µg/L)			Elutriate (Units: µg/L)			Elutriate (Units: µg/L)		
Core Location Name:		ppb (µg/L)		NAE3a (Surface) Rep 1			NAE3a (Surface) Rep 2			NAE3a (Surface) Rep 3		
ASI ID #:				20200425a			20200425a			20200425a		
Enthalpy ID #:				34274-054			34274-055			34274-056		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Aldrin	309-00-2	0.26	0.00032	0.00016	0.002	U	0.00016	0.002	U	0.00016	0.002	U
cis-Chlordane (α)	5103-71-9	0.02	0.00047	0.00024	0.002	U	0.00024	0.002	U	0.00024	0.002	U
trans-Chlordane (γ)	5103-74-2	0.02	0.00047	0.00024	0.002	U	0.00024	0.002	U	0.00024	0.002	U
Chlordane (cis and trans) (α and γ)		0.02	0.00047	0.00047			0.00047			0.00047		
Chlorpyrifos	2921-88-2	0.002	0.00058	0.00029	0.002	U	0.00029	0.002	U	0.00029	0.002	U
Dieldrin	60-57-1	0.14	0.0011	0.00055	0.004	U	0.00055	0.004	U	0.00055	0.004	U
4,4'-DDT	50-29-3	0.03	0.00061	0.00031	0.004	U	0.00031	0.004	U	0.00031	0.004	U
Endosulfan I (α)	959-98-8	0.007	0.0015	0.00075	0.002	U	0.00075	0.002	U	0.00075	0.002	U
Endosulfan II (β)	33213-65-9	0.007	0.0027	0.00135	0.004	U	0.00135	0.004	U	0.00135	0.004	U
I and II (α and β) Endosulfan		0.007		0.0021			0.0021			0.0021		
Endrin	72-20-8	0.007	0.00067	0.00034	0.004	U	0.00034	0.004	U	0.00034	0.004	U
Heptachlor	76-44-8	0.01	0.0011	0.00055	0.002	UJ4	0.00055	0.002	UJ4	0.00055	0.002	UJ4
Heptachlor epoxide	1024-57-3	0.01	0.00086	0.00043	0.002	U	0.00043	0.002	U	0.00043	0.002	U
Lindane (gamma-HCH) (gamma-BHC)	58-89-9	0.26	0.00058	0.00029	0.002	U	0.00029	0.002	U	0.00029	0.002	U
Toxaphene	8001-35-2	0.04	0.013	0.0065	0.093	U	0.0065	0.093	U	0.0065	0.093	U

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

**Table 5a - continued. Metal Analysis of of Elutriate (CENAE RIM)**

ASI Job #: 40-126		RIM Reporting Limit	Enthalpy MDL*	Elutriate (Units: µg/L)			Elutriate (Units: µg/L)			Elutriate (Units: µg/L)		
Core Location Name:		ppb (µg/L)		NAE3a (Surface) Rep 1			NAE3a (Surface) Rep 2			NAE3a (Surface) Rep 3		
ASI ID #:				20200425a			20200425a			20200425a		
Enthalpy ID #:				34274-039			34274-040			34274-041		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Arsenic	7440-38-2	1	0.15*	6.10	0.500		5.90	0.500		6.10	0.500	
Cadmium	7440-43-9	1	0.013*	0.0065	0.100	U	0.0065	0.1000	U	0.0065	0.100	U
Chromium, total	7440-47-3	1	0.19*	0.095	0.500	U	0.095	0.500	U	0.095	0.500	U
Copper	7440-50-8	0.6	0.05*	0.025	0.500	U	0.025	0.500	U	0.025	0.500	U
Lead	7439-92-1	1	0.011*	0.0055	0.200	U	0.0055	0.2000	U	0.0055	0.200	U
Nickel	7440-02-0	1	0.1*	11.3	1.00		11.2	1.00		11.6	1.00	
Selenium	7782-49-2	1	0.1*	0.050	0.500	U	0.050	0.500	U	0.050	0.500	U
Silver	7440-22-4	0.5	0.017*	0.0085	0.200	U	0.0085	0.200	U	0.0085	0.200	U
Zinc	7440-66-6	1	0.3*	1.80	1.00		1.40	1.00		1.30	1.00	
Enthalpy ID #:				34274-045			34274-046			34274-047		
Chromium VI	18540-29-9	5	1.6	0.800	5.00	U	0.800	5.00	U	0.800	5.00	U
Enthalpy ID #:				34274-042			34274-043			34274-044		
Mercury	7439-97-6	0.4	0.0005	0.00025	0.010	U	0.00025	0.010	U	0.00025	0.010	U

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

\*MDL adjusted for dilution factor.

Table 5a - continued. PCB Congener Analysis of of Elutriate (CENAE RIM)

ASI Job #: 40-126		CAS No.	RIM Reporting Limit	Enthalpy MDL	Elutriate (Units: µg/L)			Elutriate (Units: µg/L)			Elutriate (Units: µg/L)		
Core Location Name:			ppb (µg/L)	NAE3a (Surface) Rep 1			NAE3a (Surface) Rep 2			NAE3a (Surface) Rep 3			
ASI ID #:				20200425a			20200425a			20200425a			
Enthalpy ID #:				34274-051			34274-052			34274-053			
Analyte Name					Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
PCB-008*	2,4'-DiCB	34883-43-7	0.006	0.00052	0.00026	0.002	U	0.00026	0.002	U	0.00026	0.002	U
PCB-018*	2,2',5'-TrCB	37680-65-2	0.006	0.00062	0.0008	0.002	J14	0.00031	0.002	U	0.00031	0.002	U
PCB-028*	2,4,4'-TrCB	7012-37-5	0.006	0.00047	0.0008	0.002	J14	0.0007	0.002	J14	0.000235	0.002	U
PCB-044*	2,2',3,5'-TeCB	41464-39-5	0.006	0.00046	0.0006	0.002	J4, J14	0.0009	0.002	J4, J14	0.0009	0.002	J4, J14
PCB-049	2,2',4,5'-CB	41464-40-8	0.006	0.00033	0.0006	0.002	J4, J14	0.0006	0.002	J4, J14	0.000165	0.002	UJ4
PCB-052*	2,2',5,5'-TeCB	35693-99-3	0.006	0.00036	0.0004	0.002	J14	0.0004	0.002	J14	0.00018	0.002	U
PCB-066*	2,3',4,4'-TeCB	32598-10-0	0.006	0.00037	0.0006	0.002	J14	0.0005	0.002	J14	0.000185	0.002	U
PCB-087	2,2',3,4,5'-PeCB	38380-02-8	0.006	0.00081	0.00041	0.002	U	0.001	0.002	J14	0.000405	0.002	U
PCB-101*	2,2',4,5,5'-PeCB	37680-73-2	0.006	0.00086	0.00043	0.002	U	0.00043	0.002	U	0.00043	0.002	U
PCB-105*	2,3,3',4,4'-PeCB	32598-14-4	0.006	0.00079	0.0004	0.002	U	0.0008	0.002	J14	0.0009	0.002	J14
PCB-118*	2,3',4,4',5'-PeCB	31508-00-6	0.006	0.00046	0.00023	0.002	U	0.00023	0.002	U	0.00023	0.002	U
PCB-128*	2,2',3,3',4,4'-HxCB	38380-07-3	0.006	0.00040	0.0005	0.002	J4, J14	0.0012	0.002	J14	0.0002	0.002	U
PCB-138*	2,2',3,4,4',5'-HxCB	35065-28-2	0.006	0.00066	0.00033	0.002	UJ4	0.00033	0.002	UJ4	0.00033	0.002	UJ4
PCB-153*	2,2',4,4',5,5'-HxCB	35065-27-1	0.006	0.00042	0.00021	0.002	UJ4	0.0006	0.002	J4, J14	0.00021	0.002	UJ4
PCB-170*	2,2',3,3',4,4',5'-HpCB	35065-30-6	0.006	0.00097	0.00049	0.002	U	0.00049	0.002	U	0.000485	0.002	U
PCB-180*	2,2',3,4,4',5,5'-HpCB	35065-29-3	0.006	0.00058	0.00029	0.002	UJ4	0.00029	0.002	UJ4	0.00029	0.002	UJ4
PCB-183	2,2',3,4,4',5',6'-HpCB	52663-69-1	0.006	0.00084	0.00042	0.002	UJ4	0.00042	0.002	UJ4	0.00042	0.002	UJ4
PCB-184	2,2',3,4,4',6,6'-HpCB	74472-48-3	0.006	0.00058	0.00029	0.002	U	0.00029	0.002	U	0.00029	0.002	U
PCB-187*	2,2',3,4',5,5',6'-HpCB	52663-68-0	0.006	0.00089	0.00045	0.002	U	0.00045	0.002	U	0.000445	0.002	U
PCB-195*	2,2',3,3',4,4',5,6'-OeCB	52663-78-2	0.006	0.0019	0.00095	0.002	U	0.00095	0.002	U	0.00095	0.002	U
PCB-206*	2,2',3,3',4,4',5,5',6'-NoCB	40186-72-9	0.006	0.00078	0.00039	0.002	U	0.00039	0.002	U	0.0013	0.002	J14
PCB-209*	DecaCB	2051-24-3	0.006	0.00084	0.00042	0.002	U	0.00042	0.002	U	0.00042	0.002	U
PCBs <sup>2</sup>					0.01707			0.01928			0.01652		

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

<sup>2</sup> Total by NOAA summation of congeners. Sum of eighteen congeners marked with a "\*", multiplied by 2.

**Table 5b. Pentachlorophenol Analysis of Elutriate (CENAE RIM)**

ASI Job #: 40-126		RIM Reporting Limit	Enthalpy MDL	Elutriate (Units: µg/L)			Elutriate (Units: µg/L)			Elutriate (Units: µg/L)		
Core Location Name:		ppb (µg/L)		NAE6a (Surface) Rep 1			NAE6a (Surface) Rep 2			NAE6a (Surface) Rep 3		
ASI ID #:				20200428a			20200428a			20200428a		
Enthalpy ID #:				34274-066			34274-067			34274-068		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Pentachlorophenol	87-86-5	2.60	1.9	0.950	2.30	U	0.950	2.30	U	0.950	2.30	U

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

**Table 5b - continued. Pesticide Analysis of Elutriate (CENAE RIM)**

ASI Job #: 40-126		RIM Reporting Limit	Enthalpy MDL	Elutriate (Units: µg/L)			Elutriate (Units: µg/L)			Elutriate (Units: µg/L)		
Core Location Name:		ppb (µg/L)		NAE6a (Surface) Rep 1			NAE6a (Surface) Rep 2			NAE6a (Surface) Rep 3		
ASI ID #:				20200428a			20200428a			20200428a		
Enthalpy ID #:				34274-072			34274-073			34274-074		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Aldrin	309-00-2	0.26	0.00032	0.00016	0.002	U	0.00016	0.002	U	0.00016	0.002	U
cis-Chlordane (α)	5103-71-9	0.02	0.00047	0.00024	0.002	U	0.00024	0.002	U	0.00024	0.002	U
trans-Chlordane (γ)	5103-74-2	0.02	0.00047	0.00024	0.002	U	0.00024	0.002	U	0.00024	0.002	U
Chlordane (cis and trans) (α and γ)		0.02	0.00047	0.00047			0.00047			0.00047		
Chlorpyrifos	2921-88-2	0.002	0.00058	0.00029	0.002	U	0.00029	0.002	U	0.00029	0.002	U
Dieldrin	60-57-1	0.14	0.0011	0.00055	0.004	U	0.00055	0.004	U	0.00055	0.004	U
4,4'-DDT	50-29-3	0.03	0.00061	0.00031	0.004	U	0.00031	0.004	U	0.00031	0.004	U
Endosulfan I (α)	959-98-8	0.007	0.0015	0.00075	0.002	U	0.00075	0.002	U	0.00075	0.002	U
Endosulfan II (β)	33213-65-9	0.007	0.0027	0.00135	0.004	U	0.00135	0.004	U	0.00135	0.004	U
I and II (α and β) Endosulfan		0.007		0.0021			0.0021			0.0021		
Endrin	72-20-8	0.007	0.00067	0.00034	0.004	U	0.00034	0.004	U	0.00034	0.004	U
Heptachlor	76-44-8	0.01	0.0011	0.00055	0.002	UJ4	0.00055	0.002	UJ4	0.00055	0.002	UJ4
Heptachlor epoxide	1024-57-3	0.01	0.00086	0.00043	0.002	U	0.00043	0.002	U	0.00043	0.002	U
Lindane (gamma-HCH) (gamma-BHC)	58-89-9	0.26	0.00058	0.00029	0.002	U	0.00029	0.002	U	0.00029	0.002	U
Toxaphene	8001-35-2	0.04	0.013	0.0065	0.093	U	0.0065	0.092	U	0.0065	0.093	U

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

**Table 5b - continued. Metal Analysis of of Elutriate (CENAE RIM)**

ASI Job #: 40-126		RIM Reporting Limit	Enthalpy MDL*	Elutriate (Units: µg/L)			Elutriate (Units: µg/L)			Elutriate (Units: µg/L)		
Core Location Name:		ppb (µg/L)		NAE6a (Surface) Rep 1			NAE6a (Surface) Rep 2			NAE6a (Surface) Rep 3		
ASI ID #:				20200428a			20200428a			20200428a		
Enthalpy ID #:				34274-057			34274-058			34274-059		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Arsenic	7440-38-2	1	0.15*	7.90	0.500		7.80	0.500		7.80	0.500	
Cadmium	7440-43-9	1	0.013*	0.0065	0.100	U	0.0065	0.1000	U	0.0065	0.100	U
Chromium, total	7440-47-3	1	0.19*	0.095	0.500	U	0.095	0.500	U	0.095	0.500	U
Copper	7440-50-8	0.6	0.05*	1.00	0.500		0.025	0.500	U	0.025	0.500	U
Lead	7439-92-1	1	0.011*	0.0055	0.200	U	0.0055	0.2000	U	0.0055	0.200	U
Nickel	7440-02-0	1	0.1*	0.050	1.00	U	1.00	1.00		0.050	1.00	U
Selenium	7782-49-2	1	0.1*	0.050	0.500	U	0.050	0.500	U	0.050	0.500	U
Silver	7440-22-4	0.5	0.017*	0.0085	0.200	U	0.0085	0.200	U	0.0085	0.200	U
Zinc	7440-66-6	1	0.3*	6.20	1.00		9.80	1.00		3.40	1.00	
Enthalpy ID #:				34274-063			34274-064			34274-065		
Chromium VI	18540-29-9	5	1.6	0.800	5.00	U	0.800	5.00	U	0.800	5.00	U
Enthalpy ID #:				34274-060			34274-061			34274-062		
Mercury	7439-97-6	0.4	0.0005	0.00025	0.010	U	0.00025	0.010	U	0.00025	0.010	U

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

\*MDL adjusted for dilution factor.

**Table 5b - continued. PCB Congener Analysis of of Elutriate (CENAE RIM)**

ASI Job #: 40-126		CAS No.	RIM Reporting Limit	Enthalpy MDL	Elutriate (Units: µg/L)			Elutriate (Units: µg/L)			Elutriate (Units: µg/L)		
Core Location Name:			ppb (µg/L)	NAE6a (Surface) Rep 1			NAE6a (Surface) Rep 2			NAE6a (Surface) Rep 3			
ASI ID #:				20200428a			20200428a			20200428a			
Enthalpy ID #:				34274-069			34274-070			34274-071			
Analyte Name					Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
PCB-008*	2,4'-DiCB	34883-43-7	0.006	0.00052	0.00026	0.002	U	0.00026	0.002	U	0.0006	0.002	J14
PCB-018*	2,2',5'-TrCB	37680-65-2	0.006	0.00062	0.00031	0.002	U	0.00031	0.002	U	0.00031	0.002	U
PCB-028*	2,4,4'-TrCB	7012-37-5	0.006	0.00047	0.0007	0.002	J14	0.0005	0.002	J14	0.000235	0.002	U
PCB-044*	2,2',3,5'-TeCB	41464-39-5	0.006	0.00046	0.0008	0.002	J4, J14	0.0008	0.002	J4, J14	0.0012	0.002	J4, J14
PCB-049	2,2',4,5'-CB	41464-40-8	0.006	0.00033	0.0002	0.002	UJ4	0.0004	0.002	J4, J14	0.0014	0.002	J4, J14
PCB-052*	2,2',5,5'-TeCB	35693-99-3	0.006	0.00036	0.0005	0.002	J14	0.0009	0.002	J14	0.0004	0.002	J14
PCB-066*	2,3',4,4'-TeCB	32598-10-0	0.006	0.00037	0.0004	0.002	J14	0.000185	0.002	U	0.000185	0.002	U
PCB-087	2,2',3,4,5'-PeCB	38380-02-8	0.006	0.00081	0.000405	0.002	U	0.001	0.002	J14	0.000405	0.002	U
PCB-101*	2,2',4,5,5'-PeCB	37680-73-2	0.006	0.00086	0.00043	0.002	U	0.0011	0.002	J14	0.00043	0.002	U
PCB-105*	2,3,3',4,4'-PeCB	32598-14-4	0.006	0.00079	0.001	0.002	J14	0.000395	0.002	U	0.000395	0.002	U
PCB-118*	2,3',4,4',5'-PeCB	31508-00-6	0.006	0.00046	0.001	0.002	J14	0.00023	0.002	U	0.0008	0.002	J14
PCB-128*	2,2',3,3',4,4'-HxCB	38380-07-3	0.006	0.00040	0.0002	0.002	U	0.0004	0.002	J14	0.0008	0.002	J14
PCB-138*	2,2',3,4,4',5'-HxCB	35065-28-2	0.006	0.00066	0.00033	0.002	UJ4	0.00033	0.002	UJ4	0.00033	0.002	UJ4
PCB-153*	2,2',4,4',5,5'-HxCB	35065-27-1	0.006	0.00042	0.0007	0.002	J4, J14	0.00021	0.002	UJ4	0.00021	0.002	UJ4
PCB-170*	2,2',3,3',4,4',5'-HpCB	35065-30-6	0.006	0.00097	0.000485	0.002	U	0.00049	0.002	U	0.0013	0.002	J14
PCB-180*	2,2',3,4,4',5,5'-HpCB	35065-29-3	0.006	0.00058	0.00029	0.002	UJ4	0.00029	0.002	UJ4	0.00029	0.002	UJ4
PCB-183	2,2',3,4,4',5',6'-HpCB	52663-69-1	0.006	0.00084	0.00042	0.002	UJ4	0.00042	0.002	UJ4	0.00042	0.002	UJ4
PCB-184	2,2',3,4,4',6,6'-HpCB	74472-48-3	0.006	0.00058	0.001	0.002	J14	0.00029	0.002	U	0.00029	0.002	U
PCB-187*	2,2',3,4',5,5',6'-HpCB	52663-68-0	0.006	0.00089	0.000445	0.002	U	0.000445	0.002	U	0.000445	0.002	U
PCB-195*	2,2',3,3',4,4',5,6'-OeCB	52663-78-2	0.006	0.0019	0.00095	0.002	U	0.00095	0.002	U	0.00095	0.002	U
PCB-206*	2,2',3,3',4,4',5,5',6'-NoCB	40186-72-9	0.006	0.00078	0.00039	0.002	U	0.0011	0.002	J14	0.00039	0.002	U
PCB-209*	DecaCB	2051-24-3	0.006	0.00084	0.00042	0.002	U	0.00042	0.002	U	0.0018	0.002	J14
PCBs <sup>2</sup>					0.01922			0.01862			0.02214		

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

<sup>2</sup> Total by NOAA summation of congeners. Sum of eighteen congeners marked with a "\*", multiplied by 2.

**Table 5c. Pentachlorophenol Analysis of Elutriate (CENAE RIM)**

ASI Job #: 40-126		RIM Reporting Limit	Enthalpy MDL	Elutriate (Units: µg/L)			Elutriate (Units: µg/L)			Elutriate (Units: µg/L)		
Core Location Name:		ppb (µg/L)		NAE9a (Surface) Rep 1			NAE9a (Surface) Rep 2			NAE9a (Surface) Rep 3		
ASI ID #:				20200431a			20200431a			20200431a		
Enthalpy ID #:				34274-029			34274-030			34274-031		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Pentachlorophenol	87-86-5	2.60	1.9	0.950	2.30	U	0.950	2.30	U	0.950	2.30	U

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

**Table 5c - continued. Pesticide Analysis of Elutriate (CENAE RIM)**

ASI Job #: 40-126		RIM Reporting Limit	Enthalpy MDL	Elutriate (Units: µg/L)			Elutriate (Units: µg/L)			Elutriate (Units: µg/L)		
Core Location Name:		ppb (µg/L)		NAE9a (Surface) Rep 1			NAE9a (Surface) Rep 2			NAE9a (Surface) Rep 3		
ASI ID #:				20200431a			20200431a			20200431a		
Enthalpy ID #:				34274-035			34274-036			34274-037		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Aldrin	309-00-2	0.26	0.00032	0.00016	0.002	U	0.00016	0.002	U	0.00016	0.002	U
cis-Chlordane (α)	5103-71-9	0.02	0.00047	0.00024	0.002	U	0.00024	0.002	U	0.00024	0.002	U
trans-Chlordane (γ)	5103-74-2	0.02	0.00047	0.00024	0.002	U	0.00024	0.002	U	0.00024	0.002	U
Chlordane (cis and trans) (α and γ)		0.02	0.00047	0.00047			0.00047			0.00047		
Chlorpyrifos	2921-88-2	0.002	0.00058	0.00029	0.002	U	0.00029	0.002	U	0.00029	0.002	U
Dieldrin	60-57-1	0.14	0.0011	0.00055	0.004	U	0.00055	0.004	U	0.00055	0.004	U
4,4'-DDT	50-29-3	0.03	0.00061	0.00031	0.004	U	0.00031	0.004	U	0.00031	0.004	U
Endosulfan I (α)	959-98-8	0.007	0.0015	0.00075	0.002	U	0.00075	0.002	U	0.00075	0.002	U
Endosulfan II (β)	33213-65-9	0.007	0.0027	0.00135	0.004	U	0.00135	0.004	U	0.00135	0.004	U
I and II (α and β) Endosulfan		0.007		0.0021			0.0021			0.0021		
Endrin	72-20-8	0.007	0.00067	0.00034	0.004	U	0.00034	0.004	U	0.00034	0.004	U
Heptachlor	76-44-8	0.01	0.0011	0.00055	0.002	UJ4	0.00055	0.002	UJ4	0.00055	0.002	UJ4
Heptachlor epoxide	1024-57-3	0.01	0.00086	0.00043	0.002	U	0.00043	0.002	U	0.00043	0.002	U
Lindane (gamma-HCH) (gamma-BHC)	58-89-9	0.26	0.00058	0.00029	0.002	U	0.00029	0.002	U	0.00029	0.002	U
Toxaphene	8001-35-2	0.04	0.013	0.0065	0.092	U	0.0065	0.093	U	0.0065	0.093	U

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

**Table 5c - continued. Metal Analysis of of Elutriate (CENAE RIM)**

ASI Job #: 40-126		RIM Reporting Limit	Enthalpy MDL*	Elutriate (Units: µg/L)			Elutriate (Units: µg/L)			Elutriate (Units: µg/L)		
Core Location Name:		ppb (µg/L)		NAE9a (Surface) Rep 1			NAE9a (Surface) Rep 2			NAE9a (Surface) Rep 3		
ASI ID #:				20200431a			20200431a			20200431a		
Enthalpy ID #:				34274-020			34274-021			34274-022		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Arsenic	7440-38-2	1	0.15*	62.2	0.500		61.6	0.500		61.7	0.500	
Cadmium	7440-43-9	1	0.013*	0.0065	0.100	U	0.0065	0.100	U	0.0065	0.100	U
Chromium, total	7440-47-3	1	0.19*	0.095	0.500	U	0.095	0.500	U	0.095	0.500	U
Copper	7440-50-8	0.6	0.05*	0.025	0.500	U	0.025	0.500	U	0.025	0.500	U
Lead	7439-92-1	1	0.011*	0.0055	0.200	U	0.0055	0.200	U	0.0055	0.200	U
Nickel	7440-02-0	1	0.1*	1.10	1.00		1.00	1.00		1.10	1.00	
Selenium	7782-49-2	1	0.1*	0.050	0.500	U	0.050	0.500	U	0.050	0.500	U
Silver	7440-22-4	0.5	0.017*	0.0085	0.200	U	0.0085	0.200	U	0.0085	0.200	U
Zinc	7440-66-6	1	0.3*	13.8	1.00		10.4	1.00		9.70	1.00	
Enthalpy ID #:				34274-026			34274-027			34274-028		
Chromium VI	18540-29-9	5	1.6	0.800	5.00	U	0.800	5.00	U	0.800	5.00	U
Enthalpy ID #:				34274-023			34274-024			34274-025		
Mercury	7439-97-6	0.4	0.0005	0.00025	0.010	U	0.00025	0.010	U	0.00025	0.010	U

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

\*MDL adjusted for dilution factor.

Table 5c - continued. PCB Congener Analysis of of Elutriate (CENAE RIM)

ASI Job #: 40-126		CAS No.	RIM Reporting Limit	Enthalpy MDL	Elutriate (Units: µg/L)			Elutriate (Units: µg/L)			Elutriate (Units: µg/L)		
Core Location Name:			ppb (µg/L)	NAE9a (Surface) Rep 1			NAE9a (Surface) Rep 2			NAE9a (Surface) Rep 3			
ASI ID #:				20200431a			20200431a			20200431a			
Enthalpy ID #:				34274-032			34274-033			34274-034			
Analyte Name					Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
PCB-008*	2,4'-DiCB	34883-43-7	0.006	0.00052	0.002	0.002	UJ5, J7	0.00026	0.002	U	0.00026	0.002	U
PCB-018*	2,2',5'-TrCB	37680-65-2	0.006	0.00062	0.0008	0.002	J5J7J14	0.00031	0.002	U	0.00031	0.002	U
PCB-028*	2,4,4'-TrCB	7012-37-5	0.006	0.00047	0.000235	0.002	U	0.000235	0.002	U	0.000235	0.002	U
PCB-044*	2,2',3,5'-TeCB	41464-39-5	0.006	0.00046	0.00023	0.002	UJ4	0.0005	0.002	J4, J14	0.0002	0.002	UJ4
PCB-049	2,2',4,5'-CB	41464-40-8	0.006	0.00033	0.000165	0.002	UJ4	0.0004	0.002	J4, J14	0.0007	0.002	J4, J14
PCB-052*	2,2',5,5'-TeCB	35693-99-3	0.006	0.00036	0.0005	0.002	J14	0.0004	0.002	J14	0.00018	0.002	U
PCB-066*	2,3',4,4'-TeCB	32598-10-0	0.006	0.00037	0.00019	0.002	U	0.000185	0.002	U	0.0004	0.002	J14
PCB-087	2,2',3,4,5'-PeCB	38380-02-8	0.006	0.00081	0.000405	0.002	U	0.000405	0.002	U	0.001	0.002	J14
PCB-101*	2,2',4,5,5'-PeCB	37680-73-2	0.006	0.00086	0.00043	0.002	U	0.00043	0.002	U	0.0011	0.002	J14
PCB-105*	2,3,3',4,4'-PeCB	32598-14-4	0.006	0.00079	0.000395	0.002	U	0.000395	0.002	U	0.000395	0.002	U
PCB-118*	2,3',4,4',5'-PeCB	31508-00-6	0.006	0.00046	0.00023	0.002	U	0.00023	0.002	U	0.00023	0.002	U
PCB-128*	2,2',3,3',4,4'-HxCB	38380-07-3	0.006	0.00040	0.001	0.002	J14	0.0002	0.002	U	0.0002	0.002	U
PCB-138*	2,2',3,4,4',5'-HxCB	35065-28-2	0.006	0.00066	0.00033	0.002	UJ4	0.00033	0.002	UJ4	0.00033	0.002	UJ4
PCB-153*	2,2',4,4',5,5'-HxCB	35065-27-1	0.006	0.00042	0.0005	0.002	J4, J14	0.00021	0.002	UJ4	0.00021	0.002	UJ4
PCB-170*	2,2',3,3',4,4',5'-HpCB	35065-30-6	0.006	0.00097	0.000485	0.002	U	0.000485	0.002	U	0.000485	0.002	U
PCB-180*	2,2',3,4,4',5,5'-HpCB	35065-29-3	0.006	0.00058	0.00029	0.002	UJ4	0.00029	0.002	UJ4	0.00029	0.002	UJ4
PCB-183	2,2',3,4,4',5',6'-HpCB	52663-69-1	0.006	0.00084	0.00042	0.002	UJ4	0.00042	0.002	UJ4	0.00042	0.002	UJ4
PCB-184	2,2',3,4,4',6,6'-HpCB	74472-48-3	0.006	0.00058	0.00029	0.002	U	0.00029	0.002	U	0.0007	0.002	J14
PCB-187*	2,2',3,4',5,5',6'-HpCB	52663-68-0	0.006	0.00089	0.000445	0.002	U	0.000445	0.002	U	0.000445	0.002	U
PCB-195*	2,2',3,3',4,4',5,6'-OeCB	52663-78-2	0.006	0.0019	0.00095	0.002	U	0.00095	0.002	U	0.00095	0.002	U
PCB-206*	2,2',3,3',4,4',5,5',6'-NoCB	40186-72-9	0.006	0.00078	0.001	0.002	J14	0.001	0.002	J14	0.0004	0.002	U
PCB-209*	DecaCB	2051-24-3	0.006	0.00084	0.00042	0.002	U	0.0009	0.002	J14	0.0009	0.002	J14
PCBs <sup>2</sup>					0.02085			0.01551			0.01508		

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

<sup>2</sup> Total by NOAA summation of congeners. Sum of eighteen congeners marked with a "\*", multiplied by 2.

**Table 6. Pentachlorophenol Analysis of Site Blank (CENAE RIM)**

ASI Job #: 40-126		RIM Reporting Limit	Enthalpy MDL	Site Blank (Units: µg/L)			Site Blank (Units: µg/L)			Site Blank (Units: µg/L)		
Core Location Name:		ppb (µg/L)		Site Blank Rep 1			Site Blank Rep 2			Site Blank Rep 3		
ASI ID #:		ppb (µg/L)		20200431a			20200431a			20200431a		
Enthalpy ID #:		ppb (µg/L)		34274-010			34274-011			34274-012		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Pentachlorophenol	87-86-5	2.60	1.9	0.950	2.30	U	0.950	2.30	U	0.950	2.30	U

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

**Table 6 - continued. Pesticide Analysis of Site Blank (CENAE RIM)**

ASI Job #: 40-126		RIM Reporting Limit	Enthalpy MDL	Site Blank (Units: µg/L)			Site Blank (Units: µg/L)			Site Blank (Units: µg/L)		
Core Location Name:		ppb (µg/L)		Site Blank Rep 1			Site Blank Rep 2			Site Blank Rep 3		
ASI ID #:		ppb (µg/L)		20200431a			20200431a			20200431a		
Enthalpy ID #:		ppb (µg/L)		34274-016			34274-017			34274-018		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Aldrin	309-00-2	0.26	0.00032	0.00016	0.002	U	0.00016	0.002	U	0.00016	0.002	U
cis-Chlordane (α)	5103-71-9	0.02	0.00047	0.00024	0.002	U	0.00024	0.002	U	0.00024	0.002	U
trans-Chlordane (γ)	5103-74-2	0.02	0.00047	0.00024	0.002	U	0.00024	0.002	U	0.00024	0.002	U
Chlordane (cis and trans) (α and γ)		0.02	0.00047	0.00047			0.00047			0.00047		
Chlorpyrifos	2921-88-2	0.002	0.00058	0.00029	0.002	U	0.00029	0.002	U	0.00029	0.002	U
Dieldrin	60-57-1	0.14	0.0011	0.00055	0.004	U	0.00055	0.004	U	0.00055	0.004	U
4,4'-DDT	50-29-3	0.03	0.00061	0.00031	0.004	U	0.00031	0.004	U	0.00031	0.004	U
Endosulfan I (α)	959-98-8	0.007	0.0015	0.00075	0.002	U	0.00075	0.002	U	0.00075	0.002	U
Endosulfan II (β)	33213-65-9	0.007	0.0027	0.00135	0.004	U	0.00135	0.004	U	0.00135	0.004	U
I and II (α and β) Endosulfan		0.007		0.0021			0.0021			0.0021		
Endrin	72-20-8	0.007	0.00067	0.00034	0.004	U	0.00034	0.004	U	0.00034	0.004	U
Heptachlor	76-44-8	0.01	0.0011	0.00055	0.002	UJ4	0.00055	0.002	UJ4	0.00055	0.002	UJ4
Heptachlor epoxide	1024-57-3	0.01	0.00086	0.00043	0.002	U	0.00043	0.002	U	0.00043	0.002	U
Lindane (gamma-HCH) (gamma-BHC)	58-89-9	0.26	0.00058	0.00029	0.002	U	0.00029	0.002	U	0.00029	0.002	U
Toxaphene	8001-35-2	0.04	0.013	0.0065	0.092	U	0.0065	0.093	U	0.0065	0.093	U

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

**Table 6 - continued. Metal Analysis of of Site Blank (CENAE RIM)**

ASI Job #: 40-126		RIM Reporting Limit	Enthalpy MDL*	Site Blank (Units: µg/L)			Site Blank (Units: µg/L)			Site Blank (Units: µg/L)		
Core Location Name:		ppb (µg/L)		Site Blank Rep 1			Site Blank Rep 2			Site Blank Rep 3		
ASI ID #:				20200431a			20200431a			20200431a		
Enthalpy ID #:				34274-001			34274-002			34274-003		
Analyte Name	CAS No.			Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
Arsenic	7440-38-2	1	0.15*	1.30	0.500		1.20	0.500		1.20	0.500	
Cadmium	7440-43-9	1	0.013*	0.0065	0.100	U	0.0065	0.100	U	0.0065	0.100	U
Chromium, total	7440-47-3	1	0.19*	0.095	0.500	U	0.095	0.500	U	0.095	0.500	U
Copper	7440-50-8	0.6	0.05*	0.900	0.500		0.700	0.500		1.00	0.500	
Lead	7439-92-1	1	0.011*	0.0055	0.200	U	0.0055	0.200	U	0.0055	0.200	U
Nickel	7440-02-0	1	0.1*	2.00	1.00		1.40	1.00		1.20	1.00	
Selenium	7782-49-2	1	0.1*	0.050	0.500	U	0.050	0.500	U	0.050	0.500	U
Silver	7440-22-4	0.5	0.017*	0.0085	0.200	U	0.0085	0.200	U	0.0085	0.200	U
Zinc	7440-66-6	1	0.3*	5.10	1.00		3.50	1.00		5.10	1.00	
Enthalpy ID #:				34274-007			34274-008			34274-009		
Chromium VI	18540-29-9	5	1.6	0.800	5.00	U	0.800	5.00	U	0.800	5.00	U
Enthalpy ID #:				34274-004			34274-005			34274-006		
Mercury	7439-97-6	0.4	0.0005	0.00025	0.010	U	0.00025	0.010	U	0.00025	0.010	U

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

\*MDL adjusted for dilution factor.

**Table 6 - continued. PCB Congener Analysis of of Site Blank (CENAE RIM)**

ASI Job #: 40-126		CAS No.	RIM Reporting Limit	Enthalpy MDL	Site Blank (Units: µg/L)			Site Blank (Units: µg/L)			Site Blank (Units: µg/L)		
Core Location Name:			ppb (µg/L)	Site Blank Rep 1			Site Blank Rep 2			Site Blank Rep 3			
ASI ID #:				20200431a			20200431a			20200431a			
Enthalpy ID #:				34274-013			34274-014			34274-015			
Analyte Name					Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q	Result <sup>1</sup>	RL	Q
PCB-008*	2,4'-DiCB	34883-43-7	0.006	0.00052	0.00026	0.002	U	0.00026	0.002	U	0.00026	0.002	U
PCB-018*	2,2',5'-TrCB	37680-65-2	0.006	0.00062	0.0006	0.002	J14	0.00031	0.002	U	0.00031	0.002	U
PCB-028*	2,4,4'-TrCB	7012-37-5	0.006	0.00047	0.0005	0.002	J14	0.000235	0.002	U	0.0009	0.002	J14
PCB-044*	2,2',3,5'-TeCB	41464-39-5	0.006	0.00046	0.0005	0.002	J4, J14	0.00023	0.002	UJ4	0.0005	0.002	J4, J14
PCB-049	2,2',4,5'-CB	41464-40-8	0.006	0.00033	0.000165	0.002	UJ4	0.000165	0.002	UJ4	0.000165	0.002	UJ4
PCB-052*	2,2',5,5'-TeCB	35693-99-3	0.006	0.00036	0.00018	0.002	U	0.0006	0.002	J14	0.0004	0.002	J14
PCB-066*	2,3',4,4'-TeCB	32598-10-0	0.006	0.00037	0.0006	0.002	J14	0.000185	0.002	U	0.0005	0.002	J14
PCB-087	2,2',3,4,5'-PeCB	38380-02-8	0.006	0.00081	0.000405	0.002	U	0.000405	0.002	U	0.000405	0.002	U
PCB-101*	2,2',4,5,5'-PeCB	37680-73-2	0.006	0.00086	0.00043	0.002	U	0.00043	0.002	U	0.00043	0.002	U
PCB-105*	2,3,3',4,4'-PeCB	32598-14-4	0.006	0.00079	0.000395	0.002	U	0.000395	0.002	U	0.000395	0.002	U
PCB-118*	2,3',4,4',5'-PeCB	31508-00-6	0.006	0.00046	0.00023	0.002	U	0.00023	0.002	U	0.00023	0.002	U
PCB-128*	2,2',3,3',4,4'-HxCB	38380-07-3	0.006	0.00040	0.0002	0.002	U	0.0002	0.002	U	0.0002	0.002	U
PCB-138*	2,2',3,4,4',5'-HxCB	35065-28-2	0.006	0.00066	0.00033	0.002	UJ4	0.00033	0.002	UJ4	0.00033	0.002	UJ4
PCB-153*	2,2',4,4',5,5'-HxCB	35065-27-1	0.006	0.00042	0.00021	0.002	UJ4	0.0005	0.002	J4, J14	0.0009	0.002	J4, J14
PCB-170*	2,2',3,3',4,4',5'-HpCB	35065-30-6	0.006	0.00097	0.000485	0.002	U	0.001	0.002	J14	0.000485	0.002	U
PCB-180*	2,2',3,4,4',5,5'-HpCB	35065-29-3	0.006	0.00058	0.00029	0.002	UJ4	0.00029	0.002	UJ4	0.00029	0.002	UJ4
PCB-183	2,2',3,4,4',5',6'-HpCB	52663-69-1	0.006	0.00084	0.00042	0.002	UJ4	0.00042	0.002	UJ4	0.00042	0.002	UJ4
PCB-184	2,2',3,4,4',6,6'-HpCB	74472-48-3	0.006	0.00058	0.00029	0.002	U	0.00029	0.002	U	0.00029	0.002	U
PCB-187*	2,2',3,4',5,5',6'-HpCB	52663-68-0	0.006	0.00089	0.000445	0.002	U	0.000445	0.002	U	0.000445	0.002	U
PCB-195*	2,2',3,3',4,4',5,6'-OeCB	52663-78-2	0.006	0.0019	0.00095	0.002	U	0.00095	0.002	U	0.00095	0.002	U
PCB-206*	2,2',3,3',4,4',5,5',6'-NoCB	40186-72-9	0.006	0.00078	0.00039	0.002	U	0.00039	0.002	U	0.001	0.002	J14
PCB-209*	DecaCB	2051-24-3	0.006	0.00084	0.0017	0.002	J14	0.00042	0.002	U	0.0011	0.002	J14
PCBs <sup>2</sup>					0.01739			0.0148			0.01925		

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

<sup>2</sup> Total by NOAA summation of congeners. Sum of eighteen congeners marked with a "\*", multiplied by 2.

**Table 7. Mercury Analysis of All Bulk Sediment Samples (CENAE RIM)**

ASI Job #: 40-126				Bulk Sediment (Units: mg/kg)		
				Mercury		
				Cas No. 7439-97-6		
				RIM Reporting Limit: 0.02		
				MDL: 0.0011		
				RL = 0.1		
Core Location Name	ASI ID #	Enthalpy ID #	%	Result <sup>1</sup>	RL	Q
NAE2a (Surface)	20200424a	34272-001	21.3	0.022	0.010	
NAE2b (Transition)	20200424b	34272-002	11.7	0.012	0.010	
NAE2c (Deep)	20200424c	34272-003	15.7	0.011	0.010	
NAE3a (Surface)	20200425a	34272-026	10.0	0.00055	0.010	U
NAE3b (Transition)	20200425b	34272-028	10.6	0.00055	0.010	U
NAE3c (Deep)	20200425c	34272-029	13.1	0.00055	0.010	U
NAE4a (Surface)	20200426a	34272-004	18.6	0.021	0.010	
NAE4b (Transition)	20200426b	34272-005	20.1	0.00055	0.010	U
NAE4c (Deep)	20200426c	34272-006	15.7	0.00055	0.010	U
NAE5a (Surface)	20200427a	34272-007	20.1	0.014	0.010	
NAE5b (Transition)	20200427b	34272-008	16.9	0.010	0.010	
NAE5c (Deep)	20200427c	34272-009	8.00	0.00055	0.010	U
NAE6a (Surface)	20200428a	34272-031	12.0	0.00055	0.010	U
NAE6b (Transition)	20200428b	34272-033	16.8	0.00055	0.010	U
NAE6c (Deep)	20200428c	34272-034	22.6	0.00055	0.010	U
NAE7a (Surface)	20200429a	34272-010	28.8	0.051	0.010	
NAE7b (Transition)	20200429b	34272-011	25.2	0.00055	0.010	U
NAE7c (Deep)	20200429c	34272-012	16.3	0.00055	0.010	U
NAE8a (Surface)	20200430a	34272-013	51.9	0.129	0.010	
NAE8b (Transition)	20200430b	34272-014	37.1	0.012	0.010	
NAE8c (Deep)	20200430c	34272-015	40.7	0.011	0.010	
NAE9a (Surface)	20200431a	34272-035	59.9	0.142	0.010	
NAE9b (Transition)	20200431b	34272-037	53.2	0.020	0.010	
NAE9c (Deep)	20200431c	34272-038	42.7	0.012	0.010	
NAE10a (Surface)	20200432a	34272-016	60.2	0.215	0.010	
NAE10b (Transition)	20200432b	34272-017	56.6	0.034	0.010	
NAE10c (Deep)	20200432c	34272-018	45.0	0.013	0.010	
NAE11a (Surface)	20200433a	34272-019	63.1	0.245	0.010	
NAE11b (Transition)	20200433b	34272-020	54.3	0.023	0.010	
NAE11c (Deep)	20200433c	34272-021	50.8	0.016	0.010	

<sup>1</sup> Non-detected analytes (U qualifier) are reported as half the value of the MDL.

## **Appendices**

**Appendix A**  
**Core Sample Logs**



# AQUA SURVEY, INC.

## SEDIMENT CORE LOG

Client : Nordic Aquafarms, Inc.		Project : Belfast, ME			Logger:		
Job#: 40-126		Date:		Time:		Crew:	
Coordinates:		N		E		Vessel: Prattis	
Core # : NAE1		Zone: GEO		Datum NAD 83		Deploy: 1 2 3	
Project Depth [PD] [ft] MLLW:				Core Penetration Length (ft.):			
Measured Water Depth [MWD] [ft.]:				Recovered Core Length (ft.):			
Tide Adjust [TA] (+/- ft. from MLLW) [ft.]:				Sample Length Retained (ft.):			
Corrected Depth @ MLLW [ft.]:				Core Volume Retained (gal.):			
				Collected to Project Depth: Y / N			
Required Sample Core Length [SCL] [ft.]:							
<b>All Length Measurements are in Decimal Feet</b>							
Sample Interval (ft.)		Sample Id #		Description			
Top		20200423		No Sample			
↓							
Bottom							
# of containers:						Core Volumes	
Type of container:		bucket		hardliner		cup	
				other		Nominal core-barrel diameter	
Conditions:						EST. Volume	
						3.0" .25 gal/ft	
						3.5" 8.0" .33 gal/ft	
Comments:						4.0" .50 gal/ft	
						Liner Type: <input checked="" type="radio"/> Soft <input type="radio"/> Hard	
						Vibracorer: <input checked="" type="radio"/> P3 <input type="radio"/> P5 <input type="radio"/> VT6 <input type="radio"/> Other	
Live Organisms Present		Y N					
Oil Present		Y N				Pushcorer Slambar	
Odor Present		Y N					
Debris Present		Y N				Eckman Ponar: Standard / Petite	
Within 10% of Req'd Core Length		Y N					
Photo		Y N				Box Core	
MLW #td ver 030615							



# AQUA SURVEY, INC.

## SEDIMENT CORE LOG

Client : Nordic Aquafarms, Inc.		Project : Belfast, ME		Logger: WR	
Job#: 40-126	Date: 7/21/20	Time: 1113	Crew: AF		
Coordinates:	N 265863.4	E 857169.8	Vessel: Prattis		
Core # : NAE2	Zone: GEO	Datum NAD 83	Deploy:	1	2 3
Project Depth [PD] [ft] MLLW:		Core Penetration Length (ft.):		3.0	2.5
Measured Water Depth [MWD] [ft.]: 5.1		Recovered Core Length (ft.):		1.7	1.6
Tide Adjust [TA] (+/- ft. from MLLW) [ft.]: 9.6		Sample Length Retained (ft.):		1.7	1.6
Corrected Depth @ MLLW [ft.]: -4.5		Core Volume Retained (gal.):		1.0	0.2
		Collected to Project Depth:		Y <input checked="" type="radio"/> N	
Required Sample Core Length [SCL] [ft.]:					
<b>All Length Measurements are in Decimal Feet</b>					
Sample Interval (ft.)	Sample Id #	Description			
Top 0.0	20200424	Large & small rocks, send sand at bottom			
1.7					
		20200424A - Surface - 0 - 0.7' 20200424B - Transition - 0.7 - 1.3' 20200424C - Bottom 1.3' - 1.7'			
Bottom					
# of containers:			3 (500 ml)	3 (4oz)	Core Volumes
Type of container:	bucket	hardliner	cup	glass	Nominal core-barrel diameter
Conditions: Sunny					EST. Volume
					3.0" .25 gal/ft
					3.5" 8.0" .33 gal/ft
Comments: Refusal due to large rocks/boulders					<input checked="" type="radio"/> 4.0" .50 gal/ft
Latitude: N 44.394613210, Longitude: W 68.986214125					Liner Type: <input checked="" type="radio"/> Soft <input type="radio"/> Hard
					Vibracorer: <input checked="" type="radio"/> P3 <input type="radio"/> P5 VT6 Other
Live Organisms Present	N				
Oil Present	N	Pushcorer	Slambar		
Odor Present	N				
Debris Present	N	Eckman	Ponar: Standard / Petite		
Within 10% of Req'd Core Length	N				
Photo	Y	Box Core			
					MLW #td ver 030615





# AQUA SURVEY, INC.

## SEDIMENT CORE LOG

Client : Nordic Aquafarms, Inc.		Project : Belfast, ME		Logger: WR	
Job#: 40-126	Date: 7/21/20	Time: 1207	Crew: AF		
Coordinates:	N 265602.8	E 857469.5	Vessel: Prattis		
Core # : NAE4	Zone: GEO	Datum NAD 83	Deploy:	1	2 3
Project Depth [PD] [ft] MLLW:		Core Penetration Length (ft.):		5.0	10.0
Measured Water Depth [MWD] [ft.]: 8.5		Recovered Core Length (ft.):		3.1	4.5
Tide Adjust [TA] (+/- ft. from MLLW) [ft.]: 10.2		Sample Length Retained (ft.):		0.0	4.5
Corrected Depth @ MLLW [ft.]: -1.7		Core Volume Retained (gal.):		0.0	1.0
				Collected to Project Depth: <input checked="" type="radio"/> Y <input type="radio"/> N	
Required Sample Core Length [SCL] [ft.]:					
<b>All Length Measurements are in Decimal Feet</b>					
Sample Interval (ft.)		Sample Id #		Description	
Top	0.0	20200426		Course dark gray sand, trace silt, shell fragments	
	0.6				
	2.0			Fine gray/tan sand, trace silt, rocks throughout	
	2.9				
	4.5			Dark brown clay, trace sand/silt	
				Fine tan sand, trace clay, some rocks at bottom	
				20200426A - Surface - 0 - 0.6' 20200426B - Transition - 0.6' - 2.9' 20200426C - Bottom - 2.9' - 4.5'	
Bottom					
# of containers:			3 (500 ml)	3 (4 oz)	Core Volumes
Type of container:	bucket	hardliner	cup	other	Nominal core-barrel diameter
Conditions:					EST. Volume
					3.0" .25 gal/ft
					3.5" 8.0" .33 gal/ft
Comments: Refusal. Latitude: N					4.0" .50 gal/ft
44.394301250, Longitude: W 68.985064884					Liner Type: <input checked="" type="radio"/> Soft <input type="radio"/> Hard
					Vibracorer: <input checked="" type="radio"/> P3 <input type="radio"/> P5 VT6 Other
Live Organisms Present	N			Pushcorer	Slambar
Oil Present	N				
Odor Present	N			Eckman	Ponar: Standard / Petite
Debris Present	N				
Within 10% of Req'd Core Length	Y			Box Core	
Photo	Y				
MLW #td ver 030615					



# AQUA SURVEY, INC.

## SEDIMENT CORE LOG

Client : Nordic Aquafarms, Inc.		Project : Belfast, ME			Logger: WR	
Job#: 40-126	Date: 7/21/20	Time: 1326	Crew: AF			
Coordinates:	N 265514.3	E 857648.4	Vessel: Prattis			
Core # : NAE5	Zone: GEO	Datum NAD 83	Deploy:	1	2	3   4
Project Depth [PD] [ft] MLLW:		Core Penetration Length (ft.):		3.0	3.0	3.0   3.0
Measured Water Depth [MWD] [ft.]: 10.1		Recovered Core Length (ft.):		1.0	2.6	1.2   0.0
Tide Adjust [TA] (+/- ft. from MLLW) [ft.]: 4.3		Sample Length Retained (ft.):				
Corrected Depth @ MLLW [ft.]: 0.8		Core Volume Retained (gal.):				
			Collected to Project Depth:		Y	<b>N</b>
Required Sample Core Length [SCL] [ft.]:						
<b>All Length Measurements are in Decimal Feet</b>						
Sample Interval (ft.)	Sample Id #	Description				
Top 0.0	20200427	Dark brown sand, trace silt				
0.7						
2.6		Coarse sand/gravel w/ rocks, large rocks at bottom				
		20200427A - Surface - 0 - 0.7' 20200427B - Transition - 0.7' - 1.3' 20200427C - Bottom - 1.3' - 2.6'				
Bottom						
# of containers:			3 (500 ml)	3 (4 oz)	Core Volumes	
Type of container:	bucket	hardliner	cup	other	Nominal core-barrel diameter	EST. Volume
Conditions: Partly cloudy				3.0"	.25 gal/ft	
Comments: Refusal. Latitude: N 44.394061385, Longitude: W 68.984378431				3.5" 8.0"	.33 gal/ft	
				<b>4.0"</b>	.50 gal/ft	
				Liner Type: <b>Soft</b> Hard		
				Vibracorer: <b>P3</b> P5 VT6 Other		
Live Organisms Present	N	Pushcorer				
Oil Present	N	Slambar				
Odor Present	N	Eckman				
Debris Present	N	Ponar: Standard / Petite				
Within 10% of Req'd Core Length	N	Box Core				
Photo	Y					
MLW #td ver 030615						



# AQUA SURVEY, INC. SEDIMENT CORE LOG

Client : Nordic Aquafarms, Inc.		Project : Belfast, ME			Logger: WR			
Job#: 40-126		Date: 7/21/20	Time: 1424	Crew: AF				
Coordinates:		N 265467.9	E 857895.6	Vessel: Pratts				
Core # : NAE6	Zone: GEO	Datum NAD 83		Deploy:	1	2	3	
Project Depth [PD] [ft] MLLW:			Core Penetration Length (ft.):			8.5	3.0	3.0
Measured Water Depth [MWD] [ft.]: 8.9			Recovered Core Length (ft.):			4.6	1.3	1.0
Tide Adjust [TA] (+/- ft. from MLLW) [ft.]: 7.4			Sample Length Retained (ft.):			4.6	1.0	1.0
Corrected Depth @ MLLW [ft.]: 1.5			Core Volume Retained (gal.):			2.5	0.5	0.5
					Collected to Project Depth: Y / <b>N</b>			
Required Sample Core Length [SCL] [ft.]:								
<b>All Length Measurements are in Decimal Feet</b>								
Sample Interval (ft.)		Sample Id #		Description				
Top 0.0		20200428		Dark gray coarse sand w/ gravel & rocks, trace silt/clay				
1.2								
4.6				Dark brown sand w/ trace coarse sand/ silt/clay				
				Site water 8 (5 gal. buckets) taken here at 1348 on 7/22/20				
				20200428A - Surface - 0 - 1.2' 20200428B - Transition - 1.2' - 3.6' 20200428C - Bottom - 3.6' - 4.6'				
Bottom								
# of containers:						Core Volumes		
Type of container:		bucket	hardliner	cup	other	Nominal core-barrel diameter	EST. Volume	
Conditions: Sunny					3.0"	.25 gal/ft		
					3.5"	8.0"	.33 gal/ft	
					<b>4.0"</b>	.50 gal/ft		
Comments: Refusal. 7 deployments total for volume. Latitude: N 44.393938108, Longitude: W 68.983431628					Liner Type: <b>Soft</b> Hard			
					Vibracorer: <b>P3</b> P5 VT6 Other			
Live Organisms Present		N			Pushcorer	Slambar		
Oil Present		N						
Odor Present		Y						
Debris Present		N			Eckman	Ponar: Standard / Petite		
Within 10% of Req'd Core Length		N						
Photo		Y			Box Core			
MLW #td ver 030615								



# AQUA SURVEY, INC.

## SEDIMENT CORE LOG

Client : Nordic Aquafarms, Inc.		Project : Belfast, ME			Logger: WR		
Job#: 40-126		Date: 7/22/20	Time: 1327	Crew: AF			
Coordinates: N 265480.1		E 858247.9		Vessel: Prattis			
Core # : NAE7	Zone: GEO	Datum NAD 83		Deploy:	1	2	3
Project Depth [PD] [ft] MLLW:			Core Penetration Length (ft.):		9.5		
Measured Water Depth [MWD] [ft.]: 17.8			Recovered Core Length (ft.):		5.1		
Tide Adjust [TA] (+/- ft. from MLLW) [ft.]: 10.4			Sample Length Retained (ft.):		5.1		
Corrected Depth @ MLLW [ft.]: 7.4			Core Volume Retained (gal.):		1.0		
					Collected to Project Depth: <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Y</span> / N		
Required Sample Core Length [SCL] [ft.]:							
<b>All Length Measurements are in Decimal Feet</b>							
Sample Interval (ft.)		Sample Id #		Description			
Top 0.0		20200429		Gray medium coarse sand w/ some silt/clay, rocks and shell fragments throughout			
0.6							
5.1				Gray medium coarse sand, trace silt/clay, rocks and shell fragments throughout			
				20200429A - Surface - 0 - 0.6' 20200429B - Transition - 0.6' - 3.0' 20200429C - Bottom - 3.0' - 5.1'			
Bottom							
# of containers:			3 (500 ml)	3 (4 oz)	Core Volumes		
Type of container:	bucket	hardliner	cup	glass	Nominal core-barrel diameter		EST. Volume
Conditions: Cloudy/light breeze					3.0"	.25 gal/ft	
					3.5"	8.0"	.33 gal/ft
Comments: Refusal. Latitude: N 44.393977272, Longitude: W 68.982084051					<span style="border: 1px solid black; border-radius: 50%; padding: 2px;">4.0"</span>	.50 gal/ft	
					Liner Type: <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Soft</span> Hard		
					Vibracorer: <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">P3</span> P5 VT6 Other		
Live Organisms Present		N					
Oil Present		N				Pushcorer Slambar	
Odor Present		N					
Debris Present		N				Eckman Ponar: Standard / Petite	
Within 10% of Req'd Core Length		N					
Photo		Y	N			Box Core	
MLW #td ver 030615							



# AQUA SURVEY, INC.

## SEDIMENT CORE LOG

Client : Nordic Aquafarms, Inc.		Project : Belfast, ME		Logger: WR	
Job#: 40-126	Date: 7/22/20	Time: 1245	Crew: AF		
Coordinates:	N 265512.0	E 858641.5	Vessel: Prattis		
Core # : NAE8	Zone: GEO	Datum NAD 83	Deploy:	1	2 3
Project Depth [PD] [ft] MLLW:		Core Penetration Length (ft.):		10.0	
Measured Water Depth [MWD] [ft.]: 28.1		Recovered Core Length (ft.):		8.0	
Tide Adjust [TA] (+/- ft. from MLLW) [ft.]: 10.5		Sample Length Retained (ft.):		8.0	
Corrected Depth @ MLLW [ft.]: 17.6		Core Volume Retained (gal.):		1.0	
			Collected to Project Depth: <input checked="" type="radio"/> Y <input type="radio"/> N		
Required Sample Core Length [SCL] [ft.]:					
<b>All Length Measurements are in Decimal Feet</b>					
Sample Interval (ft.)	Sample Id #	Description			
Top 0.0	20200430	Gray silt w/ trace clay/sand			
0.6					
2.1		Gray clay w/ some silt/sand			
2.2		Organic debris layer			
8.0		Gray clay w/ trace sand/silt, organic debris & shell fragments throughout			
Bottom		20200430A - Surface - 0 - 0.6' 20200430B - Transition - 0.6' - 4.2' 20200430C - Bottom - 4.2' - 8.0'			
# of containers:		3 (500 ml)	3 (4 oz)	Core Volumes	
Type of container:	bucket	hardliner	cup	glass	Nominal core-barrel diameter
Conditions: Cloudy/light breeze				3.0"	EST. Volume
				3.5" 8.0"	.25 gal/ft
Comments: Latitude: N 44.394071124, Longitude: W 68.980578906				4.0"	.33 gal/ft
				Liner Type: <input checked="" type="radio"/> Soft <input type="radio"/> Hard	.50 gal/ft
				Vibracorer: <input checked="" type="radio"/> P3 <input type="radio"/> P5 VT6 Other	
Live Organisms Present	N	Pushcorer			
Oil Present	N	Slambar			
Odor Present	Y	Eckman			
Debris Present	N	Ponar: Standard / Petite			
Within 10% of Req'd Core Length	Y	Box Core			
Photo	Y				
MLW #td ver 030615					



# AQUA SURVEY, INC.

## SEDIMENT CORE LOG

Client : Nordic Aquafarms, Inc.		Project : Belfast, ME			Logger: WR			
Job#: 40-126		Date: 7/22/20	Time: 1024	Crew: AF				
Coordinates:		N 265531.1	E 859041.7	Vessel: Prattis				
Core # : NAE9	Zone: GEO	Datum NAD 83		Deploy:	1	2	3	
Project Depth [PD] [ft] MLLW:			Core Penetration Length (ft.):			10.0	5.0	5.0
Measured Water Depth [MWD] [ft.]: 31.1			Recovered Core Length (ft.):			8.7	3.9	3.7
Tide Adjust [TA] (+/- ft. from MLLW) [ft.]: 6.7			Sample Length Retained (ft.):			8.7	1.0	1.0
Corrected Depth @ MLLW [ft.]: 24.4			Core Volume Retained (gal.):			4.4	0.5	0.5
					Collected to Project Depth: <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Y</span> N			
Required Sample Core Length [SCL] [ft.]:								
<b>All Length Measurements are in Decimal Feet</b>								
Sample Interval (ft.)		Sample Id #		Description				
Top 0.0		20200431		Dark gray silt w/ sand/clay				
1.0								
8.7				Gray clay w/ silt/sand, firmer w/depth, shell fragments throughout				
				20200431A - Surface - 0 - 1.0'				
				20200431B - Transition - 1.0' - 5.0'				
				20200431C - Bottom - 5.0' - 8.7'				
↓ Bottom								
# of containers:	2 (2 gal)		3 (1L)	3 (1L)	Core Volumes			
Type of container:	bucket	hardliner	cup	glass	Nominal core-barrel diameter	EST. Volume		
Conditions: Partly sunny/calm					3.0"	.25 gal/ft		
					3.5"	8.0"	.33 gal/ft	
Comments: 8 deployments total for volume Latitude: N 44.394129951, Longitude: W 68.979048219					<span style="border: 1px solid black; border-radius: 50%; padding: 2px;">4.0</span>	.50 gal/ft		
					Liner Type: <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Soft</span> Hard			
					Vibracorer: <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">P3</span> P5 VT6 Other			
Live Organisms Present		N		Pushcorer		Slambar		
Oil Present		N						
Odor Present		Y						
Debris Present		N		Eckman		Ponar: Standard / Petite		
Within 10% of Req'd Core Length		Y						
Photo		Y		Box Core				
MLW #td ver 030615								





# AQUA SURVEY, INC.

## SEDIMENT CORE LOG

Client : Nordic Aquafarms, Inc.		Project : Belfast, ME			Logger: WR		
Job#: 40-126	Date: 7/22/20	Time: 0906	Crew: AF				
Coordinates:	N 265590.7	E 859841.6	Vessel: Prattis				
Core # : NAE11	Zone: GEO	Datum NAD 83	Deploy:		1	2	3
Project Depth [PD] [ft] MLLW:			Core Penetration Length (ft.):		10.0		
Measured Water Depth [MWD] [ft.]: 34.6			Recovered Core Length (ft.):		8.0		
Tide Adjust [TA] (+/- ft. from MLLW) [ft.]: 2.4			Sample Length Retained (ft.):		8.0		
Corrected Depth @ MLLW [ft.]: 32.2			Core Volume Retained (gal.):		1.0		
					Collected to Project Depth: <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Y</span> N		
Required Sample Core Length [SCL] [ft.]:							
All Length Measurements are in Decimal Feet							
Sample Interval (ft.)		Sample Id #		Description			
Top	0.0	20200433		Dark gray silt w/ fine sand/clay			
↓	1.0						
↓	8.0			Gray clay w/ silt/sand, firmer w/ depth, shell fragments throughout 0 - 8.0'			
↓				20200433A - Surface - 0 - 1.0' 20200433B - Transition - 1.0' - 4.5' 20200433C - Bottom - 4.5' - 8.0'			
↓							
↓							
↓							
↓							
↓							
Bottom							
# of containers:		3 (500ml)		3 (4 oz)		Core Volumes	
Type of container:		bucket	hardliner	cup	glass	Nominal core-barrel diameter EST. Volume	
Conditions: Sunny, calm						3.0"	.25 gal/ft
Comments: Latitude: N 44.394306238, Longitude: W 68.975989224						3.5" 8.0"	.33 gal/ft
						<span style="border: 1px solid black; border-radius: 50%; padding: 2px;">4.0"</span>	.50 gal/ft
						Liner Type: <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Soft</span> Hard	
				Vibracorer: <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">P3</span> P5 VT6 Other			
Live Organisms Present		N		Pushcorer		Slambar	
Oil Present		N					
Odor Present		N		Eckman		Ponar: Standard / Petite	
Debris Present		N					
Within 10% of Req'd Core Length		Y		Box Core			
Photo		Y					
MLW #td ver 030615							

**Appendix B**  
**Photographs**



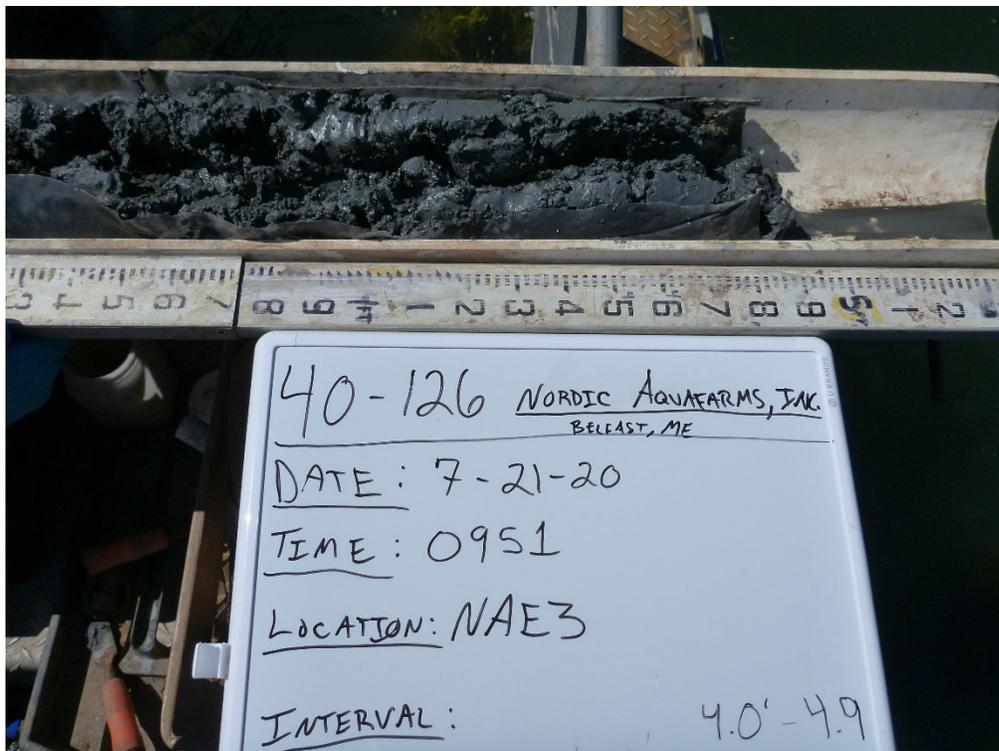
Core NAE2, 0 – 1.7', 7/21/20, ASI ID # 20200424



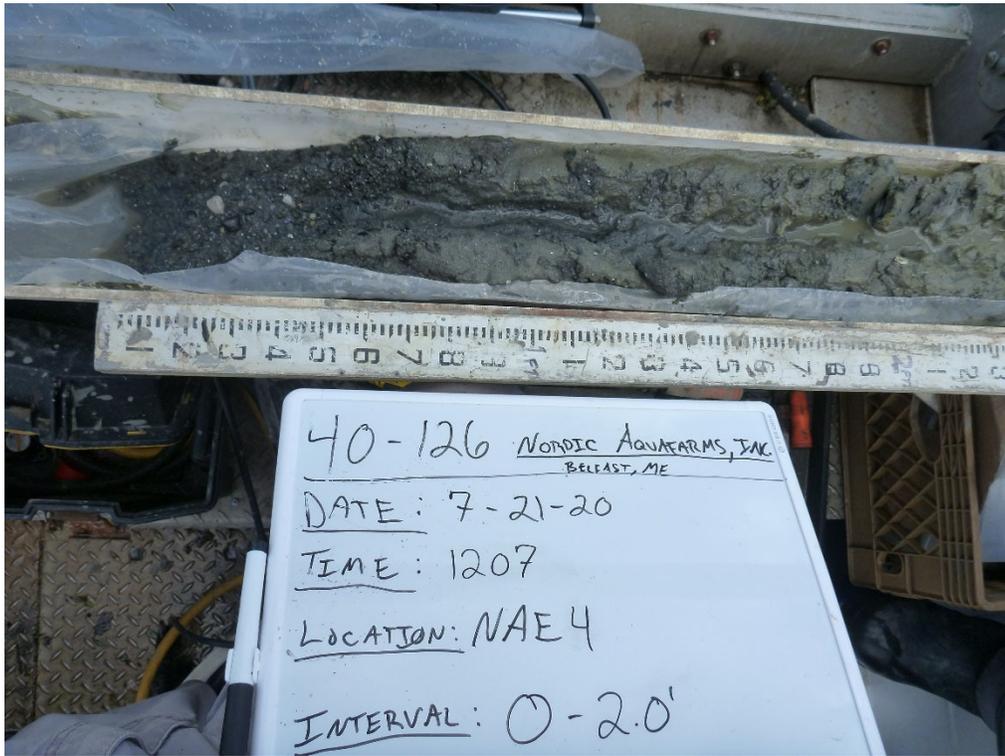
Core NAE3, 0 – 2.0', 7/21/20, ASI ID #20200425



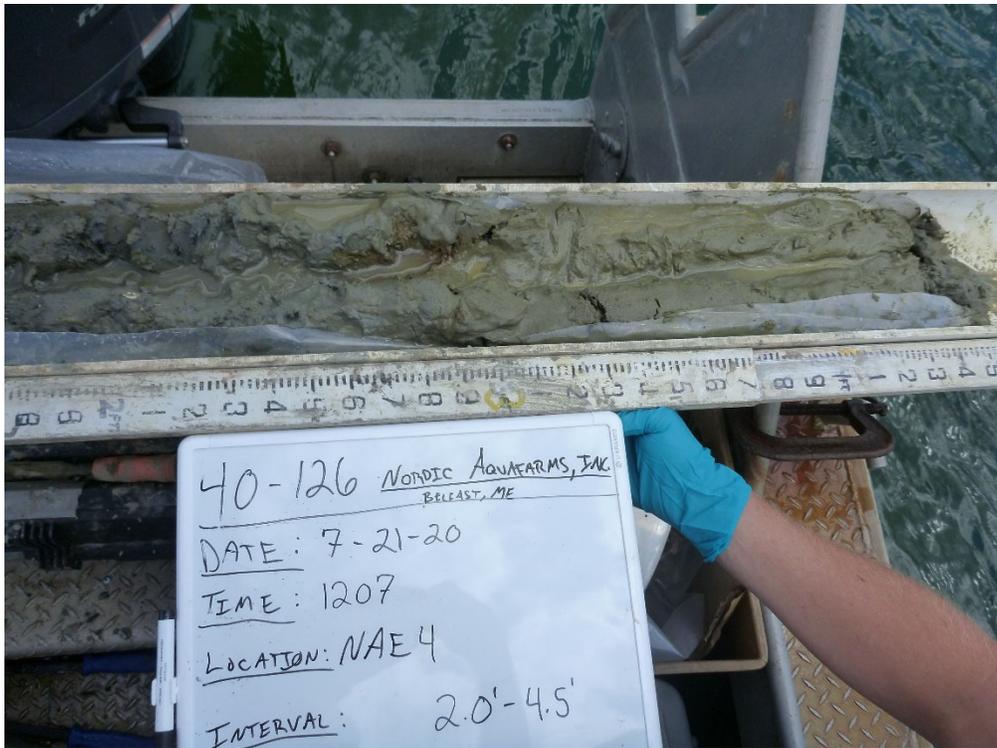
Core NAE3, 2.0' – 4.0', 7/21/20, ASI ID # 20200425



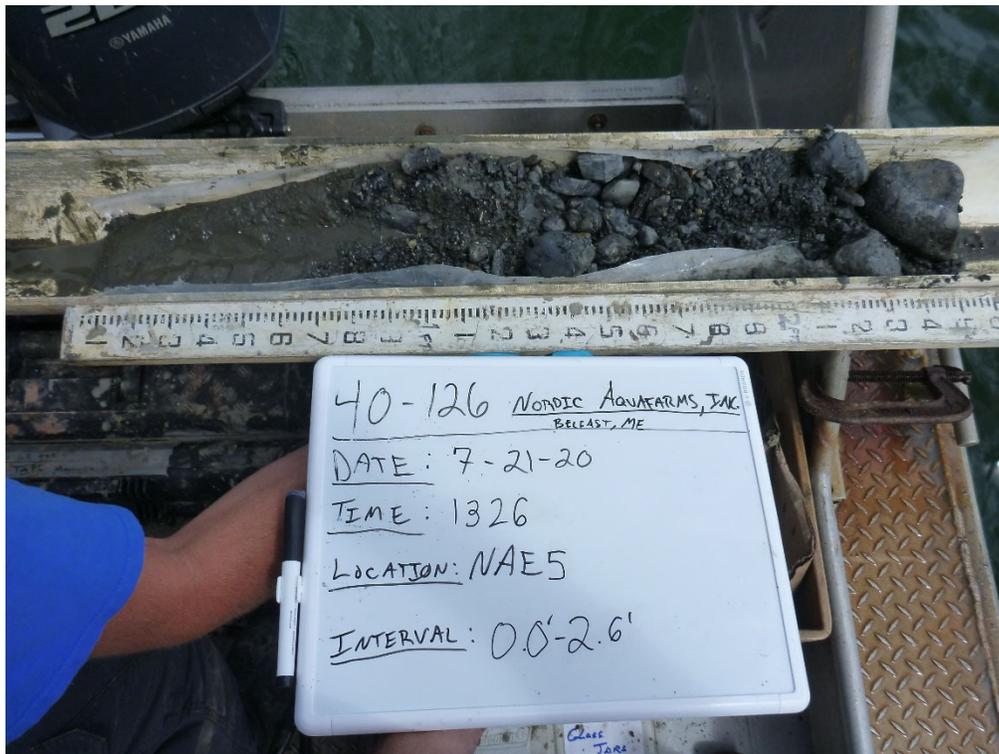
Core NAE3, 4.0' – 4.9', 7/21/20, ASI ID # 20200425



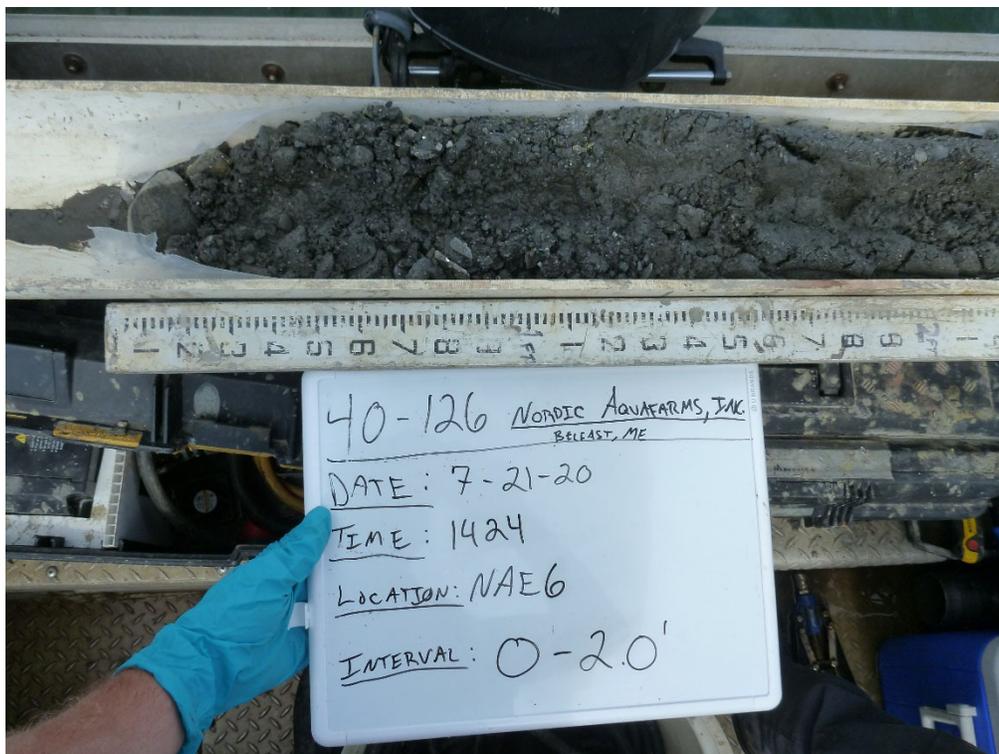
Core NAE4, 0 – 2.0', 7/21/20, ASI ID # 20200426



Core NAE4, 2.0' – 4.5', 7/21/20, ASI ID # 20200426



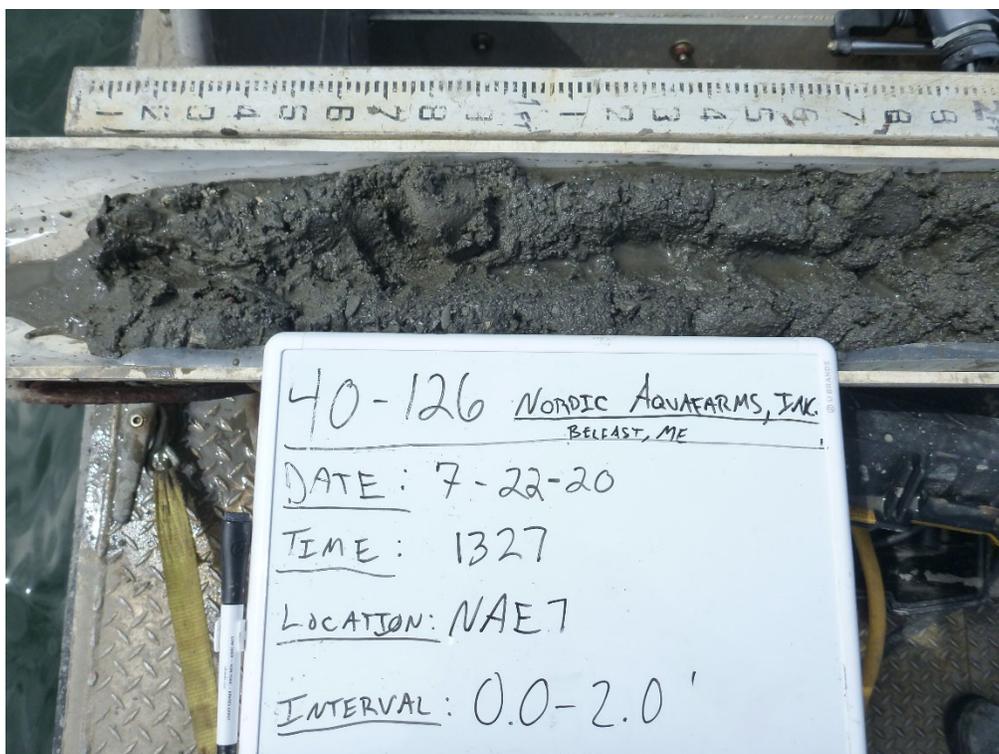
Core NAE5, 0 – 2.6', 7/21/20, ASI ID # 20200427



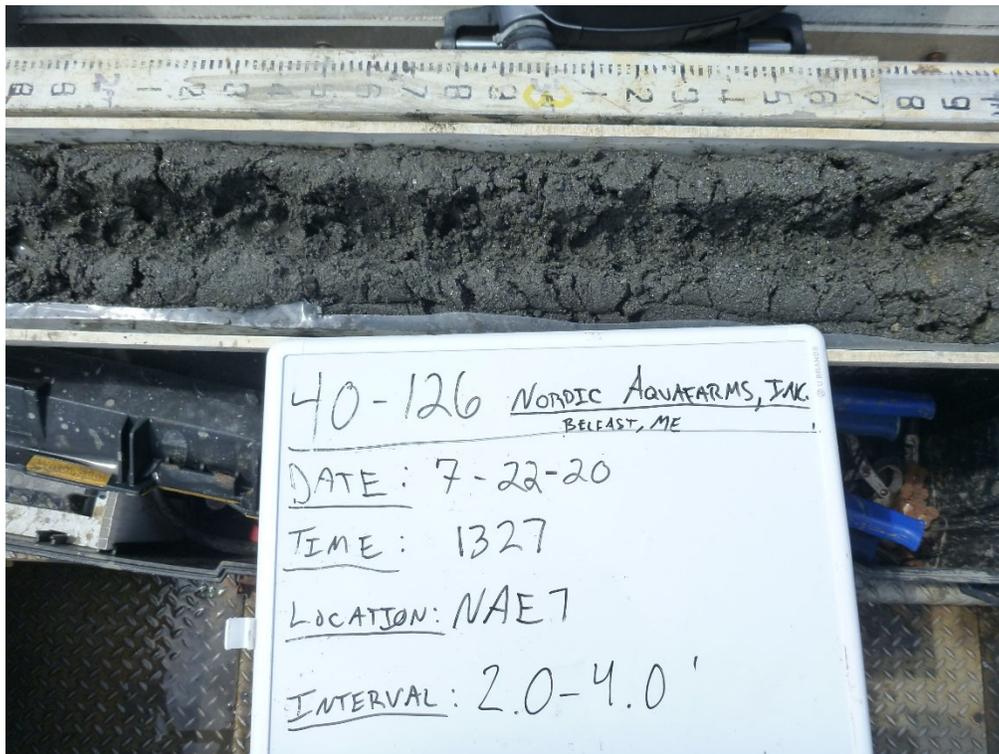
Core NAE6, 0– 2.0', 7/21/20, ASI ID # 20200428



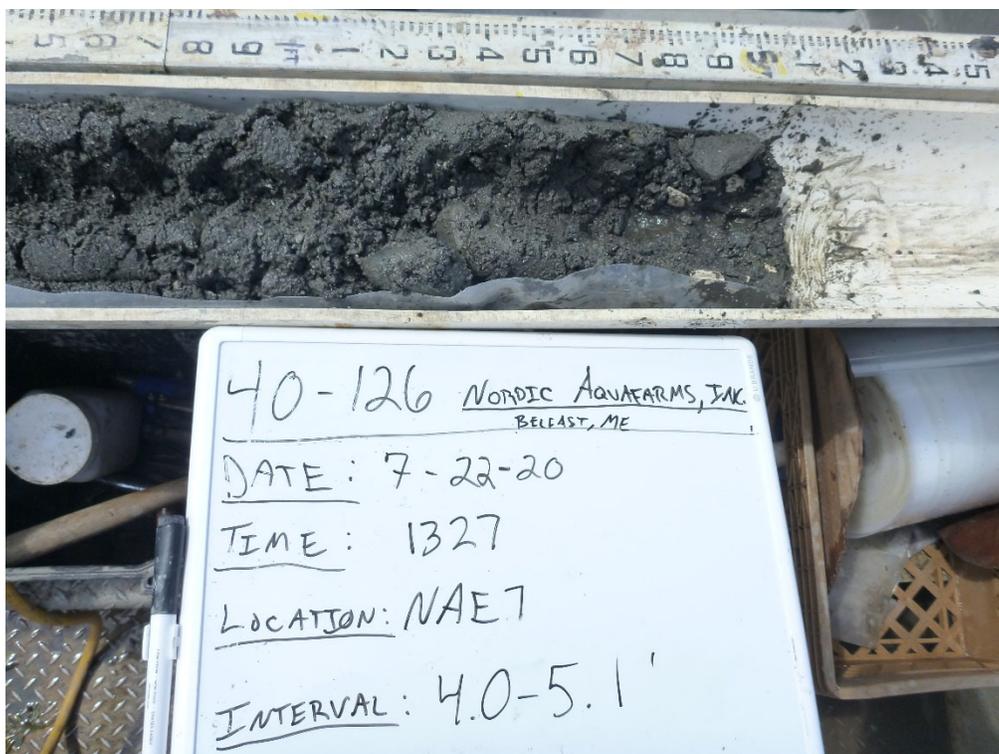
Core NAE6, 2.0' – 4.6', 7/21/20, ASI ID # 20200428



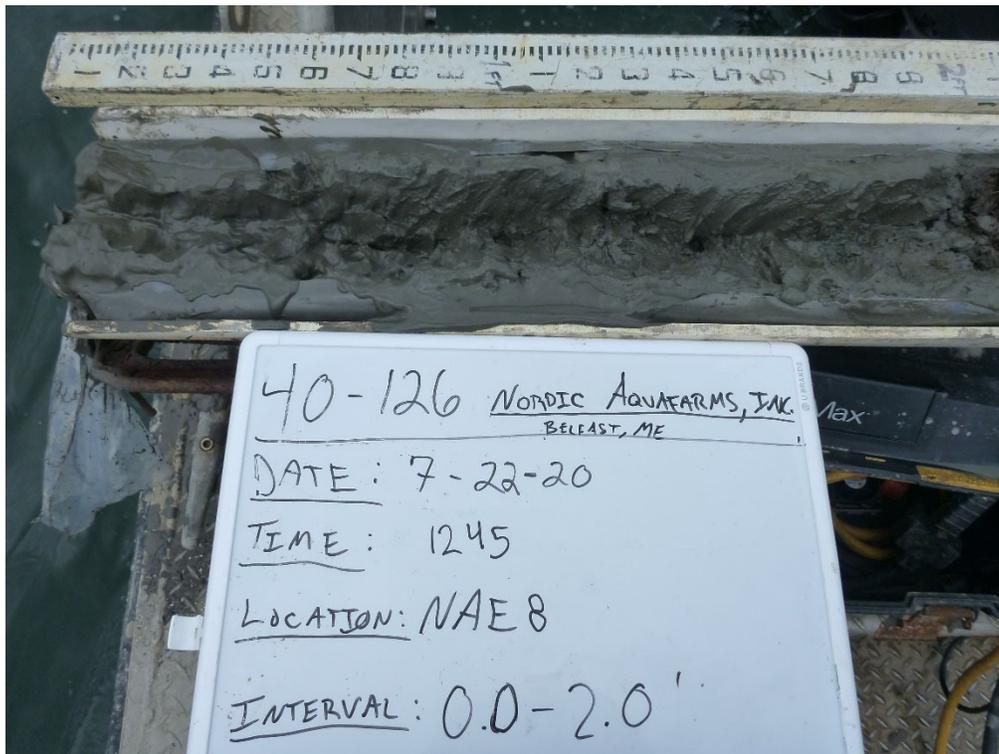
Core NAE7, 0 – 2.0', 7/22/20, ASI ID # 20200429



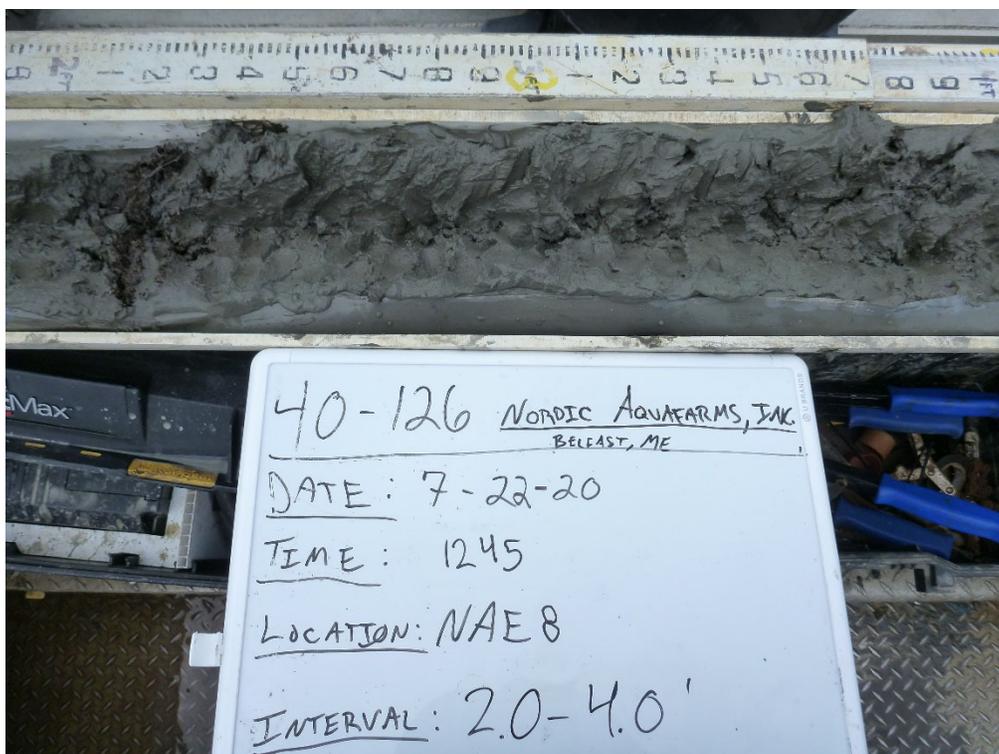
Core NAE7, 2.0' – 4.0', 7/22/20, ASI ID # 20200429



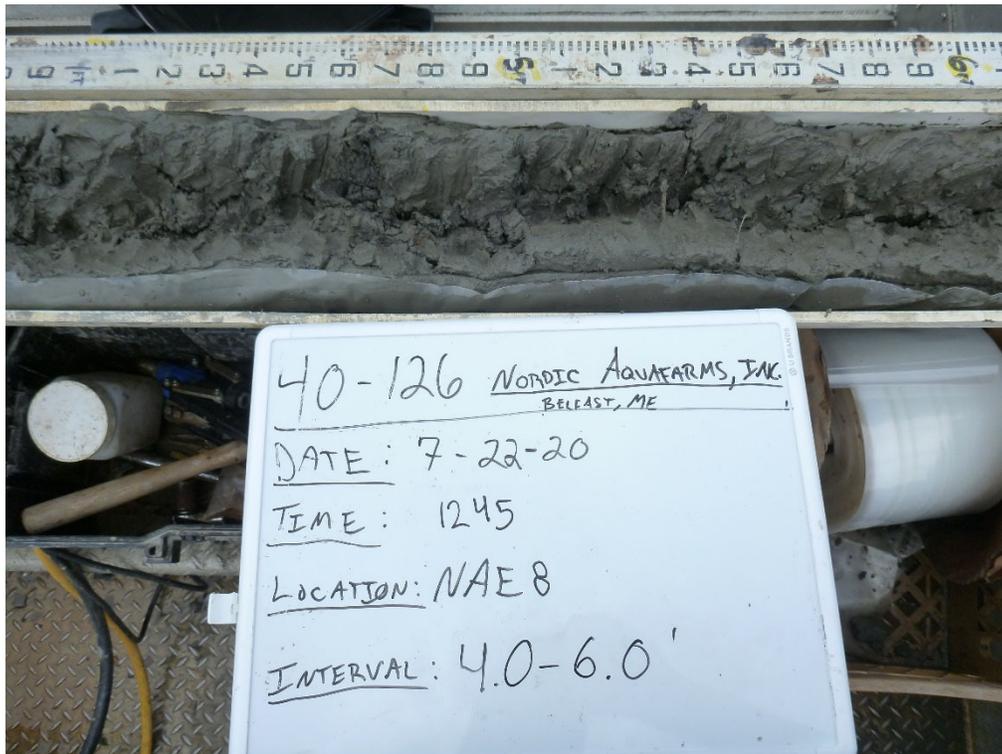
Core NAE7, 4.0' – 5.1', 7/22/20, ASI ID # 20200429



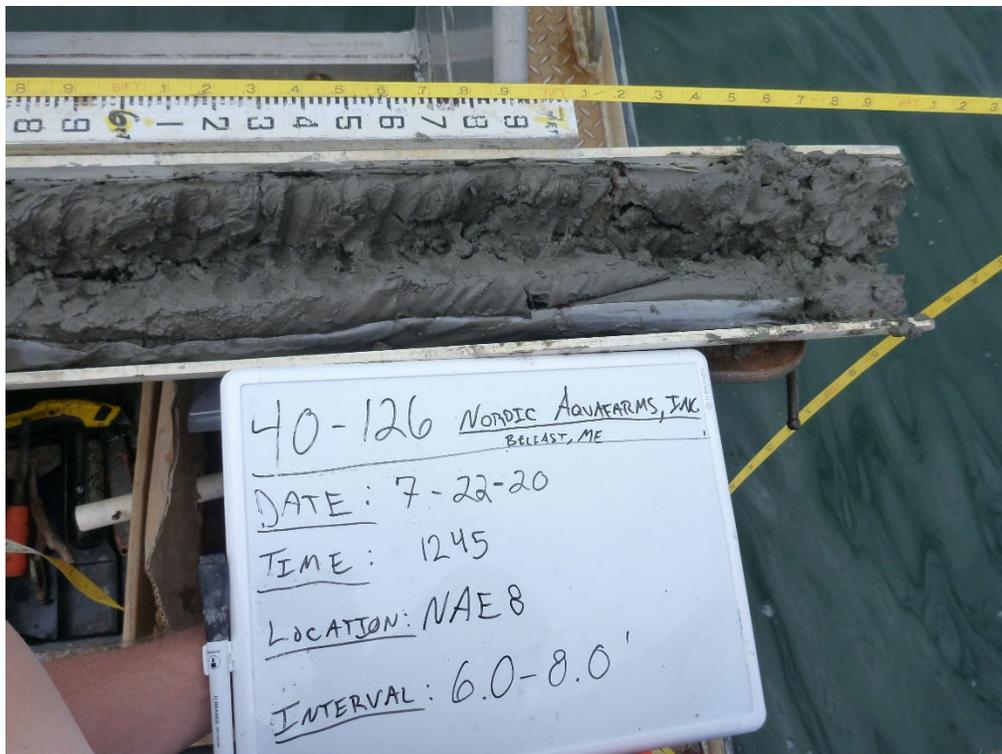
Core NAE8, 0 – 2.0', 7/22/20, ASI ID # 20200430



Core NAE8, 2.0' – 4.0', 7/22/20, ASI ID # 20200430



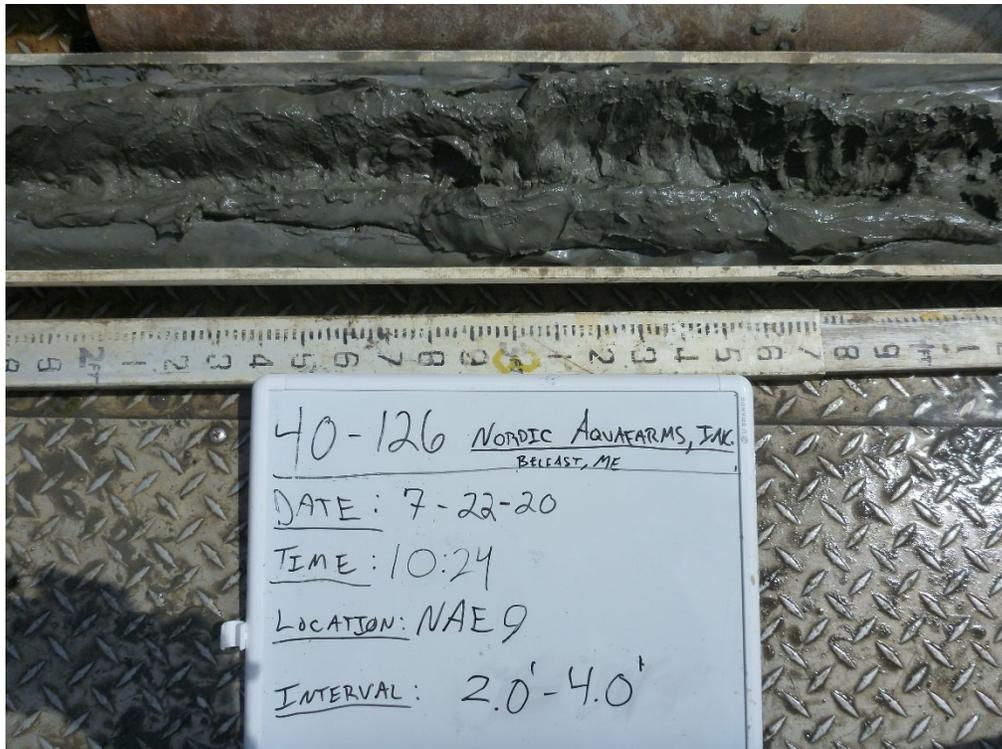
Core NAE8, 4.0' – 6.0', 7/22/20, ASI ID # 20200430



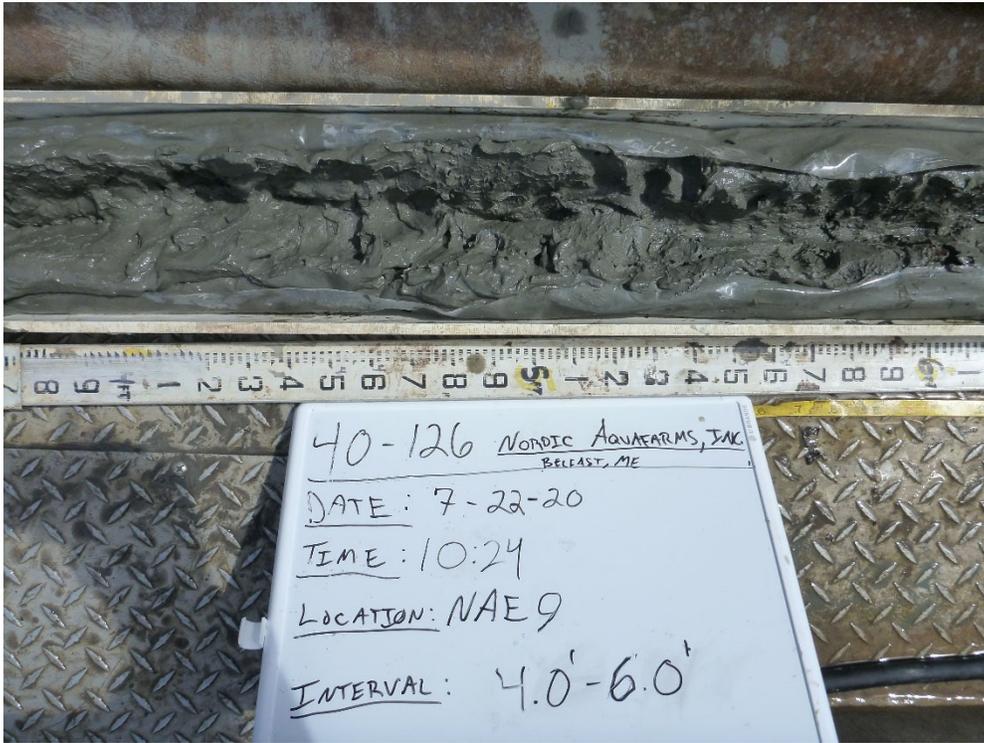
Core NAE8, 6.0' – 8.0', 7/22/20, ASI ID # 20200430



Core NAE9, 0 – 2.0', 7/22/20, ASI ID # 20200431



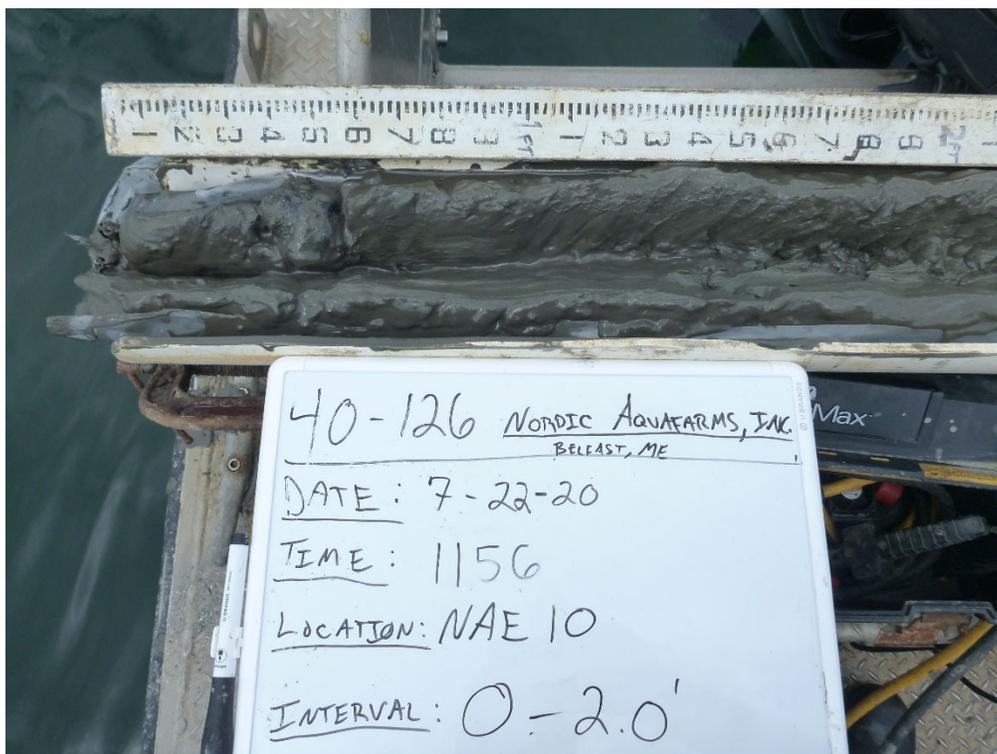
Core NAE9, 2.0' – 4.0', 7/22/20 ASI ID # 20200431



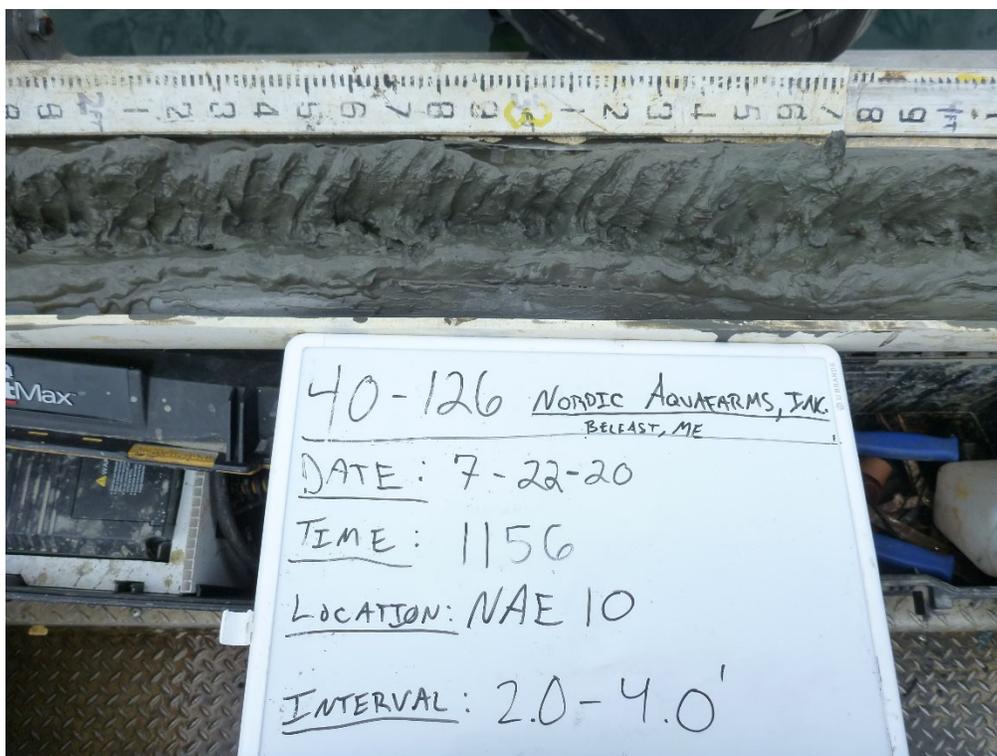
Core NAE9, 4.0' – 6.0', 7/22/20, ASI ID # 20200431



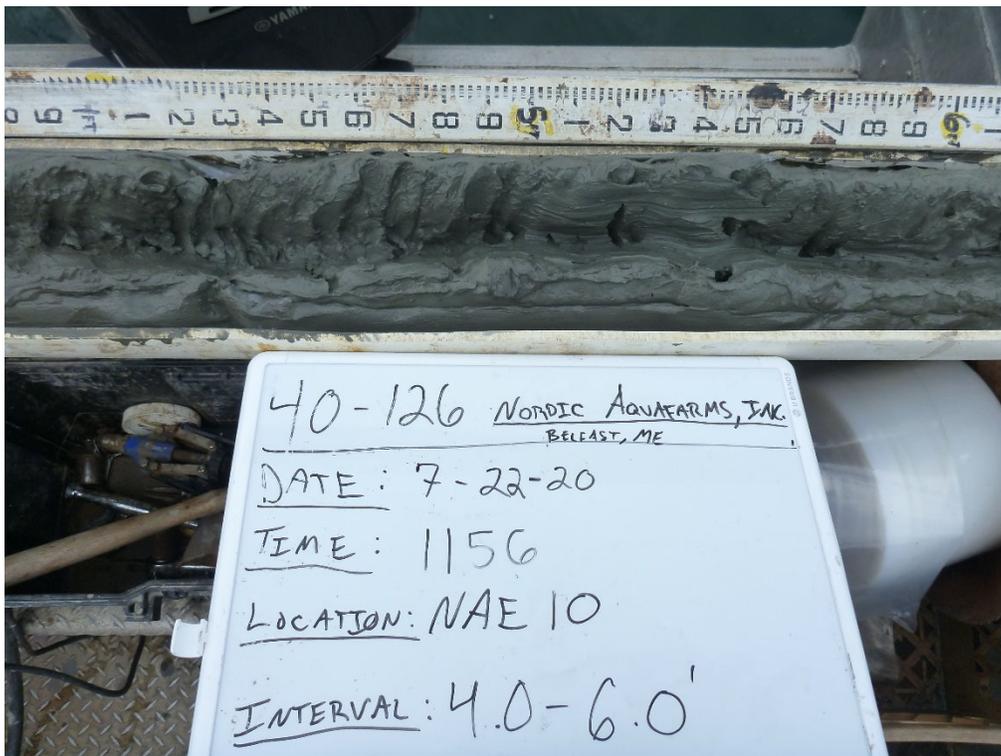
Core NAE9, 6.0' – 8.7', 7/22/20 ASI ID # 20200431



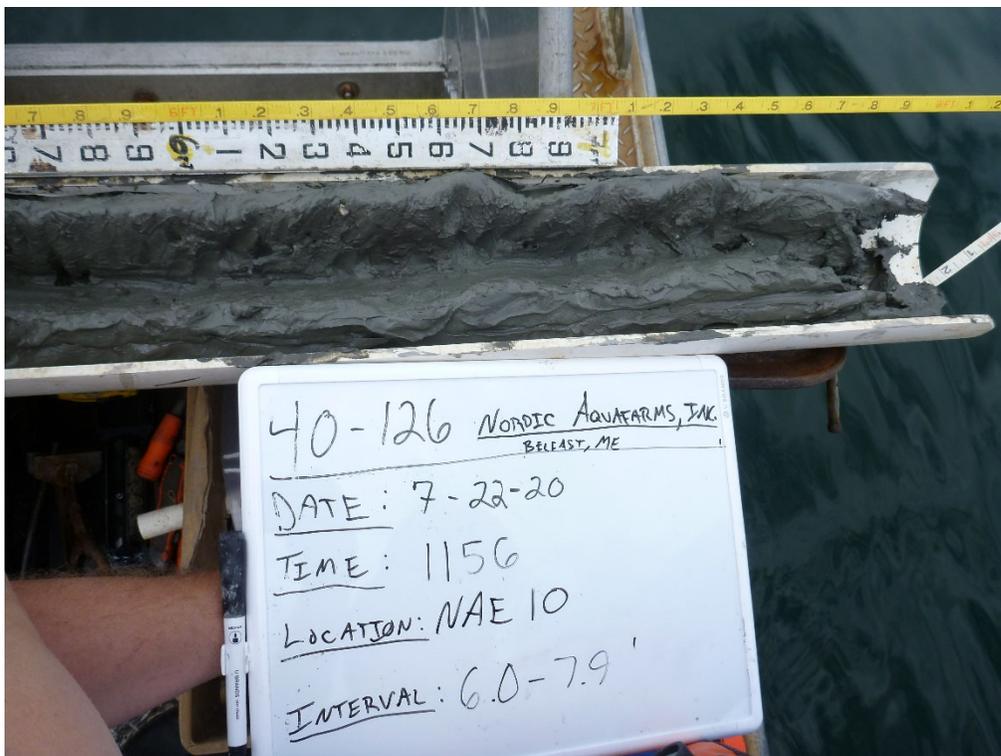
Core NAE10, 0 – 2.0', 7/22/20, ASI ID # 20200432



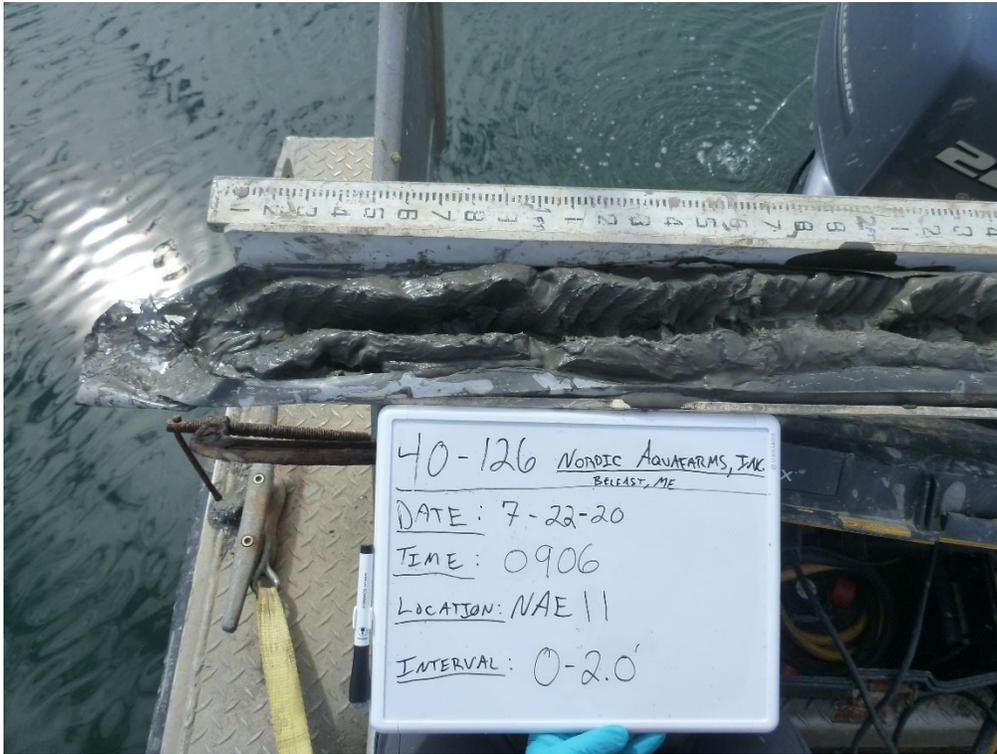
Core NAE10, 2.0' – 4.0', 7/22/20, ASI ID # 20200432



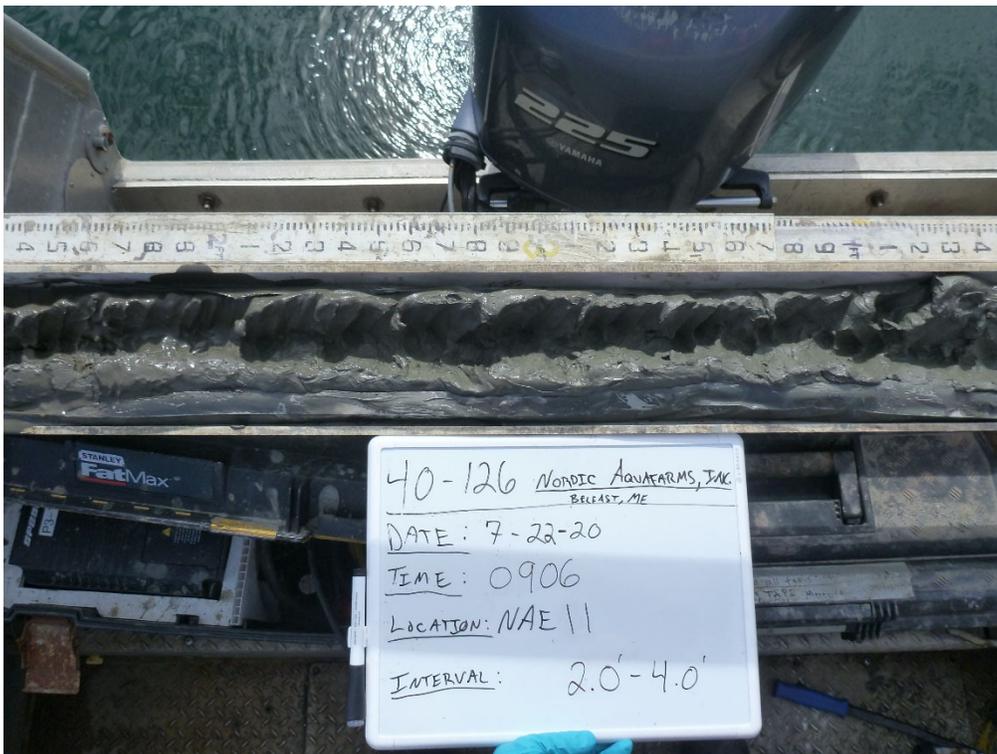
Core NAE10, 4.0' – 6.0', 7/22/20, ASI ID # 20200432



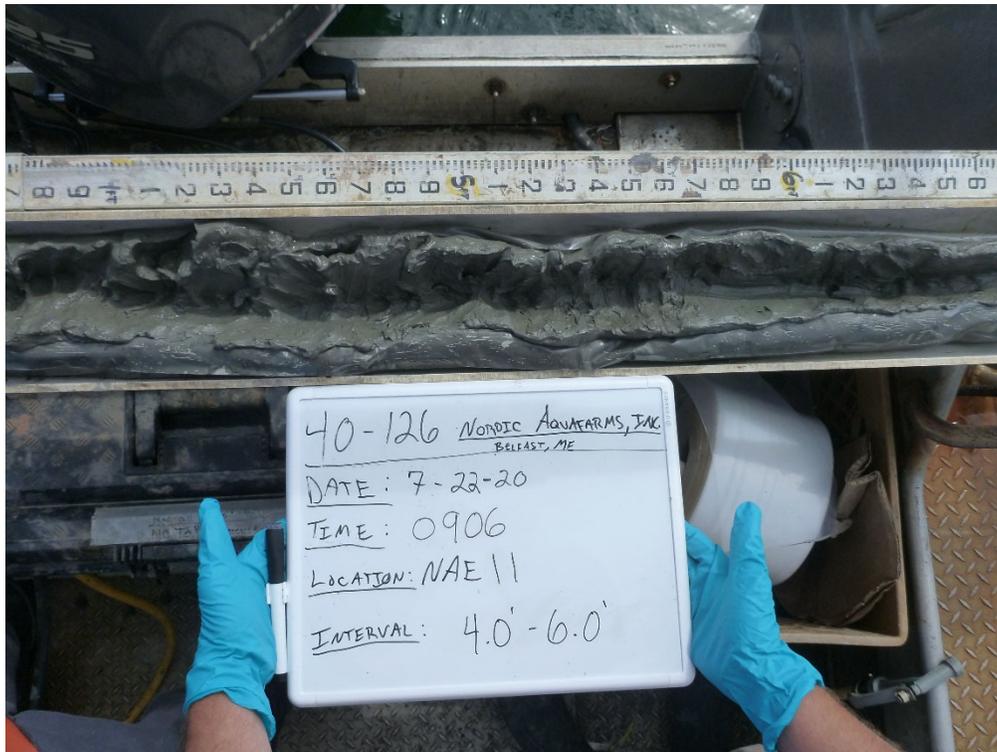
Core NAE10, 6.0' – 7.9', 7/22/20, ASI ID # 20200432



Core NAE11, 0 – 2.0', 7/22/20, ASI ID # 20200433



Core NAE11, 2.0' – 4.0', 7/22/20, ASI ID # 20200433



Core NAE11, 4.0' – 6.0', 7/22/20, ASI ID # 20200433



Core NAE11, 6.0' – 8.0', 7/22/20, ASI ID # 20200433

**Appendix C**  
**Chains of Custody**



# CHAIN OF CUSTODY RECORD

469 POINT BREEZE ROAD  
FLEMINGTON, NJ 08822  
(908) 788-8700 OFFICE  
(908) 788-9165 FAX

AQUA SURVEY, INC.

www.aquasurvey.com

CLIENT: <i>Nordic Aquafarms, INC.</i>						METHOD OF SHIPMENT: <i>AUTO</i>							
PROJECT/SITE NAME: <i>40-126 Belfast, ME</i>						TO: <i>Flemington, NJ</i>							
ASI JOB NUMBER: <i>40-126</i>						FROM: <i>Belfast, ME</i>							
SAMPLING & ANALYSIS AUTHORIZED BY:										DATE: <i>7-21-20</i>		SEE	
SAMPLE NUMBER	SAMPLING LOCATION AND DESCRIPTION	DATE	TIME	SAMPLE TYPE				NO. CNT.	ANALYSES REQUIRED *	WORK ORD.			
				SED	WTR	COM	GRB						
<i>20200424A</i>	<i>NAE2A</i>	<i>7-21-20</i>	<i>1113</i>	<i>X</i>			<i>X</i>	<i>1</i>					
<i>20200424B</i>	<i>NAE2B</i>	<i>7-21-20</i>	<i>1113</i>	<i>X</i>			<i>X</i>	<i>1</i>					
<i>20200424C</i>	<i>NAE2C</i>	<i>7-21-20</i>	<i>1113</i>	<i>X</i>			<i>X</i>	<i>1</i>					
<i>20200425A</i>	<i>NAE3A</i>	<i>7-21-20</i>	<i>0951</i>	<i>X</i>			<i>X</i>	<i>1</i>					
<i>20200425B</i>	<i>NAE3B</i>	<i>7-21-20</i>	<i>0951</i>	<i>X</i>			<i>X</i>	<i>1</i>					
<i>20200425C</i>	<i>NAE3C</i>	<i>7-21-20</i>	<i>0951</i>	<i>X</i>			<i>X</i>	<i>1</i>					
<i>20200426A</i>	<i>NAE4A</i>	<i>7-21-20</i>	<i>1207</i>	<i>X</i>			<i>X</i>	<i>1</i>					
<i>20200426B</i>	<i>NAE4B</i>	<i>7-21-20</i>	<i>1207</i>	<i>X</i>			<i>X</i>	<i>1</i>					
<i>20200426C</i>	<i>NAE4C</i>	<i>7-21-20</i>	<i>1207</i>	<i>X</i>			<i>X</i>	<i>1</i>					
SAMPLE COLLECTED BY: <i>ASI</i>						EXACT SAMPLING LOCATION: <i>please see core logs for coordinates</i>							
SAMPLE RELINQUISHED BY: <i>[Signature]</i>						DATE: <i>7-23-20</i>		TIME: <i>2045</i>		SAMPLE RECEIVED BY: <i>[Signature]</i>		DATE: <i>7/24/20</i>	TIME: <i>0800</i>
SAMPLE RELINQUISHED BY:										SAMPLE RECEIVED BY:		DATE:	TIME:
SAMPLE RELINQUISHED BY:										SAMPLE RECEIVED BY:		DATE:	TIME:
SPECIAL INSTRUCTIONS:													

\* Attach Separate Sheet If Necessary

102412



# CHAIN OF CUSTODY RECORD

469 POINT BREEZE ROAD  
FLEMINGTON, NJ 08822  
(908) 788-8700 OFFICE  
(908) 788-9165 FAX

AQUA SURVEY, INC.

www.aquasurvey.com

CLIENT: <i>Nordic Aqua Farms, INC.</i>						METHOD OF SHIPMENT: <i>AUTO</i>							
PROJECT/SITE NAME: <i>40-126 Belfast, ME</i>						TO: <i>Flemington, NJ</i>							
ASI JOB NUMBER: <i>40-126</i>						FROM: <i>Belfast, ME</i>							
SAMPLING & ANALYSIS AUTHORIZED BY:										DATE: <i>7-21-20</i>		SEE	
SAMPLE NUMBER	SAMPLING LOCATION AND DESCRIPTION	DATE	TIME	SAMPLE TYPE				NO. CNT.	ANALYSES REQUIRED *	WORK ORD.			
				SED	WTR	COM	GRB						
<i>20200427A</i>	<i>NAE 5 A</i>	<i>7-21-20</i>	<i>1326</i>	<i>X</i>			<i>X</i>	<i>1</i>					
<i>20200427B</i>	<i>NAE 5 B</i>	<i>7-21-20</i>	<i>1326</i>	<i>X</i>			<i>X</i>	<i>1</i>					
<i>20200427C</i>	<i>NAE 5 C</i>	<i>7-21-20</i>	<i>1326</i>	<i>X</i>			<i>X</i>	<i>1</i>					
<i>20200428A</i>	<i>NAE 6 A</i>	<i>7-21-20</i>	<i>1424</i>	<i>X</i>			<i>X</i>	<i>1</i>					
<i>20200428B</i>	<i>NAE 6 B</i>	<i>7-21-20</i>	<i>1424</i>	<i>X</i>			<i>X</i>	<i>1</i>					
<i>20200428C</i>	<i>NAE 6 C</i>	<i>7-21-20</i>	<i>1424</i>	<i>X</i>			<i>X</i>	<i>1</i>					
SAMPLE COLLECTED BY: <i>ASI</i>						DATE		TIME		EXACT SAMPLING LOCATION: <i>please see core logs for coordinates</i>			
SAMPLE RELINQUISHED BY: <i>[Signature]</i>						<i>7-23-20</i>		<i>2045</i>		SAMPLE RECEIVED BY: <i>[Signature]</i>		DATE	TIME
SAMPLE RELINQUISHED BY:										SAMPLE RECEIVED BY:		DATE	TIME
SAMPLE RELINQUISHED BY:										SAMPLE RECEIVED BY:		DATE	TIME
SPECIAL INSTRUCTIONS:													

\* Attach Separate Sheet If Necessary

102412



# CHAIN OF CUSTODY RECORD

469 POINT BREEZE ROAD  
 FLEMINGTON, NJ 08822  
 (908) 788-8700 OFFICE  
 (908) 788-9165 FAX

AQUA SURVEY, INC.

www.aquasurvey.com

CLIENT: <i>Nordic Aqua Farms, INC.</i>						METHOD OF SHIPMENT: <i>AUTO</i>					
PROJECT/SITE NAME: <i>40-126 Belfast, ME</i>						TO: <i>Flemington, NJ</i>					
ASI JOB NUMBER: <i>40-126</i>						FROM: <i>Belfast, ME</i>					
SAMPLING & ANALYSIS AUTHORIZED BY:										DATE: <i>7-22-20</i>	SEE WORK ORD.
SAMPLE NUMBER	SAMPLING LOCATION AND DESCRIPTION	DATE	TIME	SAMPLE TYPE				NO. CNT.	ANALYSES REQUIRED *		
				SED	WTR	COM	GRB				
<i>20200429A</i>	<i>NAE 7A</i>	<i>7-22-20</i>	<i>1327</i>	<i>X</i>			<i>X</i>	<i>1</i>			
<i>20200429B</i>	<i>NAE 7B</i>	<i>7-22-20</i>	<i>1327</i>	<i>X</i>			<i>X</i>	<i>1</i>			
<i>20200429C</i>	<i>NAE 7C</i>	<i>7-22-20</i>	<i>1327</i>	<i>X</i>			<i>X</i>	<i>1</i>			
<i>20200430A</i>	<i>NAE 8A</i>	<i>7-22-20</i>	<i>1245</i>	<i>X</i>			<i>X</i>	<i>1</i>			
<i>20200430B</i>	<i>NAE 8B</i>	<i>7-22-20</i>	<i>1245</i>	<i>X</i>			<i>X</i>	<i>1</i>			
<i>20200430C</i>	<i>NAE 8C</i>	<i>7-22-20</i>	<i>1245</i>	<i>X</i>			<i>X</i>	<i>1</i>			
<i>20200431A</i>	<i>NAE 9A</i>	<i>7-22-20</i>	<i>1024</i>	<i>X</i>			<i>X</i>	<i>1</i>			
<i>20200431B</i>	<i>NAE 9B</i>	<i>7-22-20</i>	<i>1024</i>	<i>X</i>			<i>X</i>	<i>1</i>			
<i>20200431C</i>	<i>NAE 9C</i>	<i>7-22-20</i>	<i>1024</i>	<i>X</i>			<i>X</i>	<i>1</i>			
SAMPLE COLLECTED BY: <i>ASI</i>				DATE	TIME	EXACT SAMPLING LOCATION: <i>Please see core logs for coordinates</i>					
SAMPLE RELINQUISHED BY: <i>[Signature]</i>				<i>7-23-20</i>	<i>2045</i>	SAMPLE RECEIVED BY: <i>[Signature]</i>			DATE	TIME	
SAMPLE RELINQUISHED BY:						SAMPLE RECEIVED BY:			DATE	TIME	
SAMPLE RELINQUISHED BY:						SAMPLE RECEIVED BY:			DATE	TIME	
SPECIAL INSTRUCTIONS:											

\* Attach Separate Sheet If Necessary

102412



# CHAIN OF CUSTODY RECORD

AQUA SURVEY, INC.

469 POINT BREEZE ROAD  
FLEMINGTON, NJ 08822  
(908) 788-8700 OFFICE  
(908) 788-9165 FAX

www.aquasurvey.com

CLIENT: <i>Nordic Aquafarms, INC.</i>						METHOD OF SHIPMENT: <i>AUTO</i>					
PROJECT/SITE NAME: <i>40-126 Belfast, ME</i>						TO: <i>Flemington, NJ</i>					
ASI JOB NUMBER: <i>40-126</i>						FROM: <i>Belfast, ME</i>					
SAMPLING & ANALYSIS AUTHORIZED BY:										DATE: <i>7-22-20</i>	SEE
SAMPLE NUMBER	SAMPLING LOCATION AND DESCRIPTION	DATE	TIME	SAMPLE TYPE				NO. CNT.	ANALYSES REQUIRED *	WORK ORD.	
				SED	WTR	COM	GRB				
<i>20200432A</i>	<i>NAE 10 A</i>	<i>7-22-20</i>	<i>1156</i>	<i>X</i>			<i>X</i>	<i>1</i>			
<i>20200432B</i>	<i>NAE 10 B</i>	<i>7-22-20</i>	<i>1156</i>	<i>X</i>			<i>X</i>	<i>1</i>			
<i>20200432C</i>	<i>NAE 10 C</i>	<i>7-22-20</i>	<i>1156</i>	<i>X</i>			<i>X</i>	<i>1</i>			
<i>20200433A</i>	<i>NAE 11 A</i>	<i>7-22-20</i>	<i>0906</i>	<i>X</i>			<i>X</i>	<i>1</i>			
<i>20200433B</i>	<i>NAE 11 B</i>	<i>7-22-20</i>	<i>0906</i>	<i>X</i>			<i>X</i>	<i>1</i>			
<i>20200433C</i>	<i>NAE 11 C</i>	<i>7-22-20</i>	<i>0906</i>	<i>X</i>			<i>X</i>	<i>1</i>			
SAMPLE COLLECTED BY: <i>ASI</i>						DATE	TIME	EXACT SAMPLING LOCATION: <i>please see core logs for coordinates</i>			
SAMPLE RELINQUISHED BY: <i>[Signature]</i>						<i>7-23-20</i>	<i>2045</i>	SAMPLE RECEIVED BY: <i>[Signature]</i>		DATE: <i>7/24/20</i>	TIME: <i>0800</i>
SAMPLE RELINQUISHED BY:								SAMPLE RECEIVED BY:		DATE:	TIME:
SAMPLE RELINQUISHED BY:								SAMPLE RECEIVED BY:		DATE:	TIME:
SPECIAL INSTRUCTIONS:											

\* Attach Separate Sheet If Necessary

**Appendix D**  
**Sample Use Forms**

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 2020 0424A Sample ID: NPE 2a

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input checked="" type="checkbox"/> Black <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy w/ some silt, shell, & gravel <input type="checkbox"/> Silty <input type="checkbox"/> Clayey <input type="checkbox"/> Other
--	---	--

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input checked="" type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
---	--

Total Sample Volume: ~500mL

Date/ Initials: 7/24/20 DJ

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/24/20</u>	<u>~400mL</u>		<u>GS/ %Moisture / TOC</u>	<u>DJ</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 20200424B Sample ID: NAE26

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input checked="" type="checkbox"/> Black <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy w/ some sand, shell, & gravel <input type="checkbox"/> Silty <input type="checkbox"/> Clayey <input type="checkbox"/> Other
--	---	--

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~500mL

Date/ Initials: 7/24/20 GA

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/24/20</u>	<u>~400mL</u>		<u>GS/ %Moisture / TOC</u>	<u>GA</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 20200424C Sample ID: NAEQC

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input checked="" type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy w/rocks & plant material <input type="checkbox"/> Silty <input type="checkbox"/> Clayey <input type="checkbox"/> Other
--	--	---

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~500mL Date/ Initials: 7/24/20 [initials]

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/24/20</u>	<u>~400ml</u>		<u>GS/ %Moisture / TOC</u>	<u>[initials]</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 2020 0425a Sample ID: NAE 3a

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy w/ gravel & shell fragments <input checked="" type="checkbox"/> Silty <input checked="" type="checkbox"/> Clayey <input type="checkbox"/> Other
--	--	--

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~1L

Date/ Initials: 7/24/20 JH

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/24/20</u>	<u>~500 mL</u>		<u>GS/ %Moisture / TOC</u>	<u>JH</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 2020 0425b Sample ID: NAE 36

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input type="checkbox"/> Sandy <input type="checkbox"/> Silty <input checked="" type="checkbox"/> Clayey w/ some sand & gravel <input type="checkbox"/> Other
--	--	--

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input type="checkbox"/> Spoon, <input checked="" type="checkbox"/> Other <u>hand</u>	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~750 mL

Date/ Initials: 7/24/20 DA

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/24/20</u>	<u>~500 mL</u>		<u>GS/ %Moisture / TOC</u>	<u>DA</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 20200425c Sample ID: NAE3C

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input type="checkbox"/> Sandy <input type="checkbox"/> Silty <input checked="" type="checkbox"/> Clayey w/ some sand & gravel & rocks <input type="checkbox"/> Other
--	--	--

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input checked="" type="checkbox"/> Other <u>hand</u>	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
---	--

Total Sample Volume: ~1L

Date/ Initials: 7/24/2009

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/24/20</u>	<u>~500ml</u>		<u>GS/ %Moisture / TOC</u>	<u>JS</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 20200426a Sample ID: NAE4a

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input checked="" type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy w/shell <input checked="" type="checkbox"/> Silty <input type="checkbox"/> Clayey <input type="checkbox"/> Other
--	---	---

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~500mL

Date/ Initials: 7/27/20 DM

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/27/20</u>	<u>~400mL</u>		<u>GS/ %Moisture / <del>TOC</del></u>	<u>DM</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 202004266 Sample ID: NAE46

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input checked="" type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy <u>w/wood &amp; some shell</u> <input type="checkbox"/> Silty <input checked="" type="checkbox"/> Clayey <input type="checkbox"/> Other
--	---	--

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input checked="" type="checkbox"/> Other <u>hand</u>	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
---	--

Total Sample Volume: ~500 mL

Date/ Initials: 7/27/20 DJ

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/27/20</u>	<u>~400 mL</u>		<u>GS/ %Moisture / <del>TOC</del></u>	<u>DJ</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 2020 0426c Sample ID: NAE4C

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input checked="" type="checkbox"/> Brown <input type="checkbox"/> Gray <input checked="" type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy w/ some rocks <input type="checkbox"/> Silty <input checked="" type="checkbox"/> Clayey <input type="checkbox"/> Other
--	---	---

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input checked="" type="checkbox"/> Other <u>hand</u>	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
---	--

Total Sample Volume: ~500mL

Date/ Initials: 7/27/20 MA

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/27/20</u>	<u>~400mL</u>		<u>GS/ %Moisture / <del>TOC</del></u>	<u>MA</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 20200427a Sample ID: NAE5a

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input checked="" type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input checked="" type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy <input checked="" type="checkbox"/> Silty <input type="checkbox"/> Clayey <input type="checkbox"/> Other
---	--	---

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~500mL

Date/ Initials: 7/24/2009 PJ

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/24/20</u>	<u>~400mL</u>		<u>GS/ %Moisture / TOC</u>	<u>PJ</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 2020 04276 Sample ID: NAE56

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input checked="" type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy w/shell & rocks <input checked="" type="checkbox"/> Silty <input type="checkbox"/> Clayey <input type="checkbox"/> Other
--	---	---

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~500mL

Date/ Initials: 7/24/20 MA

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/24/20</u>	<u>~400mL</u>		<u>GS/ %Moisture / <del>TOC</del></u>	<u>MA</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 20200427c Sample ID: NAESC

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input checked="" type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy w/gravel & some silt & shells <input type="checkbox"/> Silty <input type="checkbox"/> Clayey <input type="checkbox"/> Other
--	--	--

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~500 mL

Date/ Initials: 7/27/20 MD

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/27/20</u>	<u>~400 mL</u>		<u>GS/ %Moisture / TOC</u>	<u>MD</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 2020 0428a Sample ID: NAELea

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input checked="" type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy w/ some bigger rocks & gravel <input checked="" type="checkbox"/> Silty <input type="checkbox"/> Clayey <input type="checkbox"/> Other
--	---	---

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~1L

Date/ Initials: 7/27/2007

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/27/20</u>	<u>~500ml</u>		<u>GS/ %Moisture / TOC</u>	<u>MA</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 2020 04286 Sample ID: NAE66

SEDIMENT CHARACTERIZATION

Odor:  None  Slight  Moderate  Strong  Other  
Color:  Black  Brown  Gray  Olive  Other  
Consistency:  Sandy  Silty  Clayey  Other  
*w/ some rocks & shell & some wood*

HOMOGENIZATION/ COMPOSITING/ AMENDING

Method Used:  Drill,  Spoon,  Other  
Duration of Mixing:  ~2 mins,  ~3 mins,  ~5 mins,  Other

Total Sample Volume: ~1L

Date/ Initials: 7/27/20 *DD*

NOTES:

RECORD OF SAMPLE USE

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/27/20</u>	<u>~500mL</u>		<u>GS/ %Moisture / TOC</u>	<u><i>DD</i></u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 20200428C Sample ID: NAELC

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input checked="" type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy w/ some gravel <input checked="" type="checkbox"/> Silty <input type="checkbox"/> Clayey <input type="checkbox"/> Other
--	---	--

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~1L

Date/ Initials: 7/27/20 GAD

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/27/20</u>	<u>~500ml</u>	_____	<u>GS/ %Moisture / TOC</u>	<u>GAD</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 20200429a Sample ID: NAE7a

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input checked="" type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy <input checked="" type="checkbox"/> Silty w/shell <input type="checkbox"/> Clayey <input type="checkbox"/> Other
--	---	---

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~500 mL

Date/ Initials: 7/27/20 DJ

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/27 /20</u>	<u>~400mL</u>		<u>GS/ %Moisture / TOC</u>	<u>DJP</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 2020 04296 Sample ID: NAE7b

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input checked="" type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy w/shell <input checked="" type="checkbox"/> Silty <input type="checkbox"/> Clayey <input type="checkbox"/> Other
--	---	---

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~500mL

Date/ Initials: 7/27/20 *ADJ*

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/27/20</u>	<u>~400mL</u>		<u>GS/ %Moisture / <del>TOC</del></u>	<u><i>ADJ</i></u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 20200429c Sample ID: NAE7C

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input checked="" type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy w/ gravel & shell <input checked="" type="checkbox"/> Silty <input type="checkbox"/> Clayey <input type="checkbox"/> Other
--	--	---

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~500mL

Date/ Initials: 7/27/20 [initials]

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/27/20</u>	<u>~400mL</u>		<u>GS/ %Moisture / <del>TOC</del></u>	<u>[initials]</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 20200430a Sample ID: NAE8a

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input type="checkbox"/> None <input type="checkbox"/> Slight <input checked="" type="checkbox"/> Moderate <input checked="" type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input checked="" type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy w/ some shell <input checked="" type="checkbox"/> Silty <input type="checkbox"/> Clayey <input type="checkbox"/> Other
---	---	---

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~500mL

Date/ Initials: 7/27/20 [initials]

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/27/20</u>	<u>~400mL</u>		<u>GS/ %Moisture / TOC</u>	<u>[initials]</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 2020 04306 Sample ID: NAE86

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input type="checkbox"/> None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input checked="" type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy w/ plant material <input checked="" type="checkbox"/> Silty <input checked="" type="checkbox"/> Clayey <input type="checkbox"/> Other
--	---	--

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~500ml

Date/ Initials: 7/27/20 [initials]

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/27/20</u>	<u>~400ml</u>		<u>GS/ %Moisture / TOC</u>	<u>[initials]</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 20200430C Sample ID: NAE8C

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input type="checkbox"/> None <input type="checkbox"/> Slight <input checked="" type="checkbox"/> Moderate <input checked="" type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input checked="" type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy <u>w/ plant material</u> <input checked="" type="checkbox"/> Silty <input type="checkbox"/> Clayey <input type="checkbox"/> Other
---	---	--

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~500mL

Date/ Initials: 7/27/20 AD

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/27/20</u>	<u>~400mL</u>		<u>GS/ %Moisture / TOC</u>	<u>AD</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 2020 0431a Sample ID: NAE9a

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input type="checkbox"/> None <input checked="" type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input checked="" type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy <input checked="" type="checkbox"/> Silty <input checked="" type="checkbox"/> Clayey <input type="checkbox"/> Other
--	---	--

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~1L

Date/ Initials: 7/27/20 MA

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/27/20</u>	<u>~500mL</u>		<u>GS/ %Moisture / TOC</u>	<u>MA</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 2020 0431b Sample ID: NAE9b

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input type="checkbox"/> None <input type="checkbox"/> Slight <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input checked="" type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input type="checkbox"/> Sandy <input type="checkbox"/> Silty <input checked="" type="checkbox"/> Clayey w/ some sand, shell & a rock <input type="checkbox"/> Other
--	---	---

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~1L

Date/ Initials: 7/27/2009

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/27/20</u>	<u>~500ml</u>		<u>GS/ %Moisture / TOC</u>	<u>AM</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 2020 0431c Sample ID: NAE9c

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input type="checkbox"/> None <input type="checkbox"/> Slight <input checked="" type="checkbox"/> Moderate <input checked="" type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input checked="" type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy <input type="checkbox"/> Silty <input checked="" type="checkbox"/> Clayey <u>w/plant material</u> <input type="checkbox"/> Other
---	---	---

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~1L

Date/ Initials: 7/27/20 GA

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/27/20</u>	<u>~500 mL</u>		<u>GS/ %Moisture / TOC</u>	<u>GA</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 2020 0432a Sample ID: NAE10a

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input checked="" type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy <input checked="" type="checkbox"/> Silty <input type="checkbox"/> Clayey <input type="checkbox"/> Other
--	---	---

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~500 mL

Date/ Initials: 7/27/20 [initials]

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/27/20</u>	<u>~400 mL</u>		<u>GS/ %Moisture / TOC</u>	<u>[initials]</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 2020 0432b Sample ID: NAE10b

SEDIMENT CHARACTERIZATION

Odor:  None  Slight  Moderate  Strong  Other  
Color:  Black  Brown  Gray  Olive  Other  
Consistency:  Sandy  Silty  Clayey  Other

HOMOGENIZATION/ COMPOSITING/ AMENDING

Method Used:  Drill,  Spoon,  Other  
Duration of Mixing:  ~2 mins,  ~3 mins,  ~5 mins,  Other

Total Sample Volume: ~500 mL

Date/ Initials: 7/27/20 JH

NOTES:

RECORD OF SAMPLE USE

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/27/20</u>	<u>~400 mL</u>		<u>GS/ %Moisture /-TOC</u>	<u>JH</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 20200432c Sample ID: NAE10C

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input checked="" type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input checked="" type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input type="checkbox"/> Sandy <input type="checkbox"/> Silty <input checked="" type="checkbox"/> Clayey <u>w/ some sand</u> <input type="checkbox"/> Other
---	---	--

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~500 mL

Date/ Initials: 7/27/20 *MA*

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/27/20</u>	<u>~400 mL</u>		<u>GS/ %Moisture / <del>TOC</del></u>	<u><i>MA</i></u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 2020 0433a Sample ID: NAE 11a

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input checked="" type="checkbox"/> None <input checked="" type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input checked="" type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy <input checked="" type="checkbox"/> Silty <input type="checkbox"/> Clayey <input type="checkbox"/> Other
---	---	---

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~500mL

Date/ Initials: 7/29/20 PA

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/29/20</u>	<u>~400mL</u>	_____	<u>GS/ %Moisture / TOC</u>	<u>PA</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 2020 04336 Sample ID: NAE116

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input type="checkbox"/> None <input checked="" type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input checked="" type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input checked="" type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input checked="" type="checkbox"/> Sandy <input checked="" type="checkbox"/> Silty <input checked="" type="checkbox"/> Clayey <input type="checkbox"/> Other
--	--	--

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~500ml

Date/ Initials: 7/29/2007

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/29/20</u>	<u>~400ml</u>		<u>GS/ %Moisture / <del>TOC</del></u>	<u>[Signature]</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

AQUA SURVEY, INC.  
SPECIAL STUDIES DEPARTMENT

SAMPLE USE FORM

Job #: 40-126 Client: Nordic Aquafarms-Belfast, ME ASI #: 2020 0433c Sample ID: NAE11c

**SEDIMENT CHARACTERIZATION**

<b>Odor:</b> <input type="checkbox"/> None <input checked="" type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Other	<b>Color:</b> <input type="checkbox"/> Black <input checked="" type="checkbox"/> Brown <input checked="" type="checkbox"/> Gray <input type="checkbox"/> Olive <input type="checkbox"/> Other	<b>Consistency:</b> <input type="checkbox"/> Sandy <input type="checkbox"/> Silty <input checked="" type="checkbox"/> Clayey w/ some sand <input type="checkbox"/> Other
--	---	---

**HOMOGENIZATION/ COMPOSITING/ AMENDING**

<b>Method Used:</b> <input type="checkbox"/> Drill, <input checked="" type="checkbox"/> Spoon, <input type="checkbox"/> Other	<b>Duration of Mixing:</b> <input type="checkbox"/> ~2 mins, <input checked="" type="checkbox"/> ~3 mins, <input type="checkbox"/> ~5 mins <input type="checkbox"/> Other
--	--

Total Sample Volume: ~500ml Date/ Initials: 7/29/20 [initials]

**NOTES:**

**RECORD OF SAMPLE USE**

DATE	AMOUNT USED	AMOUNT REMAINING	USED FOR	INITIALS
<u>7/29/20</u>	<u>~400ml</u>		<u>GS/ %Moisture / TOC</u>	<u>[initials]</u>

TOC sample frozen to preserve hold time: \_\_\_\_\_  
(Date/Initials)

**Appendix E**

**Grain Size Distribution  
and  
Percent Moisture Raw Data**



**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

**Client:** Nordic Aquafarms

**Project:** Nordic Aquafarms Pipeline Corridor Dredging

**Project Number:** 40-126

**Location:** NAE2A

**Sample Number:** 20200424a

**Material Description:** Sediment

**Tested by:** M. Thomas

**Checked by:** C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
188.32	11.66	1	0.00	0.00	100.0
		#4	48.08	11.66	79.4
		#10	35.83	11.66	65.7
100.00	0.00	#40	167.28	123.98	37.3
		#200	170.26	131.58	11.8

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 65.7  
 Weight of hydrometer sample = 100.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 69.72  
 Dry weight and tare = 69.50  
 Tare weight = 2.44  
 Hygroscopic moisture = 0.3%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -6  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	15.0	9.3	0.0134	15.5	13.8	0.0352	6.1
5.00	21.4	13.0	7.3	0.0134	13.5	14.1	0.0225	4.8
15.00	21.4	12.0	6.3	0.0134	12.5	14.2	0.0131	4.1
30.00	21.2	11.0	5.2	0.0134	11.5	14.4	0.0093	3.4
60.00	21.3	11.0	5.2	0.0134	11.5	14.4	0.0066	3.5
250.00	21.0	9.0	3.2	0.0135	9.5	14.7	0.0033	2.1
1440.00	20.6	9.0	3.1	0.0135	9.5	14.7	0.0014	2.0

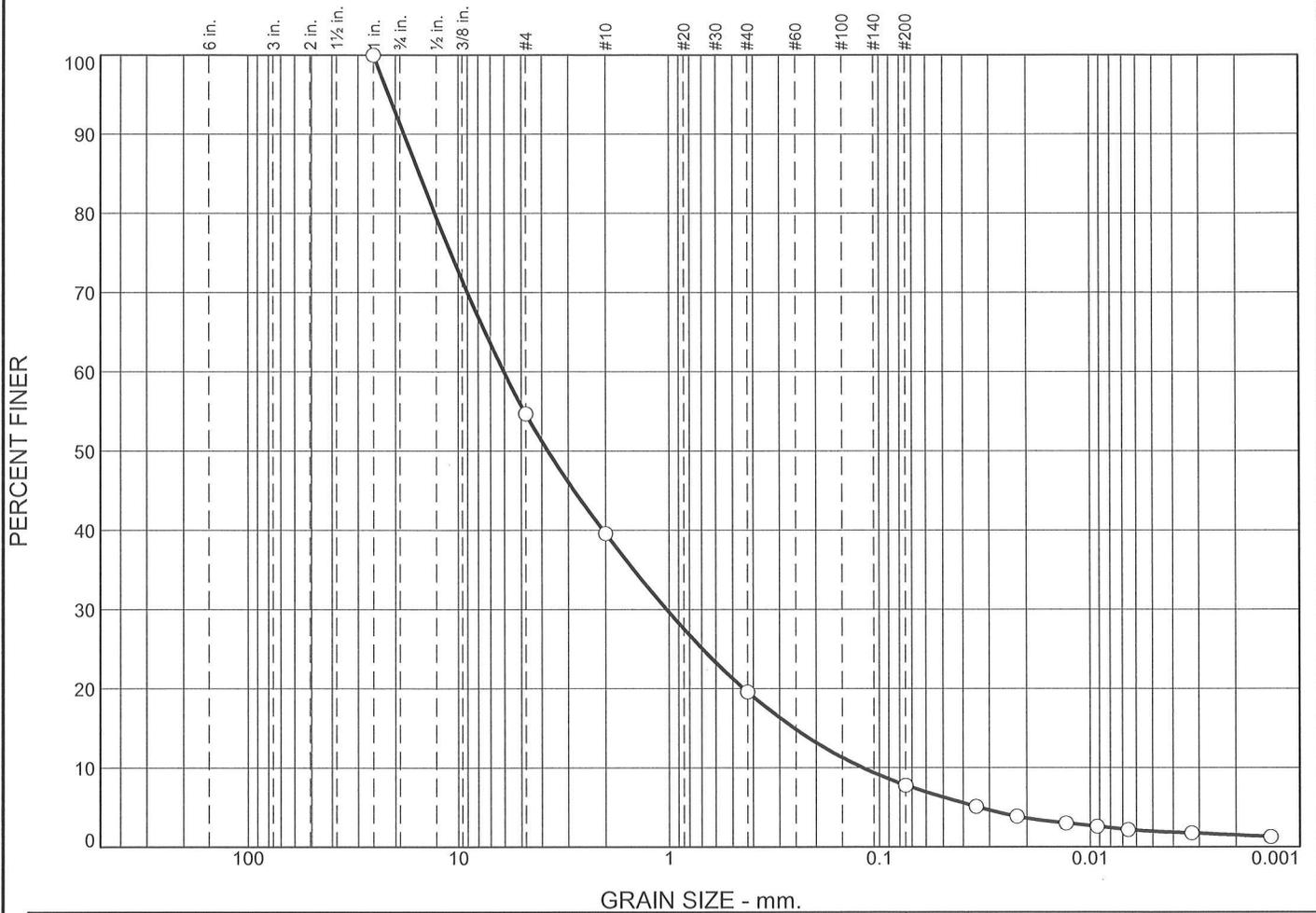
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	3.3	17.3	20.6	13.7	28.4	25.5	67.6	8.7	3.1	11.8

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0252	0.0620	0.0996	0.1463	0.2798	0.4946	0.8465	1.4508	4.9602	7.1734	10.6944	16.3577

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
3.15	23.42	0.87

# Particle Size Distribution Report



○	% +3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0.0	8.6	36.7	15.1	20.0	11.8	5.8	2.0		
⊗	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
○			15.3558	6.0373	3.7460	1.0253	0.2546	0.1195	1.46	50.52

Material Description	USCS	AASHTO
○ Sediment		

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p>○ <b>Source of Sample:</b> NAE2B      <b>Sample Number:</b> 20200424b</p>	<p><b>Remarks:</b></p>
<p><b>Aqua Survey, Inc.</b></p> <p><b>Flemington, NJ</b></p>	

Figure  
*CH*

Tested By: M. Thomas      Checked By: C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

**Client:** Nordic Aquafarms  
**Project:** Nordic Aquafarms Pipeline Corridor Dredging  
**Project Number:** 40-126  
**Location:** NAE2B  
**Sample Number:** 20200424b  
**Material Description:** Sediment

**Tested by:** M. Thomas

**Checked by:** C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
260.91	11.71	1	0.00	0.00	100.0
		#4	124.64	11.71	54.7
		#10	49.32	11.71	39.6
95.00	0.00	#40	174.60	126.63	19.6
		#200	155.77	127.45	7.8

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 39.6  
 Weight of hydrometer sample = 95.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 75.42  
 Dry weight and tare = 75.22  
 Tare weight = 2.47  
 Hygroscopic moisture = 0.3%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -6  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.2	18.0	12.2	0.0134	18.5	13.3	0.0346	5.1
5.00	21.2	15.0	9.2	0.0134	15.5	13.8	0.0223	3.9
15.00	21.2	13.0	7.2	0.0134	13.5	14.1	0.0130	3.0
30.00	21.2	12.0	6.2	0.0134	12.5	14.2	0.0093	2.6
60.00	21.3	11.0	5.2	0.0134	11.5	14.4	0.0066	2.2
250.00	21.1	10.0	4.2	0.0135	10.5	14.6	0.0032	1.8
1440.00	20.6	9.0	3.1	0.0135	9.5	14.7	0.0014	1.3

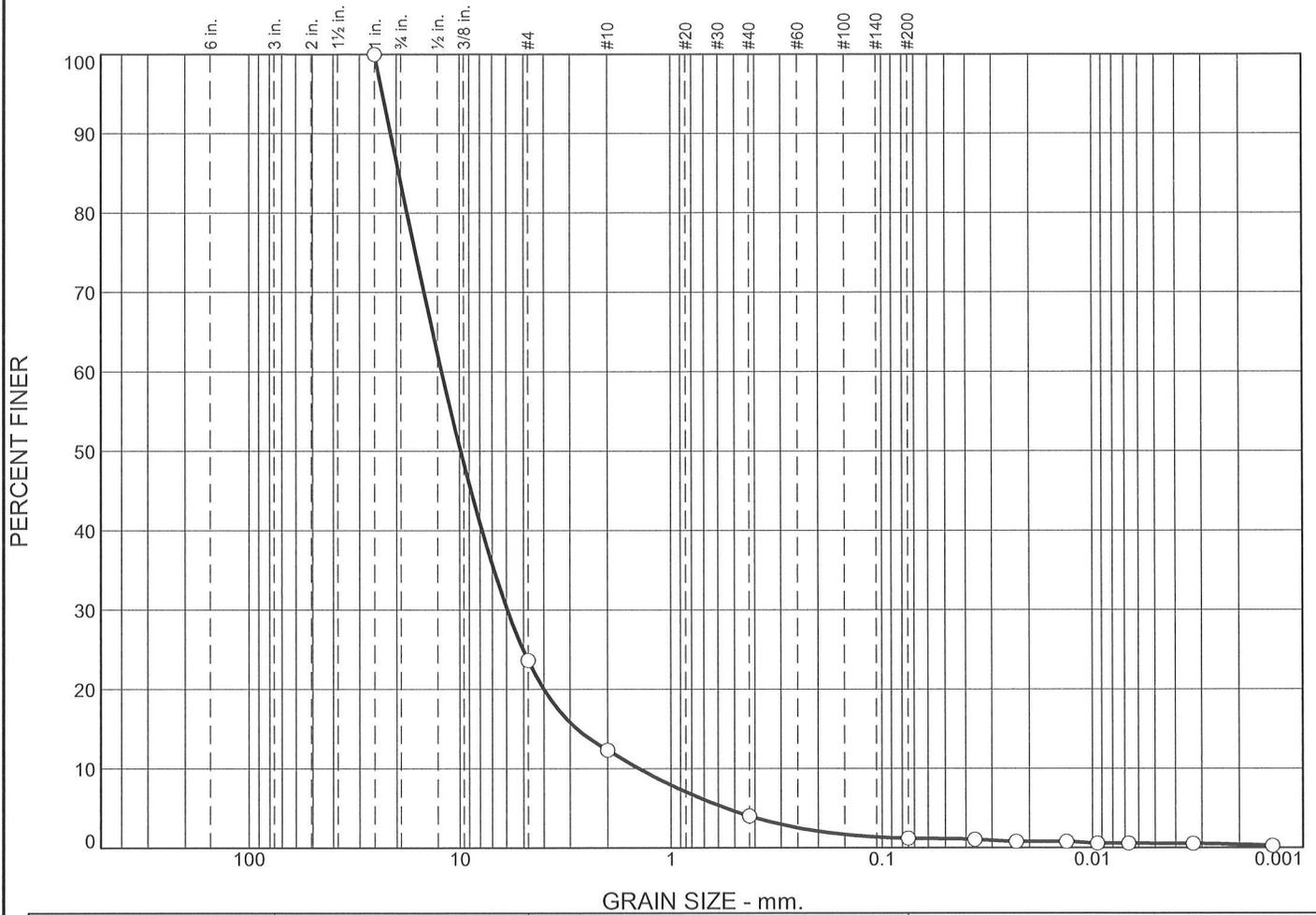
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	8.6	36.7	45.3	15.1	20.0	11.8	46.9	5.8	2.0	7.8

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0335	0.1195	0.2546	0.4421	1.0253	2.0544	3.7460	6.0373	12.9194	15.3558	18.1918	21.5067

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
4.57	50.52	1.46

# Particle Size Distribution Report



%	+3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
<input type="radio"/>	0.0	16.1	60.3	11.3	8.3	2.8	0.7	0.5		
<input checked="" type="checkbox"/>	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
<input type="radio"/>			19.4218	12.1268	9.8489	5.9439	2.7780	1.4113	2.06	8.59

Material Description	USCS	AASHTO
<input type="radio"/> Sediment	GW	

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p><input type="radio"/> <b>Source of Sample:</b> NAE2C      <b>Sample Number:</b> 20200424c</p>	<p><b>Remarks:</b></p>
<p><b>Aqua Survey, Inc.</b></p> <p><b>Flemington, NJ</b></p>	

Figure  
*CH*

**Tested By:** M. Thomas      **Checked By:** C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

Client: Nordic Aquafarms  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Project Number: 40-126  
 Location: NAE2C  
 Sample Number: 20200424c  
 Material Description: Sediment  
 USCS Classification: GW  
 Tested by: M. Thomas

Checked by: C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
458.65	11.80	1	0.00	0.00	100.0
		#4	353.02	11.80	23.6
		#10	62.30	11.80	12.3
50.00	0.00	#40	163.13	129.40	4.0
		#200	138.96	127.54	1.2

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 12.3  
 Weight of hydrometer sample = 50.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 69.27  
 Dry weight and tare = 69.14  
 Tare weight = 2.48  
 Hygroscopic moisture = 0.2%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -6  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.2	10.0	4.2	0.0134	10.5	14.6	0.0363	1.0
5.00	21.2	9.0	3.2	0.0134	9.5	14.7	0.0231	0.8
15.00	21.2	9.0	3.2	0.0134	9.5	14.7	0.0133	0.8
30.00	21.3	8.0	2.2	0.0134	8.5	14.9	0.0095	0.6
60.00	21.2	8.0	2.2	0.0134	8.5	14.9	0.0067	0.5
250.00	20.9	8.0	2.2	0.0135	8.5	14.9	0.0033	0.5
1440.00	20.6	7.0	1.1	0.0135	7.5	15.1	0.0014	0.3

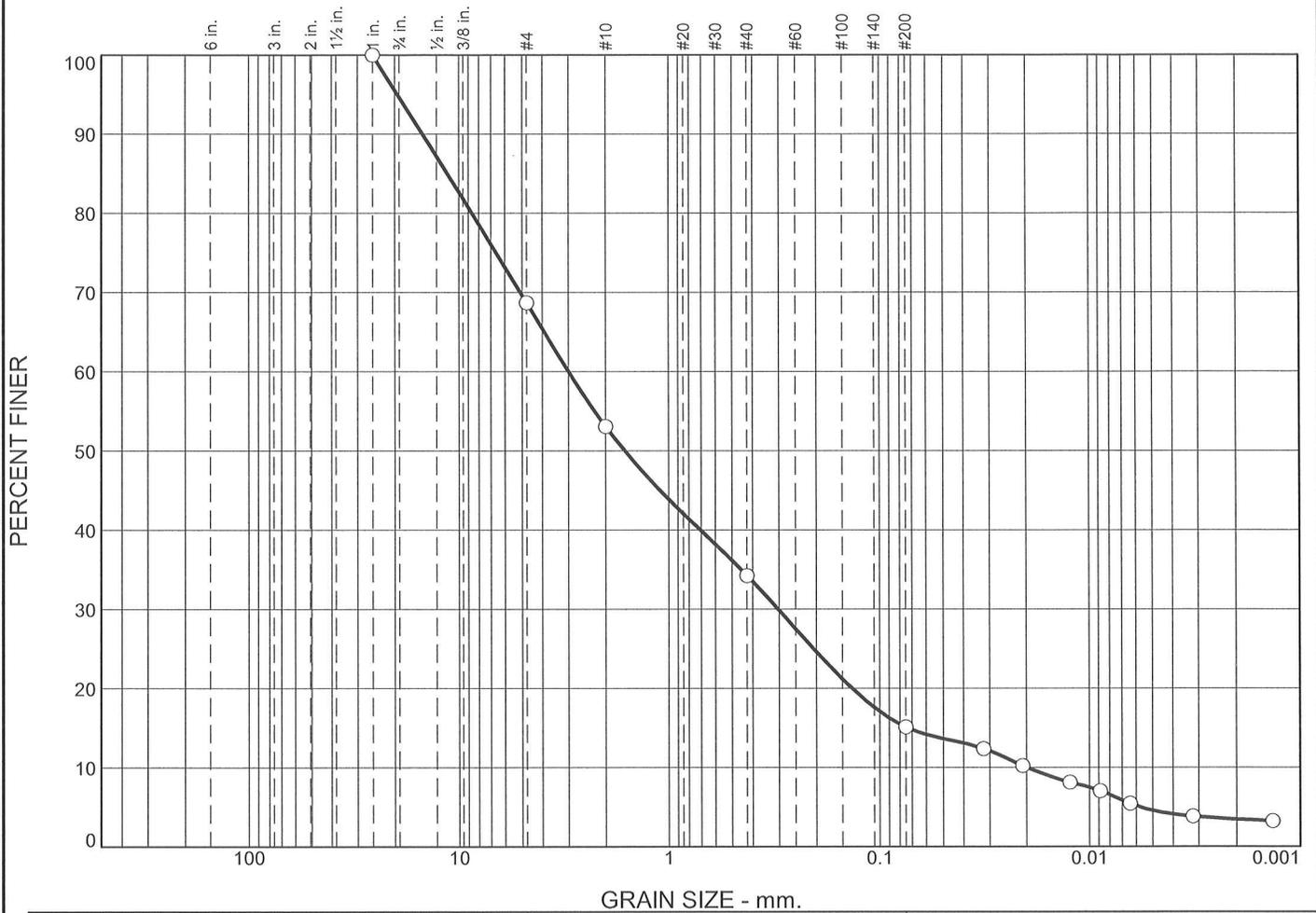
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	16.1	60.3	76.4	11.3	8.3	2.8	22.4	0.7	0.5	1.2

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.5496	1.4113	2.7780	4.0023	5.9439	7.8183	9.8489	12.1268	17.7354	19.4218	21.2495	23.2356

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
6.11	8.59	2.06

# Particle Size Distribution Report



%	+3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0.0	5.3	26.0	15.6	18.8	19.2	10.5	4.6		
⊗	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
○			11.2953	2.9965	1.6221	0.3030	0.0735	0.0199	1.54	150.43

Material Description	USCS	AASHTO
○ Sediment		

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p>○ <b>Source of Sample:</b> NAE3A      <b>Sample Number:</b> 20200425a</p>	<p><b>Remarks:</b></p>
<p><b>Aqua Survey, Inc.</b></p> <p><b>Flemington, NJ</b></p>	

Figure  
*CH*

Tested By: M. Thomas      Checked By: C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

**Client:** Nordic Aquafarms

**Project:** Nordic Aquafarms Pipeline Corridor Dredging

**Project Number:** 40-126

**Location:** NAE3A

**Sample Number:** 20200425a

**Material Description:** Sediment

**Tested by:** M. Thomas

**Checked by:** C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
237.78	11.71	1	0.00	0.00	100.0
		#4	82.48	11.71	68.7
		#10	46.99	11.71	53.1
100.00	0.00	#40	166.30	130.83	34.3
		#200	159.08	123.00	15.1

**Hydrometer Test Data**

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 53.1

Weight of hydrometer sample = 100.00

Hygroscopic moisture correction:

Moist weight and tare = 73.55

Dry weight and tare = 73.40

Tare weight = 2.48

Hygroscopic moisture = 0.2%

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = -6

Meniscus correction only = 0.5

Specific gravity of solids = 2.65

Hydrometer type = 152H

Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.3	29.0	23.2	0.0134	29.5	11.5	0.0321	12.4
5.00	21.3	25.0	19.2	0.0134	25.5	12.1	0.0209	10.2
15.00	21.3	21.0	15.2	0.0134	21.5	12.8	0.0124	8.1
30.00	21.3	19.0	13.2	0.0134	19.5	13.1	0.0089	7.0
60.00	21.2	16.0	10.2	0.0134	16.5	13.6	0.0064	5.4
250.00	21.0	13.0	7.2	0.0135	13.5	14.1	0.0032	3.8
1440.00	20.6	12.0	6.1	0.0135	12.5	14.2	0.0013	3.2

**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	5.3	26.0	31.3	15.6	18.8	19.2	53.6	10.5	4.6	15.1

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0057	0.0199	0.0735	0.1349	0.3030	0.7048	1.6221	2.9965	8.6405	11.2953	14.7864	19.3751

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
3.64	150.43	1.54



**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

Client: Nordic Aquafarms  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Project Number: 40-126  
 Location: NAE3B  
 Sample Number: 20200425b  
 Material Description: Sediment

Tested by: M. Thomas

Checked by: C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
175.24	11.82	1	0.00	0.00	100.0
		#4	48.96	11.82	77.3
		#10	33.42	11.82	64.1
50.00	0.00	#40	132.19	121.54	50.4
		#200	131.95	120.94	36.3

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 64.1  
 Weight of hydrometer sample = 50.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 70.21  
 Dry weight and tare = 70.06  
 Tare weight = 2.47  
 Hygroscopic moisture = 0.2%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -6  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.3	28.0	22.2	0.0134	28.5	11.6	0.0324	28.6
5.00	21.3	24.0	18.2	0.0134	24.5	12.3	0.0210	23.4
15.00	21.3	19.0	13.2	0.0134	19.5	13.1	0.0125	17.0
30.00	21.3	17.0	11.2	0.0134	17.5	13.4	0.0090	14.4
60.00	21.3	14.0	8.2	0.0134	14.5	13.9	0.0065	10.6
250.00	20.9	11.0	5.2	0.0135	11.5	14.4	0.0032	6.6
1440.00	20.6	9.0	3.1	0.0135	9.5	14.7	0.0014	4.0

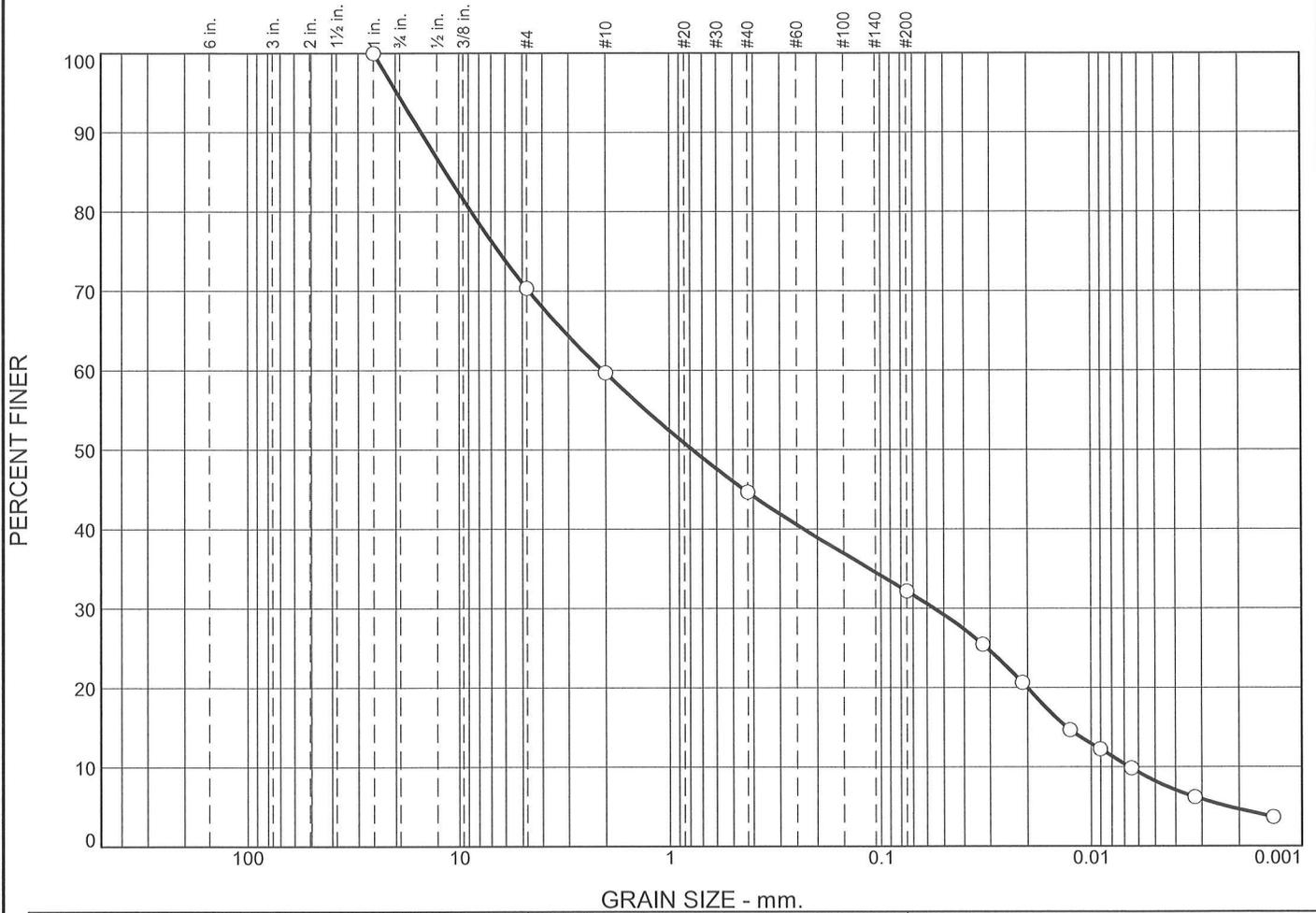
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	3.6	19.1	22.7	13.2	13.7	14.1	41.0	27.9	8.4	36.3

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0019	0.0061	0.0096	0.0163	0.0372	0.1157	0.4017	1.4138	5.6795	8.0286	11.6066	17.0831

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
2.72	231.39	0.16

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.6	24.0	10.7	15.1	12.4	24.0	8.2

LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
		11.5358	2.0580	0.7788	0.0555	0.0131	0.0066	0.23	310.43

Material Description	USCS	AASHTO
○ Sediment		

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p>○ <b>Source of Sample:</b> NAE3C      <b>Sample Number:</b> 20200425c</p>	<p><b>Remarks:</b></p>
<p><b>Aqua Survey, Inc.</b></p> <p><b>Flemington, NJ</b></p>	

Figure  
*CH*

Tested By: M. Thomas      Checked By: C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

**Client:** Nordic Aquafarms  
**Project:** Nordic Aquafarms Pipeline Corridor Dredging  
**Project Number:** 40-126  
**Location:** NAE3C  
**Sample Number:** 20200425c  
**Material Description:** Sediment

**Tested by:** M. Thomas

**Checked by:** C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
144.51	11.66	1	0.00	0.00	100.0
		#4	51.05	11.66	70.4
		#10	25.83	11.66	59.7
50.00	0.00	#40	139.62	127.02	44.6
		#200	142.23	131.78	32.2

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 59.7  
 Weight of hydrometer sample = 50.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 72.84  
 Dry weight and tare = 72.69  
 Tare weight = 2.47  
 Hygroscopic moisture = 0.2%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -6  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	27.0	21.3	0.0134	27.5	11.8	0.0326	25.4
5.00	21.4	23.0	17.3	0.0134	23.5	12.4	0.0212	20.7
15.00	21.4	18.0	12.3	0.0134	18.5	13.3	0.0126	14.7
30.00	21.3	16.0	10.2	0.0134	16.5	13.6	0.0090	12.3
60.00	21.2	14.0	8.2	0.0134	14.5	13.9	0.0065	9.8
250.00	21.0	11.0	5.2	0.0135	11.5	14.4	0.0032	6.2
1440.00	20.6	9.0	3.1	0.0135	9.5	14.7	0.0014	3.7

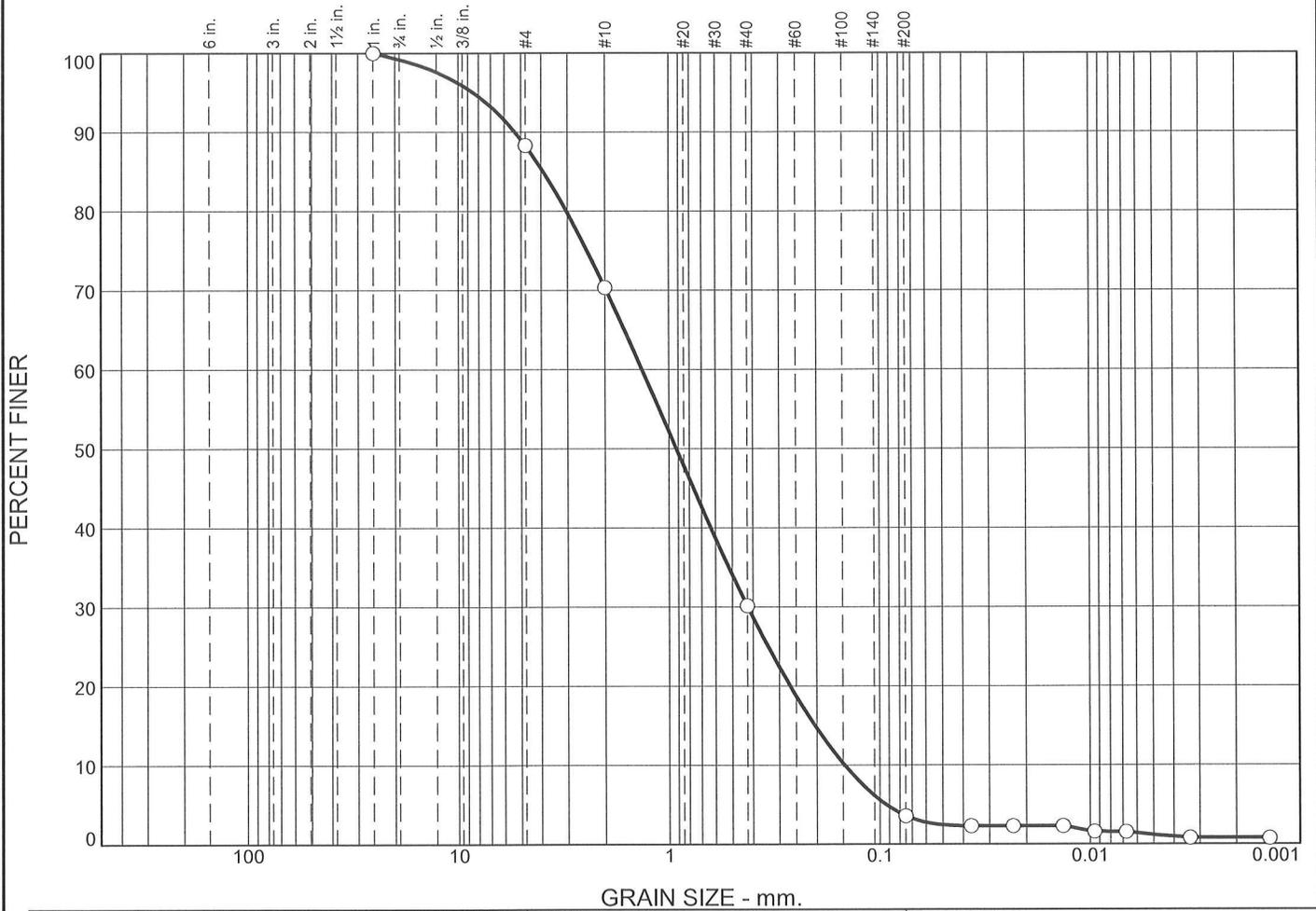
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	5.6	24.0	29.6	10.7	15.1	12.4	38.2	24.0	8.2	32.2

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0023	0.0066	0.0131	0.0201	0.0555	0.2320	0.7788	2.0580	8.7113	11.5358	15.0951	19.6134

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
3.12	310.43	0.23

# Particle Size Distribution Report



%	+3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0.0	0.8	10.9	18.0	40.2	26.5	2.4	1.2		
⊗	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
○			3.9104	1.3386	0.9210	0.4225	0.2036	0.1473	0.91	9.09

Material Description	USCS	AASHTO
○ Sediment	SP	

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p>○ <b>Source of Sample:</b> NAE4A      <b>Sample Number:</b> 20200426a</p>	<p><b>Remarks:</b></p>
<p><b>Aqua Survey, Inc.</b></p> <p><b>Flemington, NJ</b></p>	

Figure  
*CH*

**Tested By:** M. Thomas      **Checked By:** C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

Client: Nordic Aquafarms  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Project Number: 40-126  
 Location: NAE4A  
 Sample Number: 20200426a  
 Material Description: Sediment  
 USCS Classification: SP  
 Tested by: M. Thomas

Checked by: C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
230.82	11.71	1	0.00	0.00	100.0
		#4	37.37	11.71	88.3
		#10	51.07	11.71	70.3
100.00	0.00	#40	183.63	126.49	30.1
		#200	164.24	126.47	3.6

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 70.3  
 Weight of hydrometer sample = 100.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 60.36  
 Dry weight and tare = 60.20  
 Tare weight = 2.48  
 Hygroscopic moisture = 0.3%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -5  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.3	8.0	3.2	0.0134	8.5	14.9	0.0367	2.3
5.00	21.3	8.0	3.2	0.0134	8.5	14.9	0.0232	2.3
15.00	21.3	8.0	3.2	0.0134	8.5	14.9	0.0134	2.3
30.00	21.2	7.0	2.2	0.0134	7.5	15.1	0.0095	1.6
60.00	21.1	7.0	2.2	0.0135	7.5	15.1	0.0067	1.6
250.00	20.8	6.0	1.1	0.0135	6.5	15.2	0.0033	0.8
1440.00	20.6	6.0	1.1	0.0135	6.5	15.2	0.0014	0.8

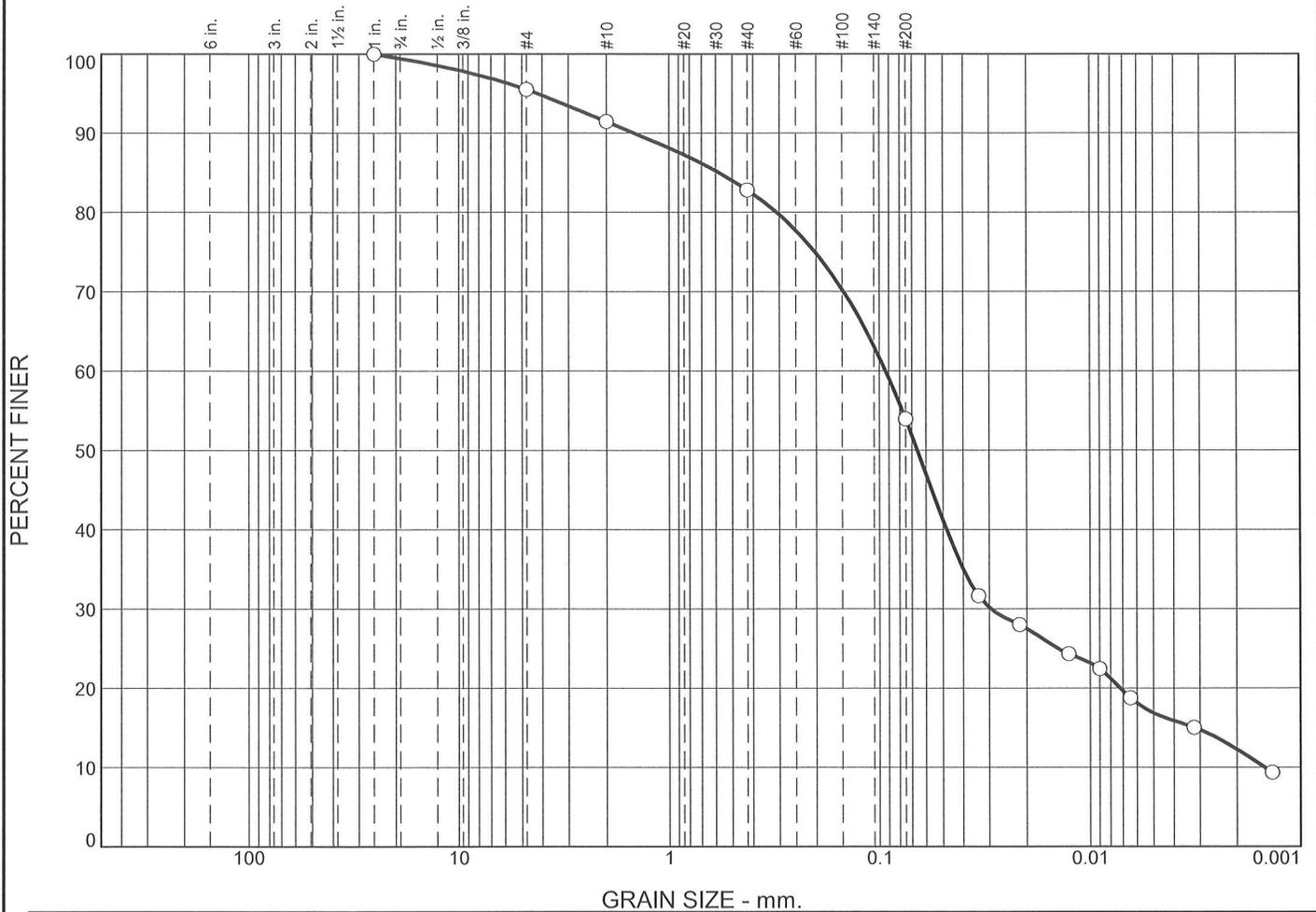
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.8	10.9	11.7	18.0	40.2	26.5	84.7	2.4	1.2	3.6

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0931	0.1473	0.2036	0.2668	0.4225	0.6313	0.9210	1.3386	3.0381	3.9104	5.3395	8.4728

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
3.14	9.09	0.91

# Particle Size Distribution Report



%	+3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0.0	0.6	3.9	4.0	8.7	28.8	37.1	16.9		
⊗	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
○			0.5768	0.0932	0.0660	0.0295	0.0032	0.0015	6.30	63.01

Material Description	USCS	AASHTO
○ Sediment		

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p>○ <b>Source of Sample:</b> NAE4B      <b>Sample Number:</b> 20200426b</p>	<p><b>Remarks:</b></p>
<p><b>Aqua Survey, Inc.</b></p> <p><b>Flemington, NJ</b></p>	

Figure  
*CH*

**Tested By:** M. Thomas      **Checked By:** C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

**Client:** Nordic Aquafarms  
**Project:** Nordic Aquafarms Pipeline Corridor Dredging  
**Project Number:** 40-126  
**Location:** NAE4B  
**Sample Number:** 20200426b  
**Material Description:** Sediment

**Tested by:** M. Thomas

**Checked by:** C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
187.97	11.43	1	0.00	0.00	100.0
		#4	19.36	11.43	95.5
		#10	18.58	11.43	91.5
50.00	0.00	#40	137.77	133.04	82.8
		#200	150.34	134.57	54.0

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 91.5  
 Weight of hydrometer sample = 50.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 53.70  
 Dry weight and tare = 53.43  
 Tare weight = 2.41  
 Hygroscopic moisture = 0.5%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -5  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.2	22.0	17.2	0.0134	22.5	12.6	0.0338	31.7
5.00	21.2	20.0	15.2	0.0134	20.5	12.9	0.0216	28.0
15.00	21.2	18.0	13.2	0.0134	18.5	13.3	0.0126	24.3
30.00	21.1	17.0	12.2	0.0135	17.5	13.4	0.0090	22.4
60.00	21.1	15.0	10.2	0.0135	15.5	13.8	0.0064	18.8
250.00	21.0	13.0	8.2	0.0135	13.5	14.1	0.0032	15.0
1440.00	20.6	10.0	5.1	0.0135	10.5	14.6	0.0014	9.4

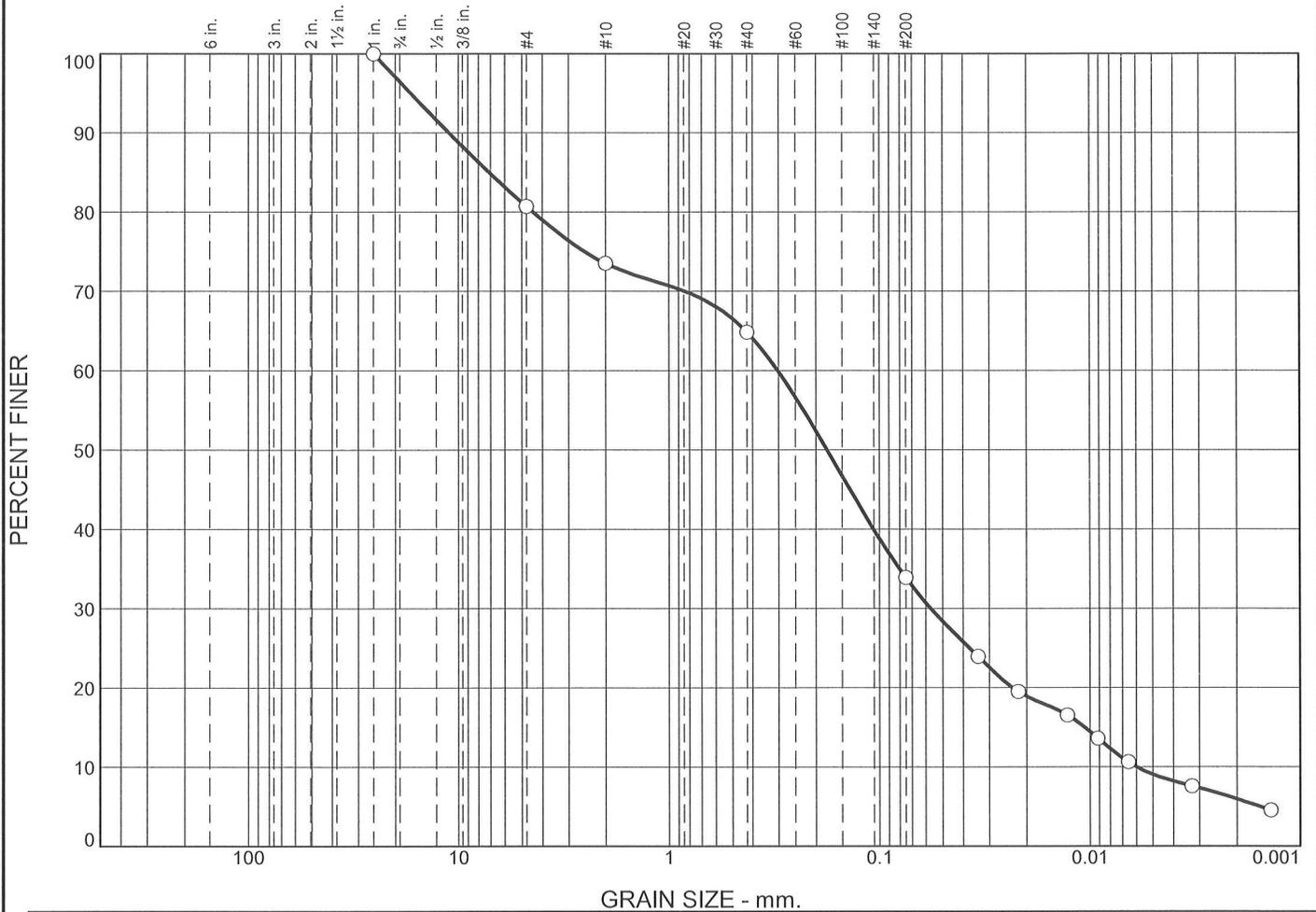
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.6	3.9	4.5	4.0	8.7	28.8	41.5	37.1	16.9	54.0

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0015	0.0032	0.0072	0.0295	0.0480	0.0660	0.0932	0.3089	0.5768	1.4676	4.2120

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.91	63.01	6.30

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	3.5	15.8	7.2	8.6	31.0	24.8	9.1

LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
		7.1217	0.3028	0.1768	0.0569	0.0106	0.0060	1.79	50.62

Material Description	USCS	AASHTO
○ Sediment		

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p>○ <b>Source of Sample:</b> NAE4C      <b>Sample Number:</b> 20200426c</p>	<p><b>Remarks:</b></p>
<p><b>Aqua Survey, Inc.</b></p> <p><b>Flemington, NJ</b></p>	

Figure  
*CH*

Tested By: M. Thomas      Checked By: C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

**Client:** Nordic Aquafarms

**Project:** Nordic Aquafarms Pipeline Corridor Dredging

**Project Number:** 40-126

**Location:** NAE4C

**Sample Number:** 20200426c

**Material Description:** Sediment

**Tested by:** M. Thomas

**Checked by:** C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
230.87	11.60	1	0.00	0.00	100.0
		#4	53.92	11.60	80.7
		#10	27.35	11.60	73.5
50.00	0.00	#40	133.14	127.25	64.9
		#200	147.46	126.42	33.9

**Hydrometer Test Data**

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 73.5

Weight of hydrometer sample = 50.00

Hygroscopic moisture correction:

Moist weight and tare = 54.43

Dry weight and tare = 54.25

Tare weight = 2.45

Hygroscopic moisture = 0.4%

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = -5

Meniscus correction only = 0.5

Specific gravity of solids = 2.65

Hydrometer type = 152H

Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.2	21.0	16.2	0.0134	21.5	12.8	0.0340	23.9
5.00	21.2	18.0	13.2	0.0134	18.5	13.3	0.0219	19.5
15.00	21.2	16.0	11.2	0.0134	16.5	13.6	0.0128	16.6
30.00	21.2	14.0	9.2	0.0134	14.5	13.9	0.0092	13.6
60.00	21.1	12.0	7.2	0.0135	12.5	14.2	0.0066	10.6
250.00	20.9	10.0	5.2	0.0135	10.5	14.6	0.0033	7.6
1440.00	20.6	8.0	3.1	0.0135	8.5	14.9	0.0014	4.6

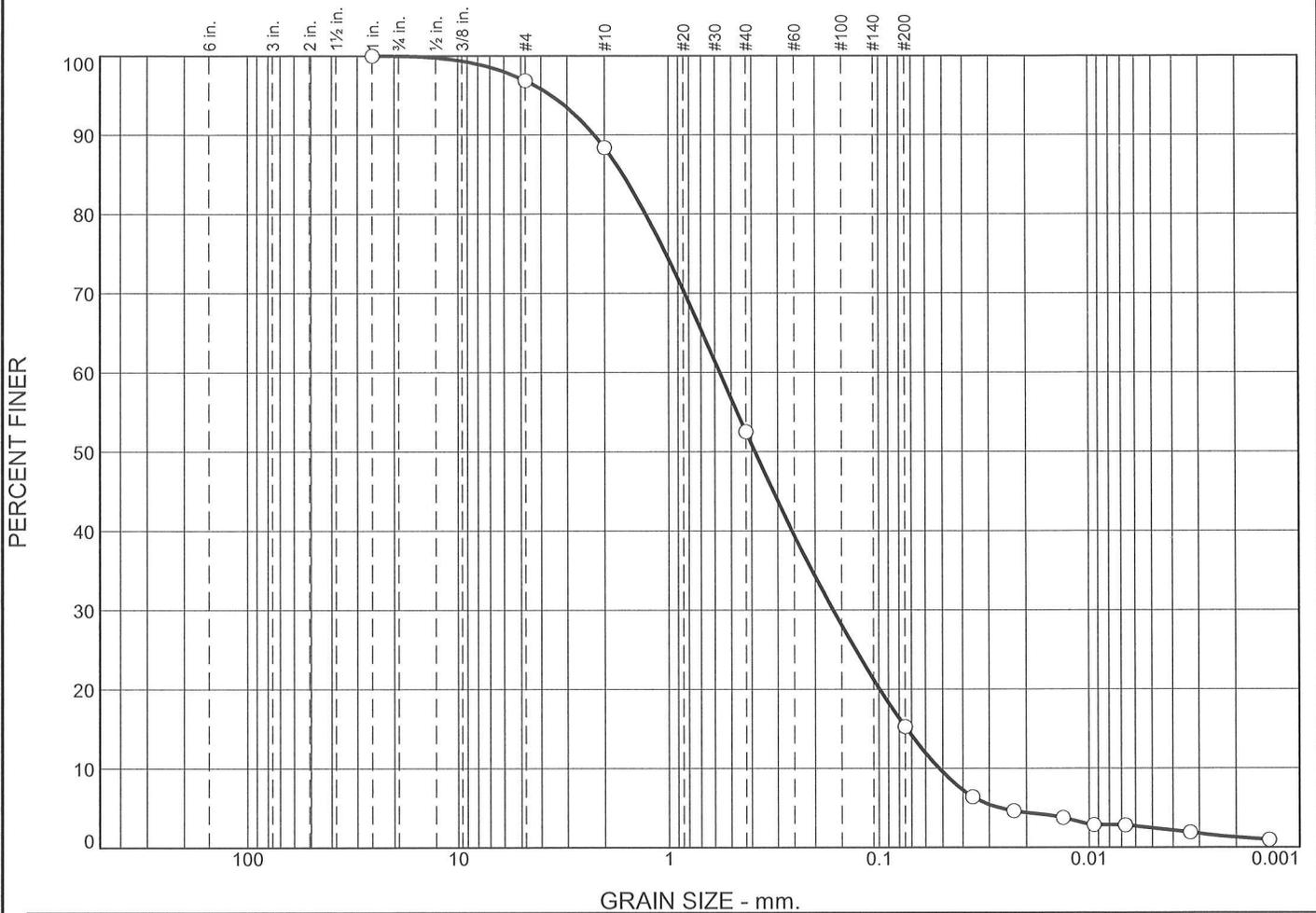
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	3.5	15.8	19.3	7.2	8.6	31.0	46.8	24.8	9.1	33.9

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0015	0.0060	0.0106	0.0233	0.0569	0.1064	0.1768	0.3028	4.4316	7.1217	11.0514	16.8260

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
2.14	50.62	1.79

# Particle Size Distribution Report



%	+3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0.0	0.0	3.1	8.5	35.9	37.2	12.9	2.4		
⊗	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
○			1.6419	0.5673	0.3853	0.1642	0.0737	0.0519	0.92	10.94

Material Description	USCS	AASHTO
○ Sediment		

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p>○ <b>Source of Sample:</b> NAE5A      <b>Sample Number:</b> 20200427a</p> <p style="text-align: center;"><b>Aqua Survey, Inc.</b></p> <p style="text-align: center;"><b>Flemington, NJ</b></p>	<p><b>Remarks:</b></p>     <p style="text-align: right;">Figure <i>CH</i></p>
--	--

Tested By: M. Thomas      Checked By: C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

**Client:** Nordic Aquafarms  
**Project:** Nordic Aquafarms Pipeline Corridor Dredging  
**Project Number:** 40-126  
**Location:** NAE5A  
**Sample Number:** 20200427a  
**Material Description:** Sediment

**Tested by:** M. Thomas **Checked by:** C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
259.68	11.67	1	0.00	0.00	100.0
		#4	19.45	11.67	96.9
		#10	32.74	11.67	88.4
100.00	0.00	#40	171.28	130.69	52.5
		#200	170.58	128.46	15.3

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 88.4  
 Weight of hydrometer sample = 100.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 62.23  
 Dry weight and tare = 62.05  
 Tare weight = 2.45  
 Hygroscopic moisture = 0.3%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -5  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.2	12.0	7.2	0.0134	12.5	14.2	0.0359	6.4
5.00	21.2	10.0	5.2	0.0134	10.5	14.6	0.0230	4.6
15.00	21.2	9.0	4.2	0.0134	9.5	14.7	0.0133	3.7
30.00	21.2	8.0	3.2	0.0134	8.5	14.9	0.0095	2.9
60.00	21.1	8.0	3.2	0.0135	8.5	14.9	0.0067	2.8
250.00	20.9	7.0	2.2	0.0135	7.5	15.1	0.0033	1.9
1440.00	20.6	6.0	1.1	0.0135	6.5	15.2	0.0014	1.0

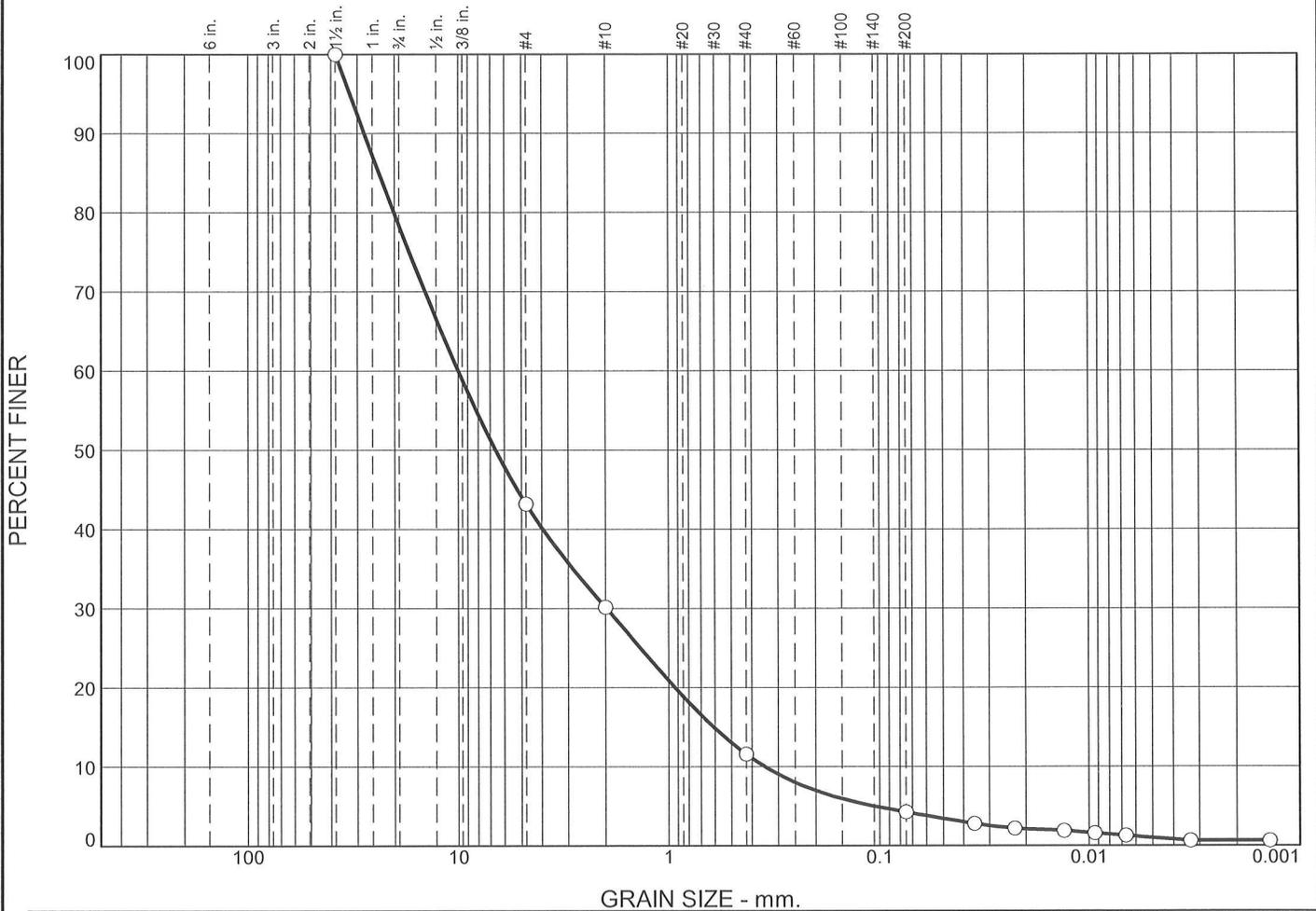
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	3.1	3.1	8.5	35.9	37.2	81.6	12.9	2.4	15.3

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0268	0.0519	0.0737	0.0989	0.1642	0.2561	0.3853	0.5673	1.2808	1.6419	2.2361	3.5854

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
2.02	10.94	0.92

# Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0.0	21.6	35.2	13.1	18.5	7.4	3.2	1.0		
×	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
○			23.6231	9.9582	6.6093	1.9799	0.6072	0.3467	1.14	28.72

Material Description	USCS	AASHTO
○ Sediment	GW	

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p>○ <b>Source of Sample:</b> NAE5B      <b>Sample Number:</b> 20200427b</p>	<p><b>Remarks:</b></p> <p>○#4 and #10- Rocks and some shell</p>
<p><b>Aqua Survey, Inc.</b></p> <p><b>Flemington, NJ</b></p>	

Figure  
*CH*

Tested By: M. Thomas      Checked By: C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

**Client:** Nordic Aquafarms  
**Project:** Nordic Aquafarms Pipeline Corridor Dredging  
**Project Number:** 40-126  
**Location:** NAE5B  
**Sample Number:** 20200427b  
**Material Description:** Sediment  
**USCS Classification:** GW  
**Testing Remarks:** #4 and #10- Rocks and some shell  
**Tested by:** M. Thomas

**Checked by:** C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
698.68	73.52	1 1/2	0.00	0.00	100.0
		#4	428.57	73.52	43.2
		#10	155.23	73.52	30.1
100.00	0.00	#40	188.52	126.92	11.6
		#200	145.43	121.13	4.2

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 30.1  
 Weight of hydrometer sample = 100.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 60.53  
 Dry weight and tare = 60.41  
 Tare weight = 2.45  
 Hygroscopic moisture = 0.2%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -5  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.3	14.0	9.2	0.0134	14.5	13.9	0.0354	2.8
5.00	21.3	12.0	7.2	0.0134	12.5	14.2	0.0227	2.2
15.00	21.3	11.0	6.2	0.0134	11.5	14.4	0.0132	1.9
30.00	21.1	10.0	5.2	0.0135	10.5	14.6	0.0094	1.6
60.00	21.1	9.0	4.2	0.0135	9.5	14.7	0.0067	1.3
250.00	20.9	7.0	2.2	0.0135	7.5	15.1	0.0033	0.7
1440.00	20.6	7.0	2.1	0.0135	7.5	15.1	0.0014	0.6

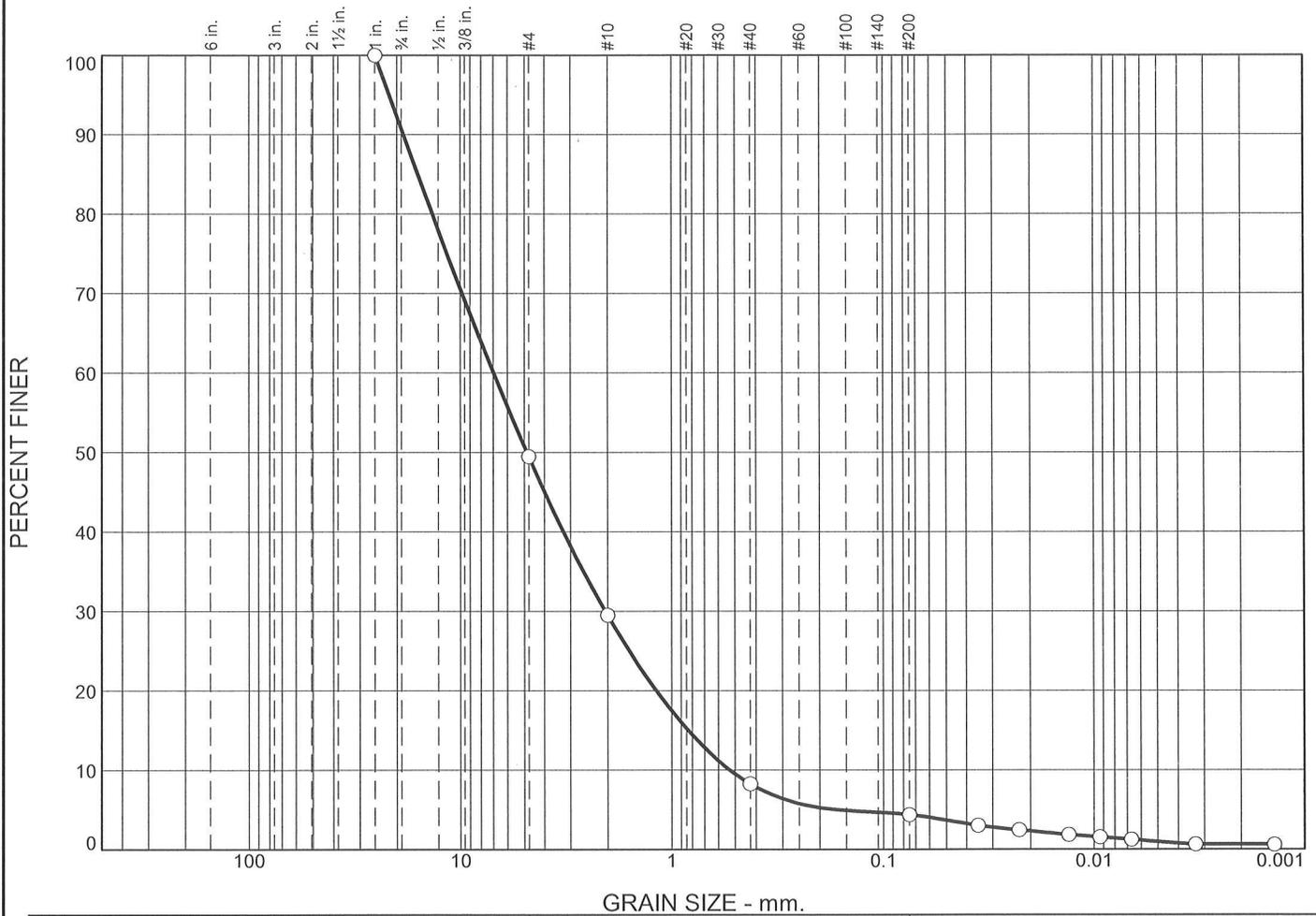
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	21.6	35.2	56.8	13.1	18.5	7.4	39.0	3.2	1.0	4.2

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.1059	0.3467	0.6072	0.9315	1.9799	3.9571	6.6093	9.9582	20.0688	23.6231	27.7392	32.5218

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
5.34	28.72	1.14

# Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0.0	9.2	41.3	20.0	21.2	3.9	3.4	1.0		
⊗	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
○			15.8805	6.9673	4.8438	2.0512	0.8345	0.5296	1.14	13.16

Material Description	USCS	AASHTO
○ Sediment	GW	

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p>○ <b>Source of Sample:</b> NAE5C      <b>Sample Number:</b> 20200427c</p>	<p><b>Remarks:</b></p> <p>○#4 and #10- Rocks and some shell</p>
<p><b>Aqua Survey, Inc.</b></p> <p><b>Flemington, NJ</b></p>	

Figure  
*CH*

Tested By: M. Thomas      Checked By: C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

Client: Nordic Aquafarms  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Project Number: 40-126  
 Location: NAE5C  
 Sample Number: 20200427c  
 Material Description: Sediment  
 USCS Classification: GW  
 Testing Remarks: #4 and #10- Rocks and some shell  
 Tested by: M. Thomas

Checked by: C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
675.72	73.53	1	0.00	0.00	100.0
		#4	377.72	73.53	49.5
		#10	193.93	73.53	29.5
100.00	0.00	#40	200.72	128.72	8.3
		#200	141.22	128.01	4.4

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 29.5  
 Weight of hydrometer sample = 100.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 72.49  
 Dry weight and tare = 72.34  
 Tare weight = 2.47  
 Hygroscopic moisture = 0.2%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -5  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.2	15.0	10.2	0.0134	15.5	13.8	0.0353	3.0
5.00	21.2	13.0	8.2	0.0134	13.5	14.1	0.0226	2.4
15.00	21.2	11.0	6.2	0.0134	11.5	14.4	0.0132	1.8
30.00	21.2	10.0	5.2	0.0134	10.5	14.6	0.0094	1.5
60.00	21.1	9.0	4.2	0.0135	9.5	14.7	0.0067	1.2
250.00	20.9	7.0	2.2	0.0135	7.5	15.1	0.0033	0.6
1440.00	20.6	7.0	2.1	0.0135	7.5	15.1	0.0014	0.6

**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	9.2	41.3	50.5	20.0	21.2	3.9	45.1	3.4	1.0	4.4

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.1654	0.5296	0.8345	1.1792	2.0512	3.2428	4.8438	6.9673	13.5466	15.8805	18.5874	21.7337

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
5.15	13.16	1.14



**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

Client: Nordic Aquafarms  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Project Number: 40-126  
 Location: NAE6A  
 Sample Number: 20200428a  
 Material Description: Sediment  
 USCS Classification: SW  
 Testing Remarks: #4- Rocks and some shell  
 Tested by: L. Horn

Checked by: C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
740.27	73.57	1 1/2	0.00	0.00	100.0
		#4	364.14	73.57	56.4
		#10	195.21	73.57	38.2
100.00	0.00	#40	186.93	127.49	15.5
		#200	151.23	121.02	4.0

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 38.2  
 Weight of hydrometer sample = 100  
 Hygroscopic moisture correction:  
 Moist weight and tare = 64.65  
 Dry weight and tare = 64.52  
 Tare weight = 2.45  
 Hygroscopic moisture = 0.2%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -5  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.1	12.0	7.4	0.0133	12.5	14.2	0.0355	2.8
5.00	22.1	10.0	5.4	0.0133	10.5	14.6	0.0227	2.1
15.00	22.1	10.0	5.4	0.0133	10.5	14.6	0.0131	2.1
30.00	22.2	8.0	3.5	0.0133	8.5	14.9	0.0094	1.3
60.00	22.3	7.0	2.5	0.0133	7.5	15.1	0.0066	0.9
250.00	22.4	6.0	1.5	0.0132	6.5	15.2	0.0033	0.6
1440.00	21.7	5.5	0.8	0.0134	6.0	15.3	0.0014	0.3

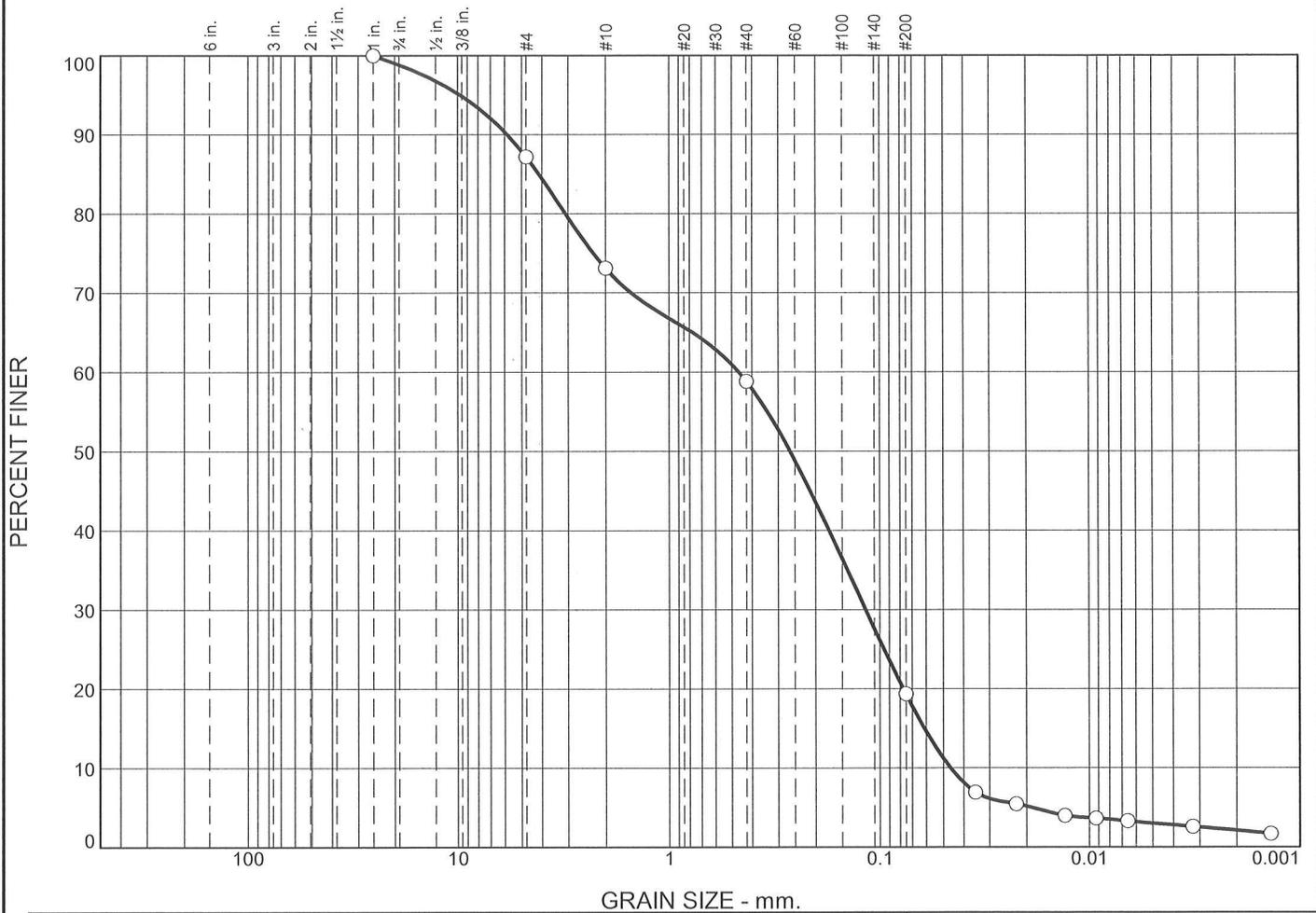
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	14.3	29.3	43.6	18.2	22.7	11.5	52.4	3.2	0.8	4.0

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.1043	0.2370	0.4060	0.6284	1.2628	2.1956	3.5379	5.6050	14.4411	18.3799	23.4200	29.8656

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
4.78	23.65	1.20

# Particle Size Distribution Report



%	+3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0.0	1.2	11.6	14.1	14.3	39.5	16.3	3.0		
⊗	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
○			4.1407	0.4626	0.2636	0.1164	0.0613	0.0462	0.63	10.02

Material Description	USCS	AASHTO
○ Sediment		

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p>○ <b>Source of Sample:</b> NAE6B      <b>Sample Number:</b> 20200428b</p>	<p><b>Remarks:</b></p>
<p><b>Aqua Survey, Inc.</b></p> <p><b>Flemington, NJ</b></p>	

Figure  
*CH*

**Tested By:** L. Horn      **Checked By:** C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

Client: Nordic Aquafarms  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Project Number: 40-126  
 Location: NAE6B  
 Sample Number: 20200428b  
 Material Description: Sediment

Tested by: L. Horn

Checked by: C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
547.50	73.55	1	0.00	0.00	100.0
		#4	134.40	73.55	87.2
		#10	140.16	73.55	73.1
100.00	0.00	#40	147.87	128.34	58.8
		#200	175.15	121.14	19.3

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 73.1  
 Weight of hydrometer sample = 100  
 Hygroscopic moisture correction:  
 Moist weight and tare = 45.10  
 Dry weight and tare = 44.91  
 Tare weight = 2.45  
 Hygroscopic moisture = 0.5%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -5  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.1	14.0	9.4	0.0133	14.5	13.9	0.0351	6.9
5.00	22.1	12.0	7.4	0.0133	12.5	14.2	0.0224	5.5
15.00	22.1	10.0	5.4	0.0133	10.5	14.6	0.0131	4.0
30.00	22.2	9.5	5.0	0.0133	10.0	14.7	0.0093	3.6
60.00	22.3	9.0	4.5	0.0133	9.5	14.7	0.0066	3.3
250.00	22.5	8.0	3.5	0.0132	8.5	14.9	0.0032	2.6
1440.00	21.6	7.0	2.3	0.0134	7.5	15.1	0.0014	1.7

**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	1.2	11.6	12.8	14.1	14.3	39.5	67.9	16.3	3.0	19.3

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0189	0.0462	0.0613	0.0772	0.1164	0.1726	0.2636	0.4626	3.0925	4.1407	5.8477	9.7212

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
2.24	10.02	0.63



**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

Client: Nordic Aquafarms

Project: Nordic Aquafarms Pipeline Corridor Dredging

Project Number: 40-126

Location: NAE6C

Sample Number: 20200428c

Material Description: Sediment

Tested by: L. Horn

Checked by: C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
607.68	73.57	1	0.00	0.00	100.0
		#4	130.65	73.57	89.3
		#10	131.06	73.57	78.5
100.00	0.00	#40	156.58	126.32	54.8
		#200	174.83	123.70	14.6

**Hydrometer Test Data**

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 78.5

Weight of hydrometer sample = 100

Hygroscopic moisture correction:

Moist weight and tare = 53.68

Dry weight and tare = 53.50

Tare weight = 2.46

Hygroscopic moisture = 0.3%

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = -5

Meniscus correction only = 0.5

Specific gravity of solids = 2.65

Hydrometer type = 152H

Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	11.5	7.0	0.0133	12.0	14.3	0.0355	5.5
5.00	22.2	10.0	5.5	0.0133	10.5	14.6	0.0227	4.3
15.00	22.2	10.0	5.5	0.0133	10.5	14.6	0.0131	4.3
30.00	22.2	9.0	4.5	0.0133	9.5	14.7	0.0093	3.5
60.00	22.3	8.0	3.5	0.0133	8.5	14.9	0.0066	2.7
250.00	22.5	7.0	2.5	0.0132	7.5	15.1	0.0032	2.0
1440.00	21.7	6.5	1.8	0.0134	7.0	15.1	0.0014	1.4

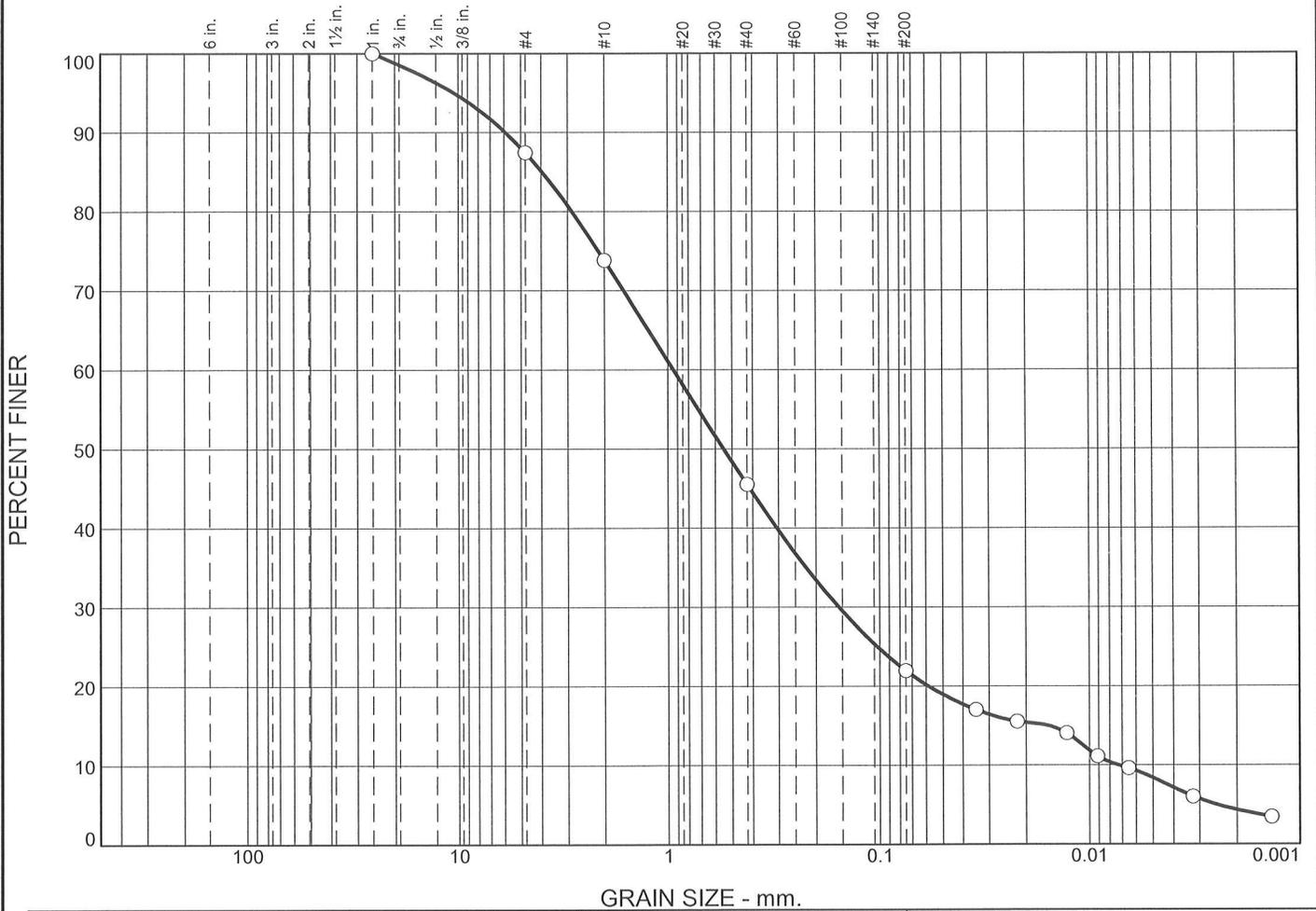
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	1.3	9.4	10.7	10.8	23.7	40.2	74.7	12.2	2.4	14.6

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0323	0.0561	0.0766	0.0983	0.1513	0.2258	0.3417	0.5563	2.2327	3.2794	5.0789	9.4075

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
2.26	9.91	0.73

# Particle Size Distribution Report



%	+3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0.0	1.4	11.2	13.6	28.3	23.5	13.6	8.4		
⊗	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
○			3.9667	0.9420	0.5472	0.1556	0.0157	0.0072	3.55	130.11

Material Description	USCS	AASHTO
○ Sediment		

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p>○ <b>Source of Sample:</b> NAE7A      <b>Sample Number:</b> 20200429a</p>	<p><b>Remarks:</b></p> <p>○#4 and #10- Rocks and some shell</p>
<p><b>Aqua Survey, Inc.</b></p> <p><b>Flemington, NJ</b></p>	

Figure  
*CH*

Tested By: L. Horn      Checked By: C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

Client: Nordic Aquafarms  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Project Number: 40-126  
 Location: NAE7A  
 Sample Number: 20200429a  
 Material Description: Sediment  
 Testing Remarks: #4 and #10- Rocks and some shell  
 Tested by: L. Horn

Checked by: C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
556.99	73.59	1	0.00	0.00	100.0
		#4	134.36	73.59	87.4
		#10	139.27	73.55	73.8
50.00	0.00	#40	140.44	121.27	45.5
		#200	142.91	126.95	22.0

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 73.8  
 Weight of hydrometer sample = 50.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 60.31  
 Dry weight and tare = 59.99  
 Tare weight = 2.48  
 Hygroscopic moisture = 0.6%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -5  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	16.0	11.5	0.0133	16.5	13.6	0.0346	17.0
5.00	22.2	15.0	10.5	0.0133	15.5	13.8	0.0220	15.5
15.00	22.2	14.0	9.5	0.0133	14.5	13.9	0.0128	14.0
30.00	22.3	12.0	7.5	0.0133	12.5	14.2	0.0091	11.1
60.00	22.3	11.0	6.5	0.0133	11.5	14.4	0.0065	9.6
250.00	22.6	8.5	4.1	0.0132	9.0	14.8	0.0032	6.0
1440.00	21.7	7.0	2.3	0.0134	7.5	15.1	0.0014	3.5

**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	1.4	11.2	12.6	13.6	28.3	23.5	65.4	13.6	8.4	22.0

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0025	0.0072	0.0157	0.0585	0.1556	0.3060	0.5472	0.9420	2.8651	3.9667	5.9166	10.4546

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
2.58	130.11	3.55



**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

Client: Nordic Aquafarms  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Project Number: 40-126  
 Location: NAE7B  
 Sample Number: 20200429b  
 Material Description: Sediment  
 Testing Remarks: #4 and #10- Rocks and some shell  
 Tested by: L. Horn

Checked by: C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
211.33	11.56	1	0.00	0.00	100.0
		#4	24.84	11.56	93.4
		#10	27.66	11.56	85.3
100.00	0.00	#40	174.11	133.21	50.4
		#200	175.74	128.96	10.5

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 85.3  
 Weight of hydrometer sample = 100.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 57.51  
 Dry weight and tare = 57.26  
 Tare weight = 2.46  
 Hygroscopic moisture = 0.4%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -5  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	13.0	8.5	0.0133	13.5	14.1	0.0352	7.2
5.00	22.2	12.0	7.5	0.0133	12.5	14.2	0.0224	6.4
15.00	22.2	11.0	6.5	0.0133	11.5	14.4	0.0130	5.5
30.00	22.4	9.5	5.0	0.0132	10.0	14.7	0.0093	4.3
60.00	22.4	9.0	4.5	0.0132	9.5	14.7	0.0066	3.9
250.00	22.6	8.0	3.6	0.0132	8.5	14.9	0.0032	3.0
1440.00	21.7	7.5	2.8	0.0134	8.0	15.0	0.0014	2.4

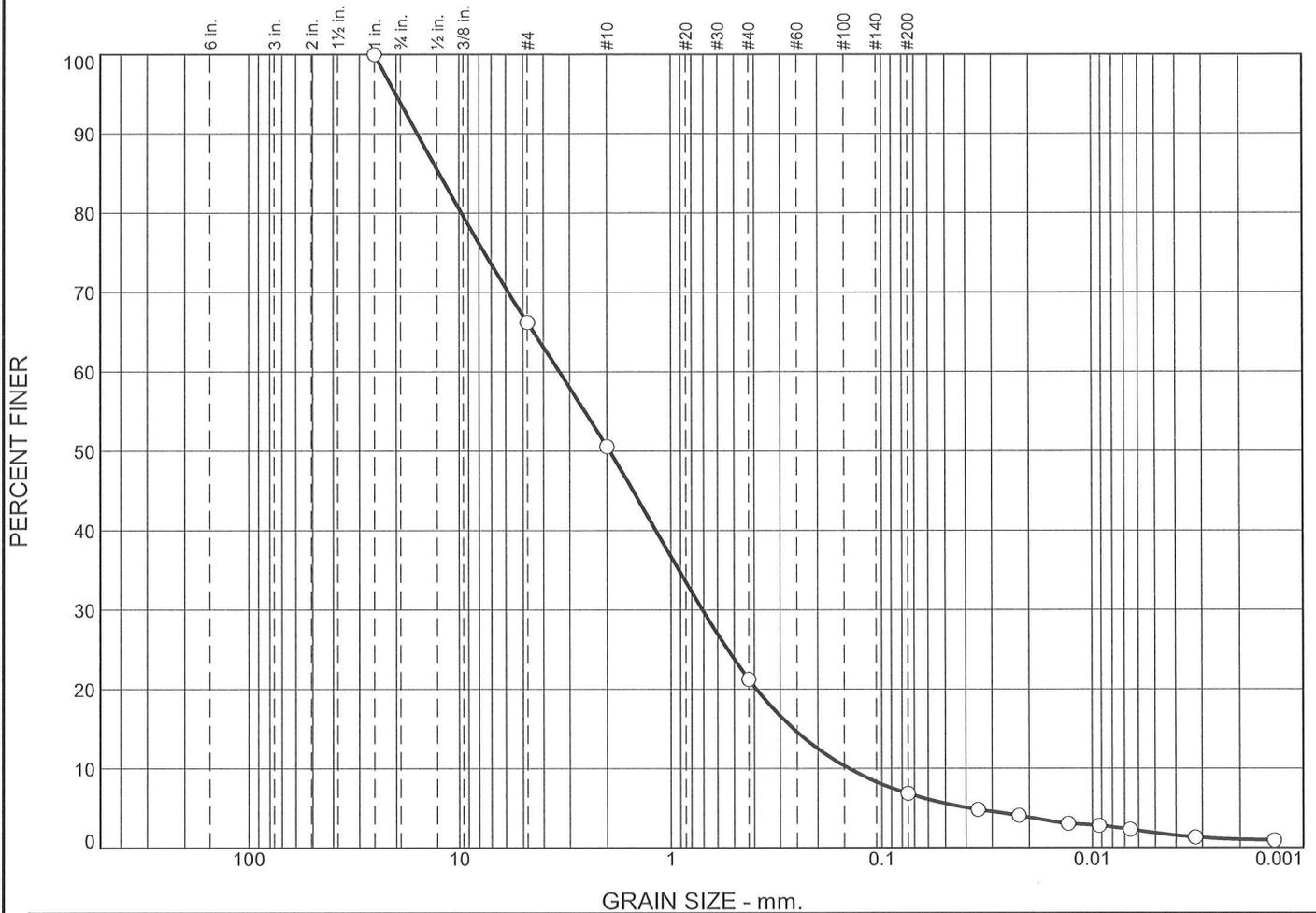
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.8	5.8	6.6	8.1	34.9	39.9	82.9	6.9	3.6	10.5

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0113	0.0711	0.1040	0.1347	0.2041	0.2941	0.4189	0.6040	1.4467	1.9593	3.0189	6.3853

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
2.24	8.50	0.97

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines			
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
0.0	6.1	27.7	15.6	29.3	14.5	4.9	1.9		
LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
		12.4011	3.3644	1.9425	0.7080	0.2596	0.1429	1.04	23.54

Material Description	USCS	AASHTO
○ Sediment		

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p>○ <b>Source of Sample:</b> NAE7C      <b>Sample Number:</b> 20200429c</p>	<p><b>Remarks:</b></p>
<p><b>Aqua Survey, Inc.</b></p> <p><b>Flemington, NJ</b></p>	

Figure  
*CH*

Tested By: L. Horn      Checked By: C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

Client: Nordic Aquafarms  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Project Number: 40-126  
 Location: NAE7C  
 Sample Number: 20200429c  
 Material Description: Sediment

Tested by: L. Horn

Checked by: C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
636.69	73.59	1	0.00	0.00	100.0
		#4	263.99	73.59	66.2
		#10	161.61	73.59	50.6
100.00	0.00	#40	186.40	128.44	21.3
		#200	158.50	129.97	6.8

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 50.6  
 Weight of hydrometer sample = 100.0  
 Hygroscopic moisture correction:  
 Moist weight and tare = 65.88  
 Dry weight and tare = 65.69  
 Tare weight = 2.48  
 Hygroscopic moisture = 0.3%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -5  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.3	14.0	9.5	0.0133	14.5	13.9	0.0350	4.8
5.00	22.3	12.5	8.0	0.0133	13.0	14.2	0.0223	4.0
15.00	22.3	10.5	6.0	0.0133	11.0	14.5	0.0130	3.1
30.00	22.3	10.0	5.5	0.0133	10.5	14.6	0.0092	2.8
60.00	22.4	9.0	4.5	0.0132	9.5	14.7	0.0066	2.3
250.00	22.8	7.0	2.6	0.0132	7.5	15.1	0.0032	1.3
1440.00	21.8	6.5	1.9	0.0133	7.0	15.1	0.0014	0.9

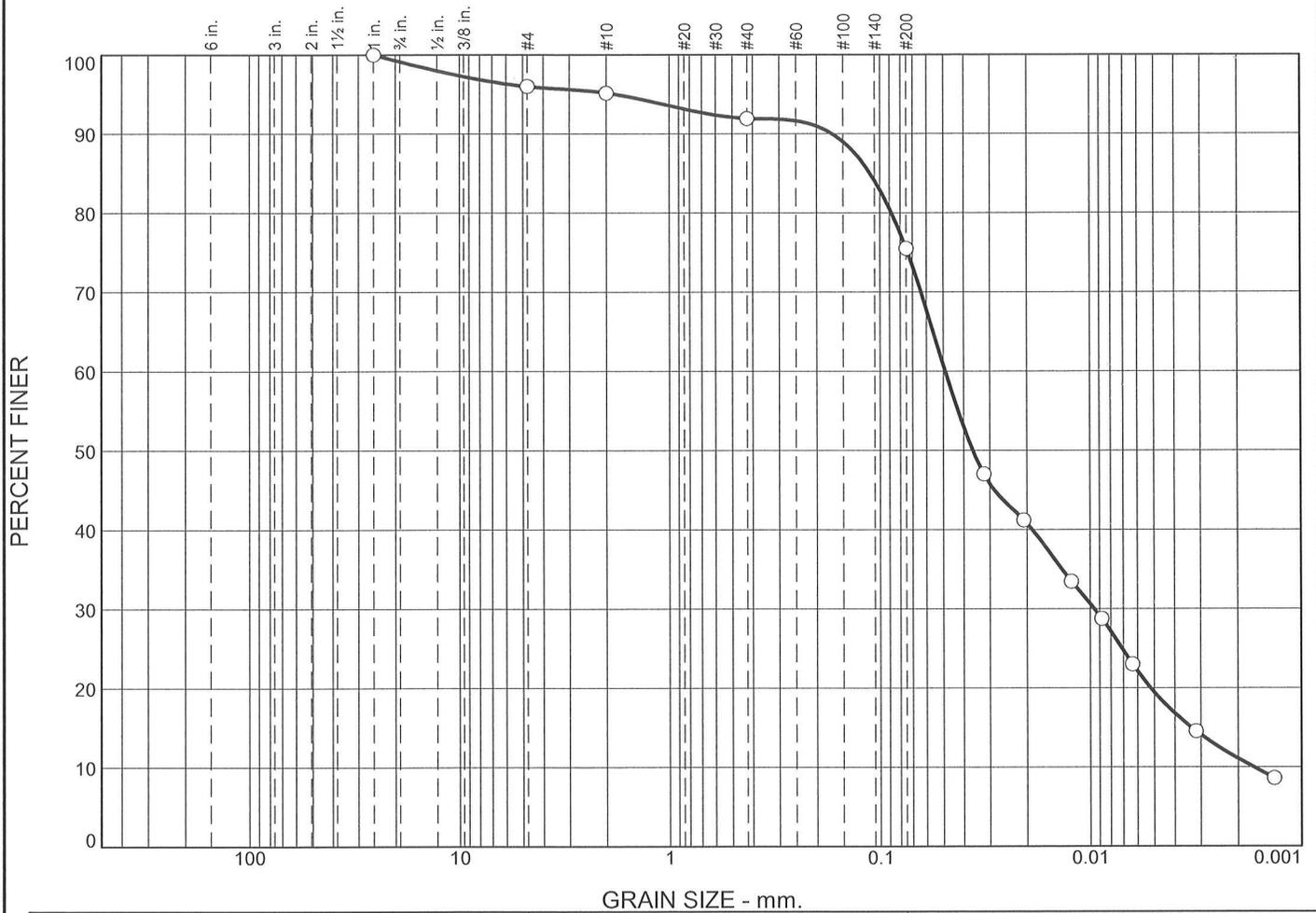
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	6.1	27.7	33.8	15.6	29.3	14.5	59.4	4.9	1.9	6.8

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0387	0.1429	0.2596	0.3900	0.7080	1.1747	1.9425	3.3644	9.7044	12.4011	15.7828	20.0347

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
4.13	23.54	1.04

# Particle Size Distribution Report



%	+3"		Gravel		Sand			Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0.0		0.9	3.1	0.8	3.3	16.4	56.1	19.4

X	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
○			0.1114	0.0488	0.0362	0.0096	0.0033	0.0017	1.11	28.89

Material Description	USCS	AASHTO
○ Sediment		

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p>○ <b>Source of Sample:</b> NAE8A      <b>Sample Number:</b> 20200430a</p>	<p><b>Remarks:</b></p>
<p><b>Aqua Survey, Inc.</b></p> <p><b>Flemington, NJ</b></p>	

Figure  
*CH*

**Tested By:** L. Horn      **Checked By:** C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

Client: Nordic Aquafarms

Project: Nordic Aquafarms Pipeline Corridor Dredging

Project Number: 40-126

Location: NAE8A

Sample Number: 20200430a

Material Description: Sediment

Tested by: L. Horn

Checked by: C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
91.14	11.96	1	0.00	0.00	100.0
		#4	15.13	11.96	96.0
		#10	12.62	11.96	95.2
50.00	0.00	#40	133.00	131.30	91.9
		#200	129.66	121.02	75.5

**Hydrometer Test Data**

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 95.2

Weight of hydrometer sample = 50.00

Hygroscopic moisture correction:

Moist weight and tare = 29.50

Dry weight and tare = 29.01

Tare weight = 2.48

Hygroscopic moisture = 1.8%

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = -5

Meniscus correction only = 0.5

Specific gravity of solids = 2.65

Hydrometer type = 152H

Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	29.0	24.3	0.0134	29.5	11.5	0.0321	47.0
5.00	21.4	26.0	21.3	0.0134	26.5	11.9	0.0207	41.2
15.00	21.4	22.0	17.3	0.0134	22.5	12.6	0.0123	33.5
30.00	21.7	19.5	14.8	0.0134	20.0	13.0	0.0088	28.8
60.00	21.8	16.5	11.9	0.0133	17.0	13.5	0.0063	23.0
250.00	22.4	12.0	7.5	0.0132	12.5	14.2	0.0032	14.6
1440.00	22.1	9.0	4.4	0.0133	9.5	14.7	0.0013	8.6

**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.9	3.1	4.0	0.8	3.3	16.4	20.5	56.1	19.4	75.5

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0017	0.0033	0.0052	0.0096	0.0189	0.0362	0.0488	0.0880	0.1114	0.1690	1.8204

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.45	28.89	1.11



**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

Client: Nordic Aquafarms  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Project Number: 40-126  
 Location: NAE8B  
 Sample Number: 20200430b  
 Material Description: Sediment  
 Tested by: L. Horn

Checked by: C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
97.81	11.68	1	0.00	0.00	100.0
		#4	11.68	11.68	100.0
		#10	12.22	11.68	99.4
50.00	0.00	#40	124.69	123.58	97.2
		#200	135.66	120.51	67.1

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 99.4  
 Weight of hydrometer sample = 50.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 45.95  
 Dry weight and tare = 45.41  
 Tare weight = 2.46  
 Hygroscopic moisture = 1.3%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -5  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.6	22.0	17.3	0.0134	22.5	12.6	0.0336	34.8
5.00	21.6	18.5	13.8	0.0134	19.0	13.2	0.0217	27.8
15.00	21.6	15.5	10.8	0.0134	16.0	13.7	0.0128	21.8
30.00	21.7	14.0	9.3	0.0134	14.5	13.9	0.0091	18.8
60.00	22.1	13.0	8.4	0.0133	13.5	14.1	0.0064	17.0
250.00	22.3	10.0	5.5	0.0133	10.5	14.6	0.0032	11.0
1440.00	21.9	8.0	3.4	0.0133	8.5	14.9	0.0014	6.8

**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.6	2.2	30.1	32.9	52.1	15.0	67.1

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0028	0.0050	0.0107	0.0260	0.0396	0.0507	0.0635	0.1108	0.1362	0.1797	0.2845

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.21	22.87	3.85

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

**Client:** Nordic Aquafarms

**Project:** Nordic Aquafarms Pipeline Corridor Dredging

**Project Number:** 40-126

**Location:** NAE8B

**Sample Number:** 20200430b dup

**Material Description:** Sediment

**Tested by:** L. Horn

**Checked by:** C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
95.62	11.52	1	0.00	0.00	100.0
		#4	11.52	11.52	100.0
		#10	12.03	11.52	99.4
50.00	0.00	#40	130.08	128.79	96.8
		#200	143.17	128.24	67.2

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 99.4  
 Weight of hydrometer sample = 50.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 45.95  
 Dry weight and tare = 45.41  
 Tare weight = 2.46  
 Hygroscopic moisture = 1.3%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -5  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.6	22.0	17.3	0.0134	22.5	12.6	0.0336	34.8
5.00	21.6	18.5	13.8	0.0134	19.0	13.2	0.0217	27.8
15.00	21.6	15.5	10.8	0.0134	16.0	13.7	0.0128	21.8
30.00	21.8	14.0	9.4	0.0133	14.5	13.9	0.0091	18.8
60.00	22.0	12.0	7.4	0.0133	12.5	14.2	0.0065	14.9
250.00	22.5	10.0	5.5	0.0132	10.5	14.6	0.0032	11.1
1440.00	22.0	8.0	3.4	0.0133	8.5	14.9	0.0014	6.9

**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.6	2.6	29.6	32.8	54.3	12.9	67.2

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0024	0.0065	0.0103	0.0260	0.0396	0.0506	0.0633	0.1106	0.1364	0.1811	0.2959

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.22	25.96	4.37

Aqua Survey, Inc.

*CH*

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

**Client:** Nordic Aquafarms

**Project:** Nordic Aquafarms Pipeline Corridor Dredging

**Project Number:** 40-126

**Location:** NAE8B

**Sample Number:** 20200430b trp

**Material Description:** Sediment

**Tested by:** L. Horn

**Checked by:** C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
97.85	11.72	1	0.00	0.00	100.0
		#4	11.72	11.72	100.0
		#10	12.18	11.72	99.5
50.00	0.00	#40	128.04	127.08	97.6
		#200	144.14	128.87	67.2

**Hydrometer Test Data**

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 99.5

Weight of hydrometer sample = 50.00

Hygroscopic moisture correction:

Moist weight and tare = 45.95

Dry weight and tare = 45.41

Tare weight = 2.46

Hygroscopic moisture = 1.3%

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = -5

Meniscus correction only = 0.5

Specific gravity of solids = 2.65

Hydrometer type = 152H

Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.7	21.5	16.8	0.0134	22.0	12.7	0.0337	33.9
5.00	21.7	18.0	13.3	0.0134	18.5	13.3	0.0218	26.9
15.00	21.7	15.0	10.3	0.0134	15.5	13.8	0.0128	20.8
30.00	21.9	14.0	9.4	0.0133	14.5	13.9	0.0091	18.9
60.00	22.2	12.0	7.5	0.0133	12.5	14.2	0.0065	15.0
250.00	22.6	10.0	5.6	0.0132	10.5	14.6	0.0032	11.2
1440.00	22.1	8.0	3.4	0.0133	8.5	14.9	0.0014	6.9

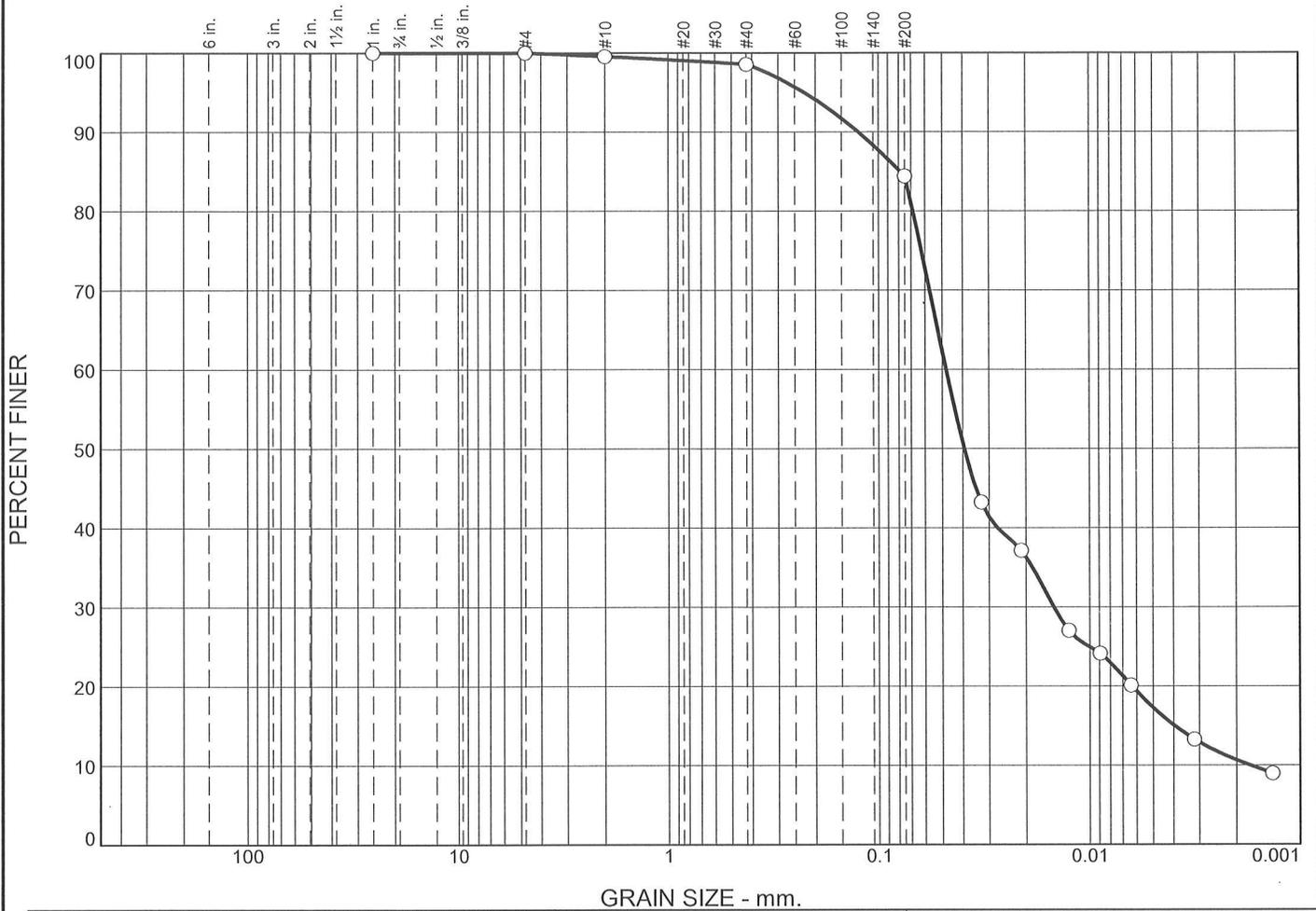
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.5	1.9	30.4	32.8	54.2	13.0	67.2

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0024	0.0065	0.0110	0.0278	0.0405	0.0513	0.0637	0.1087	0.1324	0.1721	0.2645

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.19	26.53	5.05

# Particle Size Distribution Report



%	+3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0.0	0.0	0.0	0.4	1.0	14.2	67.1	17.3		
×	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
○			0.0788	0.0479	0.0393	0.0148	0.0039	0.0017	2.66	27.77

Material Description	USCS	AASHTO
○ Sediment		

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p>○ <b>Source of Sample:</b> NAE8C      <b>Sample Number:</b> 20200430c</p>	<p><b>Remarks:</b></p> <p>○#10- rocks and some organic debris</p>
<p><b>Aqua Survey, Inc.</b></p> <p><b>Flemington, NJ</b></p>	

Figure  
*CH*

Tested By: L. Horn      Checked By: C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

Client: Nordic Aquafarms  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Project Number: 40-126  
 Location: NAE8C  
 Sample Number: 20200430c  
 Material Description: Sediment  
 Testing Remarks: #10- rocks and some organic debris  
 Tested by: L. Horn

Checked by: C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
117.14	11.97	1	0.00	0.00	100.0
		#4	11.97	11.97	100.0
		#10	12.43	11.97	99.6
50.00	0.00	#40	127.38	126.88	98.6
		#200	127.76	120.65	84.4

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 99.6  
 Weight of hydrometer sample = 50.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 37.39  
 Dry weight and tare = 36.79  
 Tare weight = 2.53  
 Hygroscopic moisture = 1.7%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -5  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.7	26.0	21.3	0.0134	26.5	11.9	0.0327	43.2
5.00	21.7	23.0	18.3	0.0134	23.5	12.4	0.0211	37.1
15.00	21.7	18.0	13.3	0.0134	18.5	13.3	0.0126	27.0
30.00	22.0	16.5	11.9	0.0133	17.0	13.5	0.0089	24.1
60.00	22.1	14.5	9.9	0.0133	15.0	13.8	0.0064	20.1
250.00	22.6	11.0	6.6	0.0132	11.5	14.4	0.0032	13.3
1440.00	22.1	9.0	4.4	0.0133	9.5	14.7	0.0013	9.0

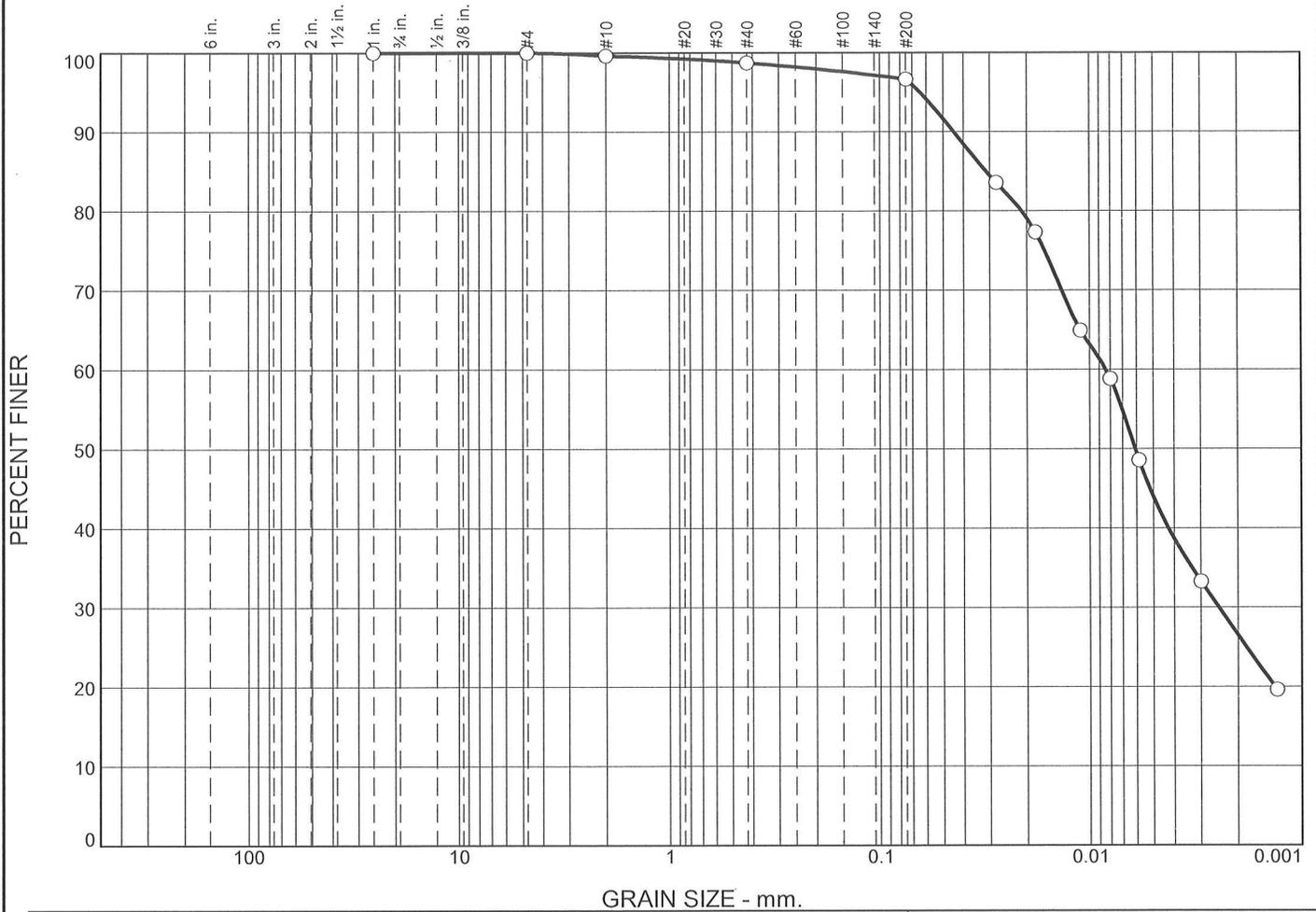
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.4	1.0	14.2	15.6	67.1	17.3	84.4

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0017	0.0039	0.0063	0.0148	0.0274	0.0393	0.0479	0.0685	0.0788	0.1249	0.2258

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.14	27.77	2.66

# Particle Size Distribution Report



%	+3"		Gravel		Sand			Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
<input type="radio"/>	0.0	0.0	0.4	0.9	2.1	52.6	44.0		

	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
<input checked="" type="checkbox"/>			0.0313	0.0084	0.0061	0.0025				

Material Description	USCS	AASHTO
<input type="radio"/> Sediment		

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p><input type="radio"/> <b>Source of Sample:</b> NAE9A      <b>Sample Number:</b> 20200431a</p>	<p><b>Remarks:</b></p>
<p><b>Aqua Survey, Inc.</b></p> <p><b>Flemington, NJ</b></p>	

Figure  
*CH*

Tested By: L. Horn      Checked By: C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

Client: Nordic Aquafarms  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Project Number: 40-126  
 Location: NAE9A  
 Sample Number: 20200431a  
 Material Description: Sediment

Tested by: L. Horn

Checked by: C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
111.21	11.45	1	0.00	0.00	100.0
		#4	11.45	11.45	100.0
		#10	11.84	11.45	99.6
50.00	0.00	#40	129.15	128.70	98.7
		#200	129.32	128.28	96.6

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 99.6  
 Weight of hydrometer sample = 50.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 26.14  
 Dry weight and tare = 25.27  
 Tare weight = 2.55  
 Hygroscopic moisture = 3.9%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -5  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.9	45.0	40.4	0.0133	45.5	8.8	0.0280	83.6
5.00	21.9	42.0	37.4	0.0133	42.5	9.3	0.0182	77.3
15.00	21.9	36.0	31.4	0.0133	36.5	10.3	0.0111	64.9
30.00	22.1	33.0	28.4	0.0133	33.5	10.8	0.0080	58.8
60.00	22.3	28.0	23.5	0.0133	28.5	11.6	0.0058	48.6
250.00	22.7	20.5	16.1	0.0132	21.0	12.9	0.0030	33.3
1440.00	22.3	14.0	9.5	0.0133	14.5	13.9	0.0013	19.6

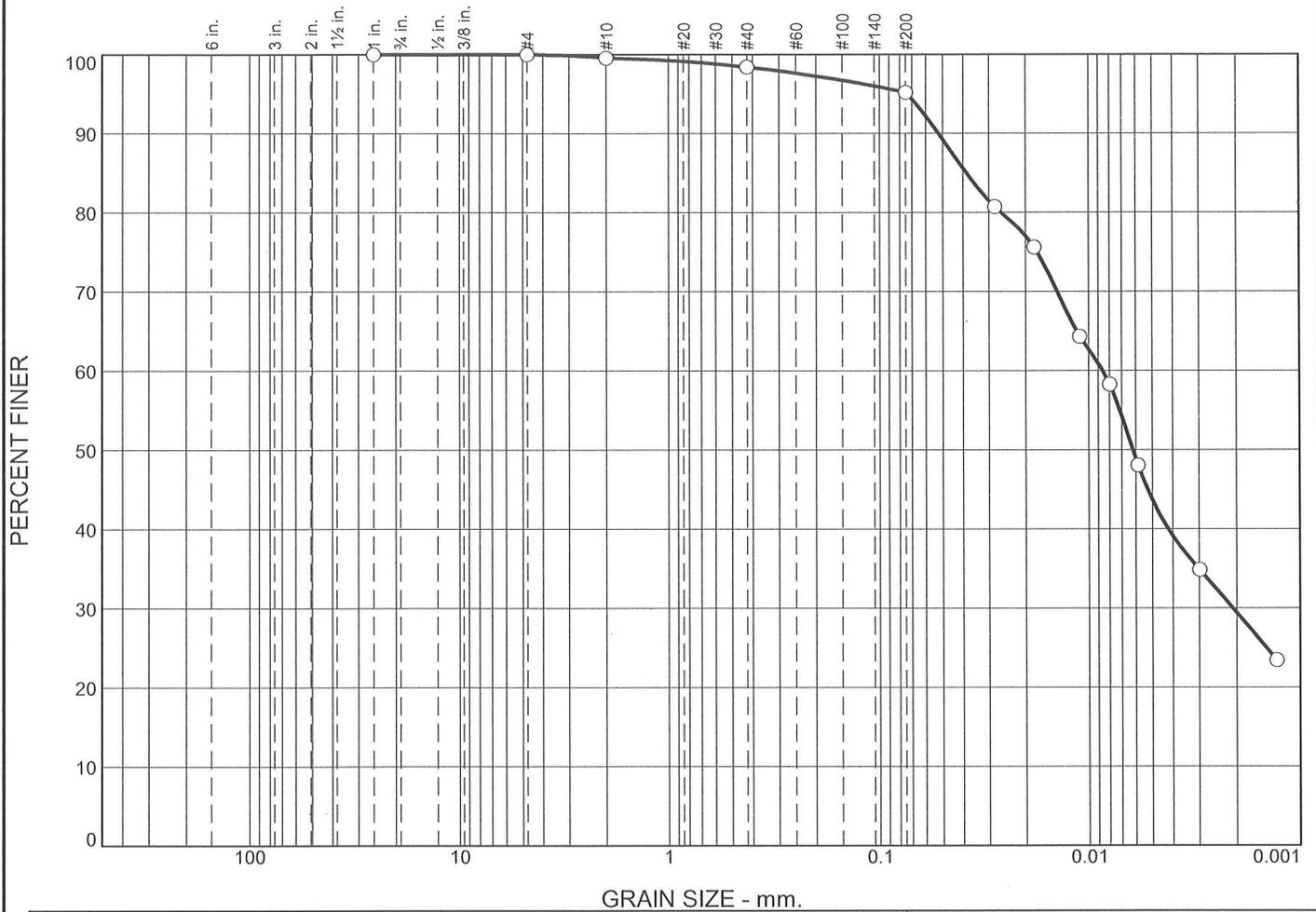
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.4	0.9	2.1	3.4	52.6	44.0	96.6

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
			0.0013	0.0025	0.0043	0.0061	0.0084	0.0212	0.0313	0.0445	0.0644

<b>Fineness Modulus</b>
0.06

# Particle Size Distribution Report



%	+3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
<input type="radio"/>	0.0	0.0	0.0	0.4	1.2	3.2	51.5	43.7

	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
<input checked="" type="checkbox"/>			0.0385	0.0086	0.0062	0.0021				

Material Description	USCS	AASHTO
<input type="radio"/> Sediment		

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p><input type="radio"/> <b>Source of Sample:</b> NAE9B      <b>Sample Number:</b> 20200431b</p>	<p><b>Remarks:</b></p>
<p><b>Aqua Survey, Inc.</b></p> <p><b>Flemington, NJ</b></p>	

Figure  
*CH*

**Tested By:** L. Horn      **Checked By:** C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

Client: Nordic Aquafarms  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Project Number: 40-126  
 Location: NAE9B  
 Sample Number: 20200431b  
 Material Description: Sediment  
 Tested by: L. Horn

Checked by: C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
93.50	11.57	1	0.00	0.00	100.0
		#4	11.57	11.57	100.0
		#10	11.93	11.57	99.6
50.00	0.00	#40	127.64	127.06	98.4
		#200	122.20	120.59	95.2

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 99.6  
 Weight of hydrometer sample = 50.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 29.78  
 Dry weight and tare = 29.05  
 Tare weight = 2.45  
 Hygroscopic moisture = 2.7%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -5  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	44.0	39.5	0.0133	44.5	9.0	0.0282	80.7
5.00	22.2	41.5	37.0	0.0133	42.0	9.4	0.0182	75.6
15.00	22.2	36.0	31.5	0.0133	36.5	10.3	0.0110	64.3
30.00	22.3	33.0	28.5	0.0133	33.5	10.8	0.0080	58.3
60.00	22.3	28.0	23.5	0.0133	28.5	11.6	0.0058	48.0
250.00	22.5	21.5	17.0	0.0132	22.0	12.7	0.0030	34.8
1440.00	22.2	16.0	11.5	0.0133	16.5	13.6	0.0013	23.4

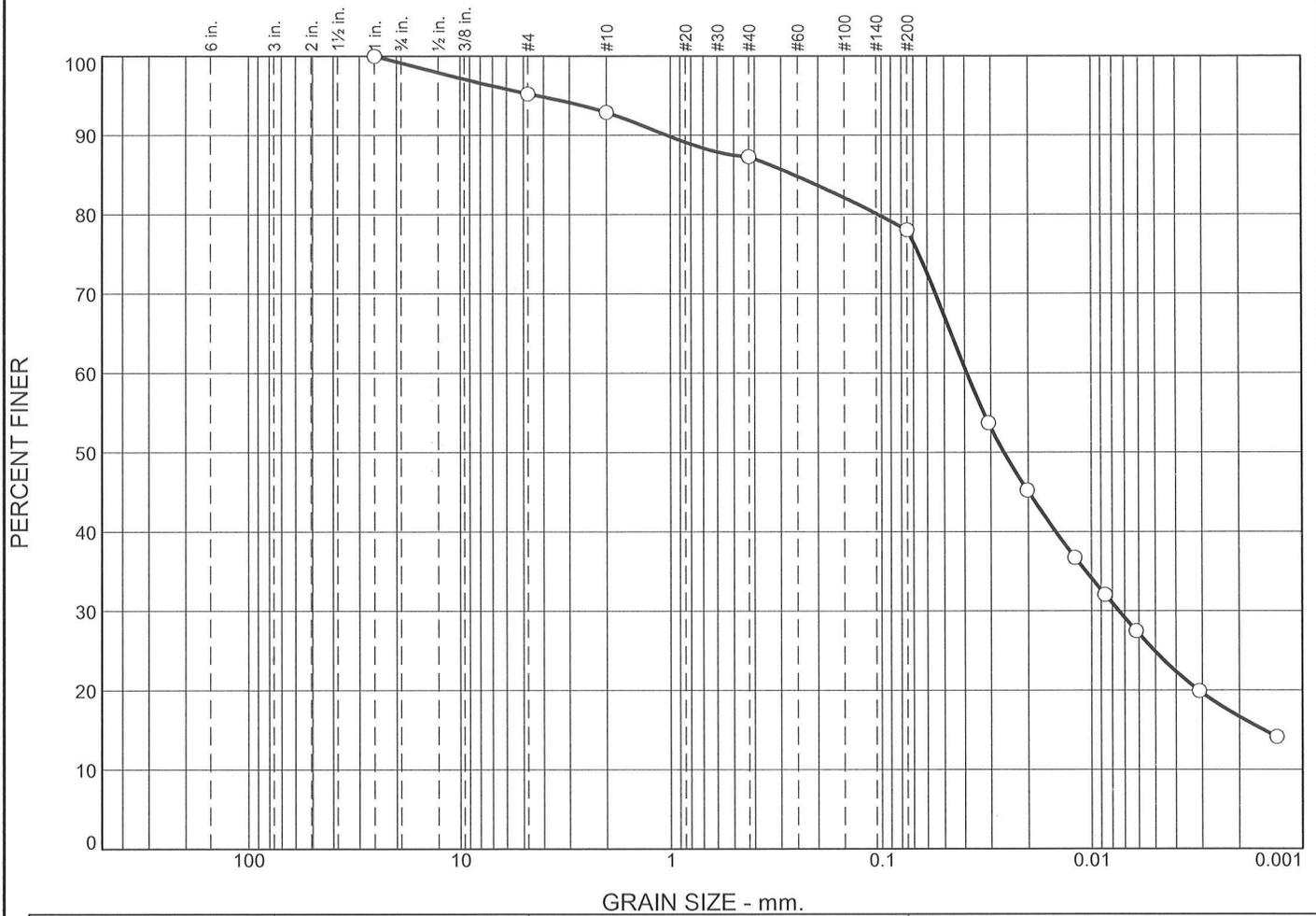
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.4	1.2	3.2	4.8	51.5	43.7	95.2

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
				0.0021	0.0042	0.0062	0.0086	0.0263	0.0385	0.0524	0.0738

<b>Fineness Modulus</b>
0.07

# Particle Size Distribution Report



%	+3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0.0	0.9	3.9	2.3	5.6	9.3	53.1	24.9		
⊗	LL	PL	D85	D60	D50	D30	D15	D10	C <sub>c</sub>	C <sub>u</sub>
○			0.2608	0.0390	0.0260	0.0074	0.0015			

Material Description	USCS	AASHTO
○ Sediment		

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p>○ <b>Source of Sample:</b> NAE9C      <b>Sample Number:</b> 20200431c</p>	<p><b>Remarks:</b></p> <p>○ #4- rocks and some organic debris</p>
<p><b>Aqua Survey, Inc.</b></p> <p><b>Flemington, NJ</b></p>	

Figure  
*CH*

Tested By: L. Horn      Checked By: C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

Client: Nordic Aquafarms  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Project Number: 40-126  
 Location: NAE9C  
 Sample Number: 20200431c  
 Material Description: Sediment  
 Testing Remarks: #4- rocks and some organic debris  
 Tested by: L. Horn

Checked by: C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
126.26	11.45	1	0.00	0.00	100.0
		#4	16.92	11.45	95.2
		#10	14.16	11.45	92.9
50.00	0.00	#40	131.89	128.88	87.3
		#200	128.09	123.11	78.0

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 92.9  
 Weight of hydrometer sample = 50.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 39.79  
 Dry weight and tare = 39.18  
 Tare weight = 2.45  
 Hygroscopic moisture = 1.7%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -5  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	33.0	28.5	0.0133	33.5	10.8	0.0309	53.7
5.00	22.2	28.5	24.0	0.0133	29.0	11.5	0.0202	45.2
15.00	22.2	24.0	19.5	0.0133	24.5	12.3	0.0120	36.7
30.00	22.3	21.5	17.0	0.0133	22.0	12.7	0.0086	32.1
60.00	22.6	19.0	14.6	0.0132	19.5	13.1	0.0062	27.5
250.00	22.6	15.0	10.6	0.0132	15.5	13.8	0.0031	19.9
1440.00	22.3	12.0	7.5	0.0133	12.5	14.2	0.0013	14.1

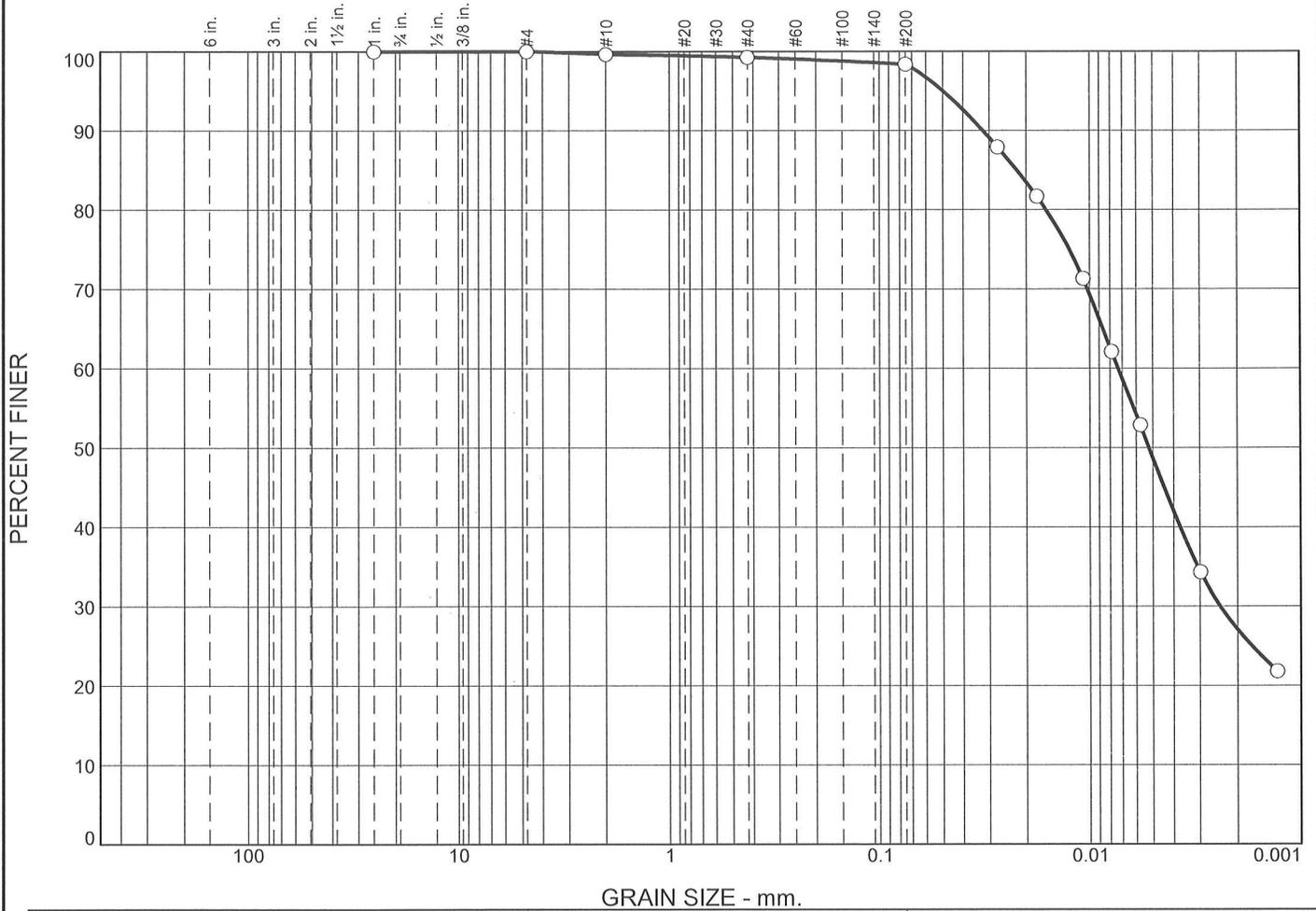
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.9	3.9	4.8	2.3	5.6	9.3	17.2	53.1	24.9	78.0

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
		0.0015	0.0031	0.0074	0.0148	0.0260	0.0390	0.1037	0.2608	1.0399	4.3023

<b>Fineness Modulus</b>
0.69

# Particle Size Distribution Report



%	+3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0.0	0.0	0.0	0.4	0.3	0.9	49.7	48.7		
⊗	LL	PL	D85	D60	D50	D30	D15	D10	Cc	Cu
○			0.0222	0.0073	0.0052	0.0024				

Material Description	USCS	AASHTO
○ Sediment		

**Project No.** 40-126      **Client:** Nordic Aquafarms  
**Project:** Nordic Aquafarms Pipeline Corridor Dredging  
  
 ○ **Source of Sample:** NAE10A      **Sample Number:** 20200432a  
  

**Aqua Survey, Inc.**  
**Flemington, NJ**

**Remarks:**

Figure  
*CH*

**Tested By:** L. Horn      **Checked By:** C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

Client: Nordic Aquafarms

Project: Nordic Aquafarms Pipeline Corridor Dredging

Project Number: 40-126

Location: NAE10A

Sample Number: 20200432a

Material Description: Sediment

Tested by: L. Horn

Checked by: C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
115.39	11.52	1	0.00	0.00	100.0
		#4	11.52	11.52	100.0
		#10	11.90	11.52	99.6
50.00	0.00	#40	128.91	128.72	99.3
		#200	130.78	130.34	98.4

**Hydrometer Test Data**

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 99.6

Weight of hydrometer sample = 50.00

Hygroscopic moisture correction:

Moist weight and tare = 25.91

Dry weight and tare = 25.03

Tare weight = 2.46

Hygroscopic moisture = 3.9%

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = -5

Meniscus correction only = 0.5

Specific gravity of solids = 2.65

Hydrometer type = 152H

Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	47.0	42.5	0.0133	47.5	8.5	0.0274	87.9
5.00	22.2	44.0	39.5	0.0133	44.5	9.0	0.0178	81.7
15.00	22.2	39.0	34.5	0.0133	39.5	9.8	0.0107	71.3
30.00	22.4	34.5	30.0	0.0132	35.0	10.6	0.0079	62.1
60.00	22.5	30.0	25.5	0.0132	30.5	11.3	0.0057	52.9
250.00	22.7	21.0	16.6	0.0132	21.5	12.8	0.0030	34.3
1440.00	22.5	15.0	10.5	0.0132	15.5	13.8	0.0013	21.8

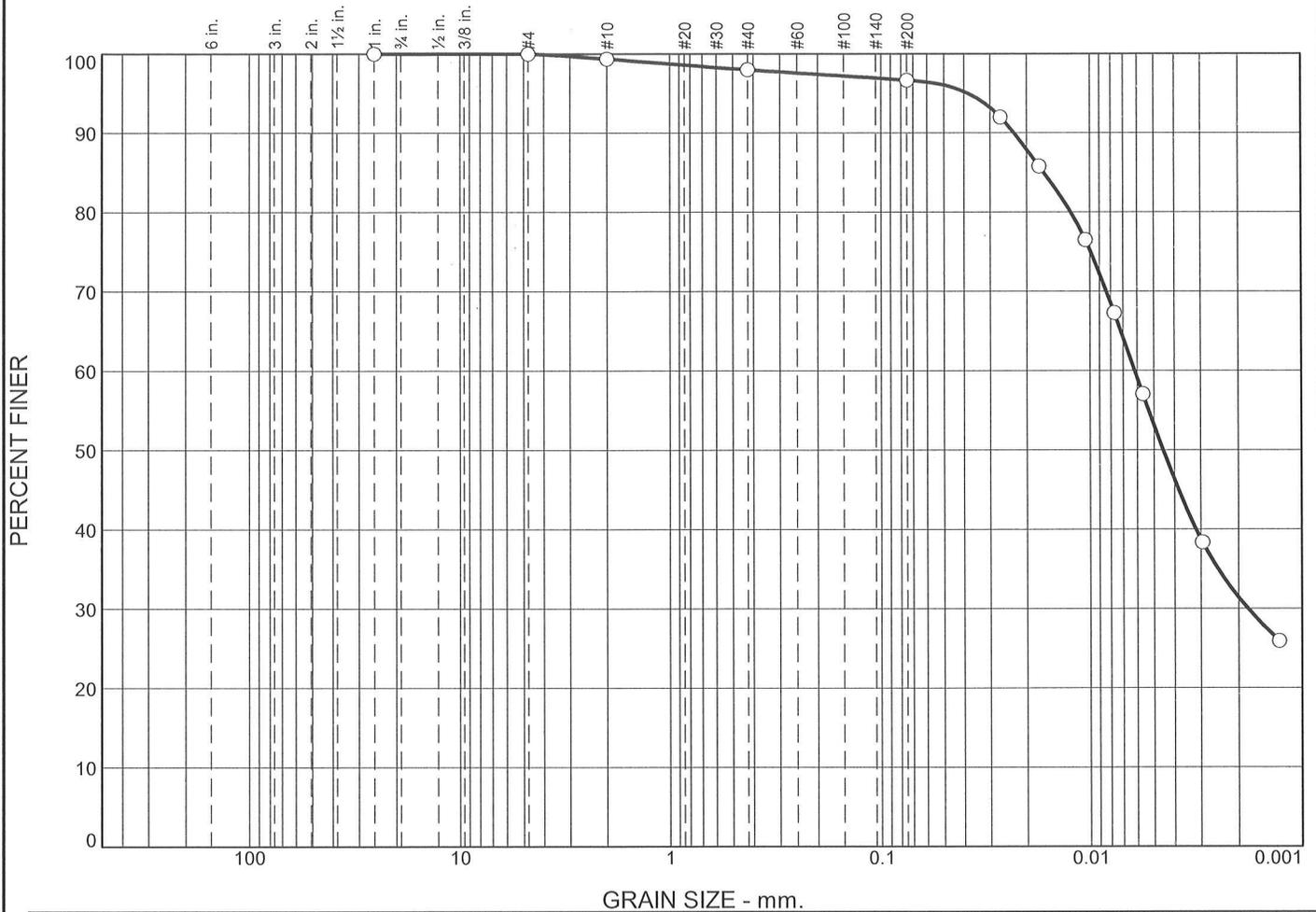
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.4	0.3	0.9	1.6	49.7	48.7	98.4

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
				0.0024	0.0037	0.0052	0.0073	0.0161	0.0222	0.0322	0.0497

<b>Fineness Modulus</b>
0.03

# Particle Size Distribution Report



%	+3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0.0	0.0	0.0	0.6	1.4	1.3	43.6	53.1		
⊗	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
○			0.0166	0.0062	0.0045	0.0018				

Material Description	USCS	AASHTO
○ Sediment		

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p>○ <b>Source of Sample:</b> NAE10B      <b>Sample Number:</b> 20200432b</p> <p style="text-align: center;"><b>Aqua Survey, Inc.</b></p> <p style="text-align: center;"><b>Flemington, NJ</b></p>	<p><b>Remarks:</b></p> <p style="text-align: right;">Figure <i>CH</i></p>
---	---

Tested By: L. Horn      Checked By: C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

**Client:** Nordic Aquafarms

**Project:** Nordic Aquafarms Pipeline Corridor Dredging

**Project Number:** 40-126

**Location:** NAE10B

**Sample Number:** 20200432b

**Material Description:** Sediment

**Tested by:** L. Horn

**Checked by:** C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
91.99	11.88	1	0.00	0.00	100.0
		#4	11.88	11.88	100.0
		#10	12.39	11.88	99.4
50.00	0.00	#40	129.36	128.67	98.0
		#200	129.05	128.38	96.7

**Hydrometer Test Data**

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 99.4

Weight of hydrometer sample = 50.00

Hygroscopic moisture correction:

Moist weight and tare = 32.20

Dry weight and tare = 31.04

Tare weight = 2.47

Hygroscopic moisture = 4.1%

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = -5

Meniscus correction only = 0.5

Specific gravity of solids = 2.65

Hydrometer type = 152H

Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.3	49.0	44.5	0.0133	49.5	8.2	0.0268	92.0
5.00	22.3	46.0	41.5	0.0133	46.5	8.7	0.0175	85.8
15.00	22.3	41.5	37.0	0.0133	42.0	9.4	0.0105	76.5
30.00	22.5	37.0	32.5	0.0132	37.5	10.1	0.0077	67.3
60.00	22.7	32.0	27.6	0.0132	32.5	11.0	0.0056	57.1
250.00	22.6	23.0	18.6	0.0132	23.5	12.4	0.0029	38.4
1440.00	22.5	17.0	12.5	0.0132	17.5	13.4	0.0013	25.9

**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.6	1.4	1.3	3.3	43.6	53.1	96.7

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
				0.0018	0.0032	0.0045	0.0062	0.0123	0.0166	0.0230	0.0382

<b>Fineness Modulus</b>
0.08



**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

Client: Nordic Aquafarms  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Project Number: 40-126  
 Location: NAE10C  
 Sample Number: 20200432c  
 Material Description: Sediment  
 Tested by: M. Thomas

Checked by: C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
101.49	11.70	1	0.00	0.00	100.0
		#4	11.95	11.70	99.7
		#10	12.72	11.70	98.6
50.00	0.00	#40	128.37	126.95	95.8
		#200	135.94	128.77	81.6

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 98.6  
 Weight of hydrometer sample = 50.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 36.54  
 Dry weight and tare = 35.89  
 Tare weight = 2.47  
 Hygroscopic moisture = 2.0%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -6  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.0	42.0	36.2	0.0135	42.5	9.3	0.0291	72.7
5.00	21.0	38.0	32.2	0.0135	38.5	10.0	0.0190	64.7
15.00	21.0	34.0	28.2	0.0135	34.5	10.6	0.0113	56.6
30.00	21.0	30.0	24.2	0.0135	30.5	11.3	0.0083	48.6
60.00	21.1	26.0	20.2	0.0135	26.5	11.9	0.0060	40.6
250.00	20.9	19.0	13.2	0.0135	19.5	13.1	0.0031	26.4
1440.00	20.6	14.0	8.1	0.0135	14.5	13.9	0.0013	16.3

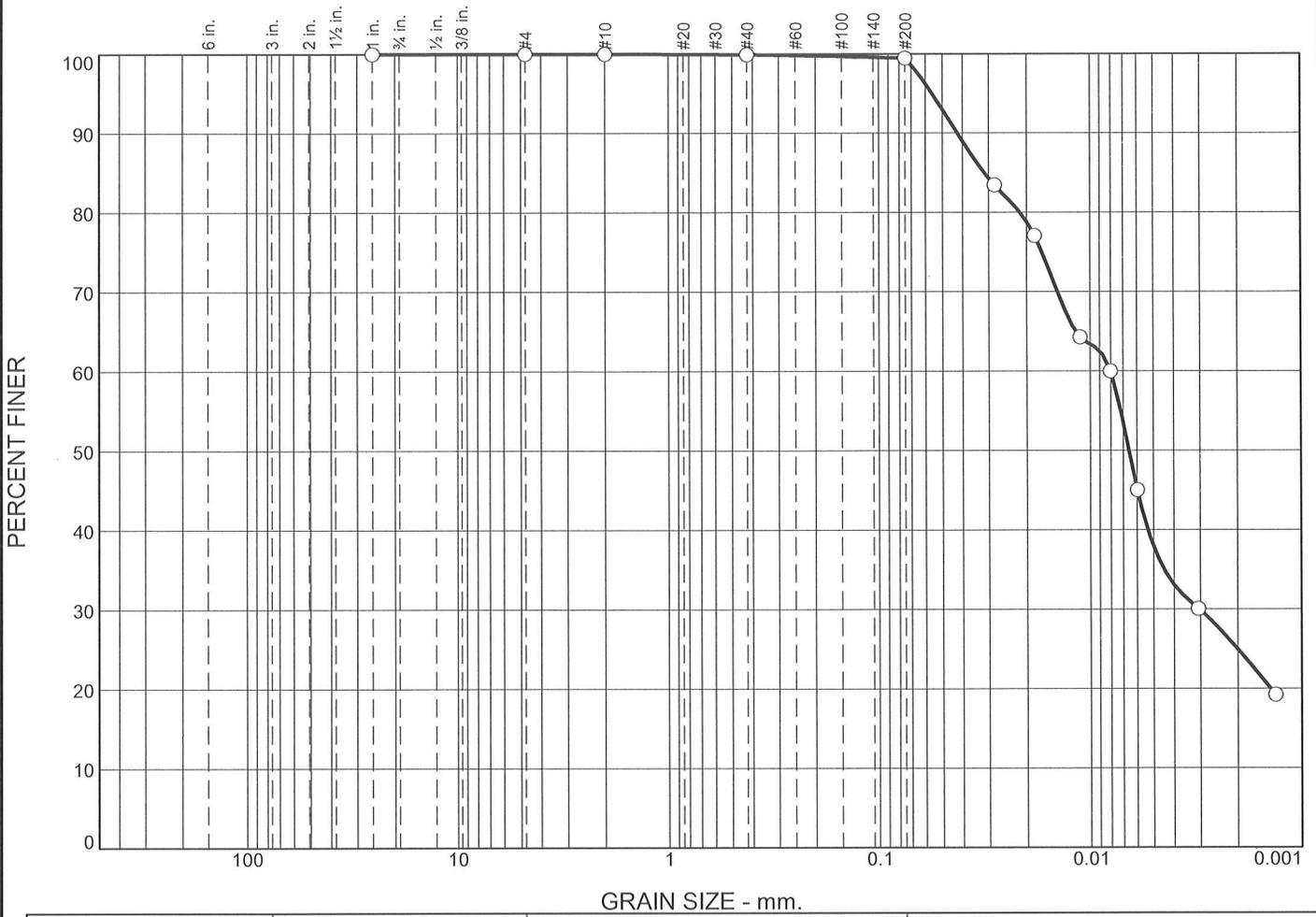
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.3	0.3	1.1	2.8	14.2	18.1	45.3	36.3	81.6

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
			0.0019	0.0037	0.0059	0.0087	0.0137	0.0584	0.1141	0.1977	0.3714

<b>Fineness Modulus</b>
0.25

# Particle Size Distribution Report



%	+3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.1	0.4	61.6	37.9

×	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
○			0.0316	0.0080	0.0066	0.0030				

Material Description	USCS	AASHTO
○ Sediment		

**Project No.** 40-126      **Client:** Nordic Aquafarms  
**Project:** Nordic Aquafarms Pipeline Corridor Dredging  
  
 ○ **Source of Sample:** NAE11A      **Sample Number:** 20200433A  
  

**Aqua Survey, Inc.**  
**Flemington, NJ**

**Remarks:**

Figure  
*CH*

Tested By: M. Thomas      Checked By: C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

Client: Nordic Aquafarms

Project: Nordic Aquafarms Pipeline Corridor Dredging

Project Number: 40-126

Location: NAE11A

Sample Number: 20200433A

Material Description: Sediment

Tested by: M. Thomas

Checked by: C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
100.08	11.54	1	0.00	0.00	100.0
		#4	11.54	11.54	100.0
		#10	11.54	11.54	100.0
50.00	0.00	#40	133.27	133.23	99.9
		#200	129.02	128.79	99.5

**Hydrometer Test Data**

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 50.00

Hygroscopic moisture correction:

Moist weight and tare = 24.71

Dry weight and tare = 23.36

Tare weight = 2.51

Hygroscopic moisture = 6.4%

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = -6

Meniscus correction only = 0.5

Specific gravity of solids = 2.65

Hydrometer type = 152H

Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.1	45.0	39.2	0.0135	45.5	8.8	0.0283	83.4
5.00	21.1	42.0	36.2	0.0135	42.5	9.3	0.0184	77.1
15.00	21.1	36.0	30.2	0.0135	36.5	10.3	0.0112	64.3
30.00	21.0	34.0	28.2	0.0135	34.5	10.6	0.0080	60.0
60.00	20.9	27.0	21.2	0.0135	27.5	11.8	0.0060	45.0
250.00	20.8	20.0	14.1	0.0135	20.5	12.9	0.0031	30.1
1440.00	20.4	15.0	9.0	0.0136	15.5	13.8	0.0013	19.3

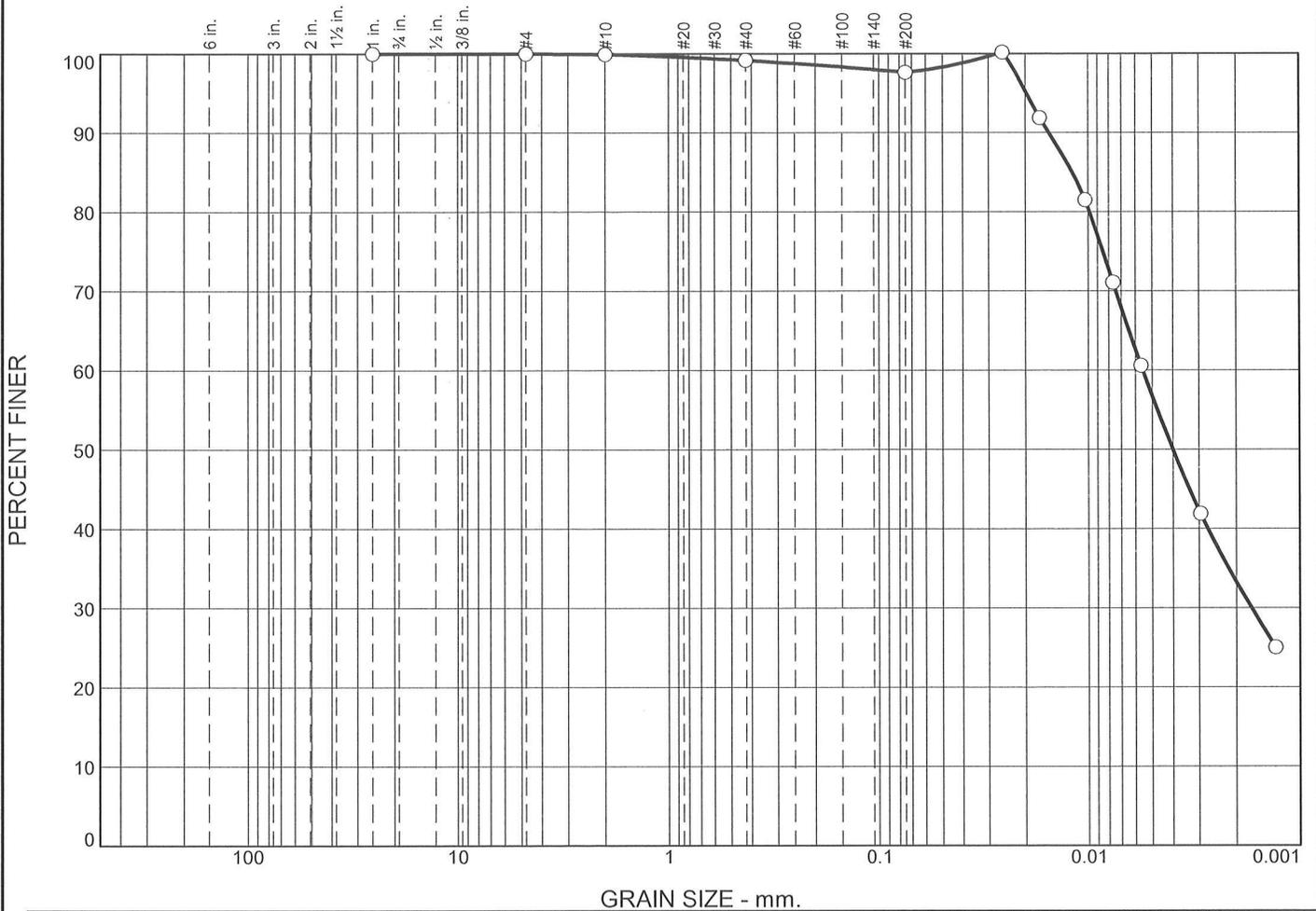
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.5	61.6	37.9	99.5

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
			0.0014	0.0030	0.0053	0.0066	0.0080	0.0215	0.0316	0.0423	0.0558

Fineness Modulus
0.01

# Particle Size Distribution Report



%	+3"		% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
<input type="radio"/>		0.0	0.1	0.7	1.6	40.9	56.7		

	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
<input type="radio"/>			0.0119	0.0055	0.0040	0.0017				

Material Description	USCS	AASHTO
<input type="radio"/> Sediment		

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p><input type="radio"/> <b>Source of Sample:</b> NAE11B      <b>Sample Number:</b> 20200433b</p>	<p><b>Remarks:</b></p>
<p><b>Aqua Survey, Inc.</b></p> <p><b>Flemington, NJ</b></p>	

Figure  
*CH*

**Tested By:** M. Thomas      **Checked By:** C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

**Client:** Nordic Aquafarms  
**Project:** Nordic Aquafarms Pipeline Corridor Dredging  
**Project Number:** 40-126  
**Location:** NAE11B  
**Sample Number:** 20200433b  
**Material Description:** Sediment

**Tested by:** M. Thomas

**Checked by:** C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
116.05	11.66	1	0.00	0.00	100.0
		#4	11.66	11.66	100.0
		#10	11.73	11.66	99.9
50.00	0.00	#40	121.75	121.36	99.2
		#200	127.31	126.55	97.6

**Hydrometer Test Data**

Hydrometer test uses material passing #10  
 Percent passing #10 based upon complete sample = 99.9  
 Weight of hydrometer sample = 50.00  
 Hygroscopic moisture correction:  
 Moist weight and tare = 29.86  
 Dry weight and tare = 28.80  
 Tare weight = 2.55  
 Hygroscopic moisture = 4.0%  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = -6  
 Meniscus correction only = 0.5  
 Specific gravity of solids = 2.65  
 Hydrometer type = 152H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.1	54.0	48.2	0.0135	54.5	7.4	0.0258	100.2
5.00	21.1	50.0	44.2	0.0135	50.5	8.0	0.0170	91.9
15.00	21.1	45.0	39.2	0.0135	45.5	8.8	0.0103	81.5
30.00	21.1	40.0	34.2	0.0135	40.5	9.7	0.0076	71.1
60.00	20.9	35.0	29.2	0.0135	35.5	10.5	0.0056	60.6
250.00	20.9	26.0	20.2	0.0135	26.5	11.9	0.0030	41.9
1440.00	20.4	18.0	12.0	0.0136	18.5	13.3	0.0013	25.0

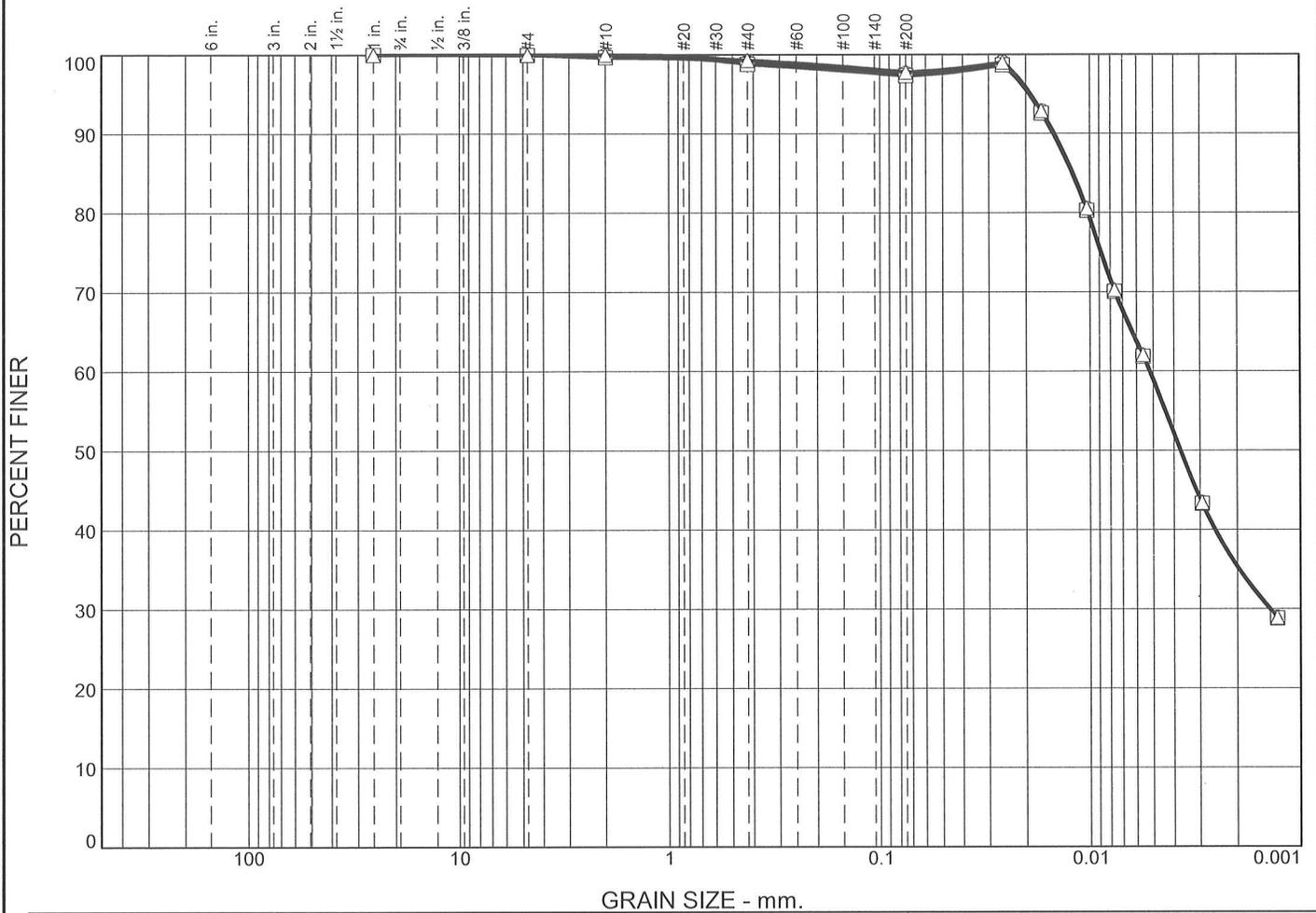
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
		0.0		0.1	0.7	1.6	2.4	40.9	56.7	97.6

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
				0.0017	0.0027	0.0040	0.0055	0.0098	0.0119	0.0154	0.0197

<b>Fineness Modulus</b>
0.04

# Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	0.0	0.0	0.0	0.0	1.0	1.4	38.7	58.9		
□	0.0	0.0	0.0	0.4	0.8	1.5	38.5	58.8		
△	0.0	0.0	0.0	0.0	0.7	1.5	38.8	59.0		
	LL	PL	D85	D60	D50	D30	D15	D10	C <sub>c</sub>	C <sub>u</sub>
○			0.0120	0.0052	0.0037	0.0014				
□			0.0121	0.0052	0.0037	0.0014				
△			0.0120	0.0052	0.0037	0.0014				

Material Description	USCS	AASHTO
○ Sediment		
□ Sediment		
△ Sediment		

<p><b>Project No.</b> 40-126      <b>Client:</b> Nordic Aquafarms</p> <p><b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging</p> <p>○ <b>Source of Sample:</b> NAE11C      <b>Sample Number:</b> 20200433c</p> <p>□ <b>Source of Sample:</b> NAE11C      <b>Sample Number:</b> 20200433c dup</p> <p>△ <b>Source of Sample:</b> NAE11C      <b>Sample Number:</b> 20200433c trp</p> <p style="text-align: center;"><b>Aqua Survey, Inc.</b></p> <p style="text-align: center;"><b>Flemington, NJ</b></p>	<p><b>Remarks:</b></p>     <p style="text-align: right;">Figure <i>CH</i></p>
---	--

**Tested By:** M. Thomas      **Checked By:** C. Hall

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

**Client:** Nordic Aquafarms

**Project:** Nordic Aquafarms Pipeline Corridor Dredging

**Project Number:** 40-126

**Location:** NAE11C

**Sample Number:** 20200433c

**Material Description:** Sediment

**Tested by:** M. Thomas

**Checked by:** C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
97.31	11.66	1	0.00	0.00	100.0
		#4	11.66	11.66	100.0
		#10	11.69	11.66	100.0
50.00	0.00	#40	132.12	131.64	99.0
		#200	127.71	127.03	97.6

**Hydrometer Test Data**

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 50.00

Hygroscopic moisture correction:

Moist weight and tare = 25.30

Dry weight and tare = 24.69

Tare weight = 2.50

Hygroscopic moisture = 2.7%

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = -6

Meniscus correction only = 0.5

Specific gravity of solids = 2.65

Hydrometer type = 152H

Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.1	54.0	48.2	0.0135	54.5	7.4	0.0258	99.0
5.00	21.1	51.0	45.2	0.0135	51.5	7.8	0.0169	92.8
15.00	21.1	45.0	39.2	0.0135	45.5	8.8	0.0103	80.5
30.00	20.9	40.0	34.2	0.0135	40.5	9.7	0.0077	70.2
60.00	20.9	36.0	30.2	0.0135	36.5	10.3	0.0056	61.9
250.00	20.8	27.0	21.1	0.0135	27.5	11.8	0.0029	43.4
1440.00	20.5	20.0	14.1	0.0136	20.5	12.9	0.0013	28.9

**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	1.0	1.4	2.4	38.7	58.9	97.6

D5	D10	D15	D20	D30	D40	D50	D60	D80	D85	D90	D95
				0.0014	0.0025	0.0037	0.0052	0.0102	0.0120	0.0147	0.0190

<b>Fineness Modulus</b>
0.04

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

**Client:** Nordic Aquafarms

**Project:** Nordic Aquafarms Pipeline Corridor Dredging

**Project Number:** 40-126

**Location:** NAE11C

**Sample Number:** 20200433c dup

**Material Description:** Sediment

**Tested by:** M. Thomas

**Checked by:** C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
99.04	11.42	1	0.00	0.00	100.0
		#4	11.45	11.42	100.0
		#10	11.70	11.42	99.6
50.00	0.00	#40	126.50	126.07	98.8
		#200	129.23	128.49	97.3

**Hydrometer Test Data**

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 99.6

Weight of hydrometer sample = 50.00

Hygroscopic moisture correction:

Moist weight and tare = 25.30

Dry weight and tare = 24.69

Tare weight = 2.50

Hygroscopic moisture = 2.7%

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = -6

Meniscus correction only = 0.5

Specific gravity of solids = 2.65

Hydrometer type = 152H

Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.1	54.0	48.2	0.0135	54.5	7.4	0.0258	98.7
5.00	21.1	51.0	45.2	0.0135	51.5	7.8	0.0169	92.5
15.00	21.1	45.0	39.2	0.0135	45.5	8.8	0.0103	80.3
30.00	21.1	40.0	34.2	0.0135	40.5	9.7	0.0076	70.0
60.00	21.1	36.0	30.2	0.0135	36.5	10.3	0.0056	61.8
250.00	20.8	27.0	21.1	0.0135	27.5	11.8	0.0029	43.3
1440.00	20.5	20.0	14.1	0.0136	20.5	12.9	0.0013	28.8

**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.4	0.8	1.5	2.7	38.5	58.8	97.3

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
				0.0014	0.0026	0.0037	0.0052	0.0102	0.0121	0.0149	0.0193

<b>Fineness Modulus</b>
0.05

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/24/2020

**Client:** Nordic Aquafarms

**Project:** Nordic Aquafarms Pipeline Corridor Dredging

**Project Number:** 40-126

**Location:** NAE11C

**Sample Number:** 20200433c trp

**Material Description:** Sediment

**Tested by:** M. Thomas

**Checked by:** C. Hall

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
98.87	11.37	1	0.00	0.00	100.0
		#4	11.37	11.37	100.0
		#10	11.37	11.37	100.0
50.00	0.00	#40	123.38	123.03	99.3
		#200	128.91	128.15	97.8

**Hydrometer Test Data**

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 50.00

Hygroscopic moisture correction:

Moist weight and tare = 25.30

Dry weight and tare = 24.69

Tare weight = 2.50

Hygroscopic moisture = 2.7%

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = -6

Meniscus correction only = 0.5

Specific gravity of solids = 2.65

Hydrometer type = 152H

Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.1	54.0	48.2	0.0135	54.5	7.4	0.0258	99.0
5.00	21.1	51.0	45.2	0.0135	51.5	7.8	0.0169	92.9
15.00	21.1	45.0	39.2	0.0135	45.5	8.8	0.0103	80.5
30.00	21.1	40.0	34.2	0.0135	40.5	9.7	0.0076	70.3
60.00	21.1	36.0	30.2	0.0135	36.5	10.3	0.0056	62.1
250.00	20.8	27.0	21.1	0.0135	27.5	11.8	0.0029	43.4
1440.00	20.5	20.0	14.1	0.0136	20.5	12.9	0.0013	28.9

**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.7	1.5	2.2	38.8	59.0	97.8

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
				0.0014	0.0025	0.0037	0.0052	0.0102	0.0120	0.0147	0.0190

<b>Fineness Modulus</b>
0.03

AQUA SURVEY, INC

GRAIN SIZE BENCHSHEET  
SEPARATION SIEVING

Job #: 40-126  
Client: Nordic Aquafarms  
Balance: AND GF-8K2

Calibration: Yes:  No:

Sample ID	Container Mass (g)	Sample Mass and Container (g)	Sample Mass Retained on #4 Sieve (4.75mm) and Container (g)	Sample Mass Retained on #10 Sieve (2.0mm) and Container (g)	Sample Mass to Hydrometer (g)	
20200424a	11.66	188.32	48.08	35.83	100.00	
20200424b	11.71	260.91	124.64	49.32	95.00	
20200424c	11.80	458.65	353.02	62.30	50.00	
20200425a	11.71	237.78	82.48	46.99	100.00	
20200425b	11.82	175.24	48.96	33.42	50.00	
20200425c	11.66	144.51	51.05	25.83	50.00	
20200426a	11.71	230.82	37.37	51.07	100.00	
20200426b	11.43	187.97	19.36	18.58	50.00	
20200426c	11.60	230.87	53.92	27.35	50.00	
20200427a	11.67	259.68	19.45	32.74	100.00	
1 1/2 20200427b	73.52	698.68	428.57 <sup>⓪</sup>	155.23 <sup>⓪</sup>	↓	
20200427c	73.53	675.72	377.72 <sup>⓪</sup>	193.93 <sup>⓪</sup>		
1 1/2 20200428a	73.57	740.27	364.14 <sup>⓪</sup>	195.21		
20200428b	73.55	547.50	134.40	104.16		
20200428c	73.57	607.68	130.65	131.06	↓	
20200429a	73.59	556.99	134.36 <sup>⓪</sup>	139.27 <sup>⓪</sup>	50.00	
20200429b	11.56	211.33	24.84 <sup>⓪</sup>	27.66 <sup>⓪</sup>	100.00	
20200429c	73.59	636.69	263.99	161.61	100.00	
Date/ Initials	8/3/20 [Signature]					→

⓪ Rocks & Some Shell

AQUA SURVEY, INC

GRAIN SIZE BENCHSHEET  
SEPARATION SIEVING

Job #: 40-126  
Client: Nordic Aquafarms  
Balance: AND GF-8K2

Calibration: Yes:  No:

Sample ID	Container Mass (g)	Sample Mass and Container (g)	Sample Mass Retained on #4 Sieve (4.75mm) and Container (g)	Sample Mass Retained on #10 Sieve (2.0mm) and Container (g)	Sample Mass to Hydrometer (g)
20200430a	11.96	91.14	15.13	12.62	50.00
20200430b	11.68	97.81	11.68	12.22	50.00
20200430bDup	11.52	95.62	11.52	12.03	50.00
20200430btrp	11.72	97.85	<del>11.72</del>	12.18	50.00
20200430c	11.97	117.14	11.97	12.43 <sup>①</sup>	50.00
20200431a	11.45	111.21	11.45	11.84	50.00
20200431b	11.57	93.50	11.57	11.93	50.00
20200431c	11.45	126.26	16.92 <sup>①</sup>	14.16	50.00
20200432a	11.52	115.39	11.52	11.90	50.00
20200432b	11.88	91.99	11.88	<del>11.90</del> 12.39	50.00
20200432c	11.70	101.49	11.95	12.72	50.00
20200433a	11.54	100.08	11.54	11.54	50.00
20200433b	11.66	116.05	11.66	11.73	50.00
20200433c	11.66	97.31	11.66	11.69	50.00
20200433cDup	11.42	99.04	11.45	11.70	50.00
20200433ctrp	11.37	98.87	11.37	11.37	50.00
Date/ Initials	7/8/19/20 i DA 8/19/20				

① Small rocks i. some organic debris

AQUA SURVEY, INC

POST HYDROMETER BENCHSHEET

Job #: 40-126

Client: Nordic Aqua Farms

Balance: AND GF 8K-2

Calibration: Yes:  No:

Oven: QL Model 40 GC

Date In: 8/20/20 Oven Temp: 110°C

Date Out: 8/21/20 Oven Temp: 110°C

Sample ID	Container Mass (g)	Sample Mass and Container (g)	Sample Mass retained on # 40 Sieve = (g)
20200424 a	123.98	167.28	
20200424 b	126.63	174.60	
20200424 c	129.40	163.13	
20200425 a	130.83	<del>159.08</del> 166.30	
20200425 b	121.54	<del>132.19</del> 132.19	
20200425 c	127.02	139.62	
20200426 a	126.49	183.63	
20200426 b	133.04	<del>150.33</del> 137.77	
20200426 c	127.25	133.94	
20200427 a	130.69	171.28	
20200427 b	126.92	188.52	
20200427 c	128.72	200.72	
20200428 a	127.49	186.93	
20200428 b	128.34	147.87	
20200428 c	126.32	156.58	
20200429 a	121.27	140.44	
20200429 b	133.21	174.11	
20200429 c	128.44	186.40	
Date/ Initials	8/20/20	8/21/20	

AQUA SURVEY, INC

POST HYDROMETER BENCHSHEET

Job #: 40-126

Client: Nordic Aqua Farms

Balance: ANL GF-8K2

Calibration: Yes:  No:

Oven: QL Model 40 GC

Date In: 8/21/20 Oven Temp: 110°C

Date Out: 8/21/20 Oven Temp: 110°C

Sample ID	Container Mass (g)	Sample Mass and Container (g)	Sample Mass retained on # 40 Sieve = (g)
20200430a	131.30	133.00	
20200430b	123.58	124.69	
20200430b dup	128.79	130.08	
20200430b trip	127.08	128.04	
20200430c	126.88	127.38	
20200431a	128.70	129.15	
20200431b	127.06	127.64	
20200431c	128.88	131.89	
20200432a	128.72	128.91	
20200432b	128.67	129.36	
20200432c	126.95	128.37	
20200433a	133.23	133.27	
20200433b	121.36	121.75	
20200433c	131.64	132.12	
20200433c dup	126.07	126.50	
20200433c trip	123.03	123.38	
Date/Initials	8/21/20	8/22/20	

POST HYDROMETER BENCHSHEET

Job #: 40-126

Client: Nordic Aqua-farms

Balance: ANB GF 8K-2

Calibration: Yes:  No:

Oven: QL Model 40 GC

Date In: 8/20/20 Oven Temp: 110°C

Date Out: 8/21/20 Oven Temp: 110°C

Sample ID	Container Mass (g)	Sample Mass and Container (g)	Sample Mass retained on #200 Sieve = (g)
20200424 a	131.58	170.26	
20200424 b	127.45	155.77	
20200424 c	127.54	138.96	
20200425 a	123.00	159.08	
20200425 b	120.94	131.95	
20200425 c	131.78	142.23	
20200426 a	126.47	164.24	
20200426 b	134.57	150.34	
20200426 c	126.42	147.46	
20200427 a	128.46	170.58	
20200427 b	121.13	145.43	
20200427 c	128.01	141.22	
20200428 a	121.02	151.23	
20200428 b	121.14	175.15	
20200428 c	123.70	174.83	
20200429 a	126.95	142.91	
20200429 b	128.96	175.74	
20200429 c	129.97	158.50	
Date/ Initials	8/20/20 <i>J</i>	8/21/20 <i>J</i>	

AQUA SURVEY, INC

POST HYDROMETER BENCHSHEET

Job #: 40-126

Client: Nordic Aqua Farms

Balance: ANB GF8k.2

Calibration: Yes:  No:

Oven: QL Model 40 GC

Date In: 8/21/20 Oven Temp: 110°C

Date Out: 8/21/20 Oven Temp: 110°C

Sample ID	Container Mass (g)	Sample Mass and Container (g)	Sample Mass retained on #200 Sieve (g)
20200430 a	121.02	129.66	
20200430 b	120.51	135.66	
20200430 b dup	128.24	143.17	
20200430 b trip	128.87	144.14	
20200430 C	120.65	127.76	
20200431a	128.28	129.32	
20200431b	120.59	122.20	
20200431 C	123.11	128.09	
20200432a	130.34	130.78	
20200432.b	128.38	129.05	
20200432 C	128.77	135.94	
20200433a	128.79	129.02	
20200433 b	126.55	127.31	
20200433 C	127.03	127.71	
20200433 C dup	128.49	129.23	
20200433 C trip	128.15	128.91	
Date/ Initials	8/21/20 /	8/22/20 /	

**HYDROMETRIC READINGS FOR GRAIN SIZE ANALYSIS**

Job #: 40-126

Client: Nordic Aqua-farms

Sample: 20200424a Grams Used: 100.00 DC: 6.0

Clock Time	M	R <sub>h</sub>	Initials/Date	T(°C)
9:00	0	XXXX	✓ 8/19/20	21.4
9:02	2	15.0	✓	
9:05	5	13.0		
9:15	15	12.0		
9:30	30	11.0		21.2
10:00	60	10.0		21.3
1:10	250	9.0		21.0
9:00	1440	9.0	✓ 8/20/20	20.6

Sample: 20200425a Grams Used: 100.00 DC: 6.0

Clock Time	T	R <sub>h</sub>	Initials/Date	T(°C)
9:12	0	XXXX	✓ 8/19/20	21.3
9:14	2	29.0	✓	
9:17	5	25.0		
9:27	15	21.0		
9:42	30	19.0		21.3
10:12	60	16.0		21.2
1:22	250	13.0		20.8-21.0
9:12	1440	12.0	✓ 8/20/20	20.6

Sample: 20200424b Grams Used: 95.00 DC: 6.0

Clock Time	M	R <sub>h</sub>	Initials/Date	T(°C)
9:04	0	XXXX	✓ 8/19/20	21.2
9:06	2	18.0	✓	
9:09	5	15.0		
9:19	15	13.0		
9:34	30	12.0		21.2
10:04	60	11.0		21.3
1:14	250	10.0		21.1
9:04	1440	9.0	✓ 8/20/20	20.6

Sample: 20200425b Grams Used: 50.00 DC: 6.0

Clock Time	T	R <sub>h</sub>	Initials/Date	T(°C)
9:16	0	XXXX	✓ 8/19/20	21.3
9:18	2	28.0	✓	
9:21	5	24.0		
9:31	15	19.0		
9:46	30	17.0		21.3
10:16	60	14.0		21.3
1:26	250	11.0		20.9
9:16	1440	9.0	✓ 8/20/20	20.6

Sample: 20200424c Grams Used: 50.00 DC: 6.0

Clock Time	M	R <sub>h</sub>	Initials/Date	T(°C)
9:08	0	XXXX	✓ 8/19/20	21.2
9:10	2	10.0	✓	
9:13	5	9.0		
9:23	15	9.0		
9:38	30	8.0		21.3
10:08	60	8.0		21.2
1:18	250	8.0		20.9
9:08	1440	7.0	✓ 8/20/20	20.6

Sample: 20200425c Grams Used: 50.00 DC: 6.0

Clock Time	T	R <sub>h</sub>	Initials/Date	T(°C)
9:20	0	XXXX	✓ 8/19/20	21.4
9:22	2	27.0	✓	
9:25	5	23.0		
9:35	15	18.0		
9:50	30	16.0		21.3
10:20	60	14.0		21.2
1:30	250	11.0		21.0
9:20	1440	9.0	✓ 8/20/20	20.6

DC= Dispersant Constant M= Time in minutes after initial mixing R<sub>h</sub>= Hydrometer Reading T=Water Temp (°C)

**HYDROMETRIC READINGS FOR GRAIN SIZE ANALYSIS**

Job #: 40-126

Client: Nordic Aqua Farms

Sample: 20200426a Grams Used: 100.00 DC: 5.0

Clock Time	M	R <sub>h</sub>	Initials/Date	T(°C)
9:36	0	XXXX	✓ 8/19/20	21.3
9:38	2	8.0		
9:41	5	8.0		
9:51	15	8.0		
10:06	30	7.0		21.2
10:36	60	7.0		21.1
1:46	250	6.0		20.8
9:36	1440	6.0	✓ 8/20/20	20.6

Sample: 20200427a Grams Used: 100.00 DC: 5.0

Clock Time	T	R <sub>h</sub>	Initials/Date	T(°C)
9:48	0	XXXX	✓ 8/19/20	21.2
9:50	2	12.0		
9:53	5	10.0		
10:03	15	9.0		
10:18	30	8.0		21.2
10:48	60	8.0		21.1
1:58	250	7.0		20.9
9:48	1440	6.0	✓ 8/20/20	20.6

Sample: 20200426b Grams Used: 50.00 DC: 5.0

Clock Time	M	R <sub>h</sub>	Initials/Date	T(°C)
9:40	0	XXXX	✓ 8/19/20	21.2
9:42	2	22.0		
9:45	5	20.0		
9:55	15	18.0		
10:10	30	17.0		21.1
10:40	60	15.0		21.1
1:50	250	13.0		21.0
9:40	1440	10.0	✓ 8/20/20	20.6

Sample: 20200427b Grams Used: 100.00 DC: 5.0

Clock Time	T	R <sub>h</sub>	Initials/Date	T(°C)
9:52	0	XXXX	✓ 8/19/20	21.3
9:54	2	14.0		
9:57	5	12.0		
10:07	15	11.0		
10:22	30	10.0		21.1
10:52	60	9.0		21.1
2:02	250	7.0		20.9
9:52	1440	7.0	✓ 8/20/20	20.6

Sample: 20200426c Grams Used: 50.00 DC: 5.0

Clock Time	M	R <sub>h</sub>	Initials/Date	T(°C)
9:44	0	XXXX	✓ 8/19/20	21.2
9:46	2	21.0		
9:49	5	18.0		
9:59	15	16.0		
10:14	30	14.0		21.2
10:44	60	12.0		21.1
1:54	250	10.0		20.9
9:44	1440	8.0	✓ 8/20/20	20.6

Sample: 20200427c Grams Used: 100.00 DC: 5.0

Clock Time	T	R <sub>h</sub>	Initials/Date	T(°C)
9:56	0	XXXX	✓ 8/19/20	21.2
9:58	2	15.0		
10:01	5	13.0		
10:11	15	11.0	11.0	
10:26	30	10.0		21.2
10:56	60	9.0		21.1
2:06	250	7.0		20.9
9:56	1440	7.0	✓ 8/20/20	20.6

DC= Dispersant Constant    M= Time in minutes after initial mixing    R<sub>h</sub>= Hydrometer Reading    T=Water Temp (°C)

**HYDROMETRIC READINGS FOR GRAIN SIZE ANALYSIS**

Job #: 40-126

Client: Nordic Aquafarm

Sample: 20200428a Grams Used: 100 DC: 5

Clock Time	M	R <sub>h</sub>	Initials/Date	T(°C)	
9:00	0	XXXX	DJA 8/19/20 ↓	22.1	
9:02	2	12			
9:05	5	10			
9:15	15	10			
9:30	30	8			22.2
10:00	60	7			22.3
1:10	250	6			22.4
9:00	1440	5.5		DJA 8/20/20	21.7

Sample: 20200429a Grams Used: 50 DC: 5

Clock Time	T	R <sub>h</sub>	Initials/Date	T(°C)	
9:12	0	XXXX	DJA 8/19/20 ↓	22.2	
9:14	2	16			
9:17	5	15			
9:27	15	14			
9:42	30	12			22.3
10:12	60	11			22.3
1:22	250	8.5			22.6
9:12	1440	7		DJA 8/20/20	21.7

Sample: 20200428b Grams Used: 100 DC: 5

Clock Time	M	R <sub>h</sub>	Initials/Date	T(°C)	
9:04	0	XXXX	DJA 8/19/20 ↓	22.1	
9:06	2	14			
9:09	5	12			
9:19	15	10			
9:34	30	9.5			22.2
10:04	60	9			22.3
1:14	250	8			22.5
9:04	1440	7		DJA 8/20/20	21.6

Sample: 20200429b Grams Used: 100 DC: 5

Clock Time	T	R <sub>h</sub>	Initials/Date	T(°C)	
9:16	0	XXXX	DJA 8/19/20 ↓	22.2	
9:18	2	13			
9:21	5	12			
9:31	15	11			
9:46	30	9.5			22.4
10:16	60	9			22.4
1:26	250	8			22.6
9:16	1440	7.5		DJA 8/20/20	21.7

Sample: 20200428c Grams Used: 100 DC: 5

Clock Time	M	R <sub>h</sub>	Initials/Date	T(°C)	
9:08	0	XXXX	DJA 8/19/20 ↓	22.2	
9:10	2	11.5			
9:13	5	10			
9:23	15	10			
9:38	30	9			22.2
10:08	60	8			22.3
1:18	250	7			22.5
9:08	1440	6.5		DJA 8/20/20	21.7

Sample: 20200429c Grams Used: 100 DC: 5

Clock Time	T	R <sub>h</sub>	Initials/Date	T(°C)	
9:20	0	XXXX	DJA 8/19/20 ↓	22.3	
9:22	2	14			
9:25	5	12.5			
9:35	15	10.5			
9:50	30	10			22.3
10:20	60	9			22.4
1:30	250	7			22.8
9:20	1440	6.5		DJA 8/20/20	21.8

DC= Dispersant Constant M= Time in minutes after initial mixing R<sub>h</sub>= Hydrometer Reading T=Water Temp (°C)

**HYDROMETRIC READINGS FOR GRAIN SIZE ANALYSIS**

Job #: 40-126

Client: Nordic Aquafarms

Sample: 20200430a Grams Used: 50 DC: 5

Sample: 20200430b TPE Grams Used: 50 DC: 5

Clock Time	M	R <sub>h</sub>	Initials/Date	T(°C)	
9:00	0	XXXX	DD 8/20/20	21.4	
9:02	2	29	↓		
9:05	5	26			
9:15	15	22			
9:30	30	19.5			21.7
10:00	60	16.5			21.8
1:10	250	12		↓	22.4
9:00	1440	9	DD 8/21/20	22.1	

Clock Time	T	R <sub>h</sub>	Initials/Date	T(°C)	
9:12	0	XXXX	DD 8/20/20	21.7	
9:14	2	21.5	↓		
9:17	5	18			
9:27	15	15			
9:42	30	14			21.9
10:12	60	12			22.2
1:22	250	10		↓	22.6
9:12	1440	8	DD 8/21/20	22.1	

Sample: 20200430b Grams Used: 50 DC: 5

Sample: 20200430c Grams Used: 50 DC: 5

Clock Time	M	R <sub>h</sub>	Initials/Date	T(°C)	
9:04	0	XXXX	DD 8/20/20	21.6	
9:06	2	22	↓		
9:09	5	18.5			
9:19	15	15.5			
9:34	30	14			21.7
10:04	60	13			22.1
1:14	250	10		↓	22.3
9:04	1440	8	DD 8/21/20	21.9	

Clock Time	T	R <sub>h</sub>	Initials/Date	T(°C)	
9:16	0	XXXX	DD 8/20/20	21.7	
9:18	2	26	↓		
9:21	5	23			
9:31	15	18			
9:46	30	16.5			22.0
10:16	60	14.5			22.1
1:26	250	11		↓	22.6
9:16	1440	9	DD 8/21/20	22.1	

Sample: 20200430b D4P Grams Used: 50 DC: 5

Clock Time	M	R <sub>h</sub>	Initials/Date	T(°C)	
9:08	0	XXXX	DD 8/20/20	21.6	
9:10	2	22	↓		
9:13	5	18.5			
9:23	15	15.5			
9:38	30	14			21.8
10:08	60	12			22.0
1:18	250	10		↓	22.5
9:08	1440	8	DD 8/21/20	22.0	

DC= Dispersant Constant M= Time in minutes after initial mixing R<sub>h</sub>= Hydrometer Reading T=Water Temp (°C)

HYDROMETRIC READINGS FOR GRAIN SIZE ANALYSIS

Job #: 40-126

Client: Nordic Aquafarms

Sample: 20200431a Grams Used: 50 DC: 5

Sample: 20200432a Grams Used: 50 DC: 5

Clock Time	M	R <sub>h</sub>	Initials/Date	T(°C)	
9:36	0	XXXX	DA 8/20/20	21.9	
9:38	2	45	↓		
9:41	5	42			
9:51	15	36			
10:06	30	33			22.1
10:36	60	28			22.3
1:46	250	20.5		↓	22.7
9:36	1440	14	DA 8/21/20	22.3	

Clock Time	T	R <sub>h</sub>	Initials/Date	T(°C)	
9:48	0	XXXX	DA 8/20/20	22.2	
9:50	2	47	↓		
9:53	5	44			
10:03	15	39			
10:18	30	34.5			22.4
10:48	60	30			22.5
1:58	250	21		↓	22.7
9:48	1440	15	DA 8/21/20	22.5	

Sample: 20200431b Grams Used: 50 DC: 5

Sample: 20200432b Grams Used: 50 DC: 5

Clock Time	M	R <sub>h</sub>	Initials/Date	T(°C)	
9:40	0	XXXX	DA 8/20/20	22.2	
9:42	2	44	↓		
9:45	5	41.5			
9:55	15	36			
10:10	30	33			22.3
10:40	60	28			22.3
1:50	250	21.5		↓	22.5
9:40	1440	16	DA 8/21/20	22.2	

Clock Time	T	R <sub>h</sub>	Initials/Date	T(°C)	
9:52	0	XXXX	DA 8/20/20	22.3	
9:54	2	49	↓		
9:57	5	46			
10:07	15	41.5			
10:22	30	37			22.5
10:52	60	32			22.7
2:02	250	23		↓	22.6
9:52	1440	17	DA 8/21/20	22.5	

Sample: 20200431c Grams Used: 50 DC: 5

Clock Time	M	R <sub>h</sub>	Initials/Date	T(°C)	
9:44	0	XXXX	DA 8/20/20	22.2	
9:46	2	41.5 33	↓		
9:49	5	28.5			
9:59	15	24			
10:14	30	21.5			22.3
10:44	60	19			22.6
1:54	250	15		↓	22.6
9:44	1440	12	DA 8/21/20	22.3	

DC= Dispersant Constant M= Time in minutes after initial mixing R<sub>h</sub>= Hydrometer Reading T=Water Temp (°C)

**HYDROMETRIC READINGS FOR GRAIN SIZE ANALYSIS**

Job #: 40-126

Client: Nordic Aqua Farms

Sample: 20200432c Grams Used: 50.00 DC: 6.0

Clock Time	M	R <sub>h</sub>	Initials/Date	T(°C)
9:00	0	XXXX	✓ 8/20/20	21.0
9:02	2	42.0		
9:05	5	38.0		
9:15	15	34.0		
9:30	30	30.0		21.0
10:00	60	26.0		21.1
1:10	250	19.0		20.9
9:00	1440	14.0	✓ 8/21/20	20.6

Sample: 20200433c Grams Used: 50.00 DC: 6.0

Clock Time	T	R <sub>h</sub>	Initials/Date	T(°C)
9:12	0	XXXX	✓ 8/20/20	21.1
9:14	2	54.0		
9:17	5	51.0		
9:27	15	45.0		
9:42	30	40.0		20.9
10:12	60	36.0		20.9
1:22	250	27.0		20.8
9:12	1440	20.0	✓ 8/21/20	20.5

Sample: 20200433a Grams Used: 50.00 DC: 6.0

Clock Time	M	R <sub>h</sub>	Initials/Date	T(°C)
9:04	0	XXXX	✓ 8/20/20	21.1
9:06	2	45.0		
9:09	5	42.0		
9:19	15	36.0		
9:34	30	34.0		20.8-21.0
10:04	60	27.0		20.9
1:14	250	20.0		20.8
9:04	1440	15.0	✓ 8/21/20	20.4

Sample: 20200433c dup Grams Used: 50.00 DC: 6.0

Clock Time	T	R <sub>h</sub>	Initials/Date	T(°C)
9:16	0	XXXX	✓ 8/20/20	21.1
9:18	2	54.0		
9:21	5	51.0		
9:31	15	45.0		
9:46	30	40.0		21.1
10:16	60	36.0		21.1
1:26	250	27.0		20.8
9:16	1440	20.0	✓ 8/21/20	20.5

Sample: 20200433b Grams Used: 50.00 DC: 6.0

Clock Time	M	R <sub>h</sub>	Initials/Date	T(°C)
9:08	0	XXXX	✓ 8/20/20	21.1
9:10	2	54.0		
9:13	5	50.0		
9:23	15	45.0		
9:38	30	40.0		21.1
10:08	60	35.0		20.9
1:18	250	26.0		20.9
9:08	1440	18.0	✓ 8/21/20	20.4

Sample: 20200433c dup Grams Used: 50.00 DC: 6.0

Clock Time	T	R <sub>h</sub>	Initials/Date	T(°C)
9:20	0	XXXX	✓ 8/20/20	21.1
9:22	2	54.0		
9:25	5	51.0		
9:35	15	45.0		
9:50	30	40.0		21.1
10:20	60	36.0		21.0
1:30	250	27.0		20.8
9:20	1440	20.0	✓ 8/21/20	20.5

DC= Dispersant Constant M= Time in minutes after initial mixing R<sub>h</sub>= Hydrometer Reading T=Water Temp (°C)

## PERCENT MOISTURE

Balance: Mettler  
Drying Oven: Fisher Model 255G

Calibration: x Yes No  
Temperature: 110 degrees C

Client: Nordic Aquafarms- Belfast, ME  
ASI Job #: 40-126

Sample ID#	Pan Weight g	Wet Sample + Pan g	Air Dry Sample +Pan Weight g	First Oven Dry Sample +Pan Weight g	Final Oven Dry Weight +Pan Weight g	% Moisture*
20200424a	2.4376	81.2854	69.7154	69.5154	69.5015	14.95
20200424b	2.4661	84.0324	75.4204	75.2343	75.2184	10.81
20200424c	2.4837	75.3882	69.2667	69.1453	69.1358	8.58
20200425a	2.4787	82.5852	73.5549	73.4123	73.4008	11.47
20200425b	2.4651	78.8834	70.2135	70.0683	70.0640	11.54
20200425c	2.4726	81.9846	72.8419	72.6921	72.6904	11.69
20200426a	2.4808	72.1640	60.3570	60.2116	60.2003	17.17
20200426b	2.4074	64.2778	53.7037	53.4406	53.4300	17.53
20200426c	2.4488	61.5618	54.4346	54.2607	54.2490	12.37
20200427a	2.4529	73.0833	62.2285	62.0588	62.0457	15.63
20200427b	2.4456	67.8804	60.5338	60.4171	60.4117	11.41
20200427c	2.4651	79.8700	72.4898	72.3435	72.3376	9.73
20200428a	2.4478	71.9357	64.6477	64.5214	64.5186	10.67
20200428b	2.4515	55.9137	45.1015	44.9127	44.9073	20.59
20200428c	2.4604	64.6105	53.6780	53.5074	53.5016	17.87
20200429a	2.4810	75.2089	60.3142	60.0056	59.9916	20.92
20200429b	2.4649	72.4345	57.5058	57.2707	57.2620	21.68
20200429c	2.4829	75.3902	65.8765	65.6981	65.6910	13.30
20200430a	2.4794	54.4757	29.5021	29.0298	29.0145	48.97
20200430b	2.4558	69.6686	45.9514	45.4257	45.4137	36.09
20200430b dup	2.4668	54.2538	35.5845	35.1813	35.1672	36.86
20200430b trp	2.4652	52.9652	34.9818	34.5904	34.5762	36.41
20200430c	2.5272	61.6427	37.3863	36.7900	36.8017	42.04
20200431a	2.5462	56.9605	26.1449	25.2815	25.2688	58.24
20200431b	2.4525	56.7005	29.7764	29.0624	29.0538	50.96
20200431c	2.4451	63.6653	39.7880	39.1784	39.1779	40.00
20200432a	2.4589	57.1028	25.9053	25.0306	25.0298	58.69
20200432b	2.4741	65.6887	32.2047	31.0420	31.0398	54.81
20200432c	2.4662	59.9744	36.5444	35.8955	35.8866	41.89
20200433a	2.5077	58.7472	24.7071	23.3698	23.3632	62.92
20200433b	2.5477	60.2925	29.8575	28.8108	28.8029	54.53
20200433c	2.5030	47.9733	25.3015	24.6934	24.6934	51.20
20200433c dup	2.4431	48.1341	25.3577	24.7225	24.7200	51.24
20200433c trp	2.4669	45.3364	23.9455	23.3251	23.3233	51.35

\* % Moisture = 
$$\frac{[(\text{wet weight} + \text{pan}) - (\text{oven dry weight} + \text{pan})]}{[(\text{wet weight} + \text{pan}) - \text{pan}]}$$

QA'd by CH 08/18/20

AQUA SURVEY, INC.  
PERCENT MOISTURE & HYDROSCOPIC CORRECTION FACTOR BENCHSHEET

Balance: Mettler Calibration: YES  NO Client: Nadac Aquifers

Drying Oven: Fisher 2550 Temperature: 110 °C Job #: 40-1269

Sample #	A	B	C	D	E	F	G	H	I	% Moisture*	HMCF**
20200424a	2.4376	81.2854	69.7154	69.5145	69.5015						
20200424b	2.4661	84.0324	75.4204	75.2343	75.2184						
20200424c	2.4837	75.3882	69.2667	69.1453	69.1358						
20200425a	2.4787	82.5852	73.5549	73.4123	73.4008						
20200425b	2.4651	78.8834	70.2135	70.0683	70.0640						
20200425c	2.4726	81.9846	72.8419	72.6921	72.6904						
20200426a	2.4808	72.1640	60.3570	60.2116	60.2003						
20200426b	2.4074	64.2778	53.7037	53.4406	53.4300						
20200426c	2.4488	61.5618	54.4340	54.2607	54.2490						
20200427a	2.4529	73.0833	62.2285	62.0588	62.0457						
20200427b	2.4456	67.8804	60.5338	60.4171	60.4117						
20200427c	2.4651	79.8700	72.4898	72.3435	72.3376						
20200428a	2.4478	71.9357	64.6477	64.5214	64.5186						
20200428b	2.4515	55.9137	45.1015	44.9127	44.9073						
20200428c	2.4604	64.6105	53.6780	53.5074	53.5016						
20200429a	2.4810	75.2089	60.3142	60.0056	59.9916						
20200429b	2.4649	72.4345	57.5058	57.2707	57.2620						
20200429c	2.4829	75.3902	65.8765	65.6981	65.6910						
20200430a	2.4794	54.4757	29.5021	29.6398	29.0145						
20200430b	2.4558	69.6686	45.9514	45.4257	45.4137						
20200430c	2.4668	54.2538	35.5845	35.1813	35.1672						
20200430d	2.4652	52.9652	34.9818	34.5904	34.5762						
Initials/ Date			01/18/20	01/20/20	01/20/20						

\* % moisture =  $\frac{B - \text{Final oven dry wt. X100}}{A - \text{Empty Pan (g)}}$

B-A

\*\* HMCF =  $\frac{\text{Final oven dry wt. A}}{\text{C-A}}$  (C-A)

A= Empty Pan (g)  
B= Wet Sample + Pan (g)  
C= Air Dry Sample + Pan (g)  
D= First Oven Dry Sample + Pan (g)  
E= Second Oven Dry Sample + Pan (g)

If oven dried sample is not ± 0.05g or at a constant weight after second oven dry, return samples to oven and use F, G, H, and I until requirement is met.

AQUA SURVEY, INC.  
PERCENT MOISTURE & HYDROSCOPIC CORRECTION FACTOR BENCHSHEET

Balance: Mettler Calibration: YES NO Client: Nordic Aquasystems  
 Drying Oven: Fisher 255G Temperature: 110 °C Job #: 40-126

Sample #	A	B	C	D	E	F	G	H	I	% Moisture*	HMCF**
20200430C	2.5272	61.6427	37.3863	36.7900	36.2017						
20200431a	2.5462	56.9605	26.1449	25.2815	25.2688						
20200431b	2.4525	56.7005	29.7764	29.0624	29.0538						
20200431c	2.4451	63.6653	39.7880	39.1784	39.1779						
20200432a	2.4589	57.1628	25.9053	25.0306	25.0298						
20200432b	2.4741	65.6887	32.2047	31.0420	31.0398						
20200432c	2.4662	59.9744	30.5444	35.8955	35.8866						
20200433a	2.5077	58.7472	24.7671	23.3698	23.3632						
20200433b	2.5477	60.2925	29.8575	28.8108	28.8029						
20200433c	2.5030	47.9733	25.3015	24.6934	24.6934						
20200433d	2.4431	48.1341	25.3577	24.7225	24.7200						
20200433e	2.4669	45.3364	23.9455	23.3251	23.3233						
Initials/ Date	DA 7/29/20		DA 8/13/20	DA 8/11/20	DA 8/13/20						

\* % moisture =  $\frac{B - \text{Final oven dry wt. X100}}{B - A}$

\*\* HMCF =  $\frac{\text{Final oven dry wt. - A}}{\text{C - A}}$

- A= Empty Pan (g)
- B= Wet Sample + Pan (g)
- C= Air Dry Sample + Pan (g)
- D= First Oven Dry Sample + Pan (g)
- E= Second Oven Dry Sample + Pan (g)

If oven dried sample is not ± 0.05g or at a constant weight after second oven dry, return samples to oven and use F, G, H, and I until requirement is met.

## **Appendix F**

### **TOC Raw Data and SRM Control Chart**

```

Sample ID: 3000 Mode: TOC
Method: Boat Sampler Short Filename: 07280827
Cal. Curve: 072820 Timestamp: 2020/07/28 08:38
Operator ID: LH Sample Type: TOC Standard
    
```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			20573112	46.278	48.276	136
2			20586904	46.640	48.637	132

<<<Statistics>>> Mean: 20580008 Std Dev: 9752 RSD: 0.05

```

Sample ID: 2000 Mode: TOC
Method: Boat Sampler Short Filename: 07280931
Cal. Curve: 072820 Timestamp: 2020/07/28 09:42
Operator ID: LH Sample Type: TOC Standard
    
```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			14234324	47.817	49.816	118
2			14221570	47.832	49.828	116

<<<Statistics>>> Mean: 14227947 Std Dev: 9018 RSD: 0.06

```

Sample ID: 1000 Mode: TOC
Method: Boat Sampler Short Filename: 07280858
Cal. Curve: 072820 Timestamp: 2020/07/28 09:07
Operator ID: LH Sample Type: TOC Standard
    
```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			7349024	47.269	49.267	104
2			7390565	47.482	49.476	104

<<<Statistics>>> Mean: 7369794 Std Dev: 29374 RSD: 0.40

```

Sample ID: 500 Mode: TOC
Method: Boat Sampler Short Filename: 07280908
Cal. Curve: 072820 Timestamp: 2020/07/28 09:18
Operator ID: LH Sample Type: TOC Standard
    
```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			3788227	47.623	49.621	92
2			3774342	47.656	49.655	91

<<<Statistics>>> Mean: 3781284 Std Dev: 9818 RSD: 0.26

```

Sample ID: USGS Mode: TOC
Method: Boat Sampler Short Filename: 07280955
Cal. Curve: 072820 Timestamp: 2020/07/28 10:47
Operator ID: LH Sample Type: Sample
    
```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	93517.2734	55.1752	9266782	47.918	49.916	108
2	87467.2812	63.8511	10723921	48.060	50.054	113
3	91903.6719	34.9234	5865453	48.121	50.110	99
4	92661.0938	39.8443	6691924	48.251	50.251	100

<<<Statistics>>> Mean: 91387.3359 Std Dev: 2695.2134 RSD: 2.95

```

Sample ID: ICV 1000 Mode: TOC
Method: Boat Sampler Short Filename: 07281051
Cal. Curve: 072820 Timestamp: 2020/07/28 10:54
    
```

CH

Operator ID: LH Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1095.8474	43.8339	7934869	48.492	50.480	109

Sample ID: Blank with Acid Mode: TOC  
 Method: Boat Sampler Short Filename: 07281107  
 Cal. Curve: 072820 Timestamp: 2020/07/28 11:17  
 Operator ID: LH Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	14.2656	0.5706	95838	48.818	48.909	120
2	10.6400	0.4256	71481	48.910	48.804	120

Last Message: Low Sample Detected  
 <<<Statistics>>> Mean: 12.4528 Std Dev: 2.5637 RSD: 20.59

Sample ID: ~20200425a NAE3a 40-126 Mode: TOC  
 Method: Boat Sampler Short Filename: 07281128  
 Cal. Curve: 072820 Timestamp: ALT 2020/07/28 11:32  
 Operator ID: LH Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	3830.8899	24.5560	4124229	48.627	50.622	143

20200425a  
 Mean: 3517.17  
 St Dev: 443.67  
 RSD: 12.61 %

-----> Sample was Altered <-----

Sample ID: 20200425a NAE3a 40-126 Mode: TOC  
 Method: Boat Sampler Short Filename: 07281147  
 Cal. Curve: 072820 Timestamp: 2020/07/28 11:52  
 Operator ID: LH Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	3203.4512	26.3003	4417193	48.624	50.619	131

Sample ID: ICV 1000 Mode: TOC  
 Method: Boat Sampler Short Filename: 07281331  
 Cal. Curve: 072820 Timestamp: 2020/07/28 13:36  
 Operator ID: LH Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1092.4583	43.6983	7912101	48.517	50.515	113

Sample ID: 20200425a Spk 40-126 Mode: TOC  
 Method: Boat Sampler Short Filename: 07281337  
 Cal. Curve: 072820 Timestamp: 2020/07/28 13:50  
 Operator ID: LH Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	12567.1562	47.5039	7978365	48.386	50.383	126
2	17673.1582	94.5514	15880094	48.353	50.353	149

<<<Statistics>>> Mean: 15120.1572 Std Dev: 3610.4885 RSD: 23.88

Sample ID: 20200425b NAE3b 40-126 Mode: TOC  
 Method: Boat Sampler Short Filename: 07281431  
 Cal. Curve: 072820 Timestamp: 2020/07/28 14:48  
 Operator ID: LH Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
-------	-------	------	----------	--------------------	-----------------	------------------

CH

	Baseline	Baseline	Time
1	2823.2881	31.9596	5367681
2	2859.5029	31.9121	5359692
	48.038	50.037	159
	48.132	50.126	163

<<<Statistics>>> Mean: 2841.3955 Std Dev: 25.6078 RSD: 0.90

Sample ID: 20200425c NAE3c 40-126 Mode: TOC  
 Method: Boat Sampler Short Filename: 07281505  
 Cal. Curve: 072820 Timestamp: 2020/07/28 15:22  
 Operator ID: LH Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	2557.0190	38.0996	6398900	48.355	50.353	175
2	2970.7720	32.1735	5403596	48.339	50.333	165

<<<Statistics>>> Mean: 2763.8955 Std Dev: 292.5675 RSD: 10.59

Sample ID: 20200428a NAE6a 40-126 Mode: TOC  
 Method: Boat Sampler Short Filename: 07281536  
 Cal. Curve: 072820 Timestamp: 2020/07/28 15:49  
 Operator ID: LH Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	5133.6670	50.0533	8406542	48.228	50.227	148
2	4255.2393	45.1481	7582710	48.250	50.246	149

<<<Statistics>>> Mean: 4694.4531 Std Dev: 621.1422 RSD: 13.23

Sample ID: 20200428b NAE6b 40-126 Mode: TOC  
 Method: Boat Sampler Short Filename: 07281605  
 Cal. Curve: 072820 Timestamp: 2020/07/28 16:23  
 Operator ID: LH Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	7822.0361	78.5332	13189813	48.374	50.370	145
2	5285.6245	92.3399	15508661	48.203	50.203	161

<<<Statistics>>> Mean: 6553.8301 Std Dev: 1793.5139 RSD: 27.37

20200428b  
 Mean: 5922.44  
 St Dev: 1267.32  
 RSD: 21.40 %

Sample ID: 20200428b NAE6b 40-126 Mode: TOC  
 Method: Boat Sampler Short Filename: 07281632  
 Cal. Curve: 072820 Timestamp: 2020/07/28 16:42  
 Operator ID: LH Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	5349.9834	69.8708	11734935	48.167	50.166	147
2	5232.1021	45.3100	7609904	48.186	50.181	128

<<<Statistics>>> Mean: 5291.0430 Std Dev: 83.3547 RSD: 1.58

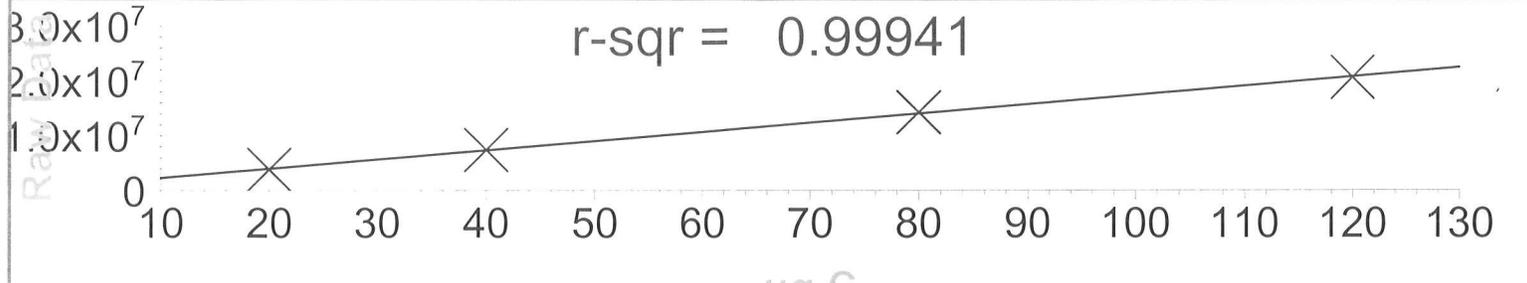
Sample ID: ICV 1000 Mode: TOC  
 Method: Boat Sampler Short Filename: 07281701  
 Cal. Curve: 072820 Timestamp: 2020/07/28 17:11  
 Operator ID: LH Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	999.1002	39.9640	7284914	54.071	56.043	99
2	1108.7225	44.3489	8021365	48.891	50.890	110
3	1067.4258	42.6970	7743930	49.435	51.425	112

<<<Statistics>>> Mean: 1058.4161 Std Dev: 55.3637 RSD: 5.23

CH





CH

Cal. Curve ID:            072820  
 Created:                 2020/07/28 09:42  
 Calibration Factor (m): 1.680e+05  
 Y Intercept (b):        572880  
 r-squared:               0.99941

Standard ID	Y	X Expected	Measured	Message	Date & Time
	Raw Data	ug C	ug C		
3000	20580006	120.000	119.124		2020/07/28 08:38
1000	7369794	40.000	40.469		2020/07/28 09:07
500	3781284	20.000	19.103		2020/07/28 09:18
2000	14227947	80.000	81.303		2020/07/28 09:42

*CH*

```

=====
Sample ID: 3000 Mode: TOC
Method: Boat Sampler Short Filename: 07300825
Cal. Curve: 073020 Timestamp: 2020/07/30 08:34
Operator ID: LH Sample Type: TOC Standard
    
```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			20433208	47.483	49.481	133
2			20416836	47.783	49.777	130

```

-----
<<<Statistics>>> Mean: 20425022 Std Dev: 11577 RSD: 0.06
=====
    
```

```

Sample ID: 2000 Mode: TOC
Method: Boat Sampler Short Filename: 07300835
Cal. Curve: 073020 Timestamp: 2020/07/30 08:47
Operator ID: LH Sample Type: TOC Standard
    
```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			13981077	47.891	49.890	114
2			14044902	48.129	50.126	115

```

-----
<<<Statistics>>> Mean: 14012990 Std Dev: 45131 RSD: 0.32
=====
    
```

```

Sample ID: 1000 Mode: TOC
Method: Boat Sampler Short Filename: 07300848
Cal. Curve: 073020 Timestamp: 2020/07/30 08:56
Operator ID: LH Sample Type: TOC Standard
    
```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			7305097	48.246	50.245	99
2			7280587	48.406	50.399	99

```

-----
<<<Statistics>>> Mean: 7292842 Std Dev: 17331 RSD: 0.24
=====
    
```

```

Sample ID: 500 Mode: TOC
Method: Boat Sampler Short Filename: 07300858
Cal. Curve: 073020 Timestamp: 2020/07/30 09:06
Operator ID: LH Sample Type: TOC Standard
    
```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			3691901	48.515	50.511	91
2			3699745	48.691	50.682	90

```

-----
<<<Statistics>>> Mean: 3695823 Std Dev: 5547 RSD: 0.15
=====
    
```

```

Sample ID: USGS Mode: TOC
Method: Boat Sampler Short Filename: 07300916
Cal. Curve: 073020 Timestamp: 2020/07/30 10:01
Operator ID: LH Sample Type: Sample
    
```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	90502.5156	45.2513	7554183	48.618	50.611	105
2	93091.0234	49.3382	8236459	48.826	50.818	104
3	95277.5234	46.6860	7793695	48.860	50.854	105
4	86910.3047	59.0990	9865908	49.002	50.995	108

```

-----
<<<Statistics>>> Mean: 91445.3438 Std Dev: 3598.5815 RSD: 3.94
=====
    
```

```

Sample ID: ICV 1000 Mode: TOC
Method: Boat Sampler Short Filename: 07301011
Cal. Curve: 073020 Timestamp: 2020/07/30 10:15
    
```

CH

Operator ID: LH Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1054.3228	42.1729	7545946	49.092	51.091	111

Sample ID: Blank with Acid Mode: TOC  
 Method: Boat Sampler Short Filename: 07301029  
 Cal. Curve: 073020 Timestamp: 2020/07/30 10:38  
 Operator ID: LH Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	6.1650	0.2466	41167	49.008	49.120	120
2	6.9729	0.2789	46562	49.066	49.176	120

Last Message: Low Sample Detected  
 <<<Statistics>>> Mean: 6.5689 Std Dev: 0.5713 RSD: 8.70

Sample ID: 20200428c NAE6c 40-126 Mode: TOC  
 Method: Boat Sampler Short Filename: 07301048  
 Cal. Curve: 073020 Timestamp: 2020/07/30 11:02  
 Operator ID: LH Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	4625.1045	44.8173	7481733	49.278	51.275	161
2	4776.4360	51.5377	8603641	49.360	51.359	138

<<<Statistics>>> Mean: 4700.7705 Std Dev: 107.0076 RSD: 2.28

Sample ID: 20200428c Spk 40-126 Mode: TOC  
 Method: Boat Sampler Short Filename: 07301112  
 Cal. Curve: 073020 Timestamp: 2020/07/30 11:27  
 Operator ID: LH Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	10801.7812	38.3463	6401483	49.547	51.543	116
2	16083.8467	61.6011	10283610	49.441	51.441	130

<<<Statistics>>> Mean: 13442.8145 Std Dev: 3734.9844 RSD: 27.78

Sample ID: 20200431a NAE9a 40-126 Mode: TOC  
 Method: Boat Sampler Short Filename: 07301140  
 Cal. Curve: 073020 Timestamp: 2020/07/30 11:49  
 Operator ID: LH Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	24431.5957	109.6979	18312812	49.396	51.390	124
2	26072.2246	72.4808	12099843	49.418	51.418	109

<<<Statistics>>> Mean: 25251.9102 Std Dev: 1160.0999 RSD: 4.59

Sample ID: ICV 1000 Mode: TOC  
 Method: Boat Sampler Short Filename: 07301303  
 Cal. Curve: 073020 Timestamp: 2020/07/30 13:08  
 Operator ID: LH Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1070.7794	42.8312	7655836	47.782	49.782	111

Sample ID: 20200431b NAE9b 40-126 Mode: TOC  
 Method: Boat Sampler Short Filename: 07301331

CH

Cal. Curve: 073020  
Operator ID: LH

Timestamp: 2020/07/30 13:46  
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	22997.0508	57.4926	9597741	47.927	49.919	107
2	25337.0156	86.9060	14507963	48.051	50.046	120

<<<Statistics>>> Mean: 24167.0332 Std Dev: 1654.6050 RSD: 6.85

Sample ID: 20200431c NAE9c 40-126  
Method: Boat Sampler Short  
Cal. Curve: 073020  
Operator ID: LH

Mode: TOC  
Filename: 07301357  
Timestamp: 2020/07/30 14:12  
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	21787.5332	101.9657	17022008	48.248	50.243	130
2	22482.9277	79.1399	13211508	48.189	50.182	119

<<<Statistics>>> Mean: 22135.2305 Std Dev: 491.7182 RSD: 2.22

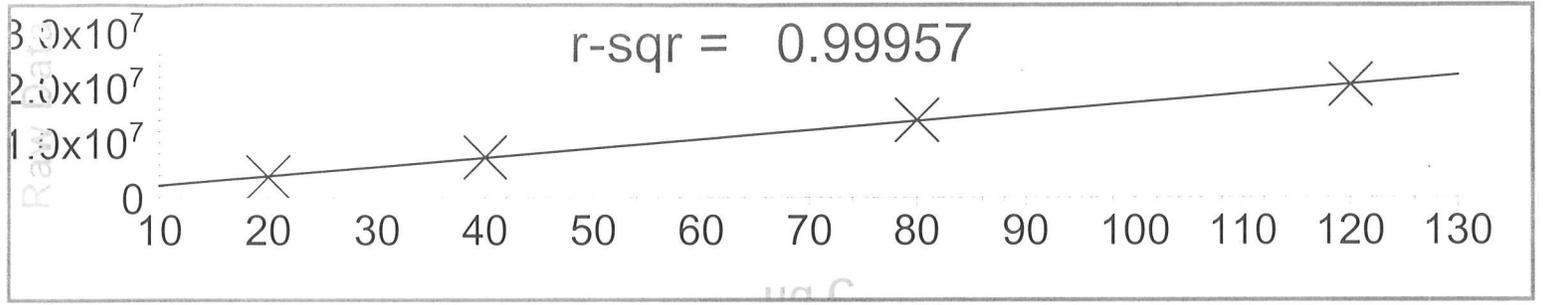
Sample ID: ICV 1000  
Method: Boat Sampler Short  
Cal. Curve: 073020  
Operator ID: LH

Mode: TOC  
Filename: 07301418  
Timestamp: 2020/07/30 14:34  
Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1075.3721	43.0149	7686504	48.209	50.204	114
2	1088.8104	43.5524	7776239	48.282	50.281	121
3	1092.2188	43.6888	7798999	48.294	50.292	124

<<<Statistics>>> Mean: 1085.4672 Std Dev: 8.9071 RSD: 0.82

CH

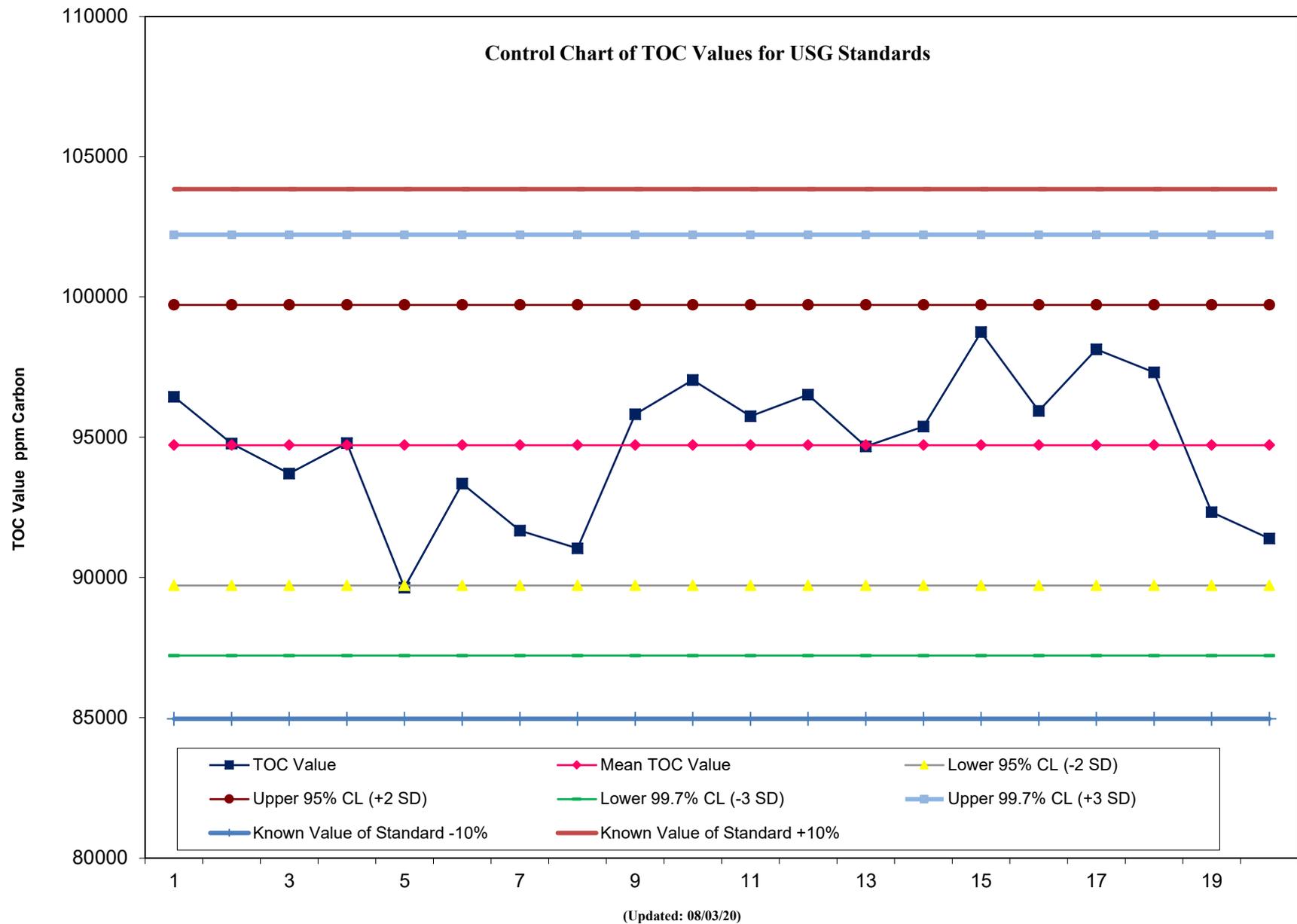


CH

Cal. Curve ID: 073020  
 Created: 2020/07/30 09:06  
 Calibration Factor (m): 1.669e+05  
 Y Intercept (b): 505658  
 r-squared: 0.99957

Standard ID	Y	X Expected	Measured	Message	Date & Time
	Raw Data	ug C	ug C		
3000	20425024	120.000	119.321		2020/07/30 08:34
2000	14012989	80.000	80.912		2020/07/30 08:47
1000	7292842	40.000	40.657		2020/07/30 08:56
500	3695823	20.000	19.110		2020/07/30 09:06

CH



## **Appendix G**

### **CENAE RIM QC Summary Tables**

# Bulk Sediment Analysis

## Support Documents

### New England District QC Summary Tables

**Table II-1: Completeness Checklist**

Quality Assurance/Quality Control Questions	Yes/No? Comments?
1. Was the report signed by the responsible applicant approved representative?	Yes
2. Were the methods for sampling, chemical and biological testing described in the Sampling and Analysis Plan (SAP) and the Laboratory QA Plan (LQAP) followed?	Yes
3. If not, were deviations documented?	NA
4. Was the SAP approved by the New England District?	Yes
5. Did the applicant use a laboratory with a LQAP on file at the New England District?	Yes
6. Did the samples adequately represent the physical/chemical variability in the dredging area?	Yes
7. Were the correct stations sampled (include the precision of the navigation method used)?	Yes
8. Were the preservation and storage requirements in Chapter 8 of the EPA/Corps QA/QC Manual (EPA/USACE 1995) and EPA (2001d) followed?	Yes
9. Were the samples properly labeled?	Yes
10. Were all the requested data included?	Yes
11. Were the reporting limits met?	Yes, except as noted for methoxychlor and toxaphene.
12. Were the chain-of-custody forms properly processed?	Yes
13. Were the method blanks run and were the concentration below the acceptance criteria?	Yes
14. Was the MDL study performed on each matrix (with this data submission) or within the last 12 months?	Yes
15. Were the SRM/CRM analyses within acceptance criteria?	Yes
16. Were the matrix spike/matrix spike duplicates run at the required frequency and was the percent recovery/RPD within the acceptance criteria?	Yes, except as noted.
17. Were the duplicate samples analyzed and were the RPDs within the required acceptance criteria?	Yes
18. For each analytical fraction of organic compounds, were recoveries for the internal standard within the acceptance criteria?	Yes
19. Were surrogate recoveries within the required acceptance criteria?	Yes
20. Were corrective action forms provided for all non-conforming data?	NA
21. Were all the species-specific test conditions in Appendix V met?	NA
22. Were the test-specific age requirements met for each test species?	NA
23. Was the bulk physical/chemical testing performed on the sediments/composites that were biologically tested?	No biological testing is planned
24. Were the mortality acceptance criteria met for the water column and sediment toxicity tests?	NA
25. Were the test performance requirements in Table 11.3 of EPA (1994a) met?	NA

**Table II-2: Quality Control Summary for Analyses of Polyaromatic Hydrocarbons (PAHs) and other base-neutrals in Sediment and Tissue Matrices**

Method Reference Number: 8270E-SIM

<b>Quality Control (QC) Element</b>	<b>Acceptance Criteria*</b>	<b>Criteria Met? Yes/No</b>	<b>List results outside criteria (Cross-reference results table in data report)</b>	<b>Location of Results (Retained at Lab or in Data Package)</b>
Initial Calibration	Must be performed prior to the analysis of any QC sample or field sample (<20 % RSD for each compound)	Yes		Retained at lab
Calculation of Method Detection Limits (MDLs)	For each matrix, analyzed once per 12 month period (see Section 5.2 for MDL procedure)	Yes		Data Package
Calibration Verification (Second Source)	Once, after initial calibration (80 to 120% recovery of each compound)	Yes		Retained at lab
Continuing Calibration	At the beginning of every 12 hour shift (15 % D)	Yes		Retained at lab
Standard Reference Materials	Within the limits provided by vendor	NA		
Method Blank	No target analytes > RL	Yes		Data Package
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	One set (MS/MSD) per group of field samples. Must contain all target analytes. (Recovery Limits 50 to 120%; RPD <30%).	Yes	In house limits of 30-150 %R were used.	Data Package
Analytical Replicates	Analyze one sample in duplicate for each group of field samples (RPD < 30%)	Yes		Data Package
Surrogate Recoveries	Calculate % recovery (30 to 150% recovery)	Yes		Data Package
Internal Standard Areas	Within 50 to 200% of internal standards in continuing calibration check	Yes		Retained at lab

\* The Quality Control Acceptance Criteria are general guidelines. If alternate criteria are used, they must be documented in this table

**Table II-3: Quality Control Summary for Analyses of Pesticides in Sediment, Tissue and Water Matrices**

Method Reference Number: 8081B

<b>Quality Control (QC) Element</b>	<b>Acceptance Criteria*</b>	<b>Criteria Met? Yes/No</b>	<b>List results outside criteria (Cross-reference results table in data report)</b>	<b>Location of Results (Retained at Lab or in Data Package)</b>
Initial Calibration	Must be performed prior to the analysis of any QC sample or field sample (< 20 % RSD for each compound)	Yes		Retained at lab
Calculation of Method Detection Limits (MDLs)	For each matrix, analyzed once per 12 month period (see Section 5.2 for MDL procedure)	Yes		Data Package
Calibration Verification (Second Source)	Once, after initial calibration (80 to 120% recovery of each compound)	Yes		Retained at lab
Continuing Calibration	Every 20 injections ( $\leq$ 15 % D)	Yes		Retained at lab
Standard Reference Materials	Within the limits provided by vendor	NA		
Method Blank	No target analytes > RL	Yes		Data Package
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	One set (MS/MSD) per group of field samples. Must contain all target analytes. (Recovery Limits 50 to 120%; RPD <30%).	Yes, except as noted.	In house limits of 30-150 %R were used. %RPD for gamma-BHC, heptachlor, heptachlor epoxide and trans-nonachlor exceed the project acceptance limits. See page 89 of data package.	Data Package
Analytical Replicates	Analyze one sample in duplicate for each group of field samples (RPD < 30%)	Yes		Data Package
Surrogate Recoveries	Calculate % recovery (30 to 150% recovery)	Yes		Data Package

\* The Quality Control Acceptance Criteria are general guidelines. If alternate criteria are used, they must be documented in this table

**Table II-4: Quality Control Summary for Analyses of Polychlorinated Biphenyls (PCB congeners) in Sediment, Tissue and Water Matrices**

Method Reference Number: 8270E Mod

<b>Quality Control (QC) Element</b>	<b>Acceptance Criteria*</b>	<b>Criteria Met? Yes/No</b>	<b>List results outside criteria (Cross-reference results table in data report)</b>	<b>Location of Results (Retained at Lab or in Data Package)</b>
Initial Calibration	Must be performed prior to the analysis of any QC sample or field sample (<20 % RSD for each compound)	Yes		Retained at lab
Calculation of Method Detection Limits (MDLs)	For each matrix, analyzed once per 12 month period (see Section 5.2 for MDL procedure)	Yes		Data Package
Calibration Verification (Second Source)	Once, after initial calibration. (80 to 120% recovery of each compound)	Yes		Retained at lab
Continuing Calibration	Every 20 injections ( $\pm 15\%$ D)	Yes		Retained at lab
Standard Reference Materials	Within the limits provided by vendor	NA		
Method Blank	No target analytes > RL	Yes		Data Package
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	One set (MS/MSD) per group of field samples. Must contain all target analytes. (Recovery Limits 50 to 120%; RPD <30%).	Yes	In house limits of 30-150 %R were used.	Data Package
Analytical Replicates	Analyze one sample in duplicate for each group of field samples (RPD < 30%)	Yes		Data Package
Surrogate Recoveries	Calculate % recovery (30 to 150% recovery)	Yes		Data Package

\* The Quality Control Acceptance Criteria are general guidelines. If alternate criteria are used, they must be documented in this table

**Table II-5: Quality Control Summary for Analyses of Metals in Sediments, Tissue and Water Matrices**

Method Reference Numbers: EPA 6020B and 245.7

<b>Quality Control (QC) Element</b>	<b>Acceptance Criteria*</b>	<b>Criteria Met? Yes/No</b>	<b>List results outside criteria (Cross-reference results table in data report)</b>	<b>Location of Results (Retained at Lab or in Data Package)</b>
Linear Range Determination for ICP	Performed Quarterly	Yes		Retained at lab
Initial Calibration for AA, Hg	Performed Daily (Correlation Coefficient $\geq 0.995$ )	Yes		Retained at lab
Calculation of Method Detection Limits (MDLs)	For each matrix, analyzed once per 12 month period (see Section 5.2 for MDL procedure)	Yes		Data Package
Initial Calibration Verification/ Continuing Calibration Verification	Hg: 80 to 120% recovery Other metals: 90 to 110% recovery	Yes		Retained at lab
Initial Calibration Blank/ Continuing Calibration Blank	No target analytes > Instrument Detection Limit (IDL)	Yes		Retained at lab
Standard Reference Materials	Within the limits provided by vendor	NA		
Method Blank	No target analytes > RL	Yes		Data Package
Sample Spike/ Sample Duplicate	One set per group of field samples. Must contain all target analytes. Recovery Limits (75 to 125%; RPD < 20% or < 35%).	Yes	In house limits of 80-120 %R were used.	Data Package
Analytical Replicates	Analyze one sample in duplicate for each group of field samples (RPD < 30%)	Yes		Data Package

\* The Quality Control Acceptance Criteria are general guidelines. If alternate criteria are used, they must be documented in this table.

Elutriate Analysis  
Support Documents  
New England District QC Summary Tables

**Table II-1: Completeness Checklist**

<b>Quality Assurance/Quality Control Questions</b>	<b>Yes/No? Comments?</b>
1. Was the report signed by the responsible applicant approved representative?	Yes
2. Were the methods for sampling, chemical and biological testing described in the Sampling and Analysis Plan (SAP) and the Laboratory QA Plan (LQAP) followed?	Yes
3. If not, were deviations documented?	NA
4. Was the SAP approved by the New England District?	Yes
5. Did the applicant use a laboratory with a LQAP on file at the New England District?	Yes
6. Did the samples adequately represent the physical/chemical variability in the dredging area?	Yes
7. Were the correct stations sampled (include the precision of the navigation method used)?	Yes
8. Were the preservation and storage requirements in Chapter 8 of the EPA/Corps QA/QC Manual (EPA/USACE 1995) and EPA (2001d) followed?	Yes
9. Were the samples properly labeled?	Yes
10. Were all the requested data included?	Yes
11. Were the reporting limits met?	Yes, except as noted for toxaphene.
12. Were the chain-of-custody forms properly processed?	Yes
13. Were the method blanks run and were the concentration below the acceptance criteria?	Yes
14. Was the MDL study performed on each matrix (with this data submission) or within the last 12 months?	Yes
15. Were the SRM/CRM analyses within acceptance criteria?	Yes
16. Were the matrix spike/matrix spike duplicates run at the required frequency and was the percent recovery/RPD within the acceptance criteria?	Yes
17. Were the duplicate samples analyzed and were the RPDs within the required acceptance criteria?	Samples analyzed in triplicate.
18. For each analytical fraction of organic compounds, were recoveries for the internal standard within the acceptance criteria?	Yes
19. Were surrogate recoveries within the required acceptance criteria?	Yes
20. Were corrective action forms provided for all non-conforming data?	NA
21. Were all the species-specific test conditions in Appendix V met?	NA
22. Were the test-specific age requirements met for each test species?	NA
23. Was the bulk physical/chemical testing performed on the sediments/composites that were biologically tested?	No biological testing is planned
24. Were the mortality acceptance criteria met for the water column and sediment toxicity tests?	NA
25. Were the test performance requirements in Table 11.3 of EPA (1994a) met?	NA

**Table II-3: Quality Control Summary for Analyses of Pesticides in Sediment, Tissue and Water Matrices**

Method Reference Number: 8081B

<b>Quality Control (QC) Element</b>	<b>Acceptance Criteria*</b>	<b>Criteria Met? Yes/No</b>	<b>List results outside criteria (Cross-reference results table in data report)</b>	<b>Location of Results (Retained at Lab or in Data Package)</b>
Initial Calibration	Must be performed prior to the analysis of any QC sample or field sample (< 20 % RSD for each compound)	Yes		Retained at lab
Calculation of Method Detection Limits (MDLs)	For each matrix, analyzed once per 12 month period (see Section 5.2 for MDL procedure)	Yes		Data Package
Calibration Verification (Second Source)	Once, after initial calibration (80 to 120% recovery of each compound)	Yes		Retained at lab
Continuing Calibration	Every 20 injections ( $\leq$ 15 % D)	Yes		Retained at lab
Standard Reference Materials	Within the limits provided by vendor	NA		
Method Blank	No target analytes > RL	Yes		Data Package
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	One set (MS/MSD) per group of field samples. Must contain all target analytes. (Recovery Limits 50 to 120%; RPD $\leq$ 30%).	Yes	In house limits of 30-150 %R were used.	Data Package
Analytical Replicates	Analyze one sample in duplicate for each group of field samples (RPD < 30%)	Yes		Data Package
Surrogate Recoveries	Calculate % recovery (30 to 150% recovery)	Yes		Data Package

\* The Quality Control Acceptance Criteria are general guidelines. If alternate criteria are used, they must be documented in this table

**Table II-4: Quality Control Summary for Analyses of Polychlorinated Biphenyls (PCB congeners) in Sediment, Tissue and Water Matrices**

Method Reference Number: 8270E Mod

<b>Quality Control (QC) Element</b>	<b>Acceptance Criteria*</b>	<b>Criteria Met? Yes/No</b>	<b>List results outside criteria (Cross-reference results table in data report)</b>	<b>Location of Results (Retained at Lab or in Data Package)</b>
Initial Calibration	Must be performed prior to the analysis of any QC sample or field sample (<20 % RSD for each compound)	Yes		Retained at lab
Calculation of Method Detection Limits (MDLs)	For each matrix, analyzed once per 12 month period (see Section 5.2 for MDL procedure)	Yes		Data Package
Calibration Verification (Second Source)	Once, after initial calibration. (80 to 120% recovery of each compound)	Yes		Retained at lab
Continuing Calibration	Every 20 injections ( $\pm 15$ % D)	Yes		Retained at lab
Standard Reference Materials	Within the limits provided by vendor	NA		
Method Blank	No target analytes > RL	Yes		Data Package
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	One set (MS/MSD) per group of field samples. Must contain all target analytes. (Recovery Limits 50 to 120%; RPD <30%).	Yes	In house limits of 30-150 %R were used. The %R was low and the RPD was high for PCB congeners 8 and 18. See pages 84 and 85 of the data package.	Data Package
Analytical Replicates	Analyze one sample in duplicate for each group of field samples (RPD < 30%)	Yes		Data Package
Surrogate Recoveries	Calculate % recovery (30 to 150% recovery)	Yes		Data Package

\* The Quality Control Acceptance Criteria are general guidelines. If alternate criteria are used, they must be documented in this table.

**Table II-5: Quality Control Summary for Analyses of Metals in Sediments, Tissue and Water Matrices**

Method Reference Numbers: EPA 6020B and 245.7

<b>Quality Control (QC) Element</b>	<b>Acceptance Criteria*</b>	<b>Criteria Met? Yes/No</b>	<b>List results outside criteria (Cross-reference results table in data report)</b>	<b>Location of Results (Retained at Lab or in Data Package)</b>
Linear Range Determination for ICP	Performed Quarterly	Yes		Retained at lab
Initial Calibration for AA, Hg	Performed Daily (Correlation Coefficient $\geq 0.995$ )	Yes		Retained at lab
Calculation of Method Detection Limits (MDLs)	For each matrix, analyzed once per 12 month period (see Section 5.2 for MDL procedure)	Yes		Data Package
Initial Calibration Verification/ Continuing Calibration Verification	Hg: 80 to 120% recovery Other metals: 90 to 110% recovery	Yes		Retained at lab
Initial Calibration Blank/ Continuing Calibration Blank	No target analytes > Instrument Detection Limit (IDL)	Yes		Retained at lab
Standard Reference Materials	Within the limits provided by vendor	NA		
Method Blank	No target analytes > RL	Yes		Data Package
Sample Spike/ Sample Duplicate	One set per group of field samples. Must contain all target analytes. Recovery Limits (75 to 125%; RPD < 20% or < 35%).	Yes	In house limits of 80-120 %R were used.	Data Package
Analytical Replicates	Analyze one sample in duplicate for each group of field samples (RPD < 30%)	Yes		Data Package

\* The Quality Control Acceptance Criteria are general guidelines. If alternate criteria are used, they must be documented in this table.

**Table II-6: Quality Control Summary for Analyses of other Organic Chemicals not listed in Sediment, Tissue and Water Matrices**

Method Reference Numbers: 8270D (Pentachlorophenol)

Quality Control (QC) Element	Acceptance Criteria*	Criteria Met? Yes/No	List results outside criteria (Cross-reference results table in data report)	Location of Results (Retained at Lab or in Data Package)
Initial Calibration	Must be performed prior to the analysis of any QC sample or field sample (<20 % RSD for each compound)	Yes		Retained at lab
Calculation of Method Detection Limits (MDLs)	For each matrix, analyzed once per 12 month period (see Section 5.2 for MDL procedure)	Yes		Data Package
Calibration Verification (Second Source)	Once, after initial calibration (80 to 120% recovery of each compound)	Yes		Retained at lab
Continuing Calibration	At the beginning of every 12 hour shift ( $\pm 15\%$ D)	Yes		Retained at lab
Standard Reference Materials	Within the limits provided by vendor	NA		
Method Blank	No target analytes > RL	Yes		Data Package
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	One set (MS/MSD) per group of field samples. Must contain all target analytes. (Recovery Limits 50 to 120%; RPD <30%)	Yes	In house limits of 30-150 %R were used.	Data Package
Analytical Replicates	Analyze one sample in duplicate for each group of field samples (RPD < 30%)	Yes		Data Package
Surrogate Recoveries	Calculate % recovery (30 to 150% recovery)	Yes		Data Package
Internal Standard Areas (if applicable)	Within 50 to 200% of internal standards in continuing calibration check	Yes		Retained at lab

\* The Quality Control Acceptance Criteria are general guidelines. If alternate criteria are used, they must be documented in this table

**Table II-7: Quality Control Summary for Analyses of Sediment Grain Size and Total Organic Carbon**

Method Reference Numbers:

<b>Quality Control (QC) Element</b>	<b>Acceptance Criteria*</b>	<b>Criteria Met? Yes/No</b>	<b>List results outside criteria (Cross-reference results table in data report)</b>	<b>Location of Results (Retained at Lab or in Data Package)</b>
Grain Size: Analytical Replicates	Analyze one sample in duplicate for each group of field samples ( RPD < 25%)	Yes		In Data Package
Total Organic Carbon: Standard Reference Materials	Within the limits provided by vendor	Yes		In Data Package
Total Organic Carbon: Analytical Replicates	Analyze one sample in duplicate for each group of field samples (RPD < 30%)	Yes		In Data Package

\* The Quality Control Acceptance Criteria are general guidelines. If alternate criteria are used, they must be documented in this table.

# **Aqua Survey, Inc.**

## **Volume II**

### **Enthalpy Analytical Chemical Analysis of the Sediment, Elutriate and Site Blank**

**Technical Report on the Sampling and Testing of Sediment  
for the Nordic Aquafarms Pipeline Corridor Dredging,  
Belfast and Northport, ME  
File Number NAE-2019-01481**

#### **Prepared for:**

**Nordic Aquafarms, Inc.  
511 Congress Street, Suite 500  
Portland, ME 04101**

**ASI Job No. 40-126**

*469 Point Breeze Road  
Flemington, NJ 08822*

*Phone: 908-788-8700  
Fax: 908-788-9165  
mail@aquasurvey.com  
www.aquasurvey.com*





**CHEMICAL ANALYSES  
OF A PROPOSED DREDGE SEDIMENT:**

**Nordic Aquafarms Pipeline Corridor Dredging  
Belfast and Northport, Maine**

**New England District Corps of Engineers  
Application Number: NAE-2019-01481**

**Tier III Sediment Evaluation  
Bulk Sediment Analysis**

Prepared For:

Aqua Survey, Inc.  
469 Point Breeze Road  
Flemington, New Jersey 08822

Prepared By:

Enthalpy Analytical, LLC  
One Lafayette Road  
Hampton, New Hampshire 03842

Lab Master Reference 34272  
Specific Study 34272

Report Issue Date: August 20, 2020  
Analysis Start: July 2020

## TABLE OF CONTENTS

LABORATORY STANDARDS STATEMENT .....	3
1.0 INTRODUCTION .....	4
2.0 MATERIALS AND METHODS.....	4
2.1 Sample Collection, Preservation and Storage.....	4
2.2 Sample Analysis .....	4
3.0 RESULTS .....	5
4.0 DATA ACCEPTABILITY AND PROTOCOL DEVIATIONS .....	5
4.1 PAHs.....	5
4.2 Chlorinated Pesticides.....	5
4.3 PCB Congeners.....	6
4.4 Total Metals .....	6
5.0 CORRECTIVE ACTIONS .....	6
6.0 REFERENCES .....	6

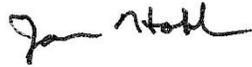
## LIST OF TABLES

Table 1. Sample Collection and Receipt Information .....	7
Table 2. Parameters Tested and Hold Times .....	8
Table 3. Detection Limits .....	9
APPENDIX A Table of Contents .....	10

## LABORATORY STANDARDS STATEMENT

This study was performed by Enthalpy (Enthalpy) (a division of Montrose Environmental Group), at its facility in Hampton, New Hampshire. Enthalpy's laboratory is accredited by the State of New Hampshire under the National Environmental Laboratory Accreditation (NELAC) program. Additionally, Enthalpy is accredited under the Department of Defense (DoD) ELAP program, ISO/IEC 17025:2005, Certificate Number L2340. Enthalpy also has an approved Laboratory Quality Assurance Plan (LQAP) covering all portions of this project. All testing conducted by Enthalpy as part of this program was compliant with NELAC guidelines and standards. Additionally, this study was conducted in accordance with guidelines presented in the 2004 version of the New England District's Regional Implementation Manual (RIM) for Evaluation of Dredged Material Proposed for Disposal In New England Waters. Any deviations from specific elements of the RIM are detailed in the Protocol Deviation section of this report.

For Enthalpy



August 20, 2020

---

Jason Hobbs  
Technical Manager

Date

# CHEMICAL ANALYSES OF A PROPOSED DREDGE SEDIMENT:

Nordic Aquafarms Pipeline Corridor Dredging  
Belfast and Northport, Maine

New England District Corps of Engineers  
Application Number: NAE-2019-01481

Tier III Sediment Evaluation  
Bulk Sediment Analysis

## 1.0 INTRODUCTION

As part of a comprehensive plan to reduce adverse environmental impacts of ocean dumping, Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 specifies that all sediments to be discharged into ocean waters must be evaluated to define their potential impact on existing benthic communities. The United States Environmental Protection Agency (EPA) has determined that the most effective means to make such an assessment is through the use of bioassay tests, which provide a relatively direct estimate of potential impact.

This project was designed to characterize the chemical nature of sediments removed as part of pipeline installation for the Nordic Aquafarms Pipeline Corridor Dredging Project located in Belfast and Northport, Maine. The excess dredge materials that are not re-deposited in place over the pipeline will be removed for upland disposal.

Testing involved completion of bulk sediment analysis following procedures established by the EPA and the United States Army Corps of Engineers (USACE) for testing of dredged material. Procedures are presented in *Evaluation of Dredged Material Proposed for Ocean Disposal* (EPA, USACE 1991), *Evaluation of Dredged Material Proposed for Discharge in Waters of the US - Testing Manual* (EPA, USACE 1998), and the *Regional Implementation Manual for Evaluation of Dredged Material Proposed for Disposal in New England Waters* (EPA, CENAE, 2004). All chemical analyses were performed at Enthalpy Analytical, a division of Montrose Environmental Group (MEG), at its facility in Hampton, New Hampshire.

## 2.0 MATERIALS AND METHODS

### 2.1 Sample Collection, Preservation and Storage

Sediment samples for chemical analysis were collected from the locations identified in the Final Sampling and Analysis Plan (SAP) approved by the USACE New England District (CENAE). Project site samples were provided by Aqua Survey, Inc. Flemington, New Jersey. Samples were received by Enthalpy under chain of custody in 1 L and 125 mL glass jars. Upon arrival at the laboratory, all samples received an internal sample control number and were logged into the project sample control system. Prior to testing, samples were placed in a secure refrigerator and stored at a temperature of  $4\pm 2^{\circ}\text{C}$  until test initiation. Sample identification, collection and receipt information is summarized in Table 1. Copies of chains of custody and sample receipt forms are provided in Appendix A.

Sediment subsamples were transferred to the appropriate containers for each parameter outlined in the project SAP. Upon collection, samples were stored under refrigeration ( $4\pm 2^{\circ}\text{C}$ ) as appropriate. An aliquot of sample was transferred to the freezer ( $\leq 20^{\circ}\text{C}$ ) for extended storage as outlined in Table 2.

### 2.2 Sample Analysis

Sample analyses were carried out following methods and protocols specified in the SAP. Review of the analytical reports indicates that all sample holding times were met, unless otherwise qualified. See

Table 2 for a summary of parameters tested and associated hold times. The analytical methods used were appropriate for the parameter and sample matrix and met USACE New England District RIM document requirements.

Trace metals were prepared by EPA 3050B and analyzed using EPA Method 6020B (Inductively Coupled Plasma - Mass Spectrometry (ICP-MS)). Mercury was prepared by EPA 3050B and analyzed using EPA Method 245.7 (Cold Vapor Atomic Fluorescence Spectrometry). PCB Congeners, pesticides and PAHs were all prepared by EPA Methods 3570 (Microscale Solvent Extraction). PCB Congeners were subsequently analyzed by EPA Method 8270E (Gas Chromatography – Mass Spectrometry). The laboratory has modified this analytical method to meet some quality control requirements outlined in EPA Methods 8270E - SIM and 8082A. Pesticides were analyzed by EPA Method 8081B. PAHs were analyzed by EPA Method 8270E - SIM.

Samples were grouped into preparation batches of up to 20 samples. QC samples were established for each batch to assess potential background analyte levels as well as recovery bias and precision for the given set of samples. Preparation Blanks (PB) were prepared and analyzed on a per batch basis to monitor for potential background levels of analytes above the reporting limit. A Laboratory Control Sample (LCS), Laboratory Control Sample Duplicate (LCSD), and, when possible, a Standard Reference Material sample (SRM) were prepared and analyzed on a per batch basis to evaluate bias and precision of recovered analytes against project criteria. Site sediment was used for assessing bias and precision of reported analytes extracted or digested from sediment matrices. Site sediment was spiked in duplicate and assigned a Matrix Spike (MS) and Matrix Spike Duplicate (MSD) sample designation. These two spiked samples were evaluated for percent recovery (%R) and relative percent difference (%RPD). Site sediment was run in duplicate and assigned a Duplicate (D) sample designation. This sample was evaluated for relative percent difference (%RPD) between sample results.

### **3.0 RESULTS**

See Table 3 for a summary of project Detection Limits (DLs). Sample results were reported to laboratory Reporting Limits (RL) that met or exceeded minimum quality assurance plan objectives and RIM requirements for assigned DLs, except where noted in Section 4.0. In cases where it was feasible, the laboratory was able to report to levels below the laboratory RL but above the established Method Detection Limit (MDL). In these cases, a J14 qualifier was provided for low level concentrations of target analytes below the reporting limit. Where dilution of the sample extract was required, or if adjustments were made in sample mass to accommodate high moisture content of the matrix, the final RL remained at or below the RIM document specified limits, except where noted in Table 3. These adjustments did not result in artificial “Non-Detects.” Sample results were qualified as tentative when method confirmation criteria were exceeded. Actual sample reporting limits are adjusted for initial weights and final volumes.

Review of supporting quality assurance data documented that, except where qualified, all data meet the requirements of NELAC, for all NELAC accredited parameters. Project based quality control objectives are reported with sample QC results. A full copy of the analytical report for field samples and sample QC are included in Appendix A.

### **4.0 DATA ACCEPTABILITY AND PROTOCOL DEVIATIONS**

The following paragraphs summarize acceptance with or deviations from project QC criteria.

#### **4.1 PAHs**

All acceptance criteria were achieved for all QC samples.

#### **4.2 Chlorinated Pesticides**

The RPDs between the MS and MSD exceeded the RIM acceptance limits of 30% and were J7-

qualified accordingly for gamma-BHC (Lindane), heptachlor, heptachlor epoxide and trans-nonachlor, but were within the acceptable range for all other pesticides. The RPDs between the LCS and LCSD exceeded the RIM acceptance limits of 30% and were J4-qualified accordingly for aldrin and oxychlorane, but were within the acceptable range for all other pesticides. All other acceptance criteria were achieved for the PB, sample NAE3 surface and its duplicate.

The RL for methoxychlor was above the RIM DL due to method limitations, however the MDLs for both pesticides were near or below the RIM DL. Neither pesticide was present in site samples above the MDL.

#### 4.3 PCB Congeners

All acceptance criteria were achieved for all QC samples.

#### 4.4 Total Metals

All acceptance criteria were achieved for all QC samples.

### 5.0 CORRECTIVE ACTIONS

Every effort was made to re-extract and re-analyze individual samples and sample batches that showed negative performance when compared to QC requirements outlined in the SAP and USACE, EPA guidance (1991, 1998, 2004, 2017). Negative performance would include but not be limited to: recovery of surrogates outside of acceptance criteria, unqualifiable contamination found in the preparation blank, unqualifiable issues with meeting criteria for precision and accuracy of laboratory control samples, unacceptable instrument performance, sample hold time deviations, and technical errors in preparation and analysis. The laboratory used its best judgment to interpret the validity of nonconforming data and acted in due diligence to address corrective actions within acceptable time frames.

### 6.0 REFERENCES

EPA Region 1, CENAE. 2004. *Regional Implementation Manual for Evaluation of Dredged Material Proposed for Disposal in New England Waters*. September 2004.

EPA, USACE. 1991. *Evaluation of Dredged Material Proposed for Ocean Disposal - Testing Manual*. EPA-503/8-91/001, February 1991.

EPA, USACE. 1998. *Evaluation of Dredged Material Proposed for Discharge in Waters of the US – Testing Manual*. EPA-823-B-98-004, February 1998.

**Table 1. Sample Collection and Receipt Information. Bulk Sediment Analysis. Nordic Aquafarms Pipeline Corridor, Belfast and Northport, ME. NAE-2019-01481. July 2020.**

Station ID	Lab Code	Matrix	Collection		Receipt	
			Date	Time	Date	Time
NAE2 Surface	34272-001	Solid	07/21/20	1113	07/22/20	1700
NAE2 Transition	34272-002	Solid	07/21/20	1113	07/22/20	1700
NAE2 Deep	34272-003	Solid	07/21/20	1113	07/22/20	1700
NAE4 Surface	34272-004	Solid	07/21/20	1207	07/22/20	1700
NAE4 Transition	34272-005	Solid	07/21/20	1207	07/22/20	1700
NAE4 Deep	34272-006	Solid	07/21/20	1207	07/22/20	1700
NAE5 Surface	34272-007	Solid	07/21/20	1326	07/22/20	1700
NAE5 Transition	34272-008	Solid	07/21/20	1326	07/22/20	1700
NAE5 Deep	34272-009	Solid	07/21/20	1326	07/22/20	1700
NAE7 Surface	34272-010	Solid	07/22/20	1327	07/22/20	1700
NAE7 Transition	34272-011	Solid	07/22/20	1327	07/22/20	1700
NAE7 Deep	34272-012	Solid	07/22/20	1327	07/22/20	1700
NAE8 Surface	34272-013	Solid	07/22/20	1245	07/22/20	1700
NAE8 Transition	34272-014	Solid	07/22/20	1245	07/22/20	1700
NAE8 Deep	34272-015	Solid	07/22/20	1245	07/22/20	1700
NAE10 Surface	34272-016	Solid	07/22/20	1156	07/22/20	1700
NAE10 Transition	34272-017	Solid	07/22/20	1156	07/22/20	1700
NAE10 Deep	34272-018	Solid	07/22/20	1156	07/22/20	1700
NAE11 Surface	34272-019	Solid	07/22/20	0906	07/22/20	1700
NAE11 Transition	34272-020	Solid	07/22/20	0906	07/22/20	1700
NAE11 Deep	34272-021	Solid	07/22/20	0906	07/22/20	1700
NAE1 Surface	34272-022	Solid	No sample <sup>a</sup>			
NAE1 Surface	34272-023	Solid	No sample <sup>a</sup>			
NAE1 Transition	34272-024	Solid	No sample <sup>a</sup>			
NAE1 Deep	34272-025	Solid	No sample <sup>a</sup>			
NAE3 Surface	34272-026	Solid	07/21/20	0951	07/22/20	1700
NAE3 Surface	34272-027 <sup>b</sup>	Solid	07/21/20	0951	07/22/20	1700
NAE3 Transition	34272-028	Solid	07/21/20	0951	07/22/20	1700
NAE3 Deep	34272-029	Solid	07/21/20	0951	07/22/20	1700
NAE6 Site Water	34272-030 <sup>b</sup>	Water	07/22/20	1348	07/22/20	1700
NAE6 Surface	34272-031	Solid	07/21/20	1424	07/22/20	1700
NAE6 Surface	34272-032 <sup>b</sup>	Solid	07/21/20	1424	07/22/20	1700
NAE6 Transition	34272-033	Solid	07/21/20	1424	07/22/20	1700
NAE6 Deep	34272-034	Solid	07/21/20	1424	07/22/20	1700
NAE9 Surface	34272-035	Solid	07/22/20	1024	07/22/20	1700
NAE9 Surface	34272-036 <sup>b</sup>	Solid	07/22/20	1024	07/22/20	1700
NAE9 Transition	34272-037	Solid	07/22/20	1024	07/22/20	1700
NAE9 Deep	34272-038	Solid	07/22/20	1024	07/22/20	1700

**Note:**

<sup>a</sup> Sample NAE1 was not collected. See email communication in Appendix A.

<sup>b</sup> Sample used only for elutriate preparation.

**Table 2. Parameters Tested and Hold Times. Bulk Sediment Analysis. Nordic Aquafarms Pipeline Corridor, Belfast and Northport, ME. NAE-2019-01481. July 2020.**

Parameter	Lab Codes	Volume and Container Type	Preservation Requirement	Hold Time 4±2°C / ≤20°C
Total Metals As, Cd, Cr, Cu, Pb, Ni, Zn	(See Table 1)	Glass – 1 Liter	4±2°C or ≤20°C	180 days / 1 year
Total Metals Hg				28 days / 1 year
Percent Moisture				28 days / 1 year
PAHs				14 days / 1 year
Pesticides				14 days / 1 year
PCB Congeners				14 days / 1 year

**Table 3. Detection Limits. Bulk Sediment Analysis. Nordic Aquafarms Pipeline Corridor, Belfast and Northport, ME. NAE-2019-01481. July 2020.**

COC	Units	Detection Limits		MDL	COC	Units	Detection Limits		MDL
		RIM	Enthalpy	Enthalpy			RIM	Enthalpy	Enthalpy
<b>Metals (SW-846 6020 and EPA 245.7)</b>					<b>PAH Compounds (SW-846 Method 8270E)</b>				
Arsenic	µg/g	0.4	0.2	0.060	Acenaphthene	ng/g	10	10	3.1
Cadmium	µg/g	0.07	0.07	0.0046	Acenaphthylene	ng/g	10	10	3.4
Chromium	µg/g	0.5	0.2	0.041	Anthracene	ng/g	10	10	3.3
Copper	µg/g	0.5	0.2	0.024	Benzo(a)anthracene	ng/g	10	10	4.5
Lead	µg/g	0.5	0.07	0.0053	Benzo(a)pyrene	ng/g	10	10	4.8
Mercury	µg/g	0.02	0.01	0.0011	Benzo(b)fluoranthene	ng/g	10	10	4.1
Nickel	µg/g	0.5	0.4	0.045	Benzo(k)fluoranthene	ng/g	10	10	4.4
Zinc	µg/g	1.0	2 <sup>a</sup>	0.079	Benzo(g,h,i)perylene	ng/g	10	10	3.9
<b>PCB Congeners (SW-846 Method 8270E CGR)</b>					Chrysene	ng/g	10	10	4.2
PCB 008	ng/g	1	0.4	0.14	Dibenz(a,h)anthracene	ng/g	10	10	3.9
PCB 018	ng/g	1	0.4	0.15	Fluoranthene	ng/g	10	10	6.6
PCB 028	ng/g	1	0.4	0.18	Fluorene	ng/g	10	10	3.4
PCB 044	ng/g	1	0.4	0.16	Indeno(1,2,3-c,d)pyrene	ng/g	10	10	3.5
PCB 049	ng/g	1	0.4	0.15	Naphthalene	ng/g	10	10	2.9
PCB 052	ng/g	1	0.4	0.18	Phenanthrene	ng/g	10	10	8.6
PCB 066	ng/g	1	0.4	0.16	Pyrene	ng/g	10	10	5.0
PCB 077	ng/g	1	0.4	0.13	<b>Pesticides (SW-846 Method 8081B)</b>				
PCB 087	ng/g	1	0.4	0.20	Aldrin	ng/g	1	0.4	0.25
PCB 101	ng/g	1	0.4	0.16	Alpha-chlordane	ng/g	1	0.4	0.078
PCB 105	ng/g	1	0.4	0.21	Gamma-chlordane	ng/g	1	0.4	0.17
PCB 118	ng/g	1	0.4	0.14	Cis-nonachlor	ng/g	1	0.4	0.061
PCB 126	ng/g	1	0.4	0.14	Trans-nonachlor	ng/g	1	0.4	0.095
PCB 128	ng/g	1	0.4	0.19	Oxychlordane	ng/g	1	0.4	0.21
PCB 138	ng/g	1	0.4	0.19	4,4'-DDT	ng/g	1	0.9	0.10
PCB 153	ng/g	1	0.4	0.16	4,4'-DDE	ng/g	1	0.9	0.076
PCB 170	ng/g	1	0.4	0.13	4,4'-DDD	ng/g	1	0.9	0.065
PCB 180	ng/g	1	0.4	0.10	Endosulfan I	ng/g	1	0.9	0.12
PCB 183	ng/g	1	0.4	0.08	Endosulfan II	ng/g	1	0.9	0.18
PCB 184	ng/g	1	0.4	0.14	Dieldrin	ng/g	1	0.9	0.093
PCB 187	ng/g	1	0.4	0.15	Endrin	ng/g	1	0.9	0.088
PCB 195	ng/g	1	0.4	0.19	Heptachlor	ng/g	1	0.4	0.14
PCB 206	ng/g	1	0.4	0.19	Heptachlor epoxide	ng/g	1	0.4	0.29
PCB 209	ng/g	1	0.4	0.20	Hexachlorobenzene	ng/g	1	0.9	0.39
<b>Total Organic Carbon (EPA 9060A)</b>					Gamma-BHC (Lindane)	ng/g	1	0.4	0.13
Total Organic Carbon	%	0.1	0.2	0.0082	Methoxychlor	ng/g	1	4.3 <sup>b</sup>	1.6 <sup>b</sup>
					Toxaphene	ng/g	25	43 <sup>a</sup>	4.4

**Note:** Quantitation Limits for this study may be slightly different from these values as they are adjusted by initial mass used in analysis, and final extract volumes.

<sup>a</sup> The RL is above the RIM detection limit due to sample dilution or lower sample mass used during preparation. All site samples had levels of these COCs at concentrations higher than the RL.

<sup>b</sup> The RL is above the RIM detection limit. See Section 4.2 for a discussion.

## APPENDIX A TABLE OF CONTENTS

<b>Contents</b>	<b>Number of Pages</b>
Study Number Log	1
Chain of Custody and Sample Receipt Records	14
Email Communications from Client	2
Report Qualifier Descriptions	1
<hr/>	
Sediment Analysis Report Pages	
Trace Metals	13
PCB Congeners	10
PAHs	10
Pesticides	10
<hr/>	
QC Support Documents	
Trace Metals	10
PCB Congeners	5
PAHs	5
Pesticides	8
MDL Studies	7
<hr/>	
Sample Support Documents	
New England District Quality Control Summary Tables	6
<hr/>	
Total Pages	102

## STUDY NUMBER RECORD

Issue and complete this form for studies that require multiple tasks and directly associated support studies. Issue consecutive study numbers at the start of the project to cover all potential elements of the project.

**Client:** Aqua Survey, Inc.  
**Contact:** John Doi  
**Project:** Nordic Aquafarms Pipeline Corridor Dredging  
**Application Number:** NAE-2019-01481

Species / Analysis Parameters:		STUDY:
<b>Sample Receipt and Bulk Sediment Analysis</b>		<b>34272</b>
<b>Composite Prep:</b>	Ammonia Reduction Procedure (Optional)	-
<b>10 Day Assay:</b>	<i>Leptocheirus plumulosus</i>	-
	<i>Americamysis bahia</i>	-
<b>Elutriate Preparation:</b>	Type: Standard	<b>34273</b>
<b>Elutriate Analysis:</b>	Pentachlorophenol <input checked="" type="radio"/> Yes / No	<b>34274</b>
	Trace Metals <input checked="" type="radio"/> Yes / No	
	PCB Congeners <input checked="" type="radio"/> Yes / No	
	Pesticides <input checked="" type="radio"/> Yes / No	
<b>SPP Assays:</b>	<i>Menidia beryllina</i>	-
	<i>Americamysis bahia</i>	
	<i>Arbacia punctulata</i>	
<b>Bioaccumulation Study:</b>	<i>Macoma nasuta</i>	-
	<i>Nereis virens</i>	-
<b>Tissue Analysis:</b>	Lipids Yes / No	-
	Trace Metals Yes / No	
	PAH Compounds Yes / No	
	PCB Congeners Yes / No	
	Pesticides Yes / No	

# Chain of Custody Records

## Sample Receipt Forms



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Pipeline Corridor Dredging
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0915 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composite (G/C)	Container		Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:	
						No	Size (mL)					
001	NAE2 Surface	7-21-20	1113	ASI	G	1	125	A	4 C	Solid	N	Total Metals Hg;
002	NAE2 Transition	7-21-20	1113	ASI	G	1	125	A	4 C	Solid	N	Total Metals Hg;
003	NAE2 Deep	7-21-20	1113	ASI	G	1	125	A	4 C	Solid	N	Total Metals Hg;

Relinquished By: *Will P* Date: 7-22-20 Time: 1700 Received By: *D. White* Date: 7-22-20 Time: 1708 Temp (C): Meter ID:

Relinquished By: Date: Time: Received at Lab By: Date: Time: Temp (C): Meter ID:

Comments: \_\_\_\_\_



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Pipeline Corridor Dredging
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0915 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composite (G/C)	Container		Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:	
						No	Size (mL)					
004	NAE4 Surface	7-21-20	1207	ASI	G	1	125	A	4 C	Solid	N	Total Metals Hg;
005	NAE4 Transition	7-21-20	1207	ASI	G	1	125	A	4 C	Solid	N	Total Metals Hg;
006	NAE4 Deep	7-21-20	1207	ASI	G	1	125	A	4 C	Solid	N	Total Metals Hg;

Relinquished By: *[Signature]* Date: 7-22-20 Time: 1700 Received By: *[Signature]* Date: 7-22-20 Time: 1700 Temp (C): Meter ID:

Relinquished By: Date: Time: Received at Lab By: Date: Time: Temp (C): Meter ID:

Comments: \_\_\_\_\_



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Pipeline Corridor Dredging
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0915 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composite (G/C)	Container		Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:	
						No	Size (mL)					
007	NAE5 Surface	7-21-20	1326	ASI	G	1	125	A	4 C	Solid	N	Total Metals Hg;
008	NAE5 Transition	7-21-20	1326	ASI	G	1	125	A	4 C	Solid	N	Total Metals Hg;
009	NAE5 Deep	7-21-20	1326	ASI	G	1	125	A	4 C	Solid	N	Total Metals Hg;

Relinquished By: *[Signature]* Date: 7-22-20 Time: 1700 Received By: *[Signature]* Date: 7-22-20 Time: 1700 Temp (C): Meter ID:

Relinquished By: Date: Time: Received at Lab By: Date: Time: Temp (C): Meter ID:

Comments: \_\_\_\_\_



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Pipeline Corridor Dredging
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0915 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composite (G/C)	Container		Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:	
						No	Size (mL)					
010	NAE7 Surface	7-22-20	1327	ASI	G	1	125	A	4 C	Solid	N	Total Metals Hg;
011	NAE7 Transition	7-22-20	1327	ASI	G	1	125	A	4 C	Solid	N	Total Metals Hg;
012	NAE7 Deep	7-22-20	1327	ASI	G	1	125	A	4 C	Solid	N	Total Metals Hg;

Relinquished By: *Michael R* Date: 7-22-20 Time: 1700 Received By: *[Signature]* Date: 7-22-20 Time: 1700 Temp (C): Meter ID:

Relinquished By: Date: Time: Received at Lab By: Date: Time: Temp (C): Meter ID:

Comments: \_\_\_\_\_



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Pipeline Corridor Dredging
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0915 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composite (G/C)	No	Container Size (mL)	Type (P/G/T)	Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:
013	NAE8 Surface	7-22-20	1245	ASI	G	1	125	A	4 C	Solid	N	Total Metals Hg;
014	NAE8 Transition	7-22-20	1245	ASI	G	1	125	A	4 C	Solid	N	Total Metals Hg;
015	NAE8 Deep	7-22-20	1245	ASI	G	1	125	A	4 C	Solid	N	Total Metals Hg;

Relinquished By: *[Signature]* Date: 7-22-20 Time: 1700 Received By: *[Signature]* Date: 7-22-20 Time: 1700 Temp (C): Meter ID:

Relinquished By: Date: Time: Received at Lab By: Date: Time: Temp (C): Meter ID:

Comments: \_\_\_\_\_



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Pipeline Corridor Dredging
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0915 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composite (G/C)	No	Container Size (mL)	Type (P/G/T)	Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:
016	NAE10 Surface	7-22-20	1156	AST	G	1	125	A	4 C	Solid	N	Total Metals Hg;
017	NAE10 Transition	7-22-20	1156	AST	G	1	125	A	4 C	Solid	N	Total Metals Hg;
018	NAE10 Deep	7-22-20	1156	AST	G	1	125	A	4 C	Solid	N	Total Metals Hg;

Relinquished By: *[Signature]* Date: 7-22-20 Time: 1700 Received By: *[Signature]* Date: 7-22-20 Time: 1700 Temp (C): Meter ID:

Relinquished By: Date: Time: Received at Lab By: Date: Time: Temp (C): Meter ID:

Comments: \_\_\_\_\_



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Pipeline Corridor Dredging
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0915 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composite (G/C)	Container		Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:	
						No	Size (mL)					
019	NAE11 Surface	7-22-20	0906	ASI	G	1	125	A	4 C	Solid	N	Total Metals Hg;
020	NAE11 Transition	7-22-20	0906	ASI	G	1	125	A	4 C	Solid	N	Total Metals Hg;
021	NAE11 Deep	7-22-20	0906	ASI	G	1	125	A	4 C	Solid	N	Total Metals Hg;

Relinquished By: *[Signature]* Date: 7-22-20 Time: 1700 Received By: *[Signature]* Date: 7-22-20 Time: 1700 Temp (C): Meter ID:

Relinquished By: Date: Time: Received at Lab By: Date: Time: Temp (C): Meter ID:

Comments: \_\_\_\_\_



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Pipeline Corridor Dredging
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0915 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or com- posite (G/C)	Container		Field Preser- vation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:	
						No	Size (mL)					
022	NAE1 Surface					1	1000	A	4 C	Solid	N	%H2O,PAH680,Pest8081,CGR680>Total Metals As,Cd,Cr,C
023	NAE1 Surface					2	2 gallon	P	4 C	Solid	N	Elutriate Prep
024	NAE1 Transition					1	1000	A	4 C	Solid	N	%H2O,PAH680,Pest8081,CGR680>Total Metals As,Cd,Cr,C
025	NAE1 Deep					1	1000	A	4 C	Solid	N	%H2O,PAH680,Pest8081,CGR680>Total Metals As,Cd,Cr,C

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Temp (C):	Meter ID:
Relinquished By:	Date:	Time:	Received at Lab By:	Date:	Time:	Temp (C):	Meter ID:

Comments: \_\_\_\_\_

COC Number: A1018977



NO SAMPLE

Page	of
------	----



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Pipeline Corridor Dredging
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0915 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or com- posite (G/C)	No	Container Size (mL)	Type (P/G/T)	Field Preser- vation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:
026	NAE3 Surface	7-21-20	0951	ASI	G	1	1000	A	4 C	Solid	N	%H2O,PAH680,Pest8081,CGR680>Total Metals As,Cd,Cr,C
027	NAE3 Surface	7-21-20	0951	ASI	G	2	2 gallon	P	4 C	Solid	N	Elutriate Prep
028	NAE3 Transition	7-21-20	0951	ASI	G	1	1000	A	4 C	Solid	N	%H2O,PAH680,Pest8081,CGR680>Total Metals As,Cd,Cr,C
029	NAE3 Deep	7-21-20	0951	ASI	G	1	1000	A	4 C	Solid	N	%H2O,PAH680,Pest8081,CGR680>Total Metals As,Cd,Cr,C

Relinquished By: <i>Michael B...</i>	Date: 7-22-20	Time: 1700	Received By: <i>DW...</i>	Date: 7-22-20	Time: 1708	Temp (C):	Meter ID:
Relinquished By:	Date:	Time:	Received at Lab By:	Date:	Time:	Temp (C):	Meter ID:

Comments: \_\_\_\_\_



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Pipeline Corridor Dredging
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0915 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or com- posite (G/C)	No	Container		Field Preser- vation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:
							Size (mL)	Type (P/G/T)				
030	NAE6 Site Water	<sup>07/23/20</sup> RAM (E10) <del>7-21-20</del> 7-22-20	<del>1424</del> 1348	ASI	G	8	5 gallon	P	4 C	Water	N	Elutriate Prep
031	NAE6 Surface	7-21-20	1424	ASI	G	1	1000	A	4 C	Solid	N	%H2O, PAH680, Pest8081, CGR680, Total Metals As, Cd, Cr, C
032	NAE6 Surface	7-21-20	1424	ASI	G	2	2 gallon	P	4 C	Solid	N	Elutriate Prep
033	NAE6 Transition	7-21-20	1424	ASI	G	1	1000	A	4 C	Solid	N	%H2O, PAH680, Pest8081, CGR680, Total Metals As, Cd, Cr, C
034	NAE6 Deep	7-21-20	1424	ASI	G	1	1000	A	4 C	Solid	N	%H2O, PAH680, Pest8081, CGR680, Total Metals As, Cd, Cr, C

Relinquished By: *William* Date: 7-22-20 Time: 1700 Received By: *D. White* Date: 7-22-20 Time: 1700 Temp (C): Meter ID:

Relinquished By: Date: Time: Received at Lab By: Date: Time: Temp (C): Meter ID:

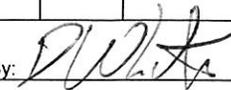
Comments: (E10) RAM 07/23/20 - Client confirmed in an email communication that sample collected 07/22/20 at 1348.



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Pipeline Corridor Dredging
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0915 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composite (G/C)	No	Container Size (mL)	Type (P/G/T)	Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested\ Special Instructions:
035	NAE9 Surface	7-22-20	1024	ASI	G	1	1000	A	4 C	Solid	N	%H2O,PAH680,Pest8081,CGR680>Total Metals As,Cd,Cr,C
036	NAE9 Surface	7-22-20	1024	ASI	G	2	2 gallon	P	4 C	Solid	N	Elutriate Prep
037	NAE9 Transition	7-22-20	1024	ASI	G	1	1000	A	4 C	Solid	N	%H2O,PAH680,Pest8081,CGR680>Total Metals As,Cd,Cr,C
038	NAE9 Deep	7-22-20	1024	ASI	G	1	1000	A	4 C	Solid	N	%H2O,PAH680,Pest8081.CGR680>Total Metals As,Cd,Cr,C

Relinquished By:  Date: 7-22-20 Time: 1700 Received By:  Date: 7-22-20 Time: 1700 Temp (C): Meter ID:

Relinquished By: Date: Time: Received at Lab By: Date: Time: Temp (C): Meter ID:

Comments: \_\_\_\_\_

## SAMPLE RECEIPT AND CONDITION DOCUMENTATION

STUDY NO: 34272  
 SDG No: 34272  
 Project: Nordic Aquafarms Pipeline Corridor Dredging

Delivered via:  
 Date and Time Received: 07/22/20 1700 Date and Time Logged into Lab: 07/23/20 0920  
 Received By: DW Logged into Lab by: RAM

Air bill / Way bill: NA Cooler on ice/packs: Yes  
 Custody Seals present/intact NA Cooler blank temp (C) at arrival: NA  
 Thermometer ID: NA

Number of COC Pages: 10  
 Were VOC vials free of headspace? NA

COC Complete: Yes pH Test strip lot ID: NA

Were samples received within holding time? Yes  
 Does the info on the COC match the samples? No, see comment on page 2.

Client notification/authorization: NA

Field ID	Lab ID	Mx	Analysis Requested	Bottle	Req'd Pres'n	Verified Pres'n
NAE2 Surface	34272-001	S	Total Metals Hg;	125 A	4 C	NA
NAE2 Transition	34272-002	S	Total Metals Hg;	125 A	4 C	NA
NAE2 Deep	34272-003	S	Total Metals Hg;	125 A	4 C	NA
NAE4 Surface	34272-004	S	Total Metals Hg;	125 A	4 C	NA
NAE4 Transition	34272-005	S	Total Metals Hg;	125 A	4 C	NA
NAE4 Deep	34272-006	S	Total Metals Hg;	125 A	4 C	NA
NAE5 Surface	34272-007	S	Total Metals Hg;	125 A	4 C	NA
NAE5 Transition	34272-008	S	Total Metals Hg;	125 A	4 C	NA
NAE5 Deep	34272-009	S	Total Metals Hg;	125 A	4 C	NA
NAE7 Surface	34272-010	S	Total Metals Hg;	125 A	4 C	NA
NAE7 Transition	34272-011	S	Total Metals Hg;	125 A	4 C	NA
NAE7 Deep	34272-012	S	Total Metals Hg;	125 A	4 C	NA
NAE8 Surface	34272-013	S	Total Metals Hg;	125 A	4 C	NA
NAE8 Transition	34272-014	S	Total Metals Hg;	125 A	4 C	NA
NAE8 Deep	34272-015	S	Total Metals Hg;	125 A	4 C	NA
NAE10 Surface	34272-016	S	Total Metals Hg;	125 A	4 C	NA
NAE10 Transition	34272-017	S	Total Metals Hg;	125 A	4 C	NA
NAE10 Deep	34272-018	S	Total Metals Hg;	125 A	4 C	NA
NAE11 Surface	34272-019	S	Total Metals Hg;	125 A	4 C	NA
NAE11 Transition	34272-020	S	Total Metals Hg;	125 A	4 C	NA
NAE11 Deep	34272-021	S	Total Metals Hg;	125 A	4 C	NA

Notes and qualifications:

## SAMPLE RECEIPT AND CONDITION DOCUMENTATION

STUDY NO: 34272  
 SDG No: 34272  
 Project: Nordic Aquafarms Pipeline Corridor Dredging

Delivered via:  
 Date and Time Received: 07/22/20 1700 Date and Time Logged into Lab: 07/23/20 0920  
 Received By: DW Logged into Lab by: RAM

Air bill / Way bill: NA Cooler on ice/packs: Yes  
 Custody Seals present/intact NA Cooler blank temp (C) at arrival: NA  
 Thermometer ID: NA

Number of COC Pages: 10  
 Were VOC vials free of headspace? NA

COC Complete: Yes pH Test strip lot ID: NA

Were samples received within holding time? Yes  
 Does the info on the COC match the samples? No, see comment below

Client notification/authorization: NA

Field ID	Lab ID	Mx	Analysis Requested	Bottle	Req'd Pres'n	Verified Pres'n
NAE1 Surface	34272-022	S	No Sample	1000 A	4 C	NA
NAE1 Surface	34272-023	S	No Sample	2x2 gallon	4 C	NA
NAE1 Transition	34272-024	S	No Sample	1000 A	4 C	NA
NAE1 Deep	34272-025	S	No Sample	1000 A	4 C	NA
NAE3 Surface	34272-026	S	%H2O,PAH680,Pest8081,CGR680,Total Metals As,Cd,Cr	1000 A	4 C	NA
NAE3 Surface	34272-027	S	Elutriate Prep	2x2 gallon	4 C	NA
NAE3 Transition	34272-028	S	%H2O,PAH680,Pest8081,CGR680,Total Metals As,Cd,Cr	1000 A	4 C	NA
NAE3 Deep	34272-029	S	%H2O,PAH680,Pest8081,CGR680,Total Metals As,Cd,Cr	1000 A	4 C	NA
NAE6 Site Water	34272-030	W	Elutriate Prep	8x5 gallon	4 C	NA
NAE6 Surface	34272-031	S	%H2O,PAH680,Pest8081,CGR680,Total Metals As,Cd,Cr	1000 A	4 C	NA
NAE6 Surface	34272-032	S	Elutriate Prep	2x2 gallon	4 C	NA
NAE6 Transition	34272-033	S	%H2O,PAH680,Pest8081,CGR680,Total Metals As,Cd,Cr	1000 A	4 C	NA
NAE6 Deep	34272-034	S	%H2O,PAH680,Pest8081,CGR680,Total Metals As,Cd,Cr	1000 A	4 C	NA
NAE9 Surface	34272-035	S	%H2O,PAH680,Pest8081,CGR680,Total Metals As,Cd,Cr	1000 A	4 C	NA
NAE9 Surface	34272-036	S	Elutriate Prep	2x2 gallon	4 C	NA
NAE9 Transition	34272-037	S	%H2O,PAH680,Pest8081,CGR680,Total Metals As,Cd,Cr	1000 A	4 C	NA
NAE9 Deep	34272-038	S	%H2O,PAH680,Pest8081,CGR680,Total Metals As,Cd,Cr	1000 A	4 C	NA

Notes and qualifications:

The date and time sampled for NAE6 Site Water (34272-030) was listed as:  
 07/22/20 1348 on the sample container  
 07/21/20 1424 on the chain of custody  
 Client confirmed in an email communication that the time on the container was correct. RAM 07/23/20

Samples from NAE1 (34272-022 through 34272-025) could not be collected and were not received.

# Email Communications from Client



Renee McIsaac &lt;renee.mcisaac@enthalpy.com&gt;

---

**RE[16]: Introduction**

1 message

**Jon Doi** <doi@aquasurvey.com>

Thu, Jul 23, 2020 at 10:16 AM

To: Renee McIsaac &lt;renee.mcisaac@enthalpy.com&gt;

Cc: Kirk Cram &lt;kirk.cram@enthalpy.com&gt;, James Provencher &lt;james.provencher@enthalpy.com&gt;, Tom Dolce &lt;dolce@aquasurvey.com&gt;, Jason Hobbs &lt;jason.hobbs@enthalpy.com&gt;

Renee:

There will not be a sediment sample, NAE1. It was decided that this sample was not needed. The site water was collected yesterday, so I would go with what's on the sample containers and make the appropriate change on the chain. Thanks for bringing these things to our attention.

Let me know if you have any other questions.

Take care,

Jon

---

Jon Doi, Ph.D.

Principal/Executive Vice President

**Aqua Survey, Inc.**

469 Point Breeze Road

Flemington, NJ 08822

Phone: 908-788-8700

Fax: 908-788-9165

Cell: 908-347-3935

[doi@aquasurvey.com](mailto:doi@aquasurvey.com)

[www.aquasurvey.com](http://www.aquasurvey.com)

---

**From:** Renee McIsaac <renee.mcisaac@enthalpy.com>

**Sent:** Thursday, July 23, 2020 10:08 AM

**To:** Jon Doi <doi@aquasurvey.com>

**Cc:** Kirk Cram <kirk.cram@enthalpy.com>; James Provencher <james.provencher@enthalpy.com>; Tom Dolce <dolce@aquasurvey.com>; Jason Hobbs <jason.hobbs@enthalpy.com>

**Subject:** Re: RE[15]: Introduction

Greetings,

We received samples for the Nordic Aquafarms Pipeline Corridor Dredging project yesterday and I have a couple of questions.

One of the sample sites (NAE1) the crew was not able to collect, and I wanted to know if samples will be collected at a later time or if samples will be collected from an adjacent location. (This was one of the stations identified for full bulk sediment and elutriate analysis.)

There was a discrepancy for the sampled date and time for the NAE6 Site Water sample.

07/22/20 1348 was listed on the sample containers

07/21/20 1424 was listed on the chain of custody

Could you please confirm the correct date and time for this sample.

## Report Qualifiers

J2 - Result is an estimate and biased low. Laboratory Control Sample (LCS) % Recovery (R) is below the method or project specified limit.

J3 - Result is potentially biased high. LCS %R is above the method or project specified limit.

J4 - The Relative Percent Difference (RPD) between the Laboratory Control Sample Duplicate (LCSD) and LCS are above the method or project specified limit.

J5 - Matrix Spike (MS) %R is below the method or project specified limit.

J6 - MS %R is above the method or project specified limit.

J7 - The RPD between the Matrix Spike Duplicate (MSD) and MS are above the method or project specified limit.

J8 - The RPD between the Sample Duplicate (SD) and sample are above the method or project specified limit.

J9 - Sample value above upper calibration limit and estimated. For metals, sample results are above upper calibration limit but within the established linear dynamic range for the instrument.

J12 - Result is potentially biased high. ICV % Recovery (R) is above the method or project specified limit.

J13 - Result is potentially biased high. CCV % Recovery (R) is above the method or project specified limit.

J14 - Estimated value less than reporting limit but greater than the MDL.

J16 - All dilutions resulted in complete oxygen depletion, true value greater than or equal to reported value.

J17 - Surrogate % R is below method or project specified limit.

J18 - Surrogate % R is above method or project specified limit.

J19 - Result is an estimate. Matrix interference present.

J26 - TSS filter residue below method requirement. Result may be used with due consideration.

B - Analyte found in laboratory blank at background level indicated. Results may be used with due consideration. For metals, the background concentration in the blank is noted in mg/L.

SNR - Spike recovery not evaluated. The concentration of the analyte in the sample is greater than five times the spike amount making spike QC inappropriate for evaluation of matrix bias.

ND - Not detected at or above the displayed reporting limit (Quant Limit).

O - Other narrative comment.

R1 - Sample analyzed after the recommended holding time. Result may be unusable for regulatory compliance purposes.

R2 - Sample received beyond the recommended holding time. Result may be unusable for regulatory compliance purposes.

T - Tentatively identified without confirmation from a second qualitative column.

U - Not detected at or above the displayed reporting limit (Quantitation Limit).

NA - Not added to QC sample.

NC - Not calculated due to low level of results or due to a lack of a data point.

Bulk Sediment Analysis  
Analysis Report Pages  
Trace Metals and Inorganics

**Project Number: 34272**  
**Project: Nordic Aquafarms Pipeline Corridor Dredging NAE-2019-01481**  
**Percent Moisture Method: 160.3 EPA 600/4/79/020**  
**Total Mercury Method: EPA 245.7**

Sample ID	Parameter	Lab ID	Matrix	Result	Qual	Qlimit	Units	Sampled	Prepared	Analyzed
NAE2 Surface	Percent Moisture	34272-001	Solid	21.3		0.1	%	07/21/20 1113	07/27/20 1545	07/28/20 0830
NAE2 Surface	Mercury, total	34272-001	Solid	0.022		0.01	ug/g dry wt	07/21/20 1113	08/01/20 1500	08/04/20 1246
NAE2 Transition	Percent Moisture	34272-002	Solid	11.7		0.1	%	07/21/20 1113	07/27/20 1545	07/28/20 0830
NAE2 Transition	Mercury, total	34272-002	Solid	0.012		0.01	ug/g dry wt	07/21/20 1113	08/01/20 1500	08/04/20 1255
NAE2 Deep	Percent Moisture	34272-003	Solid	15.7		0.1	%	07/21/20 1113	07/27/20 1545	07/28/20 0830
NAE2 Deep	Mercury, total	34272-003	Solid	0.011		0.01	ug/g dry wt	07/21/20 1113	08/01/20 1500	08/04/20 1258
NAE4 Surface	Percent Moisture	34272-004	Solid	18.6		0.1	%	07/21/20 1207	07/27/20 1545	07/28/20 0830
NAE4 Surface	Mercury, total	34272-004	Solid	0.021		0.01	ug/g dry wt	07/21/20 1207	08/01/20 1500	08/04/20 1304
NAE4 Transition	Percent Moisture	34272-005	Solid	20.1		0.1	%	07/21/20 1207	07/27/20 1545	07/28/20 0830
NAE4 Transition	Mercury, total	34272-005	Solid	ND		0.01	ug/g dry wt	07/21/20 1207	08/01/20 1500	08/04/20 1307
NAE4 Deep	Percent Moisture	34272-006	Solid	15.7		0.1	%	07/21/20 1207	07/27/20 1545	07/28/20 0830
NAE4 Deep	Mercury, total	34272-006	Solid	ND		0.01	ug/g dry wt	07/21/20 1207	08/01/20 1500	08/04/20 1309
NAE5 Surface	Percent Moisture	34272-007	Solid	20.1		0.1	%	07/21/20 1326	07/27/20 1545	07/28/20 0830
NAE5 Surface	Mercury, total	34272-007	Solid	0.014		0.01	ug/g dry wt	07/21/20 1326	08/01/20 1500	08/04/20 1311
NAE5 Transition	Percent Moisture	34272-008	Solid	16.9		0.1	%	07/21/20 1326	07/27/20 1545	07/28/20 0830
NAE5 Transition	Mercury, total	34272-008	Solid	0.01		0.01	ug/g dry wt	07/21/20 1326	08/01/20 1500	08/04/20 1314
NAE5 Deep	Percent Moisture	34272-009	Solid	8		0.1	%	07/21/20 1326	07/27/20 1545	07/28/20 0830
NAE5 Deep	Mercury, total	34272-009	Solid	ND		0.01	ug/g dry wt	07/21/20 1326	08/01/20 1500	08/04/20 1316
NAE7 Surface	Percent Moisture	34272-010	Solid	28.8		0.1	%	07/22/20 1327	07/27/20 1545	07/28/20 0830
NAE7 Surface	Mercury, total	34272-010	Solid	0.051		0.01	ug/g dry wt	07/22/20 1327	08/01/20 1500	08/04/20 1318

**Project Number: 34272**  
**Project: Nordic Aquafarms Pipeline Corridor Dredging NAE-2019-01481**  
**Percent Moisture Method: 160.3 EPA 600/4/79/020**  
**Total Mercury Method: EPA 245.7**

Sample ID	Parameter	Lab ID	Matrix	Result	Qual	Qlimit	Units	Sampled	Prepared	Analyzed
NAE7 Transition	Percent Moisture	34272-011	Solid	25.2		0.1	%	07/22/20 1327	07/27/20 1545	07/28/20 0830
NAE7 Transition	Mercury, total	34272-011	Solid	ND		0.01	ug/g dry wt	07/22/20 1327	08/01/20 1500	08/04/20 1321
NAE7 Deep	Percent Moisture	34272-012	Solid	16.3		0.1	%	07/22/20 1327	07/27/20 1545	07/28/20 0830
NAE7 Deep	Mercury, total	34272-012	Solid	ND		0.01	ug/g dry wt	07/22/20 1327	08/01/20 1500	08/04/20 1323
NAE8 Surface	Percent Moisture	34272-013	Solid	51.9		0.1	%	07/22/20 1245	07/27/20 1545	07/28/20 0830
NAE8 Surface	Mercury, total	34272-013	Solid	0.129		0.01	ug/g dry wt	07/22/20 1245	08/01/20 1500	08/04/20 1325
NAE8 Transition	Percent Moisture	34272-014	Solid	37.1		0.1	%	07/22/20 1245	07/27/20 1545	07/28/20 0830
NAE8 Transition	Mercury, total	34272-014	Solid	0.012		0.01	ug/g dry wt	07/22/20 1245	08/01/20 1500	08/04/20 1332
NAE8 Deep	Percent Moisture	34272-015	Solid	40.7		0.1	%	07/22/20 1245	07/27/20 1545	07/28/20 0830
NAE8 Deep	Mercury, total	34272-015	Solid	0.011		0.01	ug/g dry wt	07/22/20 1245	08/01/20 1500	08/04/20 1334
NAE10 Surface	Percent Moisture	34272-016	Solid	60.2		0.1	%	07/22/20 1156	07/27/20 1430	07/28/20 0830
NAE10 Surface	Mercury, total	34272-016	Solid	0.215		0.01	ug/g dry wt	07/22/20 1156	08/01/20 1500	08/04/20 1400
NAE10 Transition	Percent Moisture	34272-017	Solid	56.6		0.1	%	07/22/20 1156	07/27/20 1430	07/28/20 0830
NAE10 Transition	Mercury, total	34272-017	Solid	0.034		0.01	ug/g dry wt	07/22/20 1156	08/01/20 1500	08/04/20 1402
NAE10 Deep	Percent Moisture	34272-018	Solid	45		0.1	%	07/22/20 1156	07/27/20 1430	07/28/20 0830
NAE10 Deep	Mercury, total	34272-018	Solid	0.013		0.01	ug/g dry wt	07/22/20 1156	08/01/20 1500	08/04/20 1404
NAE11 Surface	Percent Moisture	34272-019	Solid	63.1		0.1	%	07/22/20 0906	07/27/20 1430	07/28/20 0830
NAE11 Surface	Mercury, total	34272-019	Solid	0.245		0.01	ug/g dry wt	07/22/20 0906	08/01/20 1500	08/04/20 1410
NAE11 Transition	Percent Moisture	34272-020	Solid	54.3		0.1	%	07/22/20 0906	07/27/20 1430	07/28/20 0830
NAE11 Transition	Mercury, total	34272-020	Solid	0.023		0.01	ug/g dry wt	07/22/20 0906	08/01/20 1500	08/04/20 1413

**Project Number: 34272**  
**Project: Nordic Aquafarms Pipeline Corridor Dredging NAE-2019-01481**  
**Percent Moisture Method: 160.3 EPA 600/4/79/020**  
**Total Mercury Method: EPA 245.7**

Sample ID	Parameter	Lab ID	Matrix	Result	Qual	Qlimit	Units	Sampled	Prepared	Analyzed
NAE11 Deep	Percent Moisture	34272-021	Solid	50.8		0.1	%	07/22/20 0906	07/27/20 1430	07/28/20 0830
NAE11 Deep	Mercury, total	34272-021	Solid	0.016		0.01	ug/g dry wt	07/22/20 0906	08/01/20 1500	08/04/20 1416

Report No: 34272 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor

Sample ID: NAE3 Surface  
 Matrix: Solid  
 Sampled: 07/21/20 0951

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Percent Moisture	34272-026	10	0.1	%	07/27/20 1430	07/28/20 0830	AS /160.3 EPA 600/4/79/020
Arsenic, total	34272-026	17	0.07	ug/g dry wt	08/01/20 1500	08/03/20 1720	AS /SW846 3rd Ed. 6020
Cadmium, total	34272-026	0.3	0.04	ug/g dry wt	08/01/20 1500	08/03/20 1720	AS /SW846 3rd Ed. 6020
Chromium, total	34272-026	26.2	0.07	ug/g dry wt	08/01/20 1500	08/03/20 1720	AS /SW846 3rd Ed. 6020
Copper, total	34272-026	21.3	0.07	ug/g dry wt	08/01/20 1500	08/03/20 1720	AS /SW846 3rd Ed. 6020
Lead, total	34272-026	7.71	0.04	ug/g dry wt	08/01/20 1500	08/03/20 1720	AS /SW846 3rd Ed. 6020
Mercury, total	34272-026	ND	0.01	ug/g dry wt	08/01/20 1500	08/04/20 1418	AS /EPA 245.7
Nickel, total	34272-026	31.5	0.2	ug/g dry wt	08/01/20 1500	08/03/20 1720	AS /SW846 3rd Ed. 6020
Zinc, total	34272-026	42.9	0.7	ug/g dry wt	08/01/20 1500	08/03/20 1720	AS /SW846 3rd Ed. 6020

Notes:

ND = Not Detected

Report No: 34272 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor  
 Sample ID: NAE3 Transition  
 Matrix: Solid  
 Sampled: 07/21/20 0951

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Percent Moisture	34272-028	10.6	0.1	%	07/27/20 1430	07/28/20 0830	AS /160.3 EPA 600/4/79/020
Arsenic, total	34272-028	13	0.07	ug/g dry wt	08/01/20 1500	08/03/20 1739	AS /SW846 3rd Ed. 6020
Cadmium, total	34272-028	0.26	0.04	ug/g dry wt	08/01/20 1500	08/03/20 1739	AS /SW846 3rd Ed. 6020
Chromium, total	34272-028	27.3	0.07	ug/g dry wt	08/01/20 1500	08/03/20 1739	AS /SW846 3rd Ed. 6020
Copper, total	34272-028	31.9	0.07	ug/g dry wt	08/01/20 1500	08/03/20 1739	AS /SW846 3rd Ed. 6020
Lead, total	34272-028	13.1	0.04	ug/g dry wt	08/01/20 1500	08/03/20 1739	AS /SW846 3rd Ed. 6020
Mercury, total	34272-028	ND	0.01	ug/g dry wt	08/01/20 1500	08/04/20 1420	AS /EPA 245.7
Nickel, total	34272-028	39.9	0.2	ug/g dry wt	08/01/20 1500	08/03/20 1739	AS /SW846 3rd Ed. 6020
Zinc, total	34272-028	68.8	0.7	ug/g dry wt	08/01/20 1500	08/03/20 1739	AS /SW846 3rd Ed. 6020

Notes:

ND = Not Detected

Report No: 34272 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor

Sample ID: NAE3 Deep  
 Matrix: Solid  
 Sampled: 07/21/20 0951

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Percent Moisture	34272-029	13.1	0.1	%	07/27/20 1430	07/28/20 0830	AS /160.3 EPA 600/4/79/020
Arsenic, total	34272-029	10.9	0.07	ug/g dry wt	08/01/20 1500	08/03/20 1746	AS /SW846 3rd Ed. 6020
Cadmium, total	34272-029	0.21	0.04	ug/g dry wt	08/01/20 1500	08/03/20 1746	AS /SW846 3rd Ed. 6020
Chromium, total	34272-029	28	0.07	ug/g dry wt	08/01/20 1500	08/03/20 1746	AS /SW846 3rd Ed. 6020
Copper, total	34272-029	37.3	0.07	ug/g dry wt	08/01/20 1500	08/03/20 1746	AS /SW846 3rd Ed. 6020
Lead, total	34272-029	8.67	0.04	ug/g dry wt	08/01/20 1500	08/03/20 1746	AS /SW846 3rd Ed. 6020
Mercury, total	34272-029	ND	0.01	ug/g dry wt	08/01/20 1500	08/04/20 1423	AS /EPA 245.7
Nickel, total	34272-029	48.4	0.2	ug/g dry wt	08/01/20 1500	08/03/20 1746	AS /SW846 3rd Ed. 6020
Zinc, total	34272-029	74.2	0.7	ug/g dry wt	08/01/20 1500	08/03/20 1746	AS /SW846 3rd Ed. 6020

Notes:

ND = Not Detected

Report No: 34272 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor

Sample ID: NAE6 Surface  
 Matrix: Solid  
 Sampled: 07/21/20 1424

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Percent Moisture	34272-031	12	0.1	%	07/27/20 1430	07/28/20 0830	AS /160.3 EPA 600/4/79/020
Arsenic, total	34272-031	5.04	0.07	ug/g dry wt	08/01/20 1500	08/03/20 1752	AS /SW846 3rd Ed. 6020
Cadmium, total	34272-031	0.068	0.04	ug/g dry wt	08/01/20 1500	08/03/20 1752	AS /SW846 3rd Ed. 6020
Chromium, total	34272-031	23.9	0.07	ug/g dry wt	08/01/20 1500	08/03/20 1752	AS /SW846 3rd Ed. 6020
Copper, total	34272-031	6.02	0.07	ug/g dry wt	08/01/20 1500	08/03/20 1752	AS /SW846 3rd Ed. 6020
Lead, total	34272-031	3.77	0.04	ug/g dry wt	08/01/20 1500	08/03/20 1752	AS /SW846 3rd Ed. 6020
Mercury, total	34272-031	ND	0.01	ug/g dry wt	08/01/20 1500	08/04/20 1425	AS /EPA 245.7
Nickel, total	34272-031	15.3	0.2	ug/g dry wt	08/01/20 1500	08/03/20 1752	AS /SW846 3rd Ed. 6020
Zinc, total	34272-031	39.8	0.7	ug/g dry wt	08/01/20 1500	08/03/20 1752	AS /SW846 3rd Ed. 6020

Notes:

ND = Not Detected

Report No: 34272 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor  
 Sample ID: NAE6 Transition  
 Matrix: Solid  
 Sampled: 07/21/20 1424

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Percent Moisture	34272-033	16.8	0.1	%	07/27/20 1430	07/28/20 0830	AS /160.3 EPA 600/4/79/020
Arsenic, total	34272-033	3.6	0.08	ug/g dry wt	08/01/20 1500	08/03/20 1759	AS /SW846 3rd Ed. 6020
Cadmium, total	34272-033	0.11	0.04	ug/g dry wt	08/01/20 1500	08/03/20 1759	AS /SW846 3rd Ed. 6020
Chromium, total	34272-033	24.9	0.08	ug/g dry wt	08/01/20 1500	08/03/20 1759	AS /SW846 3rd Ed. 6020
Copper, total	34272-033	5.15	0.08	ug/g dry wt	08/01/20 1500	08/03/20 1759	AS /SW846 3rd Ed. 6020
Lead, total	34272-033	2.99	0.04	ug/g dry wt	08/01/20 1500	08/03/20 1759	AS /SW846 3rd Ed. 6020
Mercury, total	34272-033	ND	0.01	ug/g dry wt	08/01/20 1500	08/04/20 1427	AS /EPA 245.7
Nickel, total	34272-033	17.4	0.2	ug/g dry wt	08/01/20 1500	08/03/20 1759	AS /SW846 3rd Ed. 6020
Zinc, total	34272-033	28.6	0.8	ug/g dry wt	08/01/20 1500	08/03/20 1759	AS /SW846 3rd Ed. 6020

Notes:  
 ND = Not Detected

Report No: 34272 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor

Sample ID: NAE6 Deep  
 Matrix: Solid  
 Sampled: 07/21/20 1424

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Percent Moisture	34272-034	22.6	0.1	%	07/27/20 1430	07/28/20 0830	AS /160.3 EPA 600/4/79/020
Arsenic, total	34272-034	3.15	0.08	ug/g dry wt	08/01/20 1500	08/03/20 1805	AS /SW846 3rd Ed. 6020
Cadmium, total	34272-034	0.076	0.04	ug/g dry wt	08/01/20 1500	08/03/20 1805	AS /SW846 3rd Ed. 6020
Chromium, total	34272-034	21.3	0.08	ug/g dry wt	08/01/20 1500	08/03/20 1805	AS /SW846 3rd Ed. 6020
Copper, total	34272-034	4.39	0.08	ug/g dry wt	08/01/20 1500	08/03/20 1805	AS /SW846 3rd Ed. 6020
Lead, total	34272-034	2.85	0.04	ug/g dry wt	08/01/20 1500	08/03/20 1805	AS /SW846 3rd Ed. 6020
Mercury, total	34272-034	ND	0.01	ug/g dry wt	08/01/20 1500	08/04/20 1430	AS /EPA 245.7
Nickel, total	34272-034	15.4	0.2	ug/g dry wt	08/01/20 1500	08/03/20 1805	AS /SW846 3rd Ed. 6020
Zinc, total	34272-034	36.6	0.8	ug/g dry wt	08/01/20 1500	08/03/20 1805	AS /SW846 3rd Ed. 6020

Notes:

ND = Not Detected

Report No: 34272 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor

Sample ID: NAE9 Surface  
 Matrix: Solid  
 Sampled: 07/22/20 1024

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Percent Moisture	34272-035	59.9	0.1	%	07/27/20 1430	07/28/20 0830	AS /160.3 EPA 600/4/79/020
Arsenic, total	34272-035	15.5	0.2	ug/g dry wt	08/01/20 1500	08/03/20 1812	AS /SW846 3rd Ed. 6020
Cadmium, total	34272-035	0.13	0.07	ug/g dry wt	08/01/20 1500	08/03/20 1812	AS /SW846 3rd Ed. 6020
Chromium, total	34272-035	44.8	0.2	ug/g dry wt	08/01/20 1500	08/03/20 1812	AS /SW846 3rd Ed. 6020
Copper, total	34272-035	16	0.2	ug/g dry wt	08/01/20 1500	08/03/20 1812	AS /SW846 3rd Ed. 6020
Lead, total	34272-035	24.3	0.07	ug/g dry wt	08/01/20 1500	08/03/20 1812	AS /SW846 3rd Ed. 6020
Mercury, total	34272-035	0.142	0.01	ug/g dry wt	08/01/20 1500	08/04/20 1432	AS /EPA 245.7
Nickel, total	34272-035	31.9	0.4	ug/g dry wt	08/01/20 1500	08/03/20 1812	AS /SW846 3rd Ed. 6020
Zinc, total	34272-035	75.5	2	ug/g dry wt	08/01/20 1500	08/03/20 1812	AS /SW846 3rd Ed. 6020

Notes:

Report No: 34272 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor  
 Sample ID: NAE9 Transition  
 Matrix: Solid  
 Sampled: 07/22/20 1024

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Percent Moisture	34272-037	53.2	0.1	%	07/27/20 1430	07/28/20 0830	AS /160.3 EPA 600/4/79/020
Arsenic, total	34272-037	13.7	0.1	ug/g dry wt	08/01/20 1500	08/03/20 1818	AS /SW846 3rd Ed. 6020
Cadmium, total	34272-037	0.12	0.07	ug/g dry wt	08/01/20 1500	08/03/20 1818	AS /SW846 3rd Ed. 6020
Chromium, total	34272-037	39.9	0.1	ug/g dry wt	08/01/20 1500	08/03/20 1818	AS /SW846 3rd Ed. 6020
Copper, total	34272-037	11.9	0.1	ug/g dry wt	08/01/20 1500	08/03/20 1818	AS /SW846 3rd Ed. 6020
Lead, total	34272-037	13.3	0.07	ug/g dry wt	08/01/20 1500	08/03/20 1818	AS /SW846 3rd Ed. 6020
Mercury, total	34272-037	0.02	0.01	ug/g dry wt	08/01/20 1500	08/04/20 1439	AS /EPA 245.7
Nickel, total	34272-037	29.5	0.3	ug/g dry wt	08/01/20 1500	08/03/20 1818	AS /SW846 3rd Ed. 6020
Zinc, total	34272-037	66.2	1	ug/g dry wt	08/01/20 1500	08/03/20 1818	AS /SW846 3rd Ed. 6020

Notes:

Report No: 34272 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor  
 Sample ID: NAE9 Deep  
 Matrix: Solid  
 Sampled: 07/22/20 1024

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Percent Moisture	34272-038	42.7	0.1	%	07/27/20 1430	07/28/20 0830	AS /160.3 EPA 600/4/79/020
Arsenic, total	34272-038	12.5	0.1	ug/g dry wt	08/01/20 1500	08/03/20 1641	AS /SW846 3rd Ed. 6020
Cadmium, total	34272-038	0.2	0.06	ug/g dry wt	08/01/20 1500	08/03/20 1641	AS /SW846 3rd Ed. 6020
Chromium, total	34272-038	31.5	0.1	ug/g dry wt	08/01/20 1500	08/03/20 1641	AS /SW846 3rd Ed. 6020
Copper, total	34272-038	10.3	0.1	ug/g dry wt	08/01/20 1500	08/03/20 1641	AS /SW846 3rd Ed. 6020
Lead, total	34272-038	8.87	0.06	ug/g dry wt	08/01/20 1500	08/03/20 1641	AS /SW846 3rd Ed. 6020
Mercury, total	34272-038	0.012	0.01	ug/g dry wt	08/01/20 1500	08/04/20 1350	AS /EPA 245.7
Nickel, total	34272-038	23.2	0.3	ug/g dry wt	08/01/20 1500	08/03/20 1641	AS /SW846 3rd Ed. 6020
Zinc, total	34272-038	45.4	1	ug/g dry wt	08/01/20 1500	08/03/20 1641	AS /SW846 3rd Ed. 6020

Notes:

Bulk Sediment Analysis  
Analysis Report Pages  
PCB Congeners



Laboratory ID: 34272-026  
 Field ID: NAE3 Surface  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/21/20 0951  
 Date Prepared: 08/03/20 1335  
 Batch Number: 431S  
 Matrix: Solid  
 Sample Weight (g): 6  
 Final Volume (mL): 1  
 Percent Dry Weight: 90  
 Analyst: PL

BZ Number	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
8		U	0.4	1	08/06/20 1605
18		U	0.4	1	08/06/20 1605
28		U	0.4	1	08/06/20 1605
44		U	0.4	1	08/06/20 1605
49		U	0.4	1	08/06/20 1605
52		U	0.4	1	08/06/20 1605
66		U	0.4	1	08/06/20 1605
77	J14	0.14	0.4	1	08/06/20 1605
87		U	0.4	1	08/06/20 1605
101	J14	0.16	0.4	1	08/06/20 1605
105		U	0.4	1	08/06/20 1605
118		U	0.4	1	08/06/20 1605
126		U	0.4	1	08/06/20 1605
128		U	0.4	1	08/06/20 1605
138		U	0.4	1	08/06/20 1605
153		U	0.4	1	08/06/20 1605
170		U	0.4	1	08/06/20 1605
180		U	0.4	1	08/06/20 1605
183		U	0.4	1	08/06/20 1605
184		U	0.4	1	08/06/20 1605
187		U	0.4	1	08/06/20 1605
195		U	0.4	1	08/06/20 1605
206		U	0.4	1	08/06/20 1605
209		U	0.4	1	08/06/20 1605

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
tetrachloro-m-xylene		54	30	150	YES



Laboratory ID: 34272-028  
 Field ID: NAE3 Transition  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/21/20 0951  
 Date Prepared: 08/03/20 1335  
 Batch Number: 4315  
 Matrix: Solid  
 Sample Weight (g): 6  
 Final Volume (mL): 1  
 Percent Dry Weight: 89  
 Analyst: PL

BZ Number	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
8	U	0.4	0.4	1	08/06/20 1737
18	U	0.4	0.4	1	08/06/20 1737
28	U	0.4	0.4	1	08/06/20 1737
44	U	0.4	0.4	1	08/06/20 1737
49	U	0.4	0.4	1	08/06/20 1737
52	U	0.4	0.4	1	08/06/20 1737
66	U	0.4	0.4	1	08/06/20 1737
77	U	0.4	0.4	1	08/06/20 1737
87	U	0.4	0.4	1	08/06/20 1737
101	U	0.4	0.4	1	08/06/20 1737
105	U	0.4	0.4	1	08/06/20 1737
118	U	0.4	0.4	1	08/06/20 1737
126	U	0.4	0.4	1	08/06/20 1737
128	U	0.4	0.4	1	08/06/20 1737
138	U	0.4	0.4	1	08/06/20 1737
153	U	0.4	0.4	1	08/06/20 1737
170	U	0.4	0.4	1	08/06/20 1737
180	U	0.4	0.4	1	08/06/20 1737
183	U	0.4	0.4	1	08/06/20 1737
184	U	0.4	0.4	1	08/06/20 1737
187	U	0.4	0.4	1	08/06/20 1737
195	U	0.4	0.4	1	08/06/20 1737
206	U	0.4	0.4	1	08/06/20 1737
209	U	0.4	0.4	1	08/06/20 1737

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene		56	30	150	YES



Laboratory ID: 34272-029  
 Field ID: NAE3 Deep  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/21/20 0951  
 Date Prepared: 08/03/20 1335  
 Batch Number: 4315  
 Matrix: Solid  
 Sample Weight (g): 6  
 Final Volume (mL): 1  
 Percent Dry Weight: 87  
 Analyst: PL

BZ Number	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
8		U	0.4	1	08/06/20 1800
18	J14	0.15	0.4	1	08/06/20 1800
28		U	0.4	1	08/06/20 1800
44		U	0.4	1	08/06/20 1800
49		U	0.4	1	08/06/20 1800
52		U	0.4	1	08/06/20 1800
66		U	0.4	1	08/06/20 1800
77		U	0.4	1	08/06/20 1800
87		U	0.4	1	08/06/20 1800
101		U	0.4	1	08/06/20 1800
105		U	0.4	1	08/06/20 1800
118		U	0.4	1	08/06/20 1800
126		U	0.4	1	08/06/20 1800
128		U	0.4	1	08/06/20 1800
138		U	0.4	1	08/06/20 1800
153		U	0.4	1	08/06/20 1800
170		U	0.4	1	08/06/20 1800
180		U	0.4	1	08/06/20 1800
183		U	0.4	1	08/06/20 1800
184		U	0.4	1	08/06/20 1800
187		U	0.4	1	08/06/20 1800
195		U	0.4	1	08/06/20 1800
206		U	0.4	1	08/06/20 1800
209		U	0.4	1	08/06/20 1800

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
tetrachloro-m-xylene		61	30	150	YES



Laboratory ID: 34272-031  
 Field ID: NAE6 Surface  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/21/20 1424  
 Date Prepared: 08/03/20 1335  
 Batch Number: 4315  
 Matrix: Solid  
 Sample Weight (g): 6  
 Final Volume (mL): 1  
 Percent Dry Weight: 88  
 Analyst: PL

BZ Number	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
8		U	0.4	1	08/06/20 1846
18		U	0.4	1	08/06/20 1846
28		U	0.4	1	08/06/20 1846
44		U	0.4	1	08/06/20 1846
49		U	0.4	1	08/06/20 1846
52		U	0.4	1	08/06/20 1846
66		U	0.4	1	08/06/20 1846
77		U	0.4	1	08/06/20 1846
87		U	0.4	1	08/06/20 1846
101		U	0.4	1	08/06/20 1846
105		U	0.4	1	08/06/20 1846
118		U	0.4	1	08/06/20 1846
126		U	0.4	1	08/06/20 1846
128		U	0.4	1	08/06/20 1846
138		U	0.4	1	08/06/20 1846
153		U	0.4	1	08/06/20 1846
170		U	0.4	1	08/06/20 1846
180		U	0.4	1	08/06/20 1846
183		U	0.4	1	08/06/20 1846
184		U	0.4	1	08/06/20 1846
187		U	0.4	1	08/06/20 1846
195	J14	0.28	0.4	1	08/06/20 1846
206		U	0.4	1	08/06/20 1846
209	J14	0.27	0.4	1	08/06/20 1846

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene		43	30	150	YES



Laboratory ID: 34272-033  
 Field ID: NAE6 Transition  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/21/20 1424  
 Date Prepared: 08/03/20 1335  
 Batch Number: 4315  
 Matrix: Solid  
 Sample Weight (g): 7  
 Final Volume (mL): 1  
 Percent Dry Weight: 83  
 Analyst: PL

BZ Number	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
8		U	0.3	1	08/06/20 1909
18		U	0.3	1	08/06/20 1909
28		U	0.3	1	08/06/20 1909
44		U	0.3	1	08/06/20 1909
49		U	0.3	1	08/06/20 1909
52		U	0.3	1	08/06/20 1909
66		U	0.3	1	08/06/20 1909
77		U	0.3	1	08/06/20 1909
87	J14	0.26	0.3	1	08/06/20 1909
101		U	0.3	1	08/06/20 1909
105		U	0.3	1	08/06/20 1909
118		U	0.3	1	08/06/20 1909
126		U	0.3	1	08/06/20 1909
128		U	0.3	1	08/06/20 1909
138		U	0.3	1	08/06/20 1909
153		U	0.3	1	08/06/20 1909
170		U	0.3	1	08/06/20 1909
180		U	0.3	1	08/06/20 1909
183		U	0.3	1	08/06/20 1909
184		U	0.3	1	08/06/20 1909
187		U	0.3	1	08/06/20 1909
195		U	0.3	1	08/06/20 1909
206		U	0.3	1	08/06/20 1909
209		U	0.3	1	08/06/20 1909

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
tetrachloro-m-xylene		61	30	150	YES



Laboratory ID: 34272-034  
 Field ID: NAE6 Deep  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/21/20 1424  
 Date Prepared: 08/03/20 1335  
 Batch Number: 4315  
 Matrix: Solid  
 Sample Weight (g): 7  
 Final Volume (mL): 1  
 Percent Dry Weight: 77  
 Analyst: PL

BZ Number	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
8		U	0.4	1	08/06/20 1931
18		U	0.4	1	08/06/20 1931
28		U	0.4	1	08/06/20 1931
44		U	0.4	1	08/06/20 1931
49		U	0.4	1	08/06/20 1931
52		U	0.4	1	08/06/20 1931
66		U	0.4	1	08/06/20 1931
77		U	0.4	1	08/06/20 1931
87		U	0.4	1	08/06/20 1931
101		U	0.4	1	08/06/20 1931
105		U	0.4	1	08/06/20 1931
118		U	0.4	1	08/06/20 1931
126		U	0.4	1	08/06/20 1931
128		U	0.4	1	08/06/20 1931
138		U	0.4	1	08/06/20 1931
153		U	0.4	1	08/06/20 1931
170	J14	0.14	0.4	1	08/06/20 1931
180		U	0.4	1	08/06/20 1931
183		U	0.4	1	08/06/20 1931
184		U	0.4	1	08/06/20 1931
187		U	0.4	1	08/06/20 1931
195		U	0.4	1	08/06/20 1931
206		U	0.4	1	08/06/20 1931
209		U	0.4	1	08/06/20 1931

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene		54	30	150	YES



Laboratory ID: 34272-035  
 Field ID: NAE9 Surface  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/22/20 1024  
 Date Prepared: 08/03/20 1335  
 Batch Number: 4315  
 Matrix: Solid  
 Sample Weight (g): 13  
 Final Volume (mL): 1  
 Percent Dry Weight: 40  
 Analyst: PL

BZ Number	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
8		U	0.4	1	08/06/20 1954
18		U	0.4	1	08/06/20 1954
28		U	0.4	1	08/06/20 1954
44		U	0.4	1	08/06/20 1954
49		U	0.4	1	08/06/20 1954
52		U	0.4	1	08/06/20 1954
66		U	0.4	1	08/06/20 1954
77	J14	0.13	0.4	1	08/06/20 1954
87		U	0.4	1	08/06/20 1954
101	J14	0.22	0.4	1	08/06/20 1954
105		U	0.4	1	08/06/20 1954
118		U	0.4	1	08/06/20 1954
126		U	0.4	1	08/06/20 1954
128		U	0.4	1	08/06/20 1954
138		U	0.4	1	08/06/20 1954
153	J14	0.26	0.4	1	08/06/20 1954
170		U	0.4	1	08/06/20 1954
180		U	0.4	1	08/06/20 1954
183		U	0.4	1	08/06/20 1954
184		U	0.4	1	08/06/20 1954
187		U	0.4	1	08/06/20 1954
195		U	0.4	1	08/06/20 1954
206		U	0.4	1	08/06/20 1954
209		U	0.4	1	08/06/20 1954

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
tetrachloro-m-xylene		38	30	150	YES



Laboratory ID: 34272-037  
 Field ID: NAE9 Transition  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/22/20 1024  
 Date Prepared: 08/03/20 1335  
 Batch Number: 4315  
 Matrix: Solid  
 Sample Weight (g): 11  
 Final Volume (mL): 1  
 Percent Dry Weight: 47  
 Analyst: PL

BZ Number	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
8		U	0.4	1	08/06/20 2017
18		U	0.4	1	08/06/20 2017
28		U	0.4	1	08/06/20 2017
44		U	0.4	1	08/06/20 2017
49		U	0.4	1	08/06/20 2017
52		U	0.4	1	08/06/20 2017
66		U	0.4	1	08/06/20 2017
77		U	0.4	1	08/06/20 2017
87	J14	0.26	0.4	1	08/06/20 2017
101		U	0.4	1	08/06/20 2017
105		U	0.4	1	08/06/20 2017
118		U	0.4	1	08/06/20 2017
126		U	0.4	1	08/06/20 2017
128		U	0.4	1	08/06/20 2017
138		U	0.4	1	08/06/20 2017
153		U	0.4	1	08/06/20 2017
170		U	0.4	1	08/06/20 2017
180		U	0.4	1	08/06/20 2017
183		U	0.4	1	08/06/20 2017
184		U	0.4	1	08/06/20 2017
187		U	0.4	1	08/06/20 2017
195		U	0.4	1	08/06/20 2017
206		U	0.4	1	08/06/20 2017
209		U	0.4	1	08/06/20 2017

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene		41	30	150	YES



Laboratory ID: 34272-038  
 Field ID: NAE9 Deep  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/22/20 1024  
 Date Prepared: 08/03/20 1335  
 Batch Number: 4315  
 Matrix: Solid  
 Sample Weight (g): 9  
 Final Volume (mL): 1  
 Percent Dry Weight: 57  
 Analyst: PL

BZ Number	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
8		U	0.4	1	08/06/20 2040
18		U	0.4	1	08/06/20 2040
28		U	0.4	1	08/06/20 2040
44		U	0.4	1	08/06/20 2040
49		U	0.4	1	08/06/20 2040
52		U	0.4	1	08/06/20 2040
66		U	0.4	1	08/06/20 2040
77		U	0.4	1	08/06/20 2040
87		U	0.4	1	08/06/20 2040
101		U	0.4	1	08/06/20 2040
105		U	0.4	1	08/06/20 2040
118		U	0.4	1	08/06/20 2040
126		U	0.4	1	08/06/20 2040
128		U	0.4	1	08/06/20 2040
138		U	0.4	1	08/06/20 2040
153		U	0.4	1	08/06/20 2040
170		U	0.4	1	08/06/20 2040
180		U	0.4	1	08/06/20 2040
183		U	0.4	1	08/06/20 2040
184		U	0.4	1	08/06/20 2040
187		U	0.4	1	08/06/20 2040
195	J14	0.27	0.4	1	08/06/20 2040
206		U	0.4	1	08/06/20 2040
209		U	0.4	1	08/06/20 2040

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
tetrachloro-m-xylene		48	30	150	YES

Bulk Sediment Analysis  
Analysis Report Pages  
PAHs



Laboratory ID: 34272-026  
 Field ID: NAE3 Surface  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/21/20 0951  
 Date Prepared: 08/04/20 1050  
 Batch Number: 432S  
 Matrix: Solid  
 Sample Weight (g): 12  
 Final Volume (mL): 1  
 Percent Dry Weight: 90  
 Analyst: PL

Target Compound	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Naphthalene	U	9	9	1	08/07/20 1301
Acenaphthylene	U	9	9	1	08/07/20 1301
Acenaphthene	U	9	9	1	08/07/20 1301
Fluorene	U	9	9	1	08/07/20 1301
Phenanthrene	U	9	9	1	08/07/20 1301
Anthracene	U	9	9	1	08/07/20 1301
Fluoranthene	U	9	9	1	08/07/20 1301
Pyrene	U	9	9	1	08/07/20 1301
Benzo(a)anthracene	U	9	9	1	08/07/20 1301
Chrysene	U	9	9	1	08/07/20 1301
Benzo(b)fluoranthene	U	9	9	1	08/07/20 1301
Benzo(k)fluoranthene	U	9	9	1	08/07/20 1301
Benzo(a)pyrene	U	9	9	1	08/07/20 1301
Indeno(1,2,3-cd)pyrene	U	9	9	1	08/07/20 1301
Dibenz(a,h)anthracene	U	9	9	1	08/07/20 1301
Benzo(ghi)perylene	U	9	9	1	08/07/20 1301

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
2-Fluorobiphenyl		69	30	150	YES
o-Terphenyl		78	30	150	YES



Laboratory ID: 34272-028  
 Field ID: NAE3 Transition  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/21/20 0951  
 Date Prepared: 08/04/20 1050  
 Batch Number: 432S  
 Matrix: Solid  
 Sample Weight (g): 12  
 Final Volume (mL): 1  
 Percent Dry Weight: 89  
 Analyst: PL

Target Compound	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Naphthalene	U	9	9	1	08/07/20 1441
Acenaphthylene	U	9	9	1	08/07/20 1441
Acenaphthene	U	9	9	1	08/07/20 1441
Fluorene	U	9	9	1	08/07/20 1441
Phenanthrene	U	9	9	1	08/07/20 1441
Anthracene	U	9	9	1	08/07/20 1441
Fluoranthene	U	9	9	1	08/07/20 1441
Pyrene	U	9	9	1	08/07/20 1441
Benzo(a)anthracene	U	9	9	1	08/07/20 1441
Chrysene	U	9	9	1	08/07/20 1441
Benzo(b)fluoranthene	U	9	9	1	08/07/20 1441
Benzo(k)fluoranthene	U	9	9	1	08/07/20 1441
Benzo(a)pyrene	U	9	9	1	08/07/20 1441
Indeno(1,2,3-cd)pyrene	U	9	9	1	08/07/20 1441
Dibenz(a,h)anthracene	U	9	9	1	08/07/20 1441
Benzo(ghi)perylene	U	9	9	1	08/07/20 1441

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
2-Fluorobiphenyl		64	30	150	YES
o-Terphenyl		76	30	150	YES



Laboratory ID: 34272-029  
 Field ID: NAE3 Deep  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/21/20 0951  
 Date Prepared: 08/04/20 1050  
 Batch Number: 432S  
 Matrix: Solid  
 Sample Weight (g): 12  
 Final Volume (mL): 1  
 Percent Dry Weight: 87  
 Analyst: PL

Target Compound	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Naphthalene	U	10	10	1	08/07/20 1507
Acenaphthylene	U	10	10	1	08/07/20 1507
Acenaphthene	U	10	10	1	08/07/20 1507
Fluorene	U	10	10	1	08/07/20 1507
Phenanthrene	U	10	10	1	08/07/20 1507
Anthracene	U	10	10	1	08/07/20 1507
Fluoranthene	U	10	10	1	08/07/20 1507
Pyrene	U	10	10	1	08/07/20 1507
Benzo(a)anthracene	U	10	10	1	08/07/20 1507
Chrysene	U	10	10	1	08/07/20 1507
Benzo(b)fluoranthene	U	10	10	1	08/07/20 1507
Benzo(k)fluoranthene	U	10	10	1	08/07/20 1507
Benzo(a)pyrene	U	10	10	1	08/07/20 1507
Indeno(1,2,3-cd)pyrene	U	10	10	1	08/07/20 1507
Dibenz(a,h)anthracene	U	10	10	1	08/07/20 1507
Benzo(ghi)perylene	U	10	10	1	08/07/20 1507

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
2-Fluorobiphenyl		61	30	150	YES
o-Terphenyl		74	30	150	YES



Laboratory ID: 34272-031  
 Field ID: NAE6 Surface  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/21/20 1424  
 Date Prepared: 08/04/20 1050  
 Batch Number: 432S  
 Matrix: Solid  
 Sample Weight (g): 12  
 Final Volume (mL): 1  
 Percent Dry Weight: 88  
 Analyst: PL

Target Compound	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Naphthalene		U	9	1	08/07/20 1532
Acenaphthylene		U	9	1	08/07/20 1532
Acenaphthene		U	9	1	08/07/20 1532
Fluorene		U	9	1	08/07/20 1532
Phenanthrene		U	9	1	08/07/20 1532
Anthracene		U	9	1	08/07/20 1532
Fluoranthene		12	9	1	08/07/20 1532
Pyrene		10	9	1	08/07/20 1532
Benzo(a)anthracene	J14	6.9	9	1	08/07/20 1532
Chrysene	J14	5.6	9	1	08/07/20 1532
Benzo(b)fluoranthene	J14	5.1	9	1	08/07/20 1532
Benzo(k)fluoranthene	J14	4.8	9	1	08/07/20 1532
Benzo(a)pyrene	J14	5.7	9	1	08/07/20 1532
Indeno(1,2,3-cd)pyrene		U	9	1	08/07/20 1532
Dibenz(a,h)anthracene		U	9	1	08/07/20 1532
Benzo(ghi)perylene		U	9	1	08/07/20 1532

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
2-Fluorobiphenyl		67	30	150	YES
o-Terphenyl		76	30	150	YES



Laboratory ID: 34272-033  
 Field ID: NAE6 Transition  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/21/20 1424  
 Date Prepared: 08/04/20 1050  
 Batch Number: 432S  
 Matrix: Solid  
 Sample Weight (g): 14  
 Final Volume (mL): 1  
 Percent Dry Weight: 83  
 Analyst: PL

Target Compound	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Naphthalene	U	9	9	1	08/07/20 1557
Acenaphthylene	U	9	9	1	08/07/20 1557
Acenaphthene	U	9	9	1	08/07/20 1557
Fluorene	U	9	9	1	08/07/20 1557
Phenanthrene	U	9	9	1	08/07/20 1557
Anthracene	U	9	9	1	08/07/20 1557
Fluoranthene	U	9	9	1	08/07/20 1557
Pyrene	U	9	9	1	08/07/20 1557
Benzo(a)anthracene	U	9	9	1	08/07/20 1557
Chrysene	U	9	9	1	08/07/20 1557
Benzo(b)fluoranthene	U	9	9	1	08/07/20 1557
Benzo(k)fluoranthene	U	9	9	1	08/07/20 1557
Benzo(a)pyrene	U	9	9	1	08/07/20 1557
Indeno(1,2,3-cd)pyrene	U	9	9	1	08/07/20 1557
Dibenz(a,h)anthracene	U	9	9	1	08/07/20 1557
Benzo(ghi)perylene	U	9	9	1	08/07/20 1557

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
2-Fluorobiphenyl		66	30	150	YES
o-Terphenyl		75	30	150	YES



Laboratory ID: 34272-034  
 Field ID: NAE6 Deep  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/21/20 1424  
 Date Prepared: 08/04/20 1050  
 Batch Number: 432S  
 Matrix: Solid  
 Sample Weight (g): 14  
 Final Volume (mL): 1  
 Percent Dry Weight: 77  
 Analyst: PL

Target Compound	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Naphthalene	U	9	9	1	08/07/20 1622
Acenaphthylene	U	9	9	1	08/07/20 1622
Acenaphthene	U	9	9	1	08/07/20 1622
Fluorene	U	9	9	1	08/07/20 1622
Phenanthrene	U	9	9	1	08/07/20 1622
Anthracene	U	9	9	1	08/07/20 1622
Fluoranthene	U	9	9	1	08/07/20 1622
Pyrene	U	9	9	1	08/07/20 1622
Benzo(a)anthracene	U	9	9	1	08/07/20 1622
Chrysene	U	9	9	1	08/07/20 1622
Benzo(b)fluoranthene	U	9	9	1	08/07/20 1622
Benzo(k)fluoranthene	U	9	9	1	08/07/20 1622
Benzo(a)pyrene	U	9	9	1	08/07/20 1622
Indeno(1,2,3-cd)pyrene	U	9	9	1	08/07/20 1622
Dibenz(a,h)anthracene	U	9	9	1	08/07/20 1622
Benzo(ghi)perylene	U	9	9	1	08/07/20 1622

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
2-Fluorobiphenyl		63	30	150	YES
o-Terphenyl		70	30	150	YES



Laboratory ID: 34272-035  
 Field ID: NAE9 Surface  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/22/20 1024  
 Date Prepared: 08/04/20 1050  
 Batch Number: 432S  
 Matrix: Solid  
 Sample Weight (g): 26  
 Final Volume (mL): 1  
 Percent Dry Weight: 40  
 Analyst: PL

Target Compound	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Naphthalene	J14	4.7	10	1	08/07/20 1647
Acenaphthylene		17	10	1	08/07/20 1647
Acenaphthene		U	10	1	08/07/20 1647
Fluorene	J14	4.2	10	1	08/07/20 1647
Phenanthrene		50	10	1	08/07/20 1647
Anthracene		12	10	1	08/07/20 1647
Fluoranthene		112	10	1	08/07/20 1647
Pyrene		113	10	1	08/07/20 1647
Benzo(a)anthracene		63	10	1	08/07/20 1647
Chrysene		58	10	1	08/07/20 1647
Benzo(b)fluoranthene		67	10	1	08/07/20 1647
Benzo(k)fluoranthene		67	10	1	08/07/20 1647
Benzo(a)pyrene		65	10	1	08/07/20 1647
Indeno(1,2,3-cd)pyrene		44	10	1	08/07/20 1647
Dibenz(a,h)anthracene		15	10	1	08/07/20 1647
Benzo(ghi)perylene		48	10	1	08/07/20 1647

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
2-Fluorobiphenyl		43	30	150	YES
o-Terphenyl		62	30	150	YES



Laboratory ID: 34272-037  
 Field ID: NAE9 Transition  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/22/20 1024  
 Date Prepared: 08/04/20 1050  
 Batch Number: 432S  
 Matrix: Solid  
 Sample Weight (g): 22  
 Final Volume (mL): 1  
 Percent Dry Weight: 47  
 Analyst: PL

Target Compound	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Naphthalene	U	U	10	1	08/07/20 1712
Acenaphthylene	U	U	10	1	08/07/20 1712
Acenaphthene	U	U	10	1	08/07/20 1712
Fluorene	U	U	10	1	08/07/20 1712
Phenanthrene	U	U	10	1	08/07/20 1712
Anthracene	U	U	10	1	08/07/20 1712
Fluoranthene	U	U	10	1	08/07/20 1712
Pyrene	J14	6.7	10	1	08/07/20 1712
Benzo(a)anthracene	U	U	10	1	08/07/20 1712
Chrysene	U	U	10	1	08/07/20 1712
Benzo(b)fluoranthene	U	U	10	1	08/07/20 1712
Benzo(k)fluoranthene	U	U	10	1	08/07/20 1712
Benzo(a)pyrene	U	U	10	1	08/07/20 1712
Indeno(1,2,3-cd)pyrene	U	U	10	1	08/07/20 1712
Dibenz(a,h)anthracene	U	U	10	1	08/07/20 1712
Benzo(ghi)perylene	U	U	10	1	08/07/20 1712

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
2-Fluorobiphenyl		56	30	150	YES
o-Terphenyl		69	30	150	YES



Laboratory ID: 34272-038  
 Field ID: NAE9 Deep  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/22/20 1024  
 Date Prepared: 08/04/20 1050  
 Batch Number: 432S  
 Matrix: Solid  
 Sample Weight (g): 18  
 Final Volume (mL): 1  
 Percent Dry Weight: 57  
 Analyst: PL

Target Compound	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Naphthalene	U	10	10	1	08/07/20 1738
Acenaphthylene	U	10	10	1	08/07/20 1738
Acenaphthene	U	10	10	1	08/07/20 1738
Fluorene	U	10	10	1	08/07/20 1738
Phenanthrene	U	10	10	1	08/07/20 1738
Anthracene	U	10	10	1	08/07/20 1738
Fluoranthene	U	10	10	1	08/07/20 1738
Pyrene	U	10	10	1	08/07/20 1738
Benzo(a)anthracene	U	10	10	1	08/07/20 1738
Chrysene	U	10	10	1	08/07/20 1738
Benzo(b)fluoranthene	U	10	10	1	08/07/20 1738
Benzo(k)fluoranthene	U	10	10	1	08/07/20 1738
Benzo(a)pyrene	U	10	10	1	08/07/20 1738
Indeno(1,2,3-cd)pyrene	U	10	10	1	08/07/20 1738
Dibenz(a,h)anthracene	U	10	10	1	08/07/20 1738
Benzo(ghi)perylene	U	10	10	1	08/07/20 1738

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
2-Fluorobiphenyl		54	30	150	YES
o-Terphenyl		72	30	150	YES

Bulk Sediment Analysis  
Analysis Report Pages  
Pesticides



Laboratory ID: 34272-026  
 Field ID: NAE3 Surface  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/21/20 0951  
 Date Prepared: 08/03/20 1030  
 Batch Number: 430S  
 Matrix: Solid  
 Sample Weight (g): 6  
 Final Volume (mL): 1  
 Percent Dry Weight: 90  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Hexachlorobenzene		U	0.4	2	08/10/20 1914
Gamma-BHC (Lindane)	J7	U	0.4	2	08/10/20 1914
Heptachlor	J7	U	0.4	2	08/10/20 1914
Aldrin	J4	U	0.4	2	08/10/20 1914
Oxychlordane	J4	U	0.4	2	08/10/20 1914
Heptachlor epoxide	J7	U	0.4	2	08/10/20 1914
Gamma-chlordane		U	0.4	2	08/10/20 1914
Trans-nonachlor	J7	U	0.4	2	08/10/20 1914
Alpha-chlordane		U	0.4	2	08/10/20 1914
Endosulfan I		U	0.7	2	08/10/20 1914
4,4'-DDE		U	0.7	2	08/10/20 1914
Dieldrin		U	0.7	2	08/10/20 1914
Endrin	J14	0.14	0.7	2	08/10/20 1914
Cis-nonachlor		U	0.4	2	08/10/20 1914
4,4'-DDD		U	0.7	2	08/10/20 1914
Endosulfan II		U	0.7	2	08/10/20 1914
Toxaphene		U	37.0	2	08/10/20 1914
4,4'-DDT		U	0.7	2	08/10/20 1914
Methoxychlor		U	3.7	2	08/10/20 1914

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		77	30	150	YES
Decachlorobiphenyl (209)		83	30	150	YES



Laboratory ID: 34272-028  
 Field ID: NAE3 Transition  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/21/20 0951  
 Date Prepared: 08/03/20 1030  
 Batch Number: 430S  
 Matrix: Solid  
 Sample Weight (g): 6  
 Final Volume (mL): 1  
 Percent Dry Weight: 89  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Hexachlorobenzene		U	0.4	2	08/10/20 2027
Gamma-BHC (Lindane)		U	0.4	2	08/10/20 2027
Heptachlor		U	0.4	2	08/10/20 2027
Aldrin	J4	U	0.4	2	08/10/20 2027
Oxychlordane	J4	U	0.4	2	08/10/20 2027
Heptachlor epoxide		U	0.4	2	08/10/20 2027
Gamma-chlordane		U	0.4	2	08/10/20 2027
Trans-nonachlor		U	0.4	2	08/10/20 2027
Alpha-chlordane		U	0.4	2	08/10/20 2027
Endosulfan I		U	0.7	2	08/10/20 2027
4,4'-DDE		U	0.7	2	08/10/20 2027
Dieldrin		U	0.7	2	08/10/20 2027
Endrin		U	0.7	2	08/10/20 2027
Cis-nonachlor		U	0.4	2	08/10/20 2027
4,4'-DDD		U	0.7	2	08/10/20 2027
Endosulfan II		U	0.7	2	08/10/20 2027
Toxaphene		U	37.3	2	08/10/20 2027
4,4'-DDT		U	0.7	2	08/10/20 2027
Methoxychlor		U	3.7	2	08/10/20 2027

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		78	30	150	YES
Decachlorobiphenyl (209)		92	30	150	YES



Laboratory ID: 34272-029  
 Field ID: NAE3 Deep  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/21/20 0951  
 Date Prepared: 08/03/20 1030  
 Batch Number: 430S  
 Matrix: Solid  
 Sample Weight (g): 6  
 Final Volume (mL): 1  
 Percent Dry Weight: 87  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Hexachlorobenzene		U	0.4	2	08/10/20 2046
Gamma-BHC (Lindane)		U	0.4	2	08/10/20 2046
Heptachlor		U	0.4	2	08/10/20 2046
Aldrin	J4	U	0.4	2	08/10/20 2046
Oxychlordane	J4	U	0.4	2	08/10/20 2046
Heptachlor epoxide		U	0.4	2	08/10/20 2046
Gamma-chlordane		U	0.4	2	08/10/20 2046
Trans-nonachlor		U	0.4	2	08/10/20 2046
Alpha-chlordane		U	0.4	2	08/10/20 2046
Endosulfan I		U	0.8	2	08/10/20 2046
4,4'-DDE		U	0.8	2	08/10/20 2046
Dieldrin		U	0.8	2	08/10/20 2046
Endrin		U	0.8	2	08/10/20 2046
Cis-nonachlor		U	0.4	2	08/10/20 2046
4,4'-DDD		U	0.8	2	08/10/20 2046
Endosulfan II		U	0.8	2	08/10/20 2046
Toxaphene		U	38.4	2	08/10/20 2046
4,4'-DDT		U	0.8	2	08/10/20 2046
Methoxychlor		U	3.8	2	08/10/20 2046

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		71	30	150	YES
Decachlorobiphenyl (209)		83	30	150	YES



Laboratory ID: 34272-031  
 Field ID: NAE6 Surface  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/21/20 1424  
 Date Prepared: 08/03/20 1030  
 Batch Number: 430S  
 Matrix: Solid  
 Sample Weight (g): 6  
 Final Volume (mL): 1  
 Percent Dry Weight: 88  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Hexachlorobenzene		U	0.4	2	08/10/20 2312
Gamma-BHC (Lindane)		U	0.4	2	08/10/20 2312
Heptachlor		U	0.4	2	08/10/20 2312
Aldrin	J4	U	0.4	2	08/10/20 2312
Oxychlordane	J4	U	0.4	2	08/10/20 2312
Heptachlor epoxide		U	0.4	2	08/10/20 2312
Gamma-chlordane		U	0.4	2	08/10/20 2312
Trans-nonachlor		U	0.4	2	08/10/20 2312
Alpha-chlordane		U	0.4	2	08/10/20 2312
Endosulfan I		U	0.8	2	08/10/20 2312
4,4'-DDE		U	0.8	2	08/10/20 2312
Dieldrin		U	0.8	2	08/10/20 2312
Endrin		U	0.8	2	08/10/20 2312
Cis-nonachlor		U	0.4	2	08/10/20 2312
4,4'-DDD		U	0.8	2	08/10/20 2312
Endosulfan II		U	0.8	2	08/10/20 2312
Toxaphene		U	37.9	2	08/10/20 2312
4,4'-DDT		U	0.8	2	08/10/20 2312
Methoxychlor		U	3.8	2	08/10/20 2312

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		65	30	150	YES
Decachlorobiphenyl (209)		72	30	150	YES



Laboratory ID: 34272-033  
 Field ID: NAE6 Transition  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/21/20 1424  
 Date Prepared: 08/03/20 1030  
 Batch Number: 430S  
 Matrix: Solid  
 Sample Weight (g): 7  
 Final Volume (mL): 1  
 Percent Dry Weight: 83  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Hexachlorobenzene		U	0.3	2	08/10/20 2330
Gamma-BHC (Lindane)		U	0.3	2	08/10/20 2330
Heptachlor		U	0.3	2	08/10/20 2330
Aldrin	J4	U	0.3	2	08/10/20 2330
Oxychlordane	J4	U	0.3	2	08/10/20 2330
Heptachlor epoxide		U	0.3	2	08/10/20 2330
Gamma-chlordane		U	0.3	2	08/10/20 2330
Trans-nonachlor		U	0.3	2	08/10/20 2330
Alpha-chlordane		U	0.3	2	08/10/20 2330
Endosulfan I		U	0.7	2	08/10/20 2330
4,4'-DDE		U	0.7	2	08/10/20 2330
Dieldrin		U	0.7	2	08/10/20 2330
Endrin		U	0.7	2	08/10/20 2330
Cis-nonachlor		U	0.3	2	08/10/20 2330
4,4'-DDD		U	0.7	2	08/10/20 2330
Endosulfan II		U	0.7	2	08/10/20 2330
Toxaphene		U	34.4	2	08/10/20 2330
4,4'-DDT		U	0.7	2	08/10/20 2330
Methoxychlor		U	3.4	2	08/10/20 2330

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		82	30	150	YES
Decachlorobiphenyl (209)		75	30	150	YES



Laboratory ID: 34272-034  
 Field ID: NAE6 Deep  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/21/20 1424  
 Date Prepared: 08/03/20 1030  
 Batch Number: 430S  
 Matrix: Solid  
 Sample Weight (g): 6  
 Final Volume (mL): 1  
 Percent Dry Weight: 77  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Hexachlorobenzene		U	0.4	2	08/10/20 2348
Gamma-BHC (Lindane)		U	0.4	2	08/10/20 2348
Heptachlor		U	0.4	2	08/10/20 2348
Aldrin	J4	U	0.4	2	08/10/20 2348
Oxychlordane	J4	U	0.4	2	08/10/20 2348
Heptachlor epoxide		U	0.4	2	08/10/20 2348
Gamma-chlordane		U	0.4	2	08/10/20 2348
Trans-nonachlor		U	0.4	2	08/10/20 2348
Alpha-chlordane		U	0.4	2	08/10/20 2348
Endosulfan I		U	0.9	2	08/10/20 2348
4,4'-DDE		U	0.9	2	08/10/20 2348
Dieldrin		U	0.9	2	08/10/20 2348
Endrin		U	0.9	2	08/10/20 2348
Cis-nonachlor		U	0.4	2	08/10/20 2348
4,4'-DDD		U	0.9	2	08/10/20 2348
Endosulfan II		U	0.9	2	08/10/20 2348
Toxaphene		U	43.0	2	08/10/20 2348
4,4'-DDT		U	0.9	2	08/10/20 2348
Methoxychlor		U	4.3	2	08/10/20 2348

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		68	30	150	YES
Decachlorobiphenyl (209)		75	30	150	YES



Laboratory ID: 34272-035  
 Field ID: NAE9 Surface  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/22/20 1024  
 Date Prepared: 08/03/20 1030  
 Batch Number: 430S  
 Matrix: Solid  
 Sample Weight (g): 13  
 Final Volume (mL): 1  
 Percent Dry Weight: 40  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Hexachlorobenzene		U	0.4	2	08/10/20 2217
Gamma-BHC (Lindane)		U	0.4	2	08/10/20 2217
Heptachlor		U	0.4	2	08/10/20 2217
Aldrin	J4	U	0.4	2	08/10/20 2217
Oxychlordane	J4	U	0.4	2	08/10/20 2217
Heptachlor epoxide		U	0.4	2	08/10/20 2217
Gamma-chlordane		U	0.4	2	08/10/20 2217
Trans-nonachlor		U	0.4	2	08/10/20 2217
Alpha-chlordane		U	0.4	2	08/10/20 2217
Endosulfan I		U	0.8	2	08/10/20 2217
4,4'-DDE		U	0.8	2	08/10/20 2217
Dieldrin		U	0.8	2	08/10/20 2217
Endrin		U	0.8	2	08/10/20 2217
Cis-nonachlor		U	0.4	2	08/10/20 2217
4,4'-DDD		U	0.8	2	08/10/20 2217
Endosulfan II		U	0.8	2	08/10/20 2217
Toxaphene		U	38.4	2	08/10/20 2217
4,4'-DDT		U	0.8	2	08/10/20 2217
Methoxychlor		U	3.8	2	08/10/20 2217

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		58	30	150	YES
Decachlorobiphenyl (209)		77	30	150	YES



Laboratory ID: 34272-037  
 Field ID: NAE9 Transition  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/22/20 1024  
 Date Prepared: 08/03/20 1030  
 Batch Number: 430S  
 Matrix: Solid  
 Sample Weight (g): 13  
 Final Volume (mL): 1  
 Percent Dry Weight: 47  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Hexachlorobenzene		U	0.3	2	08/10/20 2235
Gamma-BHC (Lindane)		U	0.3	2	08/10/20 2235
Heptachlor		U	0.3	2	08/10/20 2235
Aldrin	J4	U	0.3	2	08/10/20 2235
Oxychlordane	J4	U	0.3	2	08/10/20 2235
Heptachlor epoxide		U	0.3	2	08/10/20 2235
Gamma-chlordane		U	0.3	2	08/10/20 2235
Trans-nonachlor		U	0.3	2	08/10/20 2235
Alpha-chlordane		U	0.3	2	08/10/20 2235
Endosulfan I		U	0.7	2	08/10/20 2235
4,4'-DDE		U	0.7	2	08/10/20 2235
Dieldrin		U	0.7	2	08/10/20 2235
Endrin		U	0.7	2	08/10/20 2235
Cis-nonachlor		U	0.3	2	08/10/20 2235
4,4'-DDD		U	0.7	2	08/10/20 2235
Endosulfan II		U	0.7	2	08/10/20 2235
Toxaphene		U	32.9	2	08/10/20 2235
4,4'-DDT		U	0.7	2	08/10/20 2235
Methoxychlor		U	3.3	2	08/10/20 2235

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		53	30	150	YES
Decachlorobiphenyl (209)		72	30	150	YES



Laboratory ID: 34272-038  
 Field ID: NAE9 Deep  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/22/20 1024  
 Date Prepared: 08/03/20 1030  
 Batch Number: 430S  
 Matrix: Solid  
 Sample Weight (g): 9  
 Final Volume (mL): 1  
 Percent Dry Weight: 57  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Hexachlorobenzene		U	0.4	2	08/10/20 2254
Gamma-BHC (Lindane)		U	0.4	2	08/10/20 2254
Heptachlor		U	0.4	2	08/10/20 2254
Aldrin	J4	U	0.4	2	08/10/20 2254
Oxychlordane	J4	U	0.4	2	08/10/20 2254
Heptachlor epoxide		U	0.4	2	08/10/20 2254
Gamma-chlordane		U	0.4	2	08/10/20 2254
Trans-nonachlor		U	0.4	2	08/10/20 2254
Alpha-chlordane	J14	0.15	0.4	2	08/10/20 2254
Endosulfan I		U	0.8	2	08/10/20 2254
4,4'-DDE		U	0.8	2	08/10/20 2254
Dieldrin		U	0.8	2	08/10/20 2254
Endrin		U	0.8	2	08/10/20 2254
Cis-nonachlor		U	0.4	2	08/10/20 2254
4,4'-DDD		U	0.8	2	08/10/20 2254
Endosulfan II		U	0.8	2	08/10/20 2254
Toxaphene		U	38.8	2	08/10/20 2254
4,4'-DDT		U	0.8	2	08/10/20 2254
Methoxychlor		U	3.9	2	08/10/20 2254

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		80	30	150	YES
Decachlorobiphenyl (209)		80	30	150	YES

Bulk Sediment Analysis  
QC Support Documents  
Trace Metals and Inorganics

Quality Control Summary

Parameter: Arsenic, total  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Solid  
 QC Batch No: 770S

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34272-026	NAE3 Surface		
34272-028	NAE3 Transition		
34272-029	NAE3 Deep		
34272-031	NAE6 Surface		
34272-033	NAE6 Transition		
34272-034	NAE6 Deep		
34272-035	NAE9 Surface		
34272-037	NAE9 Transition		
34272-038	NAE9 Deep		

	Control Limit +/-	Preparation Blank Result ug/g dry wt	Q	M
PB770S	0.1	0.1	U	Pass

LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result ug/g dry wt	True Value ug/g dry wt	%R	Lab Control Dup Sample Result ug/g dry wt	True Value ug/g dry wt	%R	
LCS	85-115	26.3	25.0	105	26.4	25.0	106	Pass
SRM	70-130	18.6	18.9	98				Pass

DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result ug/g dry wt	Q	Sample Result ug/g dry wt	Q	RPD	Q	
34272-038	20	12.9		12.5		3		Pass

SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result ug/g dry wt	Spike Added ug/g dry wt	Sample Result ug/g dry wt	Q	%R	Q	
34272-038S	80-120	39.3	26.8	12.5		100		Pass
34272-038SD	80-120	40.8	28.3	12.5		100		Pass

U = Below quantitation limit

Quality Control Summary

Parameter: Cadmium, total  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Solid  
 QC Batch No: 770S

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34272-026	NAE3 Surface		
34272-028	NAE3 Transition		
34272-029	NAE3 Deep		
34272-031	NAE6 Surface		
34272-033	NAE6 Transition		
34272-034	NAE6 Deep		
34272-035	NAE9 Surface		
34272-037	NAE9 Transition		
34272-038	NAE9 Deep		

	Control Limit +/-	Preparation Blank Result ug/g dry wt	Q	M
PB770S	0.05	0.05	U	Pass

LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result ug/g dry wt	True Value ug/g dry wt	%R	Lab Control Dup Sample Result ug/g dry wt	True Value ug/g dry wt	%R	
LCS	85-115	4.32	4.00	108	4.32	4.00	108	Pass
SRM	70-130	9.41	8.80	107				Pass

DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result ug/g dry wt	Q	Sample Result ug/g dry wt	Q	RPD	Q	
34272-038	20	0.22		0.20		NC		Pass

SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result ug/g dry wt	Spike Added ug/g dry wt	Sample Result ug/g dry wt	Q	%R	Q	
34272-038S	80-120	4.65	4.28	0.20		104		Pass
34272-038SD	80-120	4.95	4.53	0.20		105		Pass

U = Below quantitation limit

NC = Not calculated due to one or both values less than five times the reporting limit.

Quality Control Summary

Parameter: Chromium, total  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Solid  
 QC Batch No: 770S

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34272-026	NAE3 Surface		
34272-028	NAE3 Transition		
34272-029	NAE3 Deep		
34272-031	NAE6 Surface		
34272-033	NAE6 Transition		
34272-034	NAE6 Deep		
34272-035	NAE9 Surface		
34272-037	NAE9 Transition		
34272-038	NAE9 Deep		

	Control Limit +/-	Preparation Blank Result ug/g dry wt	Q	M
PB770S	0.1	0.1	U	Pass

LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result ug/g dry wt	True Value ug/g dry wt	%R	Lab Control Dup Sample Result ug/g dry wt	True Value ug/g dry wt	%R	
LCS	85-115	26.5	25.0	106	26.6	25.0	106	Pass
SRM	70-130	205	266	77				Pass

DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result ug/g dry wt	Q	Sample Result ug/g dry wt	Q	RPD	Q	
34272-038	20	31.9		31.5		1		Pass

SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result ug/g dry wt	Spike Added ug/g dry wt	Sample Result ug/g dry wt	Q	%R	Q	
34272-038S	80-120	56.2	26.8	31.5		92		Pass
34272-038SD	80-120	58.5	28.3	31.5		95		Pass

U = Below quantitation limit

Quality Control Summary

Parameter: Copper, total  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Solid  
 QC Batch No: 770S

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34272-026	NAE3 Surface		
34272-028	NAE3 Transition		
34272-029	NAE3 Deep		
34272-031	NAE6 Surface		
34272-033	NAE6 Transition		
34272-034	NAE6 Deep		
34272-035	NAE9 Surface		
34272-037	NAE9 Transition		
34272-038	NAE9 Deep		

	Control Limit +/-	Preparation Blank Result ug/g dry wt	Q	M
PB770S	0.1	0.1	U	Pass

LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result ug/g dry wt	True Value ug/g dry wt	%R	Lab Control Dup Sample Result ug/g dry wt	True Value ug/g dry wt	%R	
LCS	85-115	27.6	25.0	110	27.7	25.0	111	Pass
SRM	70-130	380	380	100				Pass

DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result ug/g dry wt	Q	Sample Result ug/g dry wt	Q	RPD	Q	
34272-038	20	10.8		10.3		5		Pass

SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result ug/g dry wt	Spike Added ug/g dry wt	Sample Result ug/g dry wt	Q	%R	Q	
34272-038S	80-120	34.7	26.80	10.3		91		Pass
34272-038SD	80-120	37.0	28.30	10.3		94		Pass

U = Below quantitation limit

### Quality Control Summary

Parameter: Lead, total  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Solid  
 QC Batch No: 770S

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34272-026	NAE3 Surface		
34272-028	NAE3 Transition		
34272-029	NAE3 Deep		
34272-031	NAE6 Surface		
34272-033	NAE6 Transition		
34272-034	NAE6 Deep		
34272-035	NAE9 Surface		
34272-037	NAE9 Transition		
34272-038	NAE9 Deep		

	Control Limit +/-	Preparation Blank Result ug/g dry wt	Q	M
PB770S	0.05	0.1	U	Pass

### LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result ug/g dry wt	True Value ug/g dry wt	%R	Lab Control Dup Sample Result ug/g dry wt	True Value ug/g dry wt	%R	
LCS	85-115	12.6	12.0	105	12.7	12.0	106	Pass
SRM	70-130	319	330	97				Pass

### DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result ug/g dry wt	Q	Sample Result ug/g dry wt	Q	RPD	Q	
34272-038	20	9.09		8.87		2		Pass

### SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result ug/g dry wt	Spike Added ug/g dry wt	Sample Result ug/g dry wt	Q	%R	Q	
34272-038S	80-120	22.6	12.8	8.87		107		Pass
34272-038SD	80-120	22.8	13.6	8.87		102		Pass

U = Below quantitation limit

## Quality Control Summary

Parameter: Mercury, total  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Solid  
 QC Batch No: 538S

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34272-001	NAE2 Surface	34272-011	NAE7 Transition
34272-002	NAE2 Transition	34272-012	NAE7 Deep
34272-003	NAE2 Deep	34272-013	NAE8 Surface
34272-004	NAE4 Surface	34272-014	NAE8 Transition
34272-005	NAE4 Transition	34272-015	NAE8 Deep
34272-006	NAE4 Deep		
34272-007	NAE5 Surface		
34272-008	NAE5 Transition		
34272-009	NAE5 Deep		
34272-010	NAE7 Surface		

	Control Limit +/-	Preparation Blank Result ug/g dry wt	Q	M
PB538S	0.005	0.005	U	Pass

### LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result ug/g dry wt	True Value ug/g dry wt	%R	Lab Control Dup Sample Result ug/g dry wt	True Value ug/g dry wt	%R	
LCS	75-125	0.380	0.40	95	0.378	0.40	95	Pass
SRM	70-130	3.15	3.40	93				Pass

### DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result ug/g dry wt	Q	Sample Result ug/g dry wt	Q	RPD	Q	
34272-001	20	0.022		0.022		NC		Pass

### SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result ug/g dry wt	Spike Added ug/g dry wt	Sample Result ug/g dry wt	Q	%R	Q	
34272-001S	75-125	0.343	0.339	0.022		95		Pass
34272-001SD	75-125	0.339	0.337	0.022		94		Pass

U = Below quantitation limit

NC = Not calculated due to one or both values less than five times the reporting limit.

Quality Control Summary

Parameter: Mercury, total  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Solid  
 QC Batch No: 539S

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34272-026	NAE3 Surface	34272-016	NAE10 Surface
34272-028	NAE3 Transition	34272-017	NAE10 Transition
34272-029	NAE3 Deep	34272-018	NAE10 Deep
34272-031	NAE6 Surface	34272-019	NAE11 Surface
34272-033	NAE6 Transition	34272-020	NAE11 Transition
34272-034	NAE6 Deep	34272-021	NAE11 Deep
34272-035	NAE9 Surface		
34272-037	NAE9 Transition		
34272-038	NAE9 Deep		

	Control Limit +/-	Preparation Blank Result ug/g dry wt	Q	M
PB539S	0.005	0.005	U	Pass

LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result ug/g dry wt	True Value ug/g dry wt	%R	Lab Control Dup Sample Result ug/g dry wt	True Value ug/g dry wt	%R	
LCS	75-125	0.333	0.40	83	0.323	0.40	81	Pass
SRM	70-130	3.58	3.40	105				Pass

DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result ug/g dry wt	Q	Sample Result ug/g dry wt	Q	RPD	Q	
34272-001	20	0.013		0.012		NC		Pass

SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result ug/g dry wt	Spike Added ug/g dry wt	Sample Result ug/g dry wt	Q	%R	Q	
34272-001S	75-125	0.391	0.428	0.012		89		Pass
34272-001SD	75-125	0.405	0.453	0.012		87		Pass

U = Below quantitation limit

NC = Not calculated due to one or both values less than five times the reporting limit.

### Quality Control Summary

Parameter: Nickel, total  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Solid  
 QC Batch No: 770S

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34272-026	NAE3 Surface		
34272-028	NAE3 Transition		
34272-029	NAE3 Deep		
34272-031	NAE6 Surface		
34272-033	NAE6 Transition		
34272-034	NAE6 Deep		
34272-035	NAE9 Surface		
34272-037	NAE9 Transition		
34272-038	NAE9 Deep		

	Control Limit +/-	Preparation Blank Result ug/g dry wt	Q	M
PB770S	0.3	0.3	U	Pass

### LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result ug/g dry wt	True Value ug/g dry wt	%R	Lab Control Dup Sample Result ug/g dry wt	True Value ug/g dry wt	%R	
LCS	85-115	27.3	25.0	109	27.2	25.0	109	Pass
SRM	70-130	64.9	76.1	85				Pass

### DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result ug/g dry wt	Q	Sample Result ug/g dry wt	Q	RPD	Q	
34272-038	20	23.6		23.2		2		Pass

### SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result ug/g dry wt	Spike Added ug/g dry wt	Sample Result ug/g dry wt	Q	%R	Q	
34272-038S	80-120	47.8	26.8	23.2		92		Pass
34272-038SD	80-120	50.1	28.3	23.2		95		Pass

U = Below quantitation limit

### Quality Control Summary

Parameter: Zinc, total  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Solid  
 QC Batch No: 770S

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34272-026	NAE3 Surface		
34272-028	NAE3 Transition		
34272-029	NAE3 Deep		
34272-031	NAE6 Surface		
34272-033	NAE6 Transition		
34272-034	NAE6 Deep		
34272-035	NAE9 Surface		
34272-037	NAE9 Transition		
34272-038	NAE9 Deep		

	Control Limit +/-	Preparation Blank Result ug/g dry wt	Q	M
PB770S	1	1	U	Pass

### LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result ug/g dry wt	True Value ug/g dry wt	%R	Lab Control Dup Sample Result ug/g dry wt	True Value ug/g dry wt	%R	
LCS	85-115	53.8	50.0	108	53.6	50.0	107	Pass
SRM	70-130	620	656	95				Pass

### DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result ug/g dry wt	Q	Sample Result ug/g dry wt	Q	RPD	Q	
34272-038	20	46.6		45.4		3		Pass

### SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result ug/g dry wt	Spike Added ug/g dry wt	Sample Result ug/g dry wt	Q	%R	Q	
34272-038S	80-120	93.7	53.5	45.4		90		Pass
34272-038SD	80-120	97.4	56.6	45.4		92		Pass

U = Below quantitation limit

Bulk Sediment Analysis  
QC Support Documents  
PCB Congeners



Laboratory ID: PB431S  
 Field ID: NA  
 Project: NA  
 Date Sampled: 08/03/20 1335  
 Date Prepared: 08/03/20 1335  
 Batch Number: 431S  
 Matrix: Solid  
 Sample Weight (g): 5  
 Final Volume (mL): 1  
 Percent Dry Weight: 100  
 Analyst: PL

BZ Number	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
8	U	0.4	0.4	1	08/06/20 2103
18	U	0.4	0.4	1	08/06/20 2103
28	U	0.4	0.4	1	08/06/20 2103
44	U	0.4	0.4	1	08/06/20 2103
49	U	0.4	0.4	1	08/06/20 2103
52	U	0.4	0.4	1	08/06/20 2103
66	U	0.4	0.4	1	08/06/20 2103
77	U	0.4	0.4	1	08/06/20 2103
87	U	0.4	0.4	1	08/06/20 2103
101	U	0.4	0.4	1	08/06/20 2103
105	U	0.4	0.4	1	08/06/20 2103
118	U	0.4	0.4	1	08/06/20 2103
126	U	0.4	0.4	1	08/06/20 2103
128	U	0.4	0.4	1	08/06/20 2103
138	U	0.4	0.4	1	08/06/20 2103
153	U	0.4	0.4	1	08/06/20 2103
170	U	0.4	0.4	1	08/06/20 2103
180	U	0.4	0.4	1	08/06/20 2103
183	U	0.4	0.4	1	08/06/20 2103
184	U	0.4	0.4	1	08/06/20 2103
187	U	0.4	0.4	1	08/06/20 2103
195	U	0.4	0.4	1	08/06/20 2103
206	U	0.4	0.4	1	08/06/20 2103
209	U	0.4	0.4	1	08/06/20 2103

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
tetrachloro-m-xylene		48	30	150	YES

Laboratory ID: 34272-026  
 Field ID: NAE3 Surface  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Sample Date & Time: 07/21/20 0951  
 Preparation Date & Time: 08/03/20 1335  
 Analysis Date & Time: 08/06/20 1605  
 Batch Number: 431S  
 Matrix: Solid  
 Sample Weight (g): 6  
 Final Volume (mL): 1  
 Percent Dry Weight: 90  
 Analyst: PL

Laboratory ID: 34272-026D  
 Field ID: NAE3 Surface  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Sample Date & Time: 07/21/20 0951  
 Preparation Date & Time: 08/03/20 1335  
 Analysis Date & Time: 08/06/20 1629  
 Batch Number: 431S  
 Matrix: Solid  
 Sample Weight (g): 6  
 Final Volume (mL): 1  
 Percent Dry Weight: 90  
 Analyst: PL

BZ Number	Qualifier	Quantitation		Qualifier	Quantitation		RPD (%)	RPD Limit (%)	Meets Criteria (Yes or No)
		Concentration (ng/g)	Limit (ng/g)		Concentration (ng/g)	Limit (ng/g)			
8		U	0.4	U	0.4	NC	30	YES	
18		U	0.4	U	0.4	NC	30	YES	
28		U	0.4	U	0.4	NC	30	YES	
44		U	0.4	U	0.4	NC	30	YES	
49		U	0.4	U	0.4	NC	30	YES	
52		U	0.4	U	0.4	NC	30	YES	
66		U	0.4	U	0.4	NC	30	YES	
77	J14	0.14	0.4	U	0.4	NC	30	YES	
87		U	0.4	U	0.4	NC	30	YES	
101	J14	0.16	0.4	U	0.4	NC	30	YES	
105		U	0.4	U	0.4	NC	30	YES	
118		U	0.4	U	0.4	NC	30	YES	
126		U	0.4	U	0.4	NC	30	YES	
128		U	0.4	U	0.4	NC	30	YES	
138		U	0.4	U	0.4	NC	30	YES	
153		U	0.4	U	0.4	NC	30	YES	
170		U	0.4	U	0.4	NC	30	YES	
180		U	0.4	U	0.4	NC	30	YES	
183		U	0.4	U	0.4	NC	30	YES	
184		U	0.4	U	0.4	NC	30	YES	
187		U	0.4	U	0.4	NC	30	YES	
195		U	0.4	J14	0.26	NC	30	YES	
206		U	0.4	U	0.4	NC	30	YES	
209		U	0.4	U	0.4	NC	30	YES	

Surrogate Compound	Qualifier	Recovery (%)	Acceptance	Meets	Qualifier	Recovery (%)	Acceptance	Meets
			Limits (%)	Criteria (Yes or No)			Limits (%)	Criteria (Yes or No)
tetrachloro-m-xylene		54	30 - 150	YES		58	30 - 150	YES

Laboratory ID: LCS431S

Field ID: NA

Project: NA

Sample Date & Time: 08/03/20 1335

Preparation Date & Time: 08/03/20 1335

Analysis Date & Time: 08/06/20 1434

Batch Number: 431S

Matrix: Solid

Sample Weight (g): 5

Final Volume (mL): 1

Percent Dry Weight: 100

Analyst: PL

Laboratory ID: LCSD431S

Field ID: NA

Project: NA

Sample Date & Time: 08/03/20 1335

Preparation Date & Time: 08/03/20 1335

Analysis Date & Time: 08/06/20 1457

Batch Number: 431S

Matrix: Solid

Sample Weight (g): 5

Final Volume (mL): 1

Percent Dry Weight: 100

Analyst: PL

BZ Number	Qualifier	True Value (ng/g)	Percent Concentration (ng/g)	Percent Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)	Qualifier	True Value (ng/g)	Percent Concentration (ng/g)	Percent Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)	RPD (%)	RPD Limit (%)	Meets Criteria (Yes or No)
8		20	10.0	50	30	150	YES		20	12.4	62	30	150	YES	21	30	YES
18		20	10.2	51	30	150	YES		20	12.5	63	30	150	YES	20	30	YES
28		20	11.9	60	30	150	YES		20	13.5	68	30	150	YES	13	30	YES
44		20	13.3	67	30	150	YES		20	14.8	74	30	150	YES	11	30	YES
49		20	10.4	52	30	150	YES		20	11.4	57	30	150	YES	9	30	YES
52		20	12.7	64	30	150	YES		20	13.9	70	30	150	YES	9	30	YES
66		20	14.1	71	30	150	YES		20	14.9	75	30	150	YES	6	30	YES
77		20	18.3	92	30	150	YES		20	19.6	98	30	150	YES	7	30	YES
87		20	13.2	66	30	150	YES		20	14.2	71	30	150	YES	7	30	YES
101		20	14.3	72	30	150	YES		20	15.8	79	30	150	YES	10	30	YES
105		20	14.0	70	30	150	YES		20	15.4	77	30	150	YES	10	30	YES
118		20	14.6	73	30	150	YES		20	15.7	79	30	150	YES	7	30	YES
126		20	14.8	74	30	150	YES		20	16.1	81	30	150	YES	8	30	YES
128		20	13.8	69	30	150	YES		20	14.9	75	30	150	YES	8	30	YES
138		20	14.3	72	30	150	YES		20	15.6	78	30	150	YES	9	30	YES
153		20	14.7	74	30	150	YES		20	15.5	78	30	150	YES	5	30	YES
170		20	14.2	71	30	150	YES		20	16.2	81	30	150	YES	13	30	YES
180		20	14.1	71	30	150	YES		20	15.2	76	30	150	YES	8	30	YES
183		20	12.8	64	30	150	YES		20	14.8	74	30	150	YES	14	30	YES
184		20	11.9	60	30	150	YES		20	12.9	65	30	150	YES	8	30	YES
187		20	14.2	71	30	150	YES		20	15.3	77	30	150	YES	7	30	YES
195		20	13.3	67	30	150	YES		20	14.7	74	30	150	YES	10	30	YES
206		20	13.9	70	30	150	YES		20	15.6	78	30	150	YES	12	30	YES
209		20	14.2	71	30	150	YES		20	14.1	71	30	150	YES	1	30	YES

Surrogate Compound	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene		48	30	150	YES		60	30	150	YES

Laboratory ID: 34272-026MS  
Field ID: NAE3 Surface  
Project: Nordic Aquafarms Pipeline Corridor Dredging  
Sample Date & Time: 07/21/20 0951  
Preparation Date & Time: 08/03/20 1335  
Analysis Date & Time: 08/06/20 1651  
Batch Number: 431S  
Matrix: Solid  
Sample Weight (g): 6  
Final Volume (mL): 1  
Percent Dry Weight: 90  
Analyst: PL

Laboratory ID: 34272-026MSD  
Field ID: NAE3 Surface  
Project: Nordic Aquafarms Pipeline Corridor Dredging  
Sample Date & Time: 07/21/20 0951  
Preparation Date & Time: 08/03/20 1335  
Analysis Date & Time: 08/06/20 1714  
Batch Number: 431S  
Matrix: Solid  
Sample Weight (g): 6  
Final Volume (mL): 1  
Percent Dry Weight: 90  
Analyst: PL

BZ Number	Sample Result	Qualifier	True Value (ng/g)	Concentration (ng/g)	Percent Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)	Qualifier	True Value (ng/g)	Concentration (ng/g)	Percent Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)	RPD (%)	RPD Limit (%)	Meets Criteria (Yes or No)
8	U		18.5	10.2	55	30	150	YES		18.5	11.7	63	30	150	YES	14	30	YES
18	U		18.5	10.5	57	30	150	YES		18.5	11.7	63	30	150	YES	11	30	YES
28	U		18.5	11.2	61	30	150	YES		18.5	12.0	65	30	150	YES	7	30	YES
44	U		18.5	13.0	70	30	150	YES		18.5	13.3	72	30	150	YES	2	30	YES
49	U		18.5	9.6	52	30	150	YES		18.5	10.0	54	30	150	YES	4	30	YES
52	U		18.5	11.8	64	30	150	YES		18.5	12.6	68	30	150	YES	7	30	YES
66	U		18.5	12.4	67	30	150	YES		18.5	13.1	71	30	150	YES	5	30	YES
77	0.14		18.5	16.0	86	30	150	YES		18.5	17.1	92	30	150	YES	7	30	YES
87	U		18.5	12.0	65	30	150	YES		18.5	12.6	68	30	150	YES	5	30	YES
101	0.16		18.5	13.0	69	30	150	YES		18.5	13.8	74	30	150	YES	6	30	YES
105	U		18.5	12.2	66	30	150	YES		18.5	13.1	71	30	150	YES	7	30	YES
118	U		18.5	12.8	69	30	150	YES		18.5	13.4	72	30	150	YES	5	30	YES
126	U		18.5	13.0	70	30	150	YES		18.5	13.9	75	30	150	YES	7	30	YES
128	U		18.5	12.4	67	30	150	YES		18.5	12.9	70	30	150	YES	4	30	YES
138	U		18.5	13.2	71	30	150	YES		18.5	13.5	73	30	150	YES	2	30	YES
153	U		18.5	12.9	70	30	150	YES		18.5	13.5	73	30	150	YES	5	30	YES
170	U		18.5	13.9	75	30	150	YES		18.5	13.8	75	30	150	YES	1	30	YES
180	U		18.5	12.3	66	30	150	YES		18.5	13.4	72	30	150	YES	9	30	YES
183	U		18.5	11.5	62	30	150	YES		18.5	13.0	70	30	150	YES	12	30	YES
184	U		18.5	10.3	56	30	150	YES		18.5	11.2	61	30	150	YES	8	30	YES
187	U		18.5	12.8	69	30	150	YES		18.5	13.5	73	30	150	YES	5	30	YES
195	U		18.5	12.7	69	30	150	YES		18.5	13.1	71	30	150	YES	3	30	YES
206	U		18.5	12.1	65	30	150	YES		18.5	12.6	68	30	150	YES	4	30	YES
209	U		18.5	11.8	64	30	150	YES		18.5	12.7	69	30	150	YES	7	30	YES

Surrogate Compound	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene		52	30	150	YES		62	30	150	YES

Bulk Sediment Analysis  
QC Support Documents  
PAHs



Laboratory ID: PB432S  
 Field ID: NA  
 Project: NA  
 Date Sampled: 08/04/20 1050  
 Date Prepared: 08/04/20 1050  
 Batch Number: 432S  
 Matrix: Solid  
 Sample Weight (g): 10  
 Final Volume (mL): 1  
 Percent Dry Weight: 100  
 Analyst: PL

Target Compound	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Naphthalene	U	10	10	1	08/07/20 1145
Acenaphthylene	U	10	10	1	08/07/20 1145
Acenaphthene	U	10	10	1	08/07/20 1145
Fluorene	U	10	10	1	08/07/20 1145
Phenanthrene	U	10	10	1	08/07/20 1145
Anthracene	U	10	10	1	08/07/20 1145
Fluoranthene	U	10	10	1	08/07/20 1145
Pyrene	U	10	10	1	08/07/20 1145
Benzo(a)anthracene	U	10	10	1	08/07/20 1145
Chrysene	U	10	10	1	08/07/20 1145
Benzo(b)fluoranthene	U	10	10	1	08/07/20 1145
Benzo(k)fluoranthene	U	10	10	1	08/07/20 1145
Benzo(a)pyrene	U	10	10	1	08/07/20 1145
Indeno(1,2,3-cd)pyrene	U	10	10	1	08/07/20 1145
Dibenz(a,h)anthracene	U	10	10	1	08/07/20 1145
Benzo(ghi)perylene	U	10	10	1	08/07/20 1145

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
2-Fluorobiphenyl		73	30	150	YES
o-Terphenyl		86	30	150	YES



Laboratory ID: 34272-026

Field ID: NAE3 Surface

Project: Nordic Aquafarms Pipeline Corridor Dredging

Sample Date & Time: 07/21/20 0951

Preparation Date & Time: 08/04/20 1050

Analysis Date & Time: 08/07/20 1301

Batch Number: 432S

Matrix: Solid

Sample Weight (g): 12

Final Volume (mL): 1

Percent Dry Weight: 90

Analyst: PL

Laboratory ID: 34272-026D

Field ID: NAE3 Surface

Project: Nordic Aquafarms Pipeline Corridor Dredging

Sample Date & Time: 08/04/20 1050

Preparation Date & Time: 08/04/20 1050

Analysis Date & Time: 08/07/20 1326

Batch Number: 432S

Matrix: Solid

Sample Weight (g): 12

Final Volume (mL): 1

Percent Dry Weight: 90

Analyst: PL

Target Compound	Quantitation		Qualifier	Quantitation		RPD (%)	RPD Limit (%)	Meets Criteria (Yes or No)
	Concentration (ng/g)	Limit (ng/g)		Concentration (ng/g)	Limit (ng/g)			
Naphthalene	U	9.3	U	9.3	NC	30	NC	
Acenaphthylene	U	9.3	U	9.3	NC	30	NC	
Acenaphthene	U	9.3	U	9.3	NC	30	NC	
Fluorene	U	9.3	U	9.3	NC	30	NC	
Phenanthrene	U	9.3	U	9.3	NC	30	NC	
Anthracene	U	9.3	U	9.3	NC	30	NC	
Fluoranthene	U	9.3	U	9.3	NC	30	NC	
Pyrene	U	9.3	U	9.3	NC	30	NC	
Benzo(a)anthracene	U	9.3	U	9.3	NC	30	NC	
Chrysene	U	9.3	U	9.3	NC	30	NC	
Benzo(b)fluoranthene	U	9.3	U	9.3	NC	30	NC	
Benzo(k)fluoranthene	U	9.3	U	9.3	NC	30	NC	
Benzo(a)pyrene	U	9.3	U	9.3	NC	30	NC	
Indeno(1,2,3-cd)pyrene	U	9.3	U	9.3	NC	30	NC	
Dibenz(a,h)anthracene	U	9.3	U	9.3	NC	30	NC	
Benzo(ghi)perylene	U	9.3	U	9.3	NC	30	NC	

Surrogate Compound	Recovery (%)	Limits (%)	Meets	Recovery (%)	Limits (%)	Meets
			Criteria (Yes or No)			Criteria (Yes or No)
2-Fluorobiphenyl	69	30 - 150	YES	68	30 - 150	YES
o-Terphenyl	78	30 - 150	YES	80	30 - 150	YES

Laboratory ID: LCS432S

Field ID: NA

Project: NA

Sample Date & Time: 08/04/20 1050

Preparation Date & Time: 08/04/20 1050

Analysis Date & Time: 7 Aug 2020 12:10 pm

Batch Number: 432S

Matrix: Solid

Sample Weight (g): 10

Final Volume (mL): 1

Percent Dry Weight: 100

Analyst: PL

Laboratory ID: LCSD432S

Field ID: NA

Project: NA

Sample Date & Time: 08/04/20 1050

Preparation Date & Time: 08/04/20 1050

Analysis Date & Time: 08/07/20 1236

Batch Number: 432S

Matrix: Solid

Sample Weight (g): 10

Final Volume (mL): 1

Percent Dry Weight: 100

Analyst: PL

Target Compound	Qualifier	True Value (ng/g)	Concentration (ng/g)	Percent Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)	Qualifier	True Value (ng/g)	Concentration (ng/g)	Percent Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)	RPD (%)	RPD Limit (%)	Meets Criteria (Yes or No)
Naphthalene		500	278	56	30	150	YES		500	240	48	30	150	YES	14	30	YES
Acenaphthylene		500	274	55	30	150	YES		500	242	48	30	150	YES	12	30	YES
Acenaphthene		500	282	56	30	150	YES		500	251	50	30	150	YES	12	30	YES
Fluorene		500	292	58	30	150	YES		500	262	52	30	150	YES	11	30	YES
Phenanthrene		500	311	62	30	150	YES		500	284	57	30	150	YES	9	30	YES
Anthracene		500	306	61	30	150	YES		500	285	57	30	150	YES	7	30	YES
Fluoranthene		500	336	67	30	150	YES		500	339	68	30	150	YES	1	30	YES
Pyrene		500	337	67	30	150	YES		500	337	67	30	150	YES	0	30	YES
Benzo(a)anthracene		500	354	71	30	150	YES		500	365	73	30	150	YES	3	30	YES
Chrysene		500	334	67	30	150	YES		500	353	71	30	150	YES	6	30	YES
Benzo(b)fluoranthene		500	336	67	30	150	YES		500	353	71	30	150	YES	5	30	YES
Benzo(k)fluoranthene		500	347	69	30	150	YES		500	362	72	30	150	YES	4	30	YES
Benzo(a)pyrene		500	324	65	30	150	YES		500	337	67	30	150	YES	4	30	YES
Indeno(1,2,3-cd)pyrene		500	386	77	30	150	YES		500	388	78	30	150	YES	1	30	YES
Dibenz(a,h)anthracene		500	377	75	30	150	YES		500	388	78	30	150	YES	3	30	YES
Benzo(ghi)perylene		500	371	74	30	150	YES		500	384	77	30	150	YES	3	30	YES
Surrogate Compound	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)							
2-Fluorobiphenyl		70	30	150	YES		55	30	150	YES							
o-Terphenyl		87	30	150	YES		72	30	150	YES							

Laboratory ID: 34272-026MS

Field ID: NAE3 Surface

Project: Nordic Aquafarms Pipeline Corridor Dredging

Sample Date & Time: 08/04/20 1050

Preparation Date & Time: 08/04/20 1050

Analysis Date & Time: 08/07/20 1351

Batch Number: 432S

Matrix: Solid

Sample Weight (g): 12

Final Volume (mL): 1

Percent Dry Weight: 90

Analyst: PL

Laboratory ID: 34272-026MSD

Field ID: NAE3 Surface

Project: Nordic Aquafarms Pipeline Corridor Dredging

Sample Date & Time: 08/04/20 1050

Preparation Date & Time: 08/04/20 1050

Analysis Date & Time: 08/07/20 1416

Batch Number: 432S

Matrix: Solid

Sample Weight (g): 12

Final Volume (mL): 1

Percent Dry Weight: 90

Analyst: PL

Target Compound	Sample Result	Qualifier	True Value (ng/g)	Concentration (ng/g)	Percent Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)	Qualifier	True Value (ng/g)	Concentration (ng/g)	Percent Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)	RPD (%)	RPD Limit (%)	Meets Criteria (Yes or No)
Naphthalene	U		463	251	54	30	150	YES		463	259	56	30	150	YES	3	30	YES
Acenaphthylene	U		463	266	57	30	150	YES		463	282	61	30	150	YES	6	30	YES
Acenaphthene	U		463	268	58	30	150	YES		463	291	63	30	150	YES	8	30	YES
Fluorene	U		463	280	60	30	150	YES		463	311	67	30	150	YES	11	30	YES
Phenanthrene	U		463	276	60	30	150	YES		463	304	66	30	150	YES	10	30	YES
Anthracene	U		463	268	58	30	150	YES		463	300	65	30	150	YES	11	30	YES
Fluoranthene	U		463	308	67	30	150	YES		463	342	74	30	150	YES	10	30	YES
Pyrene	U		463	297	64	30	150	YES		463	332	72	30	150	YES	11	30	YES
Benzo(a)anthracene	U		463	321	69	30	150	YES		463	376	81	30	150	YES	16	30	YES
Chrysene	U		463	297	64	30	150	YES		463	342	74	30	150	YES	14	30	YES
Benzo(b)fluoranthene	U		463	305	66	30	150	YES		463	354	77	30	150	YES	15	30	YES
Benzo(k)fluoranthene	U		463	300	65	30	150	YES		463	347	75	30	150	YES	14	30	YES
Benzo(a)pyrene	U		463	298	64	30	150	YES		463	341	74	30	150	YES	14	30	YES
Indeno(1,2,3-cd)pyrene	U		463	293	63	30	150	YES		463	354	76	30	150	YES	19	30	YES
Dibenz(a,h)anthracene	U		463	294	64	30	150	YES		463	339	73	30	150	YES	14	30	YES
Benzo(ghi)perylene	U		463	289	62	30	150	YES		463	330	71	30	150	YES	13	30	YES
Surrogate Compound					Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)				Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)			
2-Fluorobiphenyl					62	30	150	YES				64	30	150	YES			
o-Terphenyl					70	30	150	YES				78	30	150	YES			

Bulk Sediment Analysis  
QC Support Documents  
Pesticides



Laboratory ID: PB430S  
 Field ID: NA  
 Project: NA  
 Date Sampled: 08/03/20 1030  
 Date Prepared: 08/03/20 1030  
 Batch Number: 430S  
 Matrix: Solid  
 Sample Weight (g): 5  
 Final Volume (mL): 1  
 Percent Dry Weight: 100  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Hexachlorobenzene	U	0.4	0.4	1	08/10/20 1819
Gamma-BHC (Lindane)	U	0.4	0.4	1	08/10/20 1819
Heptachlor	U	0.4	0.4	1	08/10/20 1819
Aldrin	U	0.4	0.4	1	08/10/20 1819
Oxychlordane	U	0.4	0.4	1	08/10/20 1819
Heptachlor epoxide	U	0.4	0.4	1	08/10/20 1819
Gamma-chlordane	U	0.4	0.4	1	08/10/20 1819
Trans-nonachlor	U	0.4	0.4	1	08/10/20 1819
Alpha-chlordane	U	0.4	0.4	1	08/10/20 1819
Endosulfan I	U	0.4	0.4	1	08/10/20 1819
4,4'-DDE	U	0.8	0.8	1	08/10/20 1819
Dieldrin	U	0.8	0.8	1	08/10/20 1819
Endrin	U	0.4	0.4	1	08/10/20 1819
Cis-nonachlor	U	0.4	0.4	1	08/10/20 1819
4,4'-DDD	U	0.4	0.4	1	08/10/20 1819
Endosulfan II	U	0.4	0.4	1	08/10/20 1819
Toxaphene	U	20.0	20.0	1	08/10/20 1819
4,4'-DDT	U	0.8	0.8	1	08/10/20 1819
Methoxychlor	U	2.0	2.0	1	08/10/20 1819

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		90	30	150	YES
Decachlorobiphenyl (209)		70	30	150	YES



Laboratory ID: LCS430S  
 Field ID: NA  
 Project: NA  
 Date & Time Sampled: 08/03/20 1030  
 Date & Time Prepared: 08/03/20 1030  
 Date & Time Analyzed: 08/10/20 1838  
 Batch Number: 430S  
 Matrix: Solid  
 Sample Weight (g): 5  
 Final Volume (mL): 1  
 Percent Dry Weight: 100  
 Analyst: PL

Target Compound	Qualifier	True Value (ng/g)	Concentration (ng/g)	Percent Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
hexachlorobenzene		8	8.7	109	30	150	YES
gamma-BHC (Lindane)		8	7.5	94	30	150	YES
heptachlor		8	7.3	91	30	150	YES
aldrin		8	5.3	66	30	150	YES
oxychlorane		8	5.2	65	30	150	YES
heptachlor epoxide		8	6.2	78	30	150	YES
gamma-chlordane		8	6	75	30	150	YES
trans-nonachlor		8	7.3	91	30	150	YES
alpha-chlordane		8	6.3	79	30	150	YES
endosulfan I		16	16.1	101	30	150	YES
4,4'-DDE		8	6.1	76	30	150	YES
dieldrin		8	7.8	98	30	150	YES
endrin		8	8	100	30	150	YES
cis-nonachlor		8	7.7	96	30	150	YES
4,4'-DDD		8	8.8	110	30	150	YES
endosulfan II		16	13.3	83	30	150	YES
toxaphene		8	U	NA	NA	NA	YES
4,4'-DDT		8	9	113	30	150	YES
methoxychlor		80	93.3	117	30	150	YES

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		90	30	150	YES
Decachlorobiphenyl (209)		73	30	150	YES



Laboratory ID: LCSD430S  
 Field ID: NA  
 Project: NA  
 Date & Time Sampled: 08/03/20 1030  
 Date & Time Prepared: 08/03/20 1030  
 Date & Time Analyzed: 08/10/20 1856  
 Batch Number: 430S  
 Matrix: Solid  
 Sample Weight (g): 5  
 Final Volume (mL): 1  
 Percent Dry Weight: 100  
 Analyst: PL

Target Compound	Qualifier	True Value (ng/g)	Concentration (ng/g)	Percent Recovery (ng/g)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)	RPD (%)	RPD Limit (%)
hexachlorobenzene		8	7.6	95	30	150	YES	13	30
gamma-BHC (Lindane)		8	8.2	103	30	150	YES	9	30
heptachlor		8	5.7	71	30	150	YES	25	30
aldrin	J4	8	7.4	93	30	150	NO	33	30
oxychlordane	J4	8	8	100	30	150	NO	42	30
heptachlor epoxide		8	6.1	76	30	150	YES	2	30
gamma-chlordane		8	5.9	74	30	150	YES	2	30
trans-nonachlor		8	8.8	110	30	150	YES	19	30
alpha-chlordane		8	7.1	89	30	150	YES	12	30
endosulfan I		16	17.9	112	30	150	YES	11	30
4,4'-DDE		8	6.7	84	30	150	YES	9	30
dieldrin		8	8.8	110	30	150	YES	12	30
endrin		8	8.8	110	30	150	YES	10	30
cis-nonachlor		8	7.6	95	30	150	YES	1	30
4,4'-DDD		8	9.7	121	30	150	YES	10	30
endosulfan II		16	14.6	91	30	150	YES	9	30
toxaphene		8	U	NA	NA	NA	YES	NA	30
4,4'-DDT		8	9.4	118	30	150	YES	4	30
methoxychlor		80	100.8	126	30	150	YES	8	30

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		82	30	150	YES
Decachlorobiphenyl (209)		79	30	150	YES



Laboratory ID: 34272-026  
 Field ID: NAE3 Surface  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 07/21/20 0951  
 Date Prepared: 08/03/20 1030  
 Batch Number: 430S  
 Matrix: Solid  
 Sample Weight (g): 6  
 Final Volume (mL): 1  
 Percent Dry Weight: 90  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ng/g)	Quantitation Limit (ng/g)	Dilution Factor	Analysis Date and Time
Hexachlorobenzene		U	0.4	2	08/10/20 1914
Gamma-BHC (Lindane)	J7	U	0.4	2	08/10/20 1914
Heptachlor	J7	U	0.4	2	08/10/20 1914
Aldrin	J4	U	0.4	2	08/10/20 1914
Oxychlordane	J4	U	0.4	2	08/10/20 1914
Heptachlor epoxide	J7	U	0.4	2	08/10/20 1914
Gamma-chlordane		U	0.4	2	08/10/20 1914
Trans-nonachlor	J7	U	0.4	2	08/10/20 1914
Alpha-chlordane		U	0.4	2	08/10/20 1914
Endosulfan I		U	0.7	2	08/10/20 1914
4,4'-DDE		U	0.7	2	08/10/20 1914
Dieldrin		U	0.7	2	08/10/20 1914
Endrin	J14	0.14	0.7	2	08/10/20 1914
Cis-nonachlor		U	0.4	2	08/10/20 1914
4,4'-DDD		U	0.7	2	08/10/20 1914
Endosulfan II		U	0.7	2	08/10/20 1914
Toxaphene		U	37.0	2	08/10/20 1914
4,4'-DDT		U	0.7	2	08/10/20 1914
Methoxychlor		U	3.7	2	08/10/20 1914

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		77	30	150	YES
Decachlorobiphenyl (209)		83	30	150	YES



Laboratory ID: 34272-026D  
 Field ID: NAE3 Surface  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/03/20 1030  
 Date Prepared: 08/03/20 1030  
 Batch Number: 430S  
 Matrix: Solid  
 Sample Weight (g): 6  
 Final Volume (mL): 1  
 Percent Dry Weight: 90  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ng/g)	Quantitation	Dilution Factor	Analysis Date and Time	RPD (%)	RPD Limit (%)
			Limit (ng/g)				
hexachlorobenzene	U	U	0.4	2	08/10/20 1933	NC	30
gamma-BHC (Lindane)	U	U	0.4	2	08/10/20 1933	NC	30
heptachlor	U	U	0.4	2	08/10/20 1933	NC	30
aldrin	U	U	0.4	2	08/10/20 1933	NC	30
oxychlorodane	U	U	0.4	2	08/10/20 1933	NC	30
heptachlor epoxide	U	U	0.4	2	08/10/20 1933	NC	30
gamma-chlordane	U	U	0.4	2	08/10/20 1933	NC	30
trans-nonachlor	U	U	0.4	2	08/10/20 1933	NC	30
alpha-chlordane	U	U	0.4	2	08/10/20 1933	NC	30
endosulfan I	U	U	0.7	2	08/10/20 1933	NC	30
4,4'-DDE	U	U	0.7	2	08/10/20 1933	NC	30
dieldrin	U	U	0.7	2	08/10/20 1933	NC	30
endrin	U	U	0.7	2	08/10/20 1933	NC	30
cis-nonachlor	U	U	0.4	2	08/10/20 1933	NC	30
4,4'-DDD	U	U	0.7	2	08/10/20 1933	NC	30
endosulfan II	U	U	0.7	2	08/10/20 1933	NC	30
toxaphene	U	U	37.0	2	08/10/20 1933	NC	30
4,4'-DDT	U	U	0.7	2	08/10/20 1933	NC	30
methoxychlor	U	U	3.7	2	08/10/20 1933	NC	30

Surrogate Compounds	Qualifier	Recovery (%)	Low	High	Meets
			Limit (%)	Limit %	Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		72	30	150	YES
Decachlorobiphenyl (209)		91	30	150	YES



Laboratory ID: 34272-026MS  
 Field ID: NAE3 Surface  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date & Time Sampled: 08/03/20 1030  
 Date & Time Prepared: 08/03/20 1030  
 Date & Time Analyzed: 08/10/20 1951  
 Batch Number: 430S  
 Matrix: Solid  
 Sample Weight (g): 6  
 Final Volume (mL): 1  
 Percent Dry Weight: 90  
 Analyst: PL

Target Compound	Qualifier	Results (ng/g)	True Value (ng/g)	Concentration (ng/g)	Percent Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
hexachlorobenzene	U	7.4	7.4	5.4	73	30	150	YES
gamma-BHC (Lindane)	U	7.4	7.4	5.3	72	30	150	YES
heptachlor	U	7.4	7.4	4.3	58	30	150	YES
aldrin	U	7.4	7.4	4.3	58	30	150	YES
oxychlordane	U	7.4	7.4	4.8	65	30	150	YES
heptachlor epoxide	U	7.4	7.4	4.4	59	30	150	YES
gamma-chlordane	U	7.4	7.4	4.6	62	30	150	YES
trans-nonachlor	U	7.4	7.4	5.7	77	30	150	YES
alpha-chlordane	U	7.4	7.4	4.6	62	30	150	YES
endosulfan I	U	14.8	14.8	12.2	82	30	150	YES
4,4'-DDE	U	7.4	7.4	4.9	66	30	150	YES
dieldrin	U	7.4	7.4	6.5	88	30	150	YES
endrin	U	7.4	7.4	6.4	86	30	150	YES
cis-nonachlor	U	7.4	7.4	6.1	82	30	150	YES
4,4'-DDD	U	7.4	7.4	6.9	93	30	150	YES
endosulfan II	U	14.8	14.8	10.6	72	30	150	YES
toxaphene	U	7.4	7.4	U	NA	30	150	NA
4,4'-DDT	U	7.4	7.4	7.1	96	30	150	YES
methoxychlor	U	74.0	74.0	74.1	100	30	150	YES

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		67	30	150	YES
Decachlorobiphenyl (209)		86	30	150	YES



Laboratory ID: 34272-026MSD  
 Field ID: NAE3 Surface  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date & Time Sampled: 08/03/20 1030  
 Date & Time Prepared: 08/03/20 1030  
 Date & Time Analyzed: 08/10/20 2009  
 Batch Number: 430S  
 Matrix: Solid  
 Sample Weight (g): 6  
 Final Volume (mL): 1  
 Percent Dry Weight: 90  
 Analyst: PL

Target Compound	Qualifier	Results (ng/g)	True Value (ng/g)	Concentration (ng/g)	Percent Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)	RPD (%)	RPD Limit (%)
hexachlorobenzene		U	7.4	6.4	86	30	150	YES	17	30
gamma-BHC (Lindane)	J7	U	7.4	7.3	99	30	150	No	32	30
heptachlor	J7	U	7.4	6.6	89	30	150	No	42	30
aldrin		U	7.4	5	68	30	150	YES	15	30
oxychlordane		U	7.4	5.5	74	30	150	YES	14	30
heptachlor epoxide	J7	U	7.4	9.1	123	30	150	NO	70	30
gamma-chlordane		U	7.4	4.8	65	30	150	YES	4	30
trans-nonachlor	J7	U	7.4	7.8	105	30	150	NO	31	30
alpha-chlordane		U	7.4	5.2	70	30	150	YES	12	30
endosulfan I		U	14.8	15.1	102	30	150	YES	21	30
4,4'-DDE		U	7.4	6.2	84	30	150	YES	23	30
dieldrin		U	7.4	7.7	104	30	150	YES	17	30
endrin		U	7.4	7.9	107	30	150	YES	21	30
cis-nonachlor		U	7.4	6.4	86	30	150	YES	5	30
4,4'-DDD		U	7.4	8.6	116	30	150	YES	22	30
endosulfan II		U	14.8	13.2	89	30	150	YES	22	30
toxaphene		U	7.4	U	NA	30	150	NA	NA	30
4,4'-DDT		U	7.4	8.2	111	30	150	YES	14	30
methoxychlor		U	74.0	89.4	121	30	150	YES	19	30

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		75	30	150	YES
Decachlorobiphenyl (209)		92	30	150	YES

Bulk Sediment Analysis  
QC Support Documents  
MDL Studies

**Method Detection Limit Spike Evaluation**  
 Total Metals in Solid, Sediment, and Tissue Matrix  
 SW 846 3rd ed. 6020B

SOP ID(s): QA-1369, 1323

SOP ID (MDL): QA-1111

Lab Number:	RL745S-2.5	RL749S-2.5a	RL749S-2.5b	RL750S-2.5	RL757S - 2.5a	RL757S - 2.5b	RL758S - 2.5					
Date Prepared/Initials:	03/30/20 JLH	04/30/20 JLH	04/30/20 JLH	04/30/20 JLH	05/05/20 JLH	05/05/20 JLH	05/05/20 JLH					
Date Analyzed/Initials:	03/30/20 JLH	04/30/20 JLH	04/30/20 JLH	04/30/20 JLH	05/06/20 JLH	05/06/20 JLH	05/06/20 JLH					
Matrix:	Solid	Solid	Solid	Solid	Solid	Solid	Solid					
Moisture:	NA	NA	NA	NA	NA	NA	NA					
Sample Amount (g):	1	1	1	1	1	1	1					
Final Volume (mL)	50	50	50	50	50	50	50					
Dilution Factor:	10	10	10	10	10	10	10					
Sample Designation:	True Value	MDL01 Found	MDL02 Found	MDL03 Found	MDL04 Found	MDL05 Found	MDL06 Found	MDL07 Found	STD	MDL	Spike/M DL	MDL<S pike (Y/N)
Metal	(µg/g)	(µg/g)	(µg/g)	(µg/g)	(µg/g)	(µg/g)	(µg/g)	(µg/g)		(µg/g)		
Arsenic, total	0.25	0.254	0.242	0.228	0.243	0.199	0.207	0.216	0.019	0.060	4	Y
Cadmium, total	0.025	0.0265	0.0235	0.0245	0.025	0.0285	0.0255	0.0258	0.0015	0.0046	5	Y
Chromium, total	0.25	0.283	0.263	0.252	0.272	0.269	0.24	0.259	0.013	0.041	6	Y
Copper, total	0.125	0.15	0.133	0.13	0.146	0.143	0.13	0.143	0.0076	0.024	5	Y
Lead, total	0.05	0.053	0.0495	0.049	0.0493	0.05	0.047	0.0508	0.0017	0.0053	9	Y
Nickel, total	0.25	0.286	0.253	0.269	0.264	0.288	0.247	0.271	0.014	0.045	6	Y
Selenium, total	0.25	0.265	0.245	0.24	0.252	0.267	0.244	0.254	0.010	0.030	8	Y
Silver, total	0.05	0.0525	0.051	0.0485	0.0513	0.0515	0.0485	0.0525	0.0016	0.0049	10	Y
Zinc, total	0.5	0.589	0.532	0.565	0.605	0.597	0.551	0.592	0.025	0.079	6	Y

**Method Detection Limit Spike Evaluation**  
 Mercury in Solid, Sediment, and Tissue Matrix  
 EPA 245.7

SOP ID(s): QA-1365, 1323

SOP ID (MDL): QA-1111

Lab Number:	RL427S 0.10b	RL430S 0.10a	RL430S 0.10b	RL470S 0.10a	RL470S 0.10b	RL523S - 0.10a	RL523S - 0.10b					
Date Prepared/Initials:	01/09/19 EG	01/10/19 EG	01/10/19 EG	06/30/19 JLH/EG	06/30/19 JLH/EG	05/05/20 JLH	05/05/20 JLH					
Date Analyzed/Initials:	01/09/19 EG	01/11/19 EG	01/11/19 EG	07/03/19 JLH/EG	07/03/19 JLH/EG	05/05/20 JLH	05/05/20 JLH					
Matrix:	Solid	Solid	Solid	Solid	Solid	Solid	Solid					
Moisture:	NA	NA	NA	NA	NA	NA	NA					
Sample Amount (g):	1	1	1	1	1	1	1					
Final Volume (mL)	50	50	50	50	50	50	50					
Dilution Factor:	10	10	10	10	10	10	10					
Sample Designation:	True Value	MDL01 Found	MDL02 Found	MDL03 Found	MDL04 Found	MDL05 Found	MDL06 Found	MDL07 Found	STD	MDL	Spike/M DL	MDL<S pike (Y/N)
Metal	(µg/g)	(µg/g)	(µg/g)	(µg/g)	(µg/g)	(µg/g)	(µg/g)	(µg/g)		(µg/g)		
Mercury, total	0.0025	0.0024	0.0024	0.0034	0.0022	0.0025	0.0027	0.0027	0.00036	0.0011	2	Y

**Method Detection Limit Spike Evaluation**

PCB Congeners in Solid, Sediment, and Tissue Matrix  
SW 846 8270 SIM

SOP ID(s): QA-1390, 1391

SOP ID (MDL): QA-1111

Lab Number:		RL318S D	RL403SA	RL403SB	RL403SC	RL403SD	RL419SA	RL419SB					
Date Extracted/Initials:		03/18/19 ELJ/RK	12/27/2019 PL	12/27/2019 PL	12/27/2019 PL	12/27/2019 PL	03/19/20 PL	03/19/20 PL					
Date Analyzed/Initials:		03/20/19 JK	01/09/20 PL	01/09/20 PL	01/09/20 PL	01/09/20 PL	03/24/20 PL	03/24/20 PL					
Matrix:		Solid	Solid	Solid	Solid	Solid	Solid	Solid					
Moisture:		NA	NA	NA	NA	NA	NA	NA					
Sample Amount (g):		5	5	5	5	5	5	5					
Final Volume (mL)		1	1	1	1	1	1	1					
Dilution Factor:		1	1	1	1	1	1	1					
Sample Designation:		True Value	MDL01 Found	MDL02 Found	MDL03 Found	MDL04 Found	MDL05 Found	MDL06 Found	MDL07 Found	STD	MDL (ng/g)	Spike/MDL	MDL < Spike (Y/N)
BZ Congener Number		(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)				
PCB 8	0.20	0.30	0.173	0.212	0.154	0.208	0.181	0.230	0.04	0.14	1	Y	
PCB 18	0.20	0.33	0.204	0.266	0.187	0.208	0.221	0.254	0.05	0.15	1	Y	
PCB 28	0.20	0.37	0.214	0.180	0.212	0.245	0.205	0.205	0.06	0.18	1	Y	
PCB 52	0.20	0.35	0.154	0.214	0.232	0.195	0.201	0.266	0.06	0.18	1	Y	
PCB 49	0.20	0.31	0.183	0.178	0.147	0.184	0.194	0.239	0.05	0.15	1	Y	
PCB 44	0.20	0.34	0.176	0.197	0.227	0.219	0.253	0.274	0.05	0.16	1	Y	
PCB 66	0.20	0.35	0.224	0.175	0.205	0.241	0.247	0.248	0.05	0.16	1	Y	
PCB 101	0.20	0.33	0.151	0.269	0.254	0.238	0.221	0.280	0.05	0.16	1	Y	
PCB 87	0.20	0.35	0.218	0.181	0.187	0.154	0.271	0.249	0.06	0.20	1	Y	
PCB 77	0.20	0.34	0.236	0.262	0.234	0.199	0.270	0.258	0.04	0.13	2	Y	
PCB 118	0.20	0.33	0.223	0.279	0.235	0.241	0.240	0.180	0.04	0.14	1	Y	
PCB 184	0.20	0.33	0.212	0.194	0.202	0.216	0.221	0.249	0.04	0.14	1	Y	
PCB 153	0.20	0.33	0.214	0.269	0.205	0.186	0.186	0.261	0.05	0.16	1	Y	
PCB 105	0.20	0.36	0.195	0.263	0.152	0.241	0.163	0.282	0.07	0.21	1	N	
PCB 138	0.20	0.28	0.185	0.269	0.146	0.161	0.298	0.177	0.06	0.19	1	Y	
PCB 126	0.20	0.28	0.211	0.320	0.177	0.246	0.253	0.277	0.04	0.14	1	Y	
PCB 187	0.20	0.28	0.224	0.161	0.250	0.209	0.136	0.250	0.05	0.15	1	Y	
PCB 183	0.20	0.27	0.222	0.272	0.237	0.276	0.217	0.275	0.02	0.08	3	Y	
PCB 128	0.20	0.27	0.241	0.145	0.150	0.159	0.083	0.163	0.06	0.19	1	Y	
PCB 180	0.20	0.27	0.178	0.279	0.250	0.252	0.224	0.215	0.03	0.10	2	Y	
PCB 170	0.20	0.25	0.152	0.240	0.185	0.176	0.125	0.191	0.04	0.13	2	Y	
PCB 195	0.20	0.26	0.343	0.191	0.165	0.186	0.190	0.174	0.06	0.19	1	Y	
PCB 206	0.20	0.31	0.240	0.206	0.223	0.373	0.296	0.200	0.06	0.19	1	Y	
PCB 209	0.20	0.26	0.292	0.195	0.231	0.326	0.176	0.135	0.06	0.20	1	Y	

**Enthalpy Analytical**

**Method Detection Limit Spike Evaluation 2020 (Initial)**

PAH's in Solid Matrix  
SW 846 8270E

SOP ID(s): QA-1351 Rev. 14, QA-1344 Rev. 12

SOP ID (MDL): QA-1111 Rev. 7

Lab Number:	RL403SA	RL403SB	RL403SC	RL403SD	RL420SA	RL424SA	RL424SB	RL425SA					
Sample Designation:	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid					
Date Extracted/Initials:	12/27/19 PL	12/27/19 PL	12/27/19 PL	12/27/19 PL	03/23/20 PL	05/18/20 PL	05/18/20 PL	06/09/20 PL					
Date Analyzed/Initials:	12/31/19 REB	12/31/19 REB	12/31/19 REB	12/31/19 REB	04/01/20 PL	05/28/20 PL	05/28/20 PL	06/12/20 PL					
Matrix:	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid					
Moisture:	100	100	100	100	100	100	100	100					
Sample Amount (g):	10	10	10	10	10	10	10	10					
Final Volume (mL)	1	1	1	10	1	1	1	1					
Dilution Factor:	1	1	1	1	1	1	1	1					
	True Value (ng/g)	MDL01 Found (ng/g)	MDL02 Found (ng/g)	MDL03 Found (ng/g)	MDL04 Found (ng/g)	MDL05 Found (ng/g)	MDL06 Found (ng/g)	MDL07 Found (ng/g)	MDL08 Found (ng/g)	STD (ug/L)	MDL (ng/g)	Spike/MDL	MDL< Spike (Y/N)
Naphthalene	5.0	4.12	4.54	5.09	5.19	6.65	3.92	4.39	3.18	0.97068	2.9101	2	Y
Acenaphthylene	5.0	2.69	3.12	3.48	3.66	6.42	3.44	3.82	2.62	1.12016	3.3582	1	Y
Acenaphthene	5.0	3.21	3.49	3.85	3.92	6.56	3.64	3.89	3.16	1.01884	3.0545	2	Y
Fluorene	5.0	4.17	4.64	4.65	5.22	7.16	3.79	3.99	3.07	1.14535	3.4338	1	Y
Phenanthrene	5.0	11.72	12.51	13.19	12.86	13.11	7.77	7.43	5.67	2.85798	8.5682	1	N
Anthracene	5.0	3.98	4.56	4.83	5.07	6.94	3.90	3.80	2.95	1.11320	3.3374	1	Y
Fluoranthene	5.0	7.94	8.70	9.19	9.67	11.63	5.91	5.67	4.74	2.18696	6.5565	1	N
Pyrene	5.0	6.41	6.69	7.62	8.58	10.16	5.87	5.61	4.57	1.67311	5.0160	1	N
Benzo(a)anthracene	5.0	4.93	5.47	5.92	6.72	9.29	4.86	4.93	4.28	1.49405	4.4792	1	Y
Chrysene	5.0	5.60	5.69	5.68	6.34	8.70	4.44	4.56	3.92	1.38833	4.1622	1	Y
Benzo(b)fluoranthene	5.0	5.34	5.26	5.52	5.97	8.36	4.12	3.93	3.86	1.37871	4.1334	1	Y
Benzo(k)fluoranthene	5.0	5.00	5.19	5.52	5.77	8.68	3.76	3.99	4.11	1.46976	4.4063	1	Y
Benzo(a)pyrene	5.0	4.68	4.93	5.42	5.64	8.24	3.23	3.61	2.94	1.59236	4.7739	1	Y
Indeno(1,2,3-cd)pyrene	5.0	4.88	4.74	5.09	5.55	7.56	3.72	4.09	3.80	1.16255	3.4853	1	Y
Dibenz(a,h)anthracene	5.0	5.28	5.34	5.55	5.88	7.52	3.47	3.83	3.46	1.30810	3.9217	1	Y
Benzo(ghi)perylene	5.0	5.92	5.35	5.54	6.11	8.15	3.90	4.03	4.22	1.31712	3.9487	1	Y

## Enthalpy Analytical

### Method Detection Limit Spike Evaluation 2020 (Initial)

Pesticides in Solid Matrix  
EPA 608.3 and SW 846 8081

SOP ID(s): QA-1351 Rev. 14, QA-1344 Rev. 12

SOP ID (MDL): QA-1111 Rev. 7

Lab Number:	RL401S B	RL401S C	RL401S D	RL421S A	RL421S B	RL423SB	RL427SA	RL427SB					
Sample Designation:	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid					
Date Extracted/Initials:	12/23/19 PL	12/23/19 PL	12/23/19 PL	03/31/20 PL	03/31/20 PL	05/05/20 PL	07/13/20 PL	07/13/20 PL					
Date Analyzed/Initials:	01/06/20 PL	01/06/20 PL	01/06/20 PL	04/02/20 PL	04/02/20 PL	05/18/20 PL	07/15/20 PL	07/15/20 PL					
Matrix:	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid					
Moisture:	100	100	100	100	100	100	100	100					
Sample Amount (g):	5	5	5	5	5	5	5	5					
Final Volume (mL)	1	1	1	1	1	1	1	1					
Dilution Factor:	1	1	1	1	1	1	1	1					
	True Value (ng/g)	MDL01 Found (ng/g)	MDL02 Found (ng/g)	MDL03 Found (ng/g)	MDL04 Found (ng/g)	MDL05 Found (ng/g)	MDL06 Found (ng/g)	MDL07 Found (ng/g)	MDL08 Found (ng/g)	STD	MDL (ng/g)	Spike/MDL	MDL< Spike (Y/N)
hexachlorobenzene	0.2	0.097	0.137	0.226	0.315	0.306	0.164	0.444	0.468	0.12933	0.3877	1	N
alpha-BHC	0.2	0.181	0.160	0.172	0.119	0.126	0.125	0.123	0.147	0.02296	0.0688	3	Y
gamma-BHC (Lindane)	0.2	0.266	0.252	0.201	0.151	0.199	0.127	0.166	0.184	0.04440	0.1331	2	Y
beta-BHC	0.2	0.230	0.281	0.228	0.167	0.289	0.121	0.202	0.179	0.05339	0.1601	1	Y
delta-BHC	0.2	0.108	0.128	0.120	0.101	0.142	0.080	0.086	0.092	0.02021	0.0606	3	Y
heptachlor	0.2	0.202	0.167	0.177	0.158	0.197	0.233	0.137	0.067	0.04697	0.1408	1	Y
aldrin	0.2	0.142	0.161	0.176	0.168	0.164	0.129	0.397	0.139	0.08184	0.2453	1	N
oxychlorane	0.2	0.171	0.116	0.141	0.065	0.119	0.127	0.316	0.158	0.06889	0.2065	1	N
chlorpyrifos	0.2	0.197	0.220	0.201	0.253	0.272	0.222	0.180	0.143	0.03794	0.1137	2	Y
heptachlor epoxide	0.2	0.212	0.237	0.230	0.294	0.439	0.119	0.161	0.145	0.09512	0.2852	1	N
gamma-chlordane	0.2	0.208	0.235	0.204	0.115	0.085	0.074	0.129	0.139	0.05618	0.1684	1	Y
trans-nonachlor	0.2	0.163	0.193	0.149	0.247	0.21	0.155	0.158	0.172	0.03157	0.0946	2	Y
alpha-chlordane	0.2	0.162	0.172	0.167	0.187	0.104	0.129	0.159	0.179	0.02591	0.0777	3	Y
endosulfan I	0.4	0.365	0.315	0.316	0.379	0.327	0.322	0.284	0.424	0.04165	0.1249	3	Y
4,4'-DDE	0.2	0.180	0.139	0.171	0.192	0.158	0.109	0.183	0.155	0.02526	0.0757	3	Y
dieldrin	0.2	0.195	0.262	0.237	0.198	0.206	0.187	0.196	0.272	0.03099	0.0929	2	Y
endrin	0.2	0.186	0.199	0.245	0.226	0.22	0.157	0.180	0.162	0.02942	0.0882	2	Y
cis-nonachlor	0.2	0.225	0.211	0.209	0.205	0.222	0.156	0.205	0.219	0.02036	0.0610	3	Y
4,4'-DDD	0.2	0.161	0.167	0.166	0.153	0.163	0.196	0.190	0.222	0.02175	0.0652	3	Y
endosulfan II	0.4	0.392	0.334	0.363	0.371	0.414	0.277	0.233	0.279	0.05966	0.1789	2	Y
4,4'-DDT	0.2	0.252	0.275	0.224	0.192	0.242	0.187	0.186	0.185	0.03327	0.0998	2	Y
endrin aldehyde	0.2	0.215	0.158	0.250	0.175	0.203	0.141	0.288	0.312	0.05737	0.1720	1	Y
endosulfan sulfate	0.2	0.165	0.166	0.162	0.23	0.168	0.127	0.128	0.147	0.03021	0.0906	2	Y
methoxychlor	2.0	2.302	1.928	2.306	0.99	1.535	2.519	1.142	1.734	0.52497	1.5739	1	Y
endrin ketone	0.2	0.235	0.252	0.247	0.245	0.444	0.185	0.259	0.254	0.07105	0.2130	1	N

**Enthalpy Analytical**

**Method Detection Limit Spike Evaluation 2020 (Initial)**

Pesticides in Solid Matrix  
EPA 608.3 and SW 846 8081

SOP ID(s): QA-1351 Rev. 14, QA-1344 Rev. 12

SOP ID (MDL): QA-1111 Rev. 7

Lab Number:	RL401S A	RL401S B	RL401S C	RL401S D	RL421S A	RL421S B	RL423SA	RL423SB					
Sample Designation:	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid					
Date Extracted/Initials:	12/23/19 PL	12/23/19 PL	12/23/19 PL	12/23/19 PL	03/31/20 PL	03/31/20 PL	05/05/20 PL	05/05/20 PL					
Date Analyzed/Initials:	02/27/20 PL	02/27/20 PL	02/27/20 PL	02/27/20 PL	06/03/20 PL	06/03/20 PL	05/06/20 PL	05/06/20 PL					
Matrix:	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid					
Moisture:	100	100	100	100	100	100	100	100					
Sample Amount (g):	5	5	5	5	5	5	5	5					
Final Volume (mL)	1	1	1	1	1	1	1	1					
Dilution Factor:	1	1	1	1	1	1	1	1					
	True Value (ng/g)	MDL01 Found (ng/g)	MDL02 Found (ng/g)	MDL03 Found (ng/g)	MDL04 Found (ng/g)	MDL05 Found (ng/g)	MDL06 Found (ng/g)	MDL07 Found (ng/g)	MDL08 Found (ng/g)	STD	MDL (ng/g)	Spike/MDL	MDL< Spike (Y/N)
toxaphene*	10.0	7.87	7.87	7.21	10.49	9.15	10.15571	11.428	10.825	1.46472	4.3912	2	Y

# Bulk Sediment Analysis

## Support Documents

### New England District QC Summary Tables

**Table II-1: Completeness Checklist**

Quality Assurance/Quality Control Questions	Yes/No? Comments?
1. Was the report signed by the responsible applicant approved representative?	Yes
2. Were the methods for sampling, chemical and biological testing described in the Sampling and Analysis Plan (SAP) and the Laboratory QA Plan (LQAP) followed?	Yes
3. If not, were deviations documented?	NA
4. Was the SAP approved by the New England District?	Yes
5. Did the applicant use a laboratory with a LQAP on file at the New England District?	Yes
6. Did the samples adequately represent the physical/chemical variability in the dredging area?	Yes
7. Were the correct stations sampled (include the precision of the navigation method used)?	Yes
8. Were the preservation and storage requirements in Chapter 8 of the EPA/Corps QA/QC Manual (EPA/USACE 1995) and EPA (2001d) followed?	Yes
9. Were the samples properly labeled?	Yes
10. Were all the requested data included?	Yes
11. Were the reporting limits met?	Yes, except as noted for methoxychlor and toxaphene.
12. Were the chain-of-custody forms properly processed?	Yes
13. Were the method blanks run and were the concentration below the acceptance criteria?	Yes
14. Was the MDL study performed on each matrix (with this data submission) or within the last 12 months?	Yes
15. Were the SRM/CRM analyses within acceptance criteria?	Yes
16. Were the matrix spike/matrix spike duplicates run at the required frequency and was the percent recovery/RPD within the acceptance criteria?	Yes, except as noted.
17. Were the duplicate samples analyzed and were the RPDs within the required acceptance criteria?	Yes
18. For each analytical fraction of organic compounds, were recoveries for the internal standard within the acceptance criteria?	Yes
19. Were surrogate recoveries within the required acceptance criteria?	Yes
20. Were corrective action forms provided for all non-conforming data?	NA
21. Were all the species-specific test conditions in Appendix V met?	NA
22. Were the test-specific age requirements met for each test species?	NA
23. Was the bulk physical/chemical testing performed on the sediments/composites that were biologically tested?	No biological testing is planned
24. Were the mortality acceptance criteria met for the water column and sediment toxicity tests?	NA
25. Were the test performance requirements in Table 11.3 of EPA (1994a) met?	NA

**Table II-2: Quality Control Summary for Analyses of Polyaromatic Hydrocarbons (PAHs) and other base-neutrals in Sediment and Tissue Matrices**

Method Reference Number: 8270E-SIM

<b>Quality Control (QC) Element</b>	<b>Acceptance Criteria*</b>	<b>Criteria Met? Yes/No</b>	<b>List results outside criteria (Cross-reference results table in data report)</b>	<b>Location of Results (Retained at Lab or in Data Package)</b>
Initial Calibration	Must be performed prior to the analysis of any QC sample or field sample (<20 % RSD for each compound)	Yes		Retained at lab
Calculation of Method Detection Limits (MDLs)	For each matrix, analyzed once per 12 month period (see Section 5.2 for MDL procedure)	Yes		Data Package
Calibration Verification (Second Source)	Once, after initial calibration (80 to 120% recovery of each compound)	Yes		Retained at lab
Continuing Calibration	At the beginning of every 12 hour shift (15 % D)	Yes		Retained at lab
Standard Reference Materials	Within the limits provided by vendor	NA		
Method Blank	No target analytes > RL	Yes		Data Package
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	One set (MS/MSD) per group of field samples. Must contain all target analytes. (Recovery Limits 50 to 120%; RPD <30%).	Yes	In house limits of 30-150 %R were used.	Data Package
Analytical Replicates	Analyze one sample in duplicate for each group of field samples (RPD < 30%)	Yes		Data Package
Surrogate Recoveries	Calculate % recovery (30 to 150% recovery)	Yes		Data Package
Internal Standard Areas	Within 50 to 200% of internal standards in continuing calibration check	Yes		Retained at lab

\* The Quality Control Acceptance Criteria are general guidelines. If alternate criteria are used, they must be documented in this table

**Table II-3: Quality Control Summary for Analyses of Pesticides in Sediment, Tissue and Water Matrices**

Method Reference Number: 8081B

<b>Quality Control (QC) Element</b>	<b>Acceptance Criteria*</b>	<b>Criteria Met? Yes/No</b>	<b>List results outside criteria (Cross-reference results table in data report)</b>	<b>Location of Results (Retained at Lab or in Data Package)</b>
Initial Calibration	Must be performed prior to the analysis of any QC sample or field sample (< 20 % RSD for each compound)	Yes		Retained at lab
Calculation of Method Detection Limits (MDLs)	For each matrix, analyzed once per 12 month period (see Section 5.2 for MDL procedure)	Yes		Data Package
Calibration Verification (Second Source)	Once, after initial calibration (80 to 120% recovery of each compound)	Yes		Retained at lab
Continuing Calibration	Every 20 injections ( $\leq$ 15 % D)	Yes		Retained at lab
Standard Reference Materials	Within the limits provided by vendor	NA		
Method Blank	No target analytes > RL	Yes		Data Package
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	One set (MS/MSD) per group of field samples. Must contain all target analytes. (Recovery Limits 50 to 120%; RPD <30%).	Yes, except as noted.	In house limits of 30-150 %R were used. %RPD for gamma-BHC, heptachlor, heptachlor epoxide and trans-nonachlor exceed the project acceptance limits. See page 89 of data package.	Data Package
Analytical Replicates	Analyze one sample in duplicate for each group of field samples (RPD < 30%)	Yes		Data Package
Surrogate Recoveries	Calculate % recovery (30 to 150% recovery)	Yes		Data Package

\* The Quality Control Acceptance Criteria are general guidelines. If alternate criteria are used, they must be documented in this table

**Table II-4: Quality Control Summary for Analyses of Polychlorinated Biphenyls (PCB congeners) in Sediment, Tissue and Water Matrices**

Method Reference Number: 8270E Mod

<b>Quality Control (QC) Element</b>	<b>Acceptance Criteria*</b>	<b>Criteria Met? Yes/No</b>	<b>List results outside criteria (Cross-reference results table in data report)</b>	<b>Location of Results (Retained at Lab or in Data Package)</b>
Initial Calibration	Must be performed prior to the analysis of any QC sample or field sample (<20 % RSD for each compound)	Yes		Retained at lab
Calculation of Method Detection Limits (MDLs)	For each matrix, analyzed once per 12 month period (see Section 5.2 for MDL procedure)	Yes		Data Package
Calibration Verification (Second Source)	Once, after initial calibration. (80 to 120% recovery of each compound)	Yes		Retained at lab
Continuing Calibration	Every 20 injections ( $\pm$ 15 % D)	Yes		Retained at lab
Standard Reference Materials	Within the limits provided by vendor	NA		
Method Blank	No target analytes > RL	Yes		Data Package
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	One set (MS/MSD) per group of field samples. Must contain all target analytes. (Recovery Limits 50 to 120%; RPD <30%).	Yes	In house limits of 30-150 %R were used.	Data Package
Analytical Replicates	Analyze one sample in duplicate for each group of field samples (RPD < 30%)	Yes		Data Package
Surrogate Recoveries	Calculate % recovery (30 to 150% recovery)	Yes		Data Package

\* The Quality Control Acceptance Criteria are general guidelines. If alternate criteria are used, they must be documented in this table

**Table II-5: Quality Control Summary for Analyses of Metals in Sediments, Tissue and Water Matrices**

Method Reference Numbers: EPA 6020B and 245.7

<b>Quality Control (QC) Element</b>	<b>Acceptance Criteria*</b>	<b>Criteria Met? Yes/No</b>	<b>List results outside criteria (Cross-reference results table in data report)</b>	<b>Location of Results (Retained at Lab or in Data Package)</b>
Linear Range Determination for ICP	Performed Quarterly	Yes		Retained at lab
Initial Calibration for AA, Hg	Performed Daily (Correlation Coefficient $\geq 0.995$ )	Yes		Retained at lab
Calculation of Method Detection Limits (MDLs)	For each matrix, analyzed once per 12 month period (see Section 5.2 for MDL procedure)	Yes		Data Package
Initial Calibration Verification/ Continuing Calibration Verification	Hg: 80 to 120% recovery Other metals: 90 to 110% recovery	Yes		Retained at lab
Initial Calibration Blank/ Continuing Calibration Blank	No target analytes > Instrument Detection Limit (IDL)	Yes		Retained at lab
Standard Reference Materials	Within the limits provided by vendor	NA		
Method Blank	No target analytes > RL	Yes		Data Package
Sample Spike/ Sample Duplicate	One set per group of field samples. Must contain all target analytes. Recovery Limits (75 to 125%; RPD < 20% or < 35%).	Yes	In house limits of 80-120 %R were used.	Data Package
Analytical Replicates	Analyze one sample in duplicate for each group of field samples (RPD < 30%)	Yes		Data Package

\* The Quality Control Acceptance Criteria are general guidelines. If alternate criteria are used, they must be documented in this table.



**CHEMICAL ANALYSES  
OF A PROPOSED DREDGE SEDIMENT:**

**Nordic Aquafarms Pipeline Corridor Dredging  
Belfast and Northport, Maine**

**New England District Corps of Engineers  
Application Number: NAE-2019-01481**

**Tier III Sediment Evaluation  
Elutriate Analysis**

Prepared For:

Aqua Survey, Inc.  
469 Point Breeze Road  
Flemington, New Jersey 08822

Prepared By:

Enthalpy Analytical, LLC  
One Lafayette Road  
Hampton, New Hampshire 03842

Lab Master Reference 34272  
Specific Study 34274

Report Issue Date: August 21, 2020  
Analysis Start: July 2020

## TABLE OF CONTENTS

LABORATORY STANDARDS STATEMENT .....	3
1.0 INTRODUCTION .....	4
2.0 MATERIALS AND METHODS.....	4
2.1 Sample Collection, Preservation and Storage.....	4
2.2 Elutriate Preparation .....	4
2.3 Elutriate Analysis .....	5
3.0 RESULTS AND DISCUSSION .....	5
4.0 DATA ACCEPTABILITY AND PROTOCOL DEVIATIONS .....	6
4.1 Trace Metals .....	6
4.2 PCB Congeners.....	6
4.3 Chlorinated Pesticides.....	6
4.4 Pentachlorophenol.....	6
5.0 CORRECTIVE ACTIONS .....	6
6.0 REFERENCES .....	7

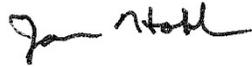
## LIST OF TABLES

Table 1. Sample Collection and Receipt Information .....	8
Table 2. Elutriate Solution Preparation.....	8
Table 3. Parameters Tested and Hold Times.....	9
Table 4. Detection Limits .....	10
APPENDIX A Table of Contents .....	11

## LABORATORY STANDARDS STATEMENT

This study was performed by Enthalpy (Enthalpy) (a division of Montrose Environmental Group), at its facility in Hampton, New Hampshire. Enthalpy's laboratory is accredited by the State of New Hampshire under the National Environmental Laboratory Accreditation (NELAC) program. Additionally, Enthalpy is accredited under the Department of Defense (DoD) ELAP program, ISO/IEC 17025:2005, Certificate Number L2340. Enthalpy also has an approved Laboratory Quality Assurance Plan (LQAP) covering all portions of this project. All testing conducted by Enthalpy as part of this program was compliant with NELAC guidelines and standards. Additionally, this study was conducted in accordance with guidelines presented in the 2004 version of the New England District's Regional Implementation Manual (RIM) for Evaluation of Dredged Material Proposed for Disposal In New England Waters. Any deviations from specific elements of the RIM are detailed in the Protocol Deviation section of this report.

For Enthalpy



August 21, 2020

---

Jason Hobbs  
Technical Manager

Date

# **CHEMICAL ANALYSES OF A PROPOSED DREDGE SEDIMENT:**

Nordic Aquafarms Pipeline Corridor Dredging  
Belfast and Northport, Maine

New England District Corps of Engineers  
Application Number: NAE-2019-01481

Tier III Sediment Evaluation  
Elutriate Analysis

## **1.0 INTRODUCTION**

As part of a comprehensive plan to reduce adverse environmental impacts of ocean dumping, Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 specifies that all sediments to be discharged into ocean waters must be evaluated to define their potential impact on existing benthic communities. The United States Environmental Protection Agency (EPA) has determined that the most effective means to make such an assessment is through the use of bioassay tests, which provide a relatively direct estimate of potential impact.

This project was designed to characterize the chemical nature of marine elutriates prepared using sediments removed as part of pipeline installation for the Nordic Aquafarms Pipeline Corridor Dredging Project located in Belfast and Northport, Maine. The excess dredge materials that are not re-deposited in place over the pipeline will be removed for upland disposal.

Testing involved completion of elutriate chemical analyses following procedures established by the EPA and the United States Army Corps of Engineers (USACE) for testing of dredged material. Procedures are presented in Evaluation of Dredged Material Proposed for Ocean Disposal (EPA, USACE 1991), Evaluation of Dredged Material Proposed for Discharge in Waters of the US - Testing Manual (EPA, USACE 1998), and the Regional Implementation Manual for Evaluation of Dredged Material Proposed for Disposal in New England Waters (EPA, CENAE, 2004). All chemical analyses completed in support of this evaluation were performed at Enthalpy Analytical, a division of Montrose Environmental Group (MEG), at its facility in Hampton, New Hampshire.

## **2.0 MATERIALS AND METHODS**

### **2.1 Sample Collection, Preservation and Storage**

Sediment and water samples were collected from the locations identified in the Final Sampling and Analysis Plan (SAP) approved by the USACE New England District (CENAE). Project site samples were provided by Aqua Survey, Inc. Flemington, New Jersey. Samples were received by Enthalpy under chain of custody in 2- and 5-gallon high density polyethylene buckets. Upon arrival at the laboratory, all samples received an internal sample control number and were logged into the project sample control system. Prior to testing, samples were placed in a secure refrigerator and stored at a temperature of  $4\pm 2^{\circ}\text{C}$  until test initiation. Sample identification, collection and receipt information is summarized in Table 1. Original sample collection and receipt documents, and composite preparation forms are provided in Appendix A.

### **2.2 Elutriate Preparation**

The elutriate samples were prepared by placing one volume of test sediment and four volumes of site water in a stainless-steel container and mixing with a mechanical stirring blade made of inert materials, for 30 minutes. Speed of the stirring motor was set so that the sample did not cavitate, entrain air, or oxidize the sample, while at the same time keeping the sediment in suspension.

After mixing, the sediment and water mixtures were allowed to settle for an hour. The resulting supernatant solution was then removed by siphon and centrifuged for 20 minutes at 5,000 rpm for elutriate chemical analysis. A summary of elutriate preparation is provided in Table 2. The original elutriate preparation forms are provided in Appendix A.

Prepared elutriates and site waters were transferred to the appropriate containers for each parameter. Upon collection, samples were preserved according to method and were stored under refrigeration ( $4\pm 2^{\circ}\text{C}$ ) as appropriate. The metals, mercury, and hexavalent chromium samples were filtered prior to transfer and preservation.

### 2.3 Elutriate Analysis

A summary of the elutriate compounds of concern and their hold times is provided in Table 4. Review of the analytical reports showed that all sample holding times were met, unless otherwise qualified. The analytical methods used in the analysis were appropriate for the parameter and sample matrix and met CENAE RIM document requirements.

Trace metals were prepared and analyzed using EPA Method 200.8 (Inductively Coupled Plasma - Mass Spectrometry (ICP-MS)). Mercury was prepared and analyzed using EPA Method 245.7 (Cold Vapor Atomic Fluorescence Spectrometry). Hexavalent chromium was analyzed by SM 3500D. PCB congeners, pesticides and pentachlorophenol were prepared by EPA Method 3510C (Liquid-Liquid Extraction). PCBs were subsequently analyzed by EPA Method 8270E-SIM. The laboratory has modified this analytical method to meet analyte lists and some quality control requirements outlined in EPA Methods 680 and 8082A. Pesticides were analyzed by EPA Method 8081B. Pentachlorophenol was analyzed by EPA Method 8270D.

Samples were grouped into preparation batches of up to 20 samples. QC samples were established for each batch to assess potential background analyte levels as well as recovery bias and precision for the given set of samples. Preparation Blanks (PB) were prepared and analyzed on a per batch basis to monitor for potential background levels of analytes above the reporting limit. A Laboratory Control Sample (LCS), Laboratory Control Sample Duplicate (LCSD), and, when available, a Standard Reference Material sample (SRM) were prepared and analyzed on a per batch basis to evaluate the recovery bias and precision of reported analytes. Composite elutriate water was used for assessing bias and precision of reported analytes extracted from aqueous matrices. Composite elutriate waters were spiked in duplicate and assigned a Matrix Spike (MS) and Matrix Spike Duplicate (MSD) sample designation. These two spiked samples were evaluated for percent recovery (%R) and relative percent difference (RPD).

## 3.0 RESULTS

See Table 4 for a summary of project Detection Limits (DLs). Sample results were reported to laboratory Reporting Limits (RL) that met or exceeded minimum quality assurance plan objectives and RIM requirements for assigned DLs, except where noted in Section 4.0. In cases where it was feasible, the laboratory was able to report to levels below the laboratory RL but above the established Method Detection Limit (MDL). In these cases, a J14 qualifier was provided for low level concentrations of target analytes below the reporting limit. Where dilution of the sample extract was required, the final RL remained at or below the RIM document specified limits, except where noted in Table 4. This did not result in artificial "Non-Detects." Sample results were qualified as tentative when method confirmation criteria were exceeded. Actual sample reporting limits are adjusted for initial and final volumes and dilution factors.

Review of supporting quality assurance data documented that, except where qualified, all data meet the requirements of NELAC, for all NELAC accredited parameters. Project based quality control objectives are reported with sample QC results. A full copy of the analytical report for field samples and sample QC are included in Appendix A.

## **4.0 DATA ACCEPTABILITY AND PROTOCOL DEVIATIONS**

The following sections summarize acceptance with or deviations from project QC criteria.

### **4.1 Trace Metals**

An MSD was not analyzed for hexavalent chromium.

All other acceptance criteria were achieved for the PB, LCS, LCSD and MS/MSD for all other metals.

### **4.2 PCB Congeners**

The RPD between the LCS and LCSD exceeded the RIM acceptance limit of 30% and were J4-qualified accordingly for PCB congeners 44, 49, 126, 138, 153, 180 and 183. The remaining PCB congeners were within the acceptable RPD range, and the %R for all PCBs achieved the in-house acceptance limits of 30-150% in the LCS and LCSD samples.

The MS %R fell below in-house acceptance criteria of 30-50% and were J5-qualified accordingly for PCB congeners 8 and 18. Likewise, the RPD between the MS and MSD exceeded the RIM acceptance limit of 30% and were J7-qualified accordingly for PCB congeners 8 and 18. The remaining PCB congeners met acceptance criteria for %R and RPD.

All acceptance criteria were achieved for the PB.

### **4.3 Chlorinated Pesticides**

The laboratory reporting limit (RL) for toxaphene exceeded the RIM DL due to method limitations, however the MDL was below the RIM DL.

The RPD between the LCS and LCSD exceeded the RIM acceptance limit of 30% and were J4-qualified accordingly for heptachlor, but all other pesticides met acceptance criteria.

All other acceptance criteria were achieved for the PB and MS/MSD.

### **4.4 Pentachlorophenol**

All acceptance criteria were achieved for the PB, LCS, LCSD and MS/MSD.

## **5.0 CORRECTIVE ACTIONS**

Every effort was made to re-extract and re-analyze individual samples and sample batches that showed negative performance when compared to QC requirements outlined in the QAPP and USACE, EPA guidance (2016). Negative performance would include but not be limited to: recovery of surrogates outside of acceptance criteria, unqualifiable contamination found in the preparation blank, unqualifiable issues with meeting criteria for precision and accuracy of laboratory control samples, unacceptable instrument performance, sample hold time deviations, and technical errors in preparation and analysis. The laboratory used its best judgment to interpret the validity of nonconforming data and acted in due diligence to address corrective actions within acceptable time frames.

## 6.0 REFERENCES

EPA Region 1, CENAE. 2004. *Regional Implementation Manual for Evaluation of Dredged Material Proposed for Disposal in New England Waters*. September 2004.

EPA, USACE. 1991. *Evaluation of Dredged Material Proposed for Ocean Disposal - Testing Manual*. EPA-503/8-91/001, February 1991.

EPA, USACE. 1998. *Evaluation of Dredged Material Proposed for Discharge in Waters of the US – Testing Manual*. EPA-823-B-98-004, February 1998.

**Table 1. Sample Collection and Receipt Information. Elutriate Analysis. Nordic Aquafarms Pipeline Corridor, Belfast and Northport, ME. NAE-2019-01481. July 2020.**

Station ID	Lab Code	Matrix	Collection		Receipt	
			Date	Time	Date	Time
NAE1 Surface	34272-022	Solid	No sample <sup>a</sup>			
NAE1 Surface	34272-023	Solid	No sample <sup>a</sup>			
NAE1 Transition	34272-024	Solid	No sample <sup>a</sup>			
NAE1 Deep	34272-025	Solid	No sample <sup>a</sup>			
NAE3 Surface	34272-026 <sup>b</sup>	Solid	07/21/20	0951	07/22/20	1700
NAE3 Surface	34272-027	Solid	07/21/20	0951	07/22/20	1700
NAE3 Transition	34272-028 <sup>b</sup>	Solid	07/21/20	0951	07/22/20	1700
NAE3 Deep	34272-029 <sup>b</sup>	Solid	07/21/20	0951	07/22/20	1700
NAE6 Site Water	34272-030	Water	07/22/20	1348	07/22/20	1700
NAE6 Surface	34272-031 <sup>b</sup>	Solid	07/21/20	1424	07/22/20	1700
NAE6 Surface	34272-032	Solid	07/21/20	1424	07/22/20	1700
NAE6 Transition	34272-033 <sup>b</sup>	Solid	07/21/20	1424	07/22/20	1700
NAE6 Deep	34272-034 <sup>b</sup>	Solid	07/21/20	1424	07/22/20	1700
NAE9 Surface	34272-035 <sup>b</sup>	Solid	07/22/20	1024	07/22/20	1700
NAE9 Surface	34272-036	Solid	07/22/20	1024	07/22/20	1700
NAE9 Transition	34272-037 <sup>b</sup>	Solid	07/22/20	1024	07/22/20	1700
NAE9 Deep	34272-038 <sup>b</sup>	Solid	07/22/20	1024	07/22/20	1700

**Note:**

<sup>a</sup> Sample NAE1 was not collected. See email communication in Appendix A.

<sup>b</sup> Sample used only for bulk sediment analysis.

**Table 2. Elutriate Solution Preparation. Elutriate Analysis. Nordic Aquafarms Pipeline Corridor, Belfast and Northport, ME. NAE-2019-01481. July 2020.**

Water		Sediment		Elutriate Preparation			
Station ID	Lab Code	Station ID	Lab Code	Elutriate ID	Lab Code	Date	Time
NAE6 Site Water	34272-030	-	-	Site Blank	34273-000	08/04/20	0855
NAE6 Site Water	34272-030	NAE3 Surface	34272-027	NAE3 Surface Elutriate	34273-002	08/04/20	1055
NAE6 Site Water	34272-030	NAE6 Surface	34272-032	NAE6 Surface Elutriate	34273-003	08/04/20	1200
NAE6 Site Water	34272-030	NAE9 Surface	34272-036	NAE9 Surface Elutriate	34273-004	08/04/20	0940

**Table 3. Parameters Tested and Hold Times. Elutriate Analysis. Nordic Aquafarms Pipeline Corridor, Belfast and Northport, ME. NAE-2019-01481. July 2020.**

Parameter	Sample Volume and Container Type	Preservation Requirement	Hold Time
Dissolved Metals (As, Cd, Cr, Cu, Pb, Ni, Se, Ag, Zn)	Plastic - 250 mL x 3	HNO <sub>3</sub> pH<2	180 days
Dissolved Mercury (Hg)	Glass - 125 mL x 3	HCl pH<2	28 Days
Hexavalent Chromium (Cr+6)	Plastic - 60 mL x 3	4±2 °C	Immediate (<24-hr)
Pentachlorophenol	Glass – 1 Liter x 3	4±2 °C	7 days to extraction
Pesticides	Glass – 1 Liter x 3	4±2 °C	7 days to extraction
PCB Congeners	Glass – 1 Liter x 3	4±2 °C	7 days to extraction

**Table 4. Detection Limits. Elutriate Analysis. Nordic Aquafarms Pipeline Corridor, Belfast and Northport, ME. NAE-2019-01481. July 2020.**

COC	Units	Detection Limits		MDL	COC	Units	Detection Limits		MDL
		RIM	Enthalpy	Enthalpy			RIM	Enthalpy	Enthalpy
<b>Metals (SW-846 6020, EPA 245.7, and 3500B)</b>					<b>PCB Congeners (SW-846 Method 8270E SIM)</b>				
Arsenic	µg/L	1	0.5	0.029	PCB 8	µg/L	0.006	0.002	0.00052
Cadmium	µg/L	1	0.1	0.0026	PCB 18	µg/L	0.006	0.002	0.00062
Chromium (Total)	µg/L	1	0.5	0.037	PCB 28	µg/L	0.006	0.002	0.00047
Chromium (VI)	µg/L	5	5	1.6	PCB 44	µg/L	0.006	0.002	0.00046
Copper	µg/L	0.6	0.5	0.010	PCB 49	µg/L	0.006	0.002	0.00033
Lead	µg/L	1	0.2	0.0023	PCB 52	µg/L	0.006	0.002	0.00036
Mercury	µg/L	0.4	0.01	0.0005	PCB 66	µg/L	0.006	0.002	0.00037
Nickel	µg/L	1	1	0.019	PCB 77	µg/L	0.006	0.002	0.00060
Selenium	µg/L	1	0.5	0.019	PCB 87	µg/L	0.006	0.002	0.00081
Silver	µg/L	0.5	0.2	0.0034	PCB 101	µg/L	0.006	0.002	0.00086
Zinc	µg/L	1	1	0.061	PCB 105	µg/L	0.006	0.002	0.00079
<b>Pesticides (SW-846 Method 8081B)</b>					PCB 118	µg/L	0.006	0.002	0.00046
Aldrin	µg/L	0.26	0.002	0.00032	PCB 126	µg/L	0.006	0.002	0.00056
gamma-BHC (Lindane)	µg/L	0.26	0.002	0.00058	PCB 128	µg/L	0.006	0.002	0.00040
Chlordane	µg/L	0.02	0.002	0.00047	PCB 138	µg/L	0.006	0.002	0.00066
Chloropyrifos	µg/L	0.002	0.002	0.00058	PCB 153	µg/L	0.006	0.002	0.00042
4,4'-DDT	µg/L	0.03	0.004	0.00061	PCB 170	µg/L	0.006	0.002	0.00097
Dieldrin	µg/L	0.14	0.004	0.0011	PCB 180	µg/L	0.006	0.002	0.00058
Endrin	µg/L	0.007	0.004	0.00067	PCB 183	µg/L	0.006	0.002	0.00084
Endosulfan I	µg/L	0.007	0.002	0.0015	PCB 184	µg/L	0.006	0.002	0.00058
Endosulfan II	µg/L	0.007	0.004	0.0027	PCB 187	µg/L	0.006	0.002	0.00089
Heptachlor	µg/L	0.01	0.002	0.0011	PCB 195	µg/L	0.006	0.002	0.0019
Heptachlor Epoxide	µg/L	0.01	0.002	0.00086	PCB 206	µg/L	0.006	0.002	0.00078
Toxaphene	µg/L	0.04	0.093 <sup>a</sup>	0.013	PCB 209	µg/L	0.006	0.002	0.00084
<b>Industrial Chemicals (SW-846 Method 8270E)</b>									
Pentachlorophenol	µg/L	2.60	2.3	1.9					

**Note:** Quantitation Limits for this study may be slightly different from these values as they are adjusted by initial and final extract volumes and sample dilution.

<sup>a</sup> The RL is above the RIM detection limit. See Section 4.2 for a discussion.

## APPENDIX A TABLE OF CONTENTS

<b>Contents</b>	<b>Number of Pages</b>
Study Number Log	1
Chain of Custody and Sample Receipt Records	6
Email Communications from Client	2
Elutriate Preparation	5
Elutriate Analysis Chains of Custody	10
Report Qualifier Descriptions	1
<hr/>	
Elutriate Analysis Report Pages	
Trace Metals	13
PCB Congeners	13
Pesticides	13
Pentachlorophenol	5
<hr/>	
QC Support Documents	
Trace Metals	12
PCB Congeners	4
Pesticides	6
Pentachlorophenol	4
MDL Studies	8
<hr/>	
Sample Support Documents	
New England District Quality Control Summary Tables	6
<hr/>	
Total Pages	109

## STUDY NUMBER RECORD

Issue and complete this form for studies that require multiple tasks and directly associated support studies. Issue consecutive study numbers at the start of the project to cover all potential elements of the project.

**Client:** Aqua Survey, Inc.

**Contact:** John Doi

**Project:** Nordic Aquafarms Pipeline Corridor Dredging

**Application Number:** NAE-2019-01481

Species / Analysis Parameters:	STUDY:
<b>Sample Receipt and Bulk Sediment Analysis</b>	<b>34272</b>
<b>Composite Prep:</b>	-
Ammonia Reduction Procedure (Optional)	-
<b>10 Day Assay:</b>	-
<i>Leptocheirus plumulosus</i>	-
<i>Americamysis bahia</i>	-
<b>Elutriate Preparation:</b> Type: Standard	<b>34273</b>
<b>Elutriate Analysis:</b>	<b>34274</b>
<b>Pentachlorophenol</b>	<b>Yes / No</b>
<b>Trace Metals</b>	<b>Yes / No</b>
<b>PCB Congeners</b>	<b>Yes / No</b>
<b>Pesticides</b>	<b>Yes / No</b>
<b>SPP Assays:</b>	-
<i>Menidia beryllina</i>	-
<i>Americamysis bahia</i>	-
<i>Arbacia punctulata</i>	-
<b>Bioaccumulation Study:</b>	-
<i>Macoma nasuta</i>	-
<i>Nereis virens</i>	-
<b>Tissue Analysis:</b>	-
Lipids	Yes / No
Trace Metals	Yes / No
PAH Compounds	Yes / No
PCB Congeners	Yes / No
Pesticides	Yes / No

Study Number Log.docx – Shell Oil, New Haven, CT

Issued by:

Reviewed by:

# Chain of Custody Records

## Sample Receipt Forms



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Pipeline Corridor Dredging
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0915 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composite (G/C)	Container		Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:	
						No	Size (mL)					
022	NAE1 Surface					1	1000	A	4 C	Solid	N	%H2O,PAH680,Pest8081,CGR680>Total Metals As,Cd,Cr,C
023	NAE1 Surface					2	2 gallon	P	4 C	Solid	N	Elutriate Prep
024	NAE1 Transition					1	1000	A	4 C	Solid	N	%H2O,PAH680,Pest8081,CGR680>Total Metals As,Cd,Cr,C
025	NAE1 Deep					1	1000	A	4 C	Solid	N	%H2O,PAH680,Pest8081,CGR680>Total Metals As,Cd,Cr,C

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Temp (C):	Meter ID:
Relinquished By:	Date:	Time:	Received at Lab By:	Date:	Time:	Temp (C):	Meter ID:

Comments: \_\_\_\_\_

COC Number: A1018977



NO SAMPLE

Page	of
------	----



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Pipeline Corridor Dredging
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0915 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or com- posite (G/C)	No	Container Size (mL)	Type (P/G/T)	Field Preser- vation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:
026	NAE3 Surface	7-21-20	0951	ASI	G	1	1000	A	4 C	Solid	N	%H2O,PAH680,Pest8081,CGR680>Total Metals As,Cd,Cr,C
027	NAE3 Surface	7-21-20	0951	ASI	G	2	2 gallon	P	4 C	Solid	N	Elutriate Prep
028	NAE3 Transition	7-21-20	0951	ASI	G	1	1000	A	4 C	Solid	N	%H2O,PAH680,Pest8081.CGR680>Total Metals As,Cd,Cr,C
029	NAE3 Deep	7-21-20	0951	ASI	G	1	1000	A	4 C	Solid	N	%H2O,PAH680,Pest8081.CGR680>Total Metals As,Cd,Cr,C

Relinquished By: *Michael B...* Date: 7-22-20 Time: 1700 Received By: *Dick...* Date: 7-22-20 Time: 1708 Temp (C): Meter ID:

Relinquished By: Date: Time: Received at Lab By: Date: Time: Temp (C): Meter ID:

Comments: \_\_\_\_\_



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Pipeline Corridor Dredging
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0915 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or com- posite (G/C)	No	Container Size (mL)	Type (P/G/T)	Field Preser- vation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:
030	NAE6 Site Water	<sup>07/23/20</sup> RAM (E10) 7-21-20	1348 1424	ASI	G	8	5 gallon	P	4 C	Water	N	Elutriate Prep
031	NAE6 Surface	7-21-20	1424	ASI	G	1	1000	A	4 C	Solid	N	%H2O,PAH680,Pest8081,CGR680>Total Metals As,Cd,Cr,C
032	NAE6 Surface	7-21-20	1424	ASI	G	2	2 gallon	P	4 C	Solid	N	Elutriate Prep
033	NAE6 Transition	7-21-20	1424	ASI	G	1	1000	A	4 C	Solid	N	%H2O,PAH680,Pest8081,CGR680>Total Metals As,Cd,Cr,C
034	NAE6 Deep	7-21-20	1424	ASI	G	1	1000	A	4 C	Solid	N	%H2O,PAH680,Pest8081,CGR680>Total Metals As,Cd,Cr,C

Relinquished By: *William* Date: 7-22-20 Time: 1700 Received By: *D. White* Date: 7-22-20 Time: 1700 Temp (C): Meter ID:

Relinquished By: Date: Time: Received at Lab By: Date: Time: Temp (C): Meter ID:

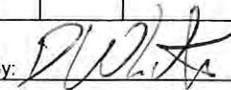
Comments: (E10) RAM 07/23/20 - Client confirmed in an email communication that sample collected 07/22/20 at 1348.



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Pipeline Corridor Dredging
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0915 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composite (G/C)	Container		Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:
						No	Size (mL) Type (P/G/T)				
035	NAE9 Surface	7-22-20	1024	ASI	G	1	1000 A	4 C	Solid	N	%H2O,PAH680,Pest8081,CGR680>Total Metals As,Cd,Cr,C
036	NAE9 Surface	7-22-20	1024	ASI	G	2	2 gallon P	4 C	Solid	N	Elutriate Prep
037	NAE9 Transition	7-22-20	1024	ASI	G	1	1000 A	4 C	Solid	N	%H2O,PAH680,Pest8081,CGR680>Total Metals As,Cd,Cr,C
038	NAE9 Deep	7-22-20	1024	ASI	G	1	1000 A	4 C	Solid	N	%H2O,PAH680,Pest8081.CGR680.Total Metals As,Cd,Cr,C

Relinquished By:  Date: 7-22-20 Time: 1700 Received By:  Date: 7-22-20 Time: 1700 Temp (C): Meter ID:

Relinquished By: Date: Time: Received at Lab By: Date: Time: Temp (C): Meter ID:

Comments: \_\_\_\_\_

## SAMPLE RECEIPT AND CONDITION DOCUMENTATION

STUDY NO: 34272  
 SDG No: 34272  
 Project: Nordic Aquafarms Pipeline Corridor Dredging

Delivered via:  
 Date and Time Received: 07/22/20 1700 Date and Time Logged into Lab: 07/23/20 0920  
 Received By: DW Logged into Lab by: RAM

Air bill / Way bill: NA Cooler on ice/packs: Yes  
 Custody Seals present/intact NA Cooler blank temp (C) at arrival: NA  
 Thermometer ID: NA

Number of COC Pages: 10  
 Were VOC vials free of headspace? NA

COC Complete: Yes pH Test strip lot ID: NA

Were samples received within holding time? Yes  
 Does the info on the COC match the samples? No, see comment below

Client notification/authorization: NA

Field ID	Lab ID	Mx	Analysis Requested	Bottle	Req'd Pres'n	Verified Pres'n
NAE1 Surface	34272-022	S	No Sample	1000 A	4 C	NA
NAE1 Surface	34272-023	S	No Sample	2x2 gallon	4 C	NA
NAE1 Transition	34272-024	S	No Sample	1000 A	4 C	NA
NAE1 Deep	34272-025	S	No Sample	1000 A	4 C	NA
NAE3 Surface	34272-026	S	%H2O,PAH680,Pest8081,CGR680,Total Metals As,Cd,Cr	1000 A	4 C	NA
NAE3 Surface	34272-027	S	Elutriate Prep	2x2 gallon	4 C	NA
NAE3 Transition	34272-028	S	%H2O,PAH680,Pest8081,CGR680,Total Metals As,Cd,Cr	1000 A	4 C	NA
NAE3 Deep	34272-029	S	%H2O,PAH680,Pest8081,CGR680,Total Metals As,Cd,Cr	1000 A	4 C	NA
NAE6 Site Water	34272-030	W	Elutriate Prep	8x5 gallon	4 C	NA
NAE6 Surface	34272-031	S	%H2O,PAH680,Pest8081,CGR680,Total Metals As,Cd,Cr	1000 A	4 C	NA
NAE6 Surface	34272-032	S	Elutriate Prep	2x2 gallon	4 C	NA
NAE6 Transition	34272-033	S	%H2O,PAH680,Pest8081,CGR680,Total Metals As,Cd,Cr	1000 A	4 C	NA
NAE6 Deep	34272-034	S	%H2O,PAH680,Pest8081,CGR680,Total Metals As,Cd,Cr	1000 A	4 C	NA
NAE9 Surface	34272-035	S	%H2O,PAH680,Pest8081,CGR680,Total Metals As,Cd,Cr	1000 A	4 C	NA
NAE9 Surface	34272-036	S	Elutriate Prep	2x2 gallon	4 C	NA
NAE9 Transition	34272-037	S	%H2O,PAH680,Pest8081,CGR680,Total Metals As,Cd,Cr	1000 A	4 C	NA
NAE9 Deep	34272-038	S	%H2O,PAH680,Pest8081,CGR680,Total Metals As,Cd,Cr	1000 A	4 C	NA

Notes and qualifications:

The date and time sampled for NAE6 Site Water (34272-030) was listed as:  
 07/22/20 1348 on the sample container  
 07/21/20 1424 on the chain of custody  
 Client confirmed in an email communication that the time on the container was correct. RAM 07/23/20

Samples from NAE1 (34272-022 through 34272-025) could not be collected and were not received.

# Email Communications from Client



# Elutriate Preparation

## ELUTRIATE PREPARATION SUMMARY

<b>Client:</b> AquaSurvey, Inc.	<b>Study:</b> 34273
<b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging	<b>Date:</b> 08/04/20

	VOLUMES		TIMES
Sample ID	Site Blank	Time Mixing Started	0725
Amount of Sediment	0 L	Hand Mixed Every 10 Minutes?	Yes <input type="radio"/> No <input checked="" type="radio"/>
Amount of Water	16 L	Time Mixing Stopped	0755
		Time Elutriate Siphoned Off	0855
		Centrifuged?	Yes <input checked="" type="radio"/> No <input type="radio"/>
Preparer's Initials	BG		

Elutriate ID	Elutriate Lab Code	Sediment ID	Sediment Lab Code	Water ID	Water Lab Code
Site Blank	34273-000	-	-	NAE6 Site Water	34272-030

**Subsamples Removed:**

Study	Sample Use	Volume
34274	Elutriate Analysis	≈ 13L

NOTES: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Elutriate Prep Log – Nordic Aquafarms Pipeline Corridor Dredging  
 Issued by: **Renee Mclsaac**

Digitally signed by Renee Mclsaac  
 DN: cn=Renee Mclsaac, o=Enthalpy Analytical,  
 ou=Project Manager / QA/QC Member,  
 email=renee.mclsaac@enthalpy.com, c=US  
 Date: 2020.07.16 16:52:01 -0400

Reviewed by: **James Provencher**

Digitally signed by James Provencher  
 DN: cn=James Provencher, o=Enthalpy Analytical LLC, ou=Technical Manager,  
 email=james.provencher@enthalpy.com, c=US  
 Date: 2020.08.03 18:32:24 -0400

## ELUTRIATE PREPARATION SUMMARY

<b>Client:</b> AquaSurvey, Inc.	<b>Study:</b> 34273
<b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging	<b>Date:</b> 08/04/20

	VOLUMES		TIMES
Sample ID	NAE3 Surface Elutriate	Time Mixing Started	0925
Amount of Sediment	8 L	Hand Mixed Every 10 Minutes?	Yes <input checked="" type="radio"/> No
Amount of Water	32 L	Time Mixing Stopped	0955
		Time Elutriate Siphoned Off	1055
		Centrifuged?	<input checked="" type="radio"/> Yes <input type="radio"/> No
Preparer's Initials	BG/JTP		

Elutriate ID	Elutriate Lab Code	Sediment ID	Sediment Lab Code	Water ID	Water Lab Code
NAE3 Surface Elutriate	34273-002	NAE3 Surface	34272-027	NAE6 Site Water	34272-030

**Subsamples Removed:**

Study	Sample Use	Volume
34274	Elutriate Analysis	≈ 13 L

NOTES: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Elutriate Prep Log – Nordic Aquafarms Pipeline Corridor Dredging

Issued by: **Renee Mclsaac**

Digitally signed by Renee Mclsaac  
DN: cn=Renee Mclsaac, o=Enthalpy Analytical  
ou=Project Manager / QAU Member,  
email=renee.mclsaac@enthalpy.com, c=US  
Date: 2020.07.16 16:52:18 -0400

Reviewed by: **James Provencher**

Digitally signed by James Provencher  
DN: cn=James Provencher, o=Enthalpy Analytical LLC, ou=Technical Manager,  
email=james.provencher@enthalpy.com, c=US  
Date: 2020.08.03 18:32:40 -0400

## ELUTRIATE PREPARATION SUMMARY

<b>Client:</b> AquaSurvey, Inc.	<b>Study:</b> 34273
<b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging	<b>Date:</b> 08/04/20

	VOLUMES		TIMES
Sample ID	NAE6 Surface Elutriate	Time Mixing Started	1030
Amount of Sediment	8 L	Hand Mixed Every 10 Minutes?	Yes <input type="radio"/> No <input checked="" type="radio"/>
Amount of Water	32 L	Time Mixing Stopped	1100
		Time Elutriate Siphoned Off	1200
		Centrifuged?	Yes <input checked="" type="radio"/> No <input type="radio"/>
Preparer's Initials	<u>RM / PES</u>		

Elutriate ID	Elutriate Lab Code	Sediment ID	Sediment Lab Code	Water ID	Water Lab Code
NAE6 Surface Elutriate	34273-003	NAE6 Surface	34272-032	NAE6 Site Water	34272-030

**Subsamples Removed:**

Study	Sample Use	Volume
34274	Elutriate Analysis	~13L

NOTES: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Elutriate Prep Log – Nordic Aquafarms Pipeline Corridor Dredging  
 Issued by: **Renee Mclsaac**

Digitally signed by Renee Mclsaac  
 DN: cn=Renee Mclsaac, o=Enthalpy Analytical,  
 ou=Project Manager / QAU Member,  
 email=renee.mclsaac@enthalpy.com, c=US  
 Date: 2020.07.16.16:52:26 -0400

Reviewed by: **James Provencher**

Digitally signed by James Provencher  
 DN: cn=James Provencher, o=Enthalpy Analytical LLC, ou=Technical Manager,  
 email=james.provencher@enthalpy.com, c=US  
 Date: 2020.08.03.18:32:53 -0400

## ELUTRIATE PREPARATION SUMMARY

<b>Client:</b> AquaSurvey, Inc.	<b>Study:</b> 34273
<b>Project:</b> Nordic Aquafarms Pipeline Corridor Dredging	<b>Date:</b> 08/04/20

	VOLUMES	TIMES	
Sample ID	NAE9 Surface Elutriate	Time Mixing Started	0810
Amount of Sediment	9 L	Hand Mixed Every 10 Minutes?	Yes <input checked="" type="radio"/> No
Amount of Water	36 L	Time Mixing Stopped	0840
		Time Elutriate Siphoned Off	0940
		Centrifuged?	<input checked="" type="radio"/> Yes <input type="radio"/> No
Preparer's Initials	<u>BG/JTP</u>		

Elutriate ID	Elutriate Lab Code	Sediment ID	Sediment Lab Code	Water ID	Water Lab Code
NAE9 Surface Elutriate	34273-004	NAE9 Surface	34272-036	NAE6 Site Water	34272-030

**Subsamples Removed:**

Study	Sample Use	Volume
34274	Elutriate Analysis	≈ 20L

NOTES: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Elutriate Prep Log – Nordic Aquafarms Pipeline Corridor Dredging

Issued by: **Renee Mclsaac**

Digitally signed by Renee Mclsaac  
 DN: cn=Renee Mclsaac, o=Enthalpy Analytical, ou=Project Manager / QA/QC Member, email=renee.mclsaac@enthalpy.com, c=US  
 Date: 2020.07.16.16:52:34 -0400

Reviewed by: **James Provencher**

Digitally signed by James Provencher  
 DN: cn=James Provencher, o=Enthalpy Analytical LLC, ou=Technical Manager, email=james.provencher@enthalpy.com, c=US  
 Date: 2020.08.03.18:33:12 -0400

# Elutriate Analysis Chains of Custody



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Elutriate Analysis	
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0916	Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi	
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com	ERR

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composite (G/C)	Container		Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:	
						No	Type (P/G/T)					
001	Site Blank - Rep 1	08/04/20	0855	EA	N/A	1	250	P	HNO3	Water	N	Metals Diss- Ag,As,Cd,Cr,Cu,Ni,Pb,Se,Zn;
002	Site Blank - Rep 2	↓	↓	↓	↓	1	250	P	HNO3	Water	N	Metals Diss- Ag,As,Cd,Cr,Cu,Ni,Pb,Se,Zn;
003	Site Blank - Rep 3					1	250	P	HNO3	Water	N	Metals Diss- Ag,As,Cd,Cr,Cu,Ni,Pb,Se,Zn;
004	Site Blank - Rep 1					1	125	G	HCl	Water	N	Metals Diss- Hg;
005	Site Blank - Rep 2					1	125	G	HCl	Water	N	Metals Diss- Hg;
006	Site Blank - Rep 3					1	125	G	HCl	Water	N	Metals Diss- Hg;
007	Site Blank - Rep 1					1	60	P	4 C	Water	N	CR6
008	Site Blank - Rep 2					1	60	P	4 C	Water	N	CR6
009	Site Blank - Rep 3					1	60	P	4 C	Water	N	CR6
010	Site Blank - Rep 1					1	1000	A	4 C	Water	N	PCP680
011	Site Blank - Rep 2					1	1000	A	4 C	Water	N	PCP680
012	Site Blank - Rep 3					1	1000	A	4 C	Water	N	PCP680

Relinquished By:	Date:	Time:	Received By: <i>J. T. [Signature]</i>	Date: 08/04/20	Time: 1500	Temp (C):	Meter ID:
Relinquished By:	Date:	Time:	Received at Lab By:	Date:	Time:	Temp (C):	Meter ID:

Comments: \_\_\_\_\_



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Elutriate Analysis	
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0916	Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi	
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com	ERR

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composite (G/C)	Container		Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:	
						No	Size (mL)					Type (P/G/T)
013	Site Blank - Rep 1	08/04/20	0855	EA	N/A	1	1000	A	4 C	Water	N	CGR680
014	Site Blank - Rep 2	↓	↓	↓	↓	1	1000	A	4 C	Water	N	CGR680
015	Site Blank - Rep 3					1	1000	A	4 C	Water	N	CGR680
016	Site Blank - Rep 1					1	1000	A	4 C	Water	N	PEST8081
017	Site Blank - Rep 2					1	1000	A	4 C	Water	N	PEST8081
018	Site Blank - Rep 3					1	1000	A	4 C	Water	N	PEST8081
019	Site Blank - Rep 3					3	1000	A	4 C	Water	N	HOLD

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: *J. T. Paul* Date: 08/04/20 Time: 1500 Temp (C): \_\_\_\_\_ Meter ID: \_\_\_\_\_

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received at Lab By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Temp (C): \_\_\_\_\_ Meter ID: \_\_\_\_\_

Comments: \_\_\_\_\_



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Elutriate Analysis	
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0916	Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi	
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com	

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or com- posite (G/C)	No	Container Size (mL)	Type (P/G/T)	Field Preser- vation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:
020	NAE9 Surface Elutriate - Rep 1	08/04/20	0940	EA	N/A	1	250	P	HNO3	Water	N	Metals Diss- Ag,As,Cd,Cr,Cu,Ni,Pb,Se,Zn;
021	NAE9 Surface Elutriate - Rep 2	↓	↓	↓	↓	1	250	P	HNO3	Water	N	Metals Diss- Ag,As,Cd,Cr,Cu,Ni,Pb,Se,Zn;
022	NAE9 Surface Elutriate - Rep 3					1	250	P	HNO3	Water	N	Metals Diss- Ag,As,Cd,Cr,Cu,Ni,Pb,Se,Zn;
023	NAE9 Surface Elutriate - Rep 1					3	125	G	HCl	Water	N	Metals Diss- Hg;
024	NAE9 Surface Elutriate - Rep 2					1	125	G	HCl	Water	N	Metals Diss- Hg;
025	NAE9 Surface Elutriate - Rep 3					1	125	G	HCl	Water	N	Metals Diss- Hg;
026	NAE9 Surface Elutriate - Rep 1					1	60 P	P	4 C	Water	N	CR6
027	NAE9 Surface Elutriate - Rep 2					1	60 P	P	4 C	Water	N	CR6
028	NAE9 Surface Elutriate - Rep 3					1	60 P	P	4 C	Water	N	CR6

Relinquished By:	Date:	Time:	Received By: <i>John T. P...</i>	Date: 08/04/20	Time: 1500	Temp (C):	Meter ID:
Relinquished By:	Date:	Time:	Received at Lab By:	Date:	Time:	Temp (C):	Meter ID:

*John T. P...*

Comments:



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Elutriate Analysis	
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0916	Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi	
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com	

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composite (G/C)	No	Container Size (mL)	Type (P/G/T)	Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested Special Instructions:
029	NAE9 Surface Elutriate - Rep 1	08/04/20	0940	EA	N/A	3	1000	A	4 C	Water	N	PCP680
030	NAE9 Surface Elutriate - Rep 2	↓	↓	↓	↓	1	1000	A	4 C	Water	N	PCP680
031	NAE9 Surface Elutriate - Rep 3					1	1000	A	4 C	Water	N	PCP680
032	NAE9 Surface Elutriate - Rep 1					3	1000	A	4 C	Water	N	CGR680
033	NAE9 Surface Elutriate - Rep 2					1	1000	A	4 C	Water	N	CGR680
034	NAE9 Surface Elutriate - Rep 3					1	1000	A	4 C	Water	N	CGR680
035	NAE9 Surface Elutriate - Rep 1					3	1000	A	4 C	Water	N	PEST8081
036	NAE9 Surface Elutriate - Rep 2					1	1000	A	4 C	Water	N	PEST8081
037	NAE9 Surface Elutriate - Rep 3					1	1000	A	4 C	Water	N	PEST8081
038	NAE9 Surface Elutriate - Rep 3					3	1000	A	4 C	Water	N	HOLD

Relinquished By:	Date:	Time:	Received By: <i>J. T. Full</i>	Date: 08/04/20	Time: 1500	Temp (C):	Meter ID:
Relinquished By:	Date:	Time:	Received at Lab By:	Date:	Time:	Temp (C):	Meter ID:

Comments:



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Elutriate Analysis
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0916 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com

ERR

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or com- posite (G/C)	No	Container Size (mL)	Type (P/G/T)	Field Preser- vation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:
032	NAE1 Surface Elutriate - Rep 1					3	1000	A	4 C	Water	N	CGR680
033	NAE1 Surface Elutriate - Rep 2					1	1000	A	4 C	Water	N	CGR680
034	NAE1 Surface Elutriate - Rep 3					1	1000	A	4 C	Water	N	CGR680
035	NAE1 Surface Elutriate - Rep 1					3	1000	A	4 C	Water	N	PEST8081
036	NAE1 Surface Elutriate - Rep 2					1	1000	A	4 C	Water	N	PEST8081
037	NAE1 Surface Elutriate - Rep 3					1	1000	A	4 C	Water	N	PEST8081
038	NAE1 Surface Elutriate - Rep 3					3	1000	A	4 C	Water	N	HOLD
039	NAE3 Surface Elutriate - Rep 1	08/04/20	1055	EA	N/A	1	250	P	HNO3	Water	N	Metals Diss- Ag,As,Cd,Cr,Cu,Ni,Pb,Se,Zn;
040	NAE3 Surface Elutriate - Rep 2	↓	↓	↓	↓	1	250	P	HNO3	Water	N	Metals Diss- Ag,As,Cd,Cr,Cu,Ni,Pb,Se,Zn;
041	NAE3 Surface Elutriate - Rep 3	↓	↓	↓	↓	1	250	P	HNO3	Water	N	Metals Diss- Ag,As,Cd,Cr,Cu,Ni,Pb,Se,Zn;

Relinquished By:	Date:	Time:	Received By: <i>J.T.P.</i>	Date: 08/04/20	Time: 1500	Temp (C):	Meter ID:
Relinquished By:	Date:	Time:	Received at Lab By:	Date:	Time:	Temp (C):	Meter ID:

Comments: \_\_\_\_\_



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Elutriate Analysis
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0916 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com <span style="float: right;">ERR</span>

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composite (G/C)	Container		Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:	
						No	Size (mL)					
042	NAE3 Surface Elutriate - Rep 1	08/04/20	1055	EA	N/A	1	125	G	HCl	Water	N	Metals Diss- Hg;
043	NAE3 Surface Elutriate - Rep 2	↓	↓	↓	↓	1	125	G	HCl	Water	N	Metals Diss- Hg;
044	NAE3 Surface Elutriate - Rep 3					1	125	G	HCl	Water	N	Metals Diss- Hg;
045	NAE3 Surface Elutriate - Rep 1					1	60 P	P	4 C	Water	N	CR6
046	NAE3 Surface Elutriate - Rep 2					1	60 P	P	4 C	Water	N	CR6
047	NAE3 Surface Elutriate - Rep 3					1	60 P	P	4 C	Water	N	CR6
048	NAE3 Surface Elutriate - Rep 1					1	1000	A	4 C	Water	N	PCP680
049	NAE3 Surface Elutriate - Rep 2					1	1000	A	4 C	Water	N	PCP680
050	NAE3 Surface Elutriate - Rep 3					1	1000	A	4 C	Water	N	PCP680
051	NAE3 Surface Elutriate - Rep 1					1	1000	A	4 C	Water	N	CGR680
052	NAE3 Surface Elutriate - Rep 2					1	1000	A	4 C	Water	N	CGR680
053	NAE3 Surface Elutriate - Rep 3					1	1000	A	4 C	Water	N	CGR680

Relinquished By:	Date:	Time:	Received By: <i>John T. ...</i>	Date: 08/04/20	Time: 1500	Temp (C):	Meter ID:
Relinquished By:	Date:	Time:	Received at Lab By:	Date:	Time:	Temp (C):	Meter ID:

Comments: \_\_\_\_\_



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Elutriate Analysis
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0916 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com <span style="float: right;">ERR</span>

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composite (G/C)	Container		Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:	
						No	Size (mL)					
054	NAE3 Surface Elutriate - Rep 1	08/04/20	1055	EA	N/A	1	1000	A	4 C	Water	N	PEST8081
055	NAE3 Surface Elutriate - Rep 2	↓	↓	↓	↓	1	1000	A	4 C	Water	N	PEST8081
056	NAE3 Surface Elutriate - Rep 3	↓	↓	↓	↓	1	1000	A	4 C	Water	N	PEST8081

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: *John T. P.* Date: 08/04/20 Time: 1500 Temp (C): \_\_\_\_\_ Meter ID: \_\_\_\_\_

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received at Lab By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Temp (C): \_\_\_\_\_ Meter ID: \_\_\_\_\_

Comments: \_\_\_\_\_



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Elutriate Analysis
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0916 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com ERR

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or com- posite (G/C)	No	Container Size (mL)	Type (P/G/T)	Field Preser- vation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:
057	NAE6 Surface Elutriate - Rep 1	08/04/20	1200	EA	N/A	1	250	P	HNO3	Water	N	Metals Diss- Ag,As,Cd,Cr,Cu,Ni,Pb,Se,Zn;
058	NAE6 Surface Elutriate - Rep 2	↓	↓	↓	↓	1	250	P	HNO3	Water	N	Metals Diss- Ag,As,Cd,Cr,Cu,Ni,Pb,Se,Zn;
059	NAE6 Surface Elutriate - Rep 3					1	250	P	HNO3	Water	N	Metals Diss- Ag,As,Cd,Cr,Cu,Ni,Pb,Se,Zn;
060	NAE6 Surface Elutriate - Rep 1					1	125	G	HCl	Water	N	Metals Diss- Hg;
061	NAE6 Surface Elutriate - Rep 2					1	125	G	HCl	Water	N	Metals Diss- Hg;
062	NAE6 Surface Elutriate - Rep 3					1	125	G	HCl	Water	N	Metals Diss- Hg;
063	NAE6 Surface Elutriate - Rep 1					1	60 P	P	4 C	Water	N	CR6
064	NAE6 Surface Elutriate - Rep 2					1	60 P	P	4 C	Water	N	CR6
065	NAE6 Surface Elutriate - Rep 3					1	60 P	P	4 C	Water	N	CR6
066	NAE6 Surface Elutriate - Rep 1					1	1000	A	4 C	Water	N	PCP680
067	NAE6 Surface Elutriate - Rep 2					1	1000	A	4 C	Water	N	PCP680
068	NAE6 Surface Elutriate - Rep 3					1	1000	A	4 C	Water	N	PCP680

Relinquished By:	Date:	Time:	Received By: <i>John T. T...</i>	Date: 08/04/20	Time: 1500	Temp (C):	Meter ID:
Relinquished By:	Date:	Time:	Received at Lab By:	Date:	Time:	Temp (C):	Meter ID:

Comments:



CHAIN OF CUSTODY DOCUMENTATION

Client: Aqua Survey, Inc.	Contact: John Doi	Project Name: Nordic Aquafarms Elutriate Analysis
Report to: John Doi	Address: 469 Point Breeze Road	Project Number: P0916 Task: 0001
Invoice to: Accounts Payable	Address: Flemington, NJ 08822	Project Manager: John Doi
Voice: 908-788-8700	Fax: 908-788-9165	email: doi@aquasurvey.com <span style="float: right;">ERR</span>

Lab Number (assigned by lab)	Your Field ID: (must agree with container)	Date Sampled	Time Sampled	Sampled By	Grab or composite (G/C)	Container		Field Preservation	Matrix S=Solid W=Water	Filter N=Not needed F=Done in field L=Lab to do	Analyses Requested/ Special Instructions:	
						No	Size (mL)					
069	NAE6 Surface Elutriate - Rep 1	08/04/20	1200	EA	N/A	1	1000	A	4 C	Water	N	CGR680
070	NAE6 Surface Elutriate - Rep 2	↓	↓	↓	↓	1	1000	A	4 C	Water	N	CGR680
071	NAE6 Surface Elutriate - Rep 3					1	1000	A	4 C	Water	N	CGR680
072	NAE6 Surface Elutriate - Rep 1					1	1000	A	4 C	Water	N	PEST8081
073	NAE6 Surface Elutriate - Rep 2					1	1000	A	4 C	Water	N	PEST8081
074	NAE6 Surface Elutriate - Rep 3					1	1000	A	4 C	Water	N	PEST8081
075	NAE6 Surface Elutriate - Rep 3					3	1000	A	4 C	Water	N	HOLD

Relinquished By:	Date:	Time:	Received By: <i>John T. Park</i>	Date: 08/04/20	Time: 1500	Temp (C):	Meter ID:
Relinquished By:	Date:	Time:	Received at Lab By:	Date:	Time:	Temp (C):	Meter ID:

Comments: \_\_\_\_\_



## Report Qualifiers

J2 - Result is an estimate and biased low. Laboratory Control Sample (LCS) % Recovery (R) is below the method or project specified limit.

J3 - Result is potentially biased high. LCS %R is above the method or project specified limit.

J4 - The Relative Percent Difference (RPD) between the Laboratory Control Sample Duplicate (LCSD) and LCS are above the method or project specified limit.

J5 - Matrix Spike (MS) %R is below the method or project specified limit.

J6 - MS %R is above the method or project specified limit.

J7 - The RPD between the Matrix Spike Duplicate (MSD) and MS are above the method or project specified limit.

J8 - The RPD between the Sample Duplicate (SD) and sample are above the method or project specified limit.

J9 - Sample value above upper calibration limit and estimated. For metals, sample results are above upper calibration limit but within the established linear dynamic range for the instrument.

J12 - Result is potentially biased high. ICV % Recovery (R) is above the method or project specified limit.

J13 - Result is potentially biased high. CCV % Recovery (R) is above the method or project specified limit.

J14 - Estimated value less than reporting limit but greater than the MDL.

J16 - All dilutions resulted in complete oxygen depletion, true value greater than or equal to reported value.

J17 - Surrogate % R is below method or project specified limit.

J18 - Surrogate % R is above method or project specified limit.

J19 - Result is an estimate. Matrix interference present.

J26 - TSS filter residue below method requirement. Result may be used with due consideration.

B - Analyte found in laboratory blank at background level indicated. Results may be used with due consideration. For metals, the background concentration in the blank is noted in mg/L.

SNR - Spike recovery not evaluated. The concentration of the analyte in the sample is greater than five times the spike amount making spike QC inappropriate for evaluation of matrix bias.

ND - Not detected at or above the displayed reporting limit (Quant Limit).

O - Other narrative comment.

R1 - Sample analyzed after the recommended holding time. Result may be unusable for regulatory compliance purposes.

R2 - Sample received beyond the recommended holding time. Result may be unusable for regulatory compliance purposes.

T - Tentatively identified without confirmation from a second qualitative column.

U - Not detected at or above the displayed reporting limit (Quantitation Limit).

NA - Not added to QC sample.

NC - Not calculated due to low level of results or due to a lack of a data point.

Elutriate Analysis  
Analysis Report Pages  
Trace Metals

Report No: 34274 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor Dredging

Sample ID: Site Blank - Rep 1  
 Matrix: Water  
 Sampled: 08/04/20 0855

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Hexavalent chromium	34274-007	ND	0.005	mg/L	08/04/20 1655	08/04/20 1710	PL /SM 3500-Cr D
Arsenic, dissolved	34274-001	0.0013	0.0005	mg/L	08/20/20 1200	08/20/20 1747	JLH/EPA 200.8
Cadmium, dissolved	34274-001	ND	0.0001	mg/L	08/20/20 1200	08/20/20 1747	JLH/EPA 200.8
Chromium, dissolved	34274-001	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1747	JLH/EPA 200.8
Copper, dissolved	34274-001	0.0009	0.0005	mg/L	08/20/20 1200	08/20/20 1747	JLH/EPA 200.8
Lead, dissolved	34274-001	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1747	JLH/EPA 200.8
Mercury, dissolved	34274-004	ND	0.01	ug/L	08/06/20 1400	08/07/20 1250	AS /EPA 245.7
Nickel, dissolved	34274-001	0.002	0.001	mg/L	08/20/20 1200	08/20/20 1747	JLH/EPA 200.8
Selenium, dissolved	34274-001	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1747	JLH/EPA 200.8
Silver, dissolved	34274-001	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1747	JLH/EPA 200.8
Zinc, dissolved	34274-001	0.0051	0.001	mg/L	08/20/20 1200	08/20/20 1747	JLH/EPA 200.8

Notes:

ND = Not Detected

Report No: 34274 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor Dredging

Sample ID: Site Blank - Rep 2  
 Matrix: Water  
 Sampled: 08/04/20 0855

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Hexavalent chromium	34274-008	ND	0.005	mg/L	08/04/20 1655	08/04/20 1710	PL /SM 3500-Cr D
Arsenic, dissolved	34274-002	0.0012	0.0005	mg/L	08/20/20 1200	08/20/20 1806	JLH/EPA 200.8
Cadmium, dissolved	34274-002	ND	0.0001	mg/L	08/20/20 1200	08/20/20 1806	JLH/EPA 200.8
Chromium, dissolved	34274-002	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1806	JLH/EPA 200.8
Copper, dissolved	34274-002	0.0007	0.0005	mg/L	08/20/20 1200	08/20/20 1806	JLH/EPA 200.8
Lead, dissolved	34274-002	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1806	JLH/EPA 200.8
Mercury, dissolved	34274-005	ND	0.01	ug/L	08/06/20 1400	08/07/20 1250	AS /EPA 245.7
Nickel, dissolved	34274-002	0.0014	0.001	mg/L	08/20/20 1200	08/20/20 1806	JLH/EPA 200.8
Selenium, dissolved	34274-002	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1806	JLH/EPA 200.8
Silver, dissolved	34274-002	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1806	JLH/EPA 200.8
Zinc, dissolved	34274-002	0.0035	0.001	mg/L	08/20/20 1200	08/20/20 1806	JLH/EPA 200.8

Notes:

ND = Not Detected

Report No: 34274 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor Dredging

Sample ID: Site Blank - Rep 3  
 Matrix: Water  
 Sampled: 08/04/20 0855

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Hexavalent chromium	34274-009	ND	0.005	mg/L	08/04/20 1655	08/04/20 1710	PL /SM 3500-Cr D
Arsenic, dissolved	34274-003	0.0012	0.0005	mg/L	08/20/20 1200	08/20/20 1813	JLH/EPA 200.8
Cadmium, dissolved	34274-003	ND	0.0001	mg/L	08/20/20 1200	08/20/20 1813	JLH/EPA 200.8
Chromium, dissolved	34274-003	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1813	JLH/EPA 200.8
Copper, dissolved	34274-003	0.001	0.0005	mg/L	08/20/20 1200	08/20/20 1813	JLH/EPA 200.8
Lead, dissolved	34274-003	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1813	JLH/EPA 200.8
Mercury, dissolved	34274-006	ND	0.01	ug/L	08/06/20 1400	08/07/20 1250	AS /EPA 245.7
Nickel, dissolved	34274-003	0.0012	0.001	mg/L	08/20/20 1200	08/20/20 1813	JLH/EPA 200.8
Selenium, dissolved	34274-003	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1813	JLH/EPA 200.8
Silver, dissolved	34274-003	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1813	JLH/EPA 200.8
Zinc, dissolved	34274-003	0.0051	0.001	mg/L	08/20/20 1200	08/20/20 1813	JLH/EPA 200.8

Notes:

ND = Not Detected

Report No: 34274 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor Dredging

Sample ID: NAE9 Surface Elutriate - Rep 1  
 Matrix: Water  
 Sampled: 08/04/20 0940

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Hexavalent chromium	34274-026	ND	0.005	mg/L	08/04/20 1655	08/04/20 1710	PL /SM 3500-Cr D
Arsenic, dissolved	34274-020	0.0622	0.0005	mg/L	08/20/20 1200	08/20/20 1819	JLH/EPA 200.8
Cadmium, dissolved	34274-020	ND	0.0001	mg/L	08/20/20 1200	08/20/20 1819	JLH/EPA 200.8
Chromium, dissolved	34274-020	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1819	JLH/EPA 200.8
Copper, dissolved	34274-020	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1819	JLH/EPA 200.8
Lead, dissolved	34274-020	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1819	JLH/EPA 200.8
Mercury, dissolved	34274-023	ND	0.01	ug/L	08/06/20 1400	08/07/20 1250	AS /EPA 245.7
Nickel, dissolved	34274-020	0.0011	0.001	mg/L	08/20/20 1200	08/20/20 1819	JLH/EPA 200.8
Selenium, dissolved	34274-020	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1819	JLH/EPA 200.8
Silver, dissolved	34274-020	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1819	JLH/EPA 200.8
Zinc, dissolved	34274-020	0.0138	0.001	mg/L	08/20/20 1200	08/20/20 1819	JLH/EPA 200.8

Notes:

ND = Not Detected

Report No: 34274 SDG:  
Project: Nordic Aquafarms Pipeline Corridor Dredging

Sample ID: NAE9 Surface Elutriate - Rep 2  
Matrix: Water  
Sampled: 08/04/20 0940

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Hexavalent chromium	34274-027	ND	0.005	mg/L	08/04/20 1655	08/04/20 1710	PL /SM 3500-Cr D
Arsenic, dissolved	34274-021	0.0616	0.0005	mg/L	08/20/20 1200	08/20/20 1826	JLH/EPA 200.8
Cadmium, dissolved	34274-021	ND	0.0001	mg/L	08/20/20 1200	08/20/20 1826	JLH/EPA 200.8
Chromium, dissolved	34274-021	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1826	JLH/EPA 200.8
Copper, dissolved	34274-021	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1826	JLH/EPA 200.8
Lead, dissolved	34274-021	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1826	JLH/EPA 200.8
Mercury, dissolved	34274-024	ND	0.01	ug/L	08/06/20 1400	08/07/20 1250	AS /EPA 245.7
Nickel, dissolved	34274-021	0.001	0.001	mg/L	08/20/20 1200	08/20/20 1826	JLH/EPA 200.8
Selenium, dissolved	34274-021	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1826	JLH/EPA 200.8
Silver, dissolved	34274-021	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1826	JLH/EPA 200.8
Zinc, dissolved	34274-021	0.0104	0.001	mg/L	08/20/20 1200	08/20/20 1826	JLH/EPA 200.8

Notes:

ND = Not Detected

Report No: 34274 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor Dredging

Sample ID: NAE9 Surface Elutriate - Rep 3  
 Matrix: Water  
 Sampled: 08/04/20 0940

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Hexavalent chromium	34274-028	ND	0.005	mg/L	08/04/20 1655	08/04/20 1710	PL /SM 3500-Cr D
Arsenic, dissolved	34274-022	0.0617	0.0005	mg/L	08/20/20 1200	08/20/20 1832	JLH/EPA 200.8
Cadmium, dissolved	34274-022	ND	0.0001	mg/L	08/20/20 1200	08/20/20 1832	JLH/EPA 200.8
Chromium, dissolved	34274-022	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1832	JLH/EPA 200.8
Copper, dissolved	34274-022	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1832	JLH/EPA 200.8
Lead, dissolved	34274-022	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1832	JLH/EPA 200.8
Mercury, dissolved	34274-025	ND	0.01	ug/L	08/06/20 1400	08/07/20 1250	AS /EPA 245.7
Nickel, dissolved	34274-022	0.0011	0.001	mg/L	08/20/20 1200	08/20/20 1832	JLH/EPA 200.8
Selenium, dissolved	34274-022	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1832	JLH/EPA 200.8
Silver, dissolved	34274-022	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1832	JLH/EPA 200.8
Zinc, dissolved	34274-022	0.0097	0.001	mg/L	08/20/20 1200	08/20/20 1832	JLH/EPA 200.8

Notes:

ND = Not Detected

Report No: 34274 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor Dredging

Sample ID: NAE3 Surface Elutriate - Rep 1  
 Matrix: Water  
 Sampled: 08/04/20 1055

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Hexavalent chromium	34274-045	ND	0.005	mg/L	08/04/20 1655	08/04/20 1710	PL /SM 3500-Cr D
Arsenic, dissolved	34274-039	0.0061	0.0005	mg/L	08/20/20 1200	08/20/20 1708	JLH/EPA 200.8
Cadmium, dissolved	34274-039	ND	0.0001	mg/L	08/20/20 1200	08/20/20 1708	JLH/EPA 200.8
Chromium, dissolved	34274-039	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1708	JLH/EPA 200.8
Copper, dissolved	34274-039	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1708	JLH/EPA 200.8
Lead, dissolved	34274-039	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1708	JLH/EPA 200.8
Mercury, dissolved	34274-042	ND	0.01	ug/L	08/06/20 1400	08/07/20 1250	AS /EPA 245.7
Nickel, dissolved	34274-039	0.0113	0.001	mg/L	08/20/20 1200	08/20/20 1708	JLH/EPA 200.8
Selenium, dissolved	34274-039	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1708	JLH/EPA 200.8
Silver, dissolved	34274-039	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1708	JLH/EPA 200.8
Zinc, dissolved	34274-039	0.0018	0.001	mg/L	08/20/20 1200	08/20/20 1708	JLH/EPA 200.8

Notes:

ND = Not Detected

Report No: 34274 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor Dredging

Sample ID: NAE3 Surface Elutriate - Rep 2  
 Matrix: Water  
 Sampled: 08/04/20 1055

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Hexavalent chromium	34274-046	ND	0.005	mg/L	08/04/20 1655	08/04/20 1710	PL /SM 3500-Cr D
Arsenic, dissolved	34274-040	0.0059	0.0005	mg/L	08/20/20 1200	08/20/20 1734	JLH/EPA 200.8
Cadmium, dissolved	34274-040	ND	0.0001	mg/L	08/20/20 1200	08/20/20 1734	JLH/EPA 200.8
Chromium, dissolved	34274-040	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1734	JLH/EPA 200.8
Copper, dissolved	34274-040	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1734	JLH/EPA 200.8
Lead, dissolved	34274-040	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1734	JLH/EPA 200.8
Mercury, dissolved	34274-043	ND	0.01	ug/L	08/06/20 1400	08/07/20 1250	AS /EPA 245.7
Nickel, dissolved	34274-040	0.0112	0.001	mg/L	08/20/20 1200	08/20/20 1734	JLH/EPA 200.8
Selenium, dissolved	34274-040	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1734	JLH/EPA 200.8
Silver, dissolved	34274-040	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1734	JLH/EPA 200.8
Zinc, dissolved	34274-040	0.0014	0.001	mg/L	08/20/20 1200	08/20/20 1734	JLH/EPA 200.8

Notes:

ND = Not Detected

Report No: 34274 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor Dredging

Sample ID: NAE3 Surface Elutriate - Rep 3  
 Matrix: Water  
 Sampled: 08/04/20 1055

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Hexavalent chromium	34274-047	ND	0.005	mg/L	08/04/20 1655	08/04/20 1710	PL /SM 3500-Cr D
Arsenic, dissolved	34274-041	0.0061	0.0005	mg/L	08/20/20 1200	08/20/20 1740	JLH/EPA 200.8
Cadmium, dissolved	34274-041	ND	0.0001	mg/L	08/20/20 1200	08/20/20 1740	JLH/EPA 200.8
Chromium, dissolved	34274-041	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1740	JLH/EPA 200.8
Copper, dissolved	34274-041	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1740	JLH/EPA 200.8
Lead, dissolved	34274-041	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1740	JLH/EPA 200.8
Mercury, dissolved	34274-044	ND	0.01	ug/L	08/06/20 1400	08/07/20 1250	AS /EPA 245.7
Nickel, dissolved	34274-041	0.0116	0.001	mg/L	08/20/20 1200	08/20/20 1740	JLH/EPA 200.8
Selenium, dissolved	34274-041	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1740	JLH/EPA 200.8
Silver, dissolved	34274-041	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1740	JLH/EPA 200.8
Zinc, dissolved	34274-041	0.0013	0.001	mg/L	08/20/20 1200	08/20/20 1740	JLH/EPA 200.8

Notes:

ND = Not Detected

Report No: 34274 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor Dredging

Sample ID: NAE6 Surface Elutriate - Rep 1  
 Matrix: Water  
 Sampled: 08/04/20 1200

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Hexavalent chromium	34274-063	ND	0.005	mg/L	08/04/20 1655	08/04/20 1710	PL /SM 3500-Cr D
Arsenic, dissolved	34274-057	0.0079	0.0005	mg/L	08/20/20 1200	08/20/20 1838	JLH/EPA 200.8
Cadmium, dissolved	34274-057	ND	0.0001	mg/L	08/20/20 1200	08/20/20 1838	JLH/EPA 200.8
Chromium, dissolved	34274-057	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1838	JLH/EPA 200.8
Copper, dissolved	34274-057	0.001	0.0005	mg/L	08/20/20 1200	08/20/20 1838	JLH/EPA 200.8
Lead, dissolved	34274-057	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1838	JLH/EPA 200.8
Mercury, dissolved	34274-060	ND	0.01	ug/L	08/06/20 1400	08/07/20 1250	AS /EPA 245.7
Nickel, dissolved	34274-057	ND	0.001	mg/L	08/20/20 1200	08/20/20 1838	JLH/EPA 200.8
Selenium, dissolved	34274-057	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1838	JLH/EPA 200.8
Silver, dissolved	34274-057	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1838	JLH/EPA 200.8
Zinc, dissolved	34274-057	0.0062	0.001	mg/L	08/20/20 1200	08/20/20 1838	JLH/EPA 200.8

Notes:

ND = Not Detected

Report No: 34274 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor Dredging

Sample ID: NAE6 Surface Elutriate - Rep 2  
 Matrix: Water  
 Sampled: 08/04/20 1200

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Hexavalent chromium	34274-064	ND	0.005	mg/L	08/04/20 1655	08/04/20 1710	PL /SM 3500-Cr D
Arsenic, dissolved	34274-058	0.0078	0.0005	mg/L	08/20/20 1200	08/20/20 1845	JLH/EPA 200.8
Cadmium, dissolved	34274-058	ND	0.0001	mg/L	08/20/20 1200	08/20/20 1845	JLH/EPA 200.8
Chromium, dissolved	34274-058	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1845	JLH/EPA 200.8
Copper, dissolved	34274-058	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1845	JLH/EPA 200.8
Lead, dissolved	34274-058	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1845	JLH/EPA 200.8
Mercury, dissolved	34274-061	ND	0.01	ug/L	08/06/20 1400	08/07/20 1250	AS /EPA 245.7
Nickel, dissolved	34274-058	0.001	0.001	mg/L	08/20/20 1200	08/20/20 1845	JLH/EPA 200.8
Selenium, dissolved	34274-058	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1845	JLH/EPA 200.8
Silver, dissolved	34274-058	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1845	JLH/EPA 200.8
Zinc, dissolved	34274-058	0.0098	0.001	mg/L	08/20/20 1200	08/20/20 1845	JLH/EPA 200.8

Notes:

ND = Not Detected

Report No: 34274 SDG:  
 Project: Nordic Aquafarms Pipeline Corridor Dredging

Sample ID: NAE6 Surface Elutriate - Rep 3  
 Matrix: Water  
 Sampled: 08/04/20 1200

Parameter		Result	Quant Limit	Units	Date Prepared	Date of Analysis	INIT/Method/Reference
Hexavalent chromium	34274-065	ND	0.005	mg/L	08/04/20 1655	08/04/20 1710	PL /SM 3500-Cr D
Arsenic, dissolved	34274-059	0.0078	0.0005	mg/L	08/20/20 1200	08/20/20 1851	JLH/EPA 200.8
Cadmium, dissolved	34274-059	ND	0.0001	mg/L	08/20/20 1200	08/20/20 1851	JLH/EPA 200.8
Chromium, dissolved	34274-059	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1851	JLH/EPA 200.8
Copper, dissolved	34274-059	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1851	JLH/EPA 200.8
Lead, dissolved	34274-059	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1851	JLH/EPA 200.8
Mercury, dissolved	34274-062	ND	0.01	ug/L	08/06/20 1400	08/07/20 1250	AS /EPA 245.7
Nickel, dissolved	34274-059	ND	0.001	mg/L	08/20/20 1200	08/20/20 1851	JLH/EPA 200.8
Selenium, dissolved	34274-059	ND	0.0005	mg/L	08/20/20 1200	08/20/20 1851	JLH/EPA 200.8
Silver, dissolved	34274-059	ND	0.0002	mg/L	08/20/20 1200	08/20/20 1851	JLH/EPA 200.8
Zinc, dissolved	34274-059	0.0034	0.001	mg/L	08/20/20 1200	08/20/20 1851	JLH/EPA 200.8

Notes:

ND = Not Detected

Elutriate Analysis  
Analysis Report Pages  
PCB Congeners



Laboratory ID: 34274-013  
 Field ID: Site Blank - Rep 1  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 0855  
 Date Prepared: 08/08/20 0930  
 Batch Number: 272W  
 Matrix: Water  
 Sample Weight (mL): 1080  
 Final Volume (mL): 1  
 Analyst: PL

BZ Number	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date
8		U	0.002	1	08/12/20 1724
18	J14	0.0006	0.002	1	08/12/20 1724
28	J14	0.0005	0.002	1	08/12/20 1724
44	J4, J14	0.0005	0.002	1	08/12/20 1724
49	J4	U	0.002	1	08/12/20 1724
52		U	0.002	1	08/12/20 1724
66	J14	0.0006	0.002	1	08/12/20 1724
77		U	0.002	1	08/12/20 1724
87		U	0.002	1	08/12/20 1724
101		U	0.002	1	08/12/20 1724
105		U	0.002	1	08/12/20 1724
118		U	0.002	1	08/12/20 1724
126	J4, J14	0.0007	0.002	1	08/12/20 1724
153	J4	U	0.002	1	08/12/20 1724
128		U	0.002	1	08/12/20 1724
138	J4	U	0.002	1	08/12/20 1724
170		U	0.002	1	08/12/20 1724
180	J4	U	0.002	1	08/12/20 1724
183	J4	U	0.002	1	08/12/20 1724
184		U	0.002	1	08/12/20 1724
187		U	0.002	1	08/12/20 1724
195		U	0.002	1	08/12/20 1724
206		U	0.002	1	08/12/20 1724
209	J14	0.0017	0.002	1	08/12/20 1724

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene		37	30	150	YES



Laboratory ID: 34274-014  
 Field ID: Site Blank - Rep 2  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 0855  
 Date Prepared: 08/08/20 0930  
 Batch Number: 272W  
 Matrix: Water  
 Sample Weight (mL): 1080  
 Final Volume (mL): 1  
 Analyst: PL

BZ Number	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date
8		U	0.002	1	08/12/20 1747
18		U	0.002	1	08/12/20 1747
28		U	0.002	1	08/12/20 1747
44	J4	U	0.002	1	08/12/20 1747
49	J4	U	0.002	1	08/12/20 1747
52	J14	0.0006	0.002	1	08/12/20 1747
66		U	0.002	1	08/12/20 1747
77		U	0.002	1	08/12/20 1747
87		U	0.002	1	08/12/20 1747
101		U	0.002	1	08/12/20 1747
105		U	0.002	1	08/12/20 1747
118		U	0.002	1	08/12/20 1747
126	J4	U	0.002	1	08/12/20 1747
153	J4, J14	0.0005	0.002	1	08/12/20 1747
128		U	0.002	1	08/12/20 1747
138	J4	U	0.002	1	08/12/20 1747
170	J14	0.0010	0.002	1	08/12/20 1747
180	J4	U	0.002	1	08/12/20 1747
183	J4	U	0.002	1	08/12/20 1747
184		U	0.002	1	08/12/20 1747
187		U	0.002	1	08/12/20 1747
195		U	0.002	1	08/12/20 1747
206		U	0.002	1	08/12/20 1747
209		U	0.002	1	08/12/20 1747

Surrogate Compound	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene		30	30	150	YES



Laboratory ID: 34274-015  
 Field ID: Site Blank - Rep 3  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 0855  
 Date Prepared: 08/08/20 0930  
 Batch Number: 272W  
 Matrix: Water  
 Sample Weight (mL): 1080  
 Final Volume (mL): 1  
 Analyst: PL

BZ Number	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date
8		U	0.002	1	08/12/20 1810
18		U	0.002	1	08/12/20 1810
28	J14	0.0009	0.002	1	08/12/20 1810
44	J4, J14	0.0005	0.002	1	08/12/20 1810
49	J4	U	0.002	1	08/12/20 1810
52	J14	0.0004	0.002	1	08/12/20 1810
66	J14	0.0005	0.002	1	08/12/20 1810
77	J14	0.0014	0.002	1	08/12/20 1810
87		U	0.002	1	08/12/20 1810
101		U	0.002	1	08/12/20 1810
105		U	0.002	1	08/12/20 1810
118		U	0.002	1	08/12/20 1810
126	J4	U	0.002	1	08/12/20 1810
153	J4, J14	0.0009	0.002	1	08/12/20 1810
128		U	0.002	1	08/12/20 1810
138	J4	U	0.002	1	08/12/20 1810
170		U	0.002	1	08/12/20 1810
180	J4	U	0.002	1	08/12/20 1810
183	J4	U	0.002	1	08/12/20 1810
184		U	0.002	1	08/12/20 1810
187		U	0.002	1	08/12/20 1810
195		U	0.002	1	08/12/20 1810
206	J14	0.0010	0.002	1	08/12/20 1810
209	J14	0.0011	0.002	1	08/12/20 1810

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene		33	30	150	YES



Laboratory ID: 34274-032  
 Field ID: NAE9 Surface Elutriate - Rep 1  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 0940  
 Date Prepared: 08/08/20 0930  
 Batch Number: 272W  
 Matrix: Water  
 Sample Weight (mL): 1080  
 Final Volume (mL): 1  
 Analyst: PL

BZ Number	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date
8	J5, J7	U	0.002	1	08/12/20 1530
18	J5, J7, J14	0.0008	0.002	1	08/12/20 1530
28		U	0.002	1	08/12/20 1530
44	J4	U	0.002	1	08/12/20 1530
49	J4	U	0.002	1	08/12/20 1530
52	J14	0.0005	0.002	1	08/12/20 1530
66		U	0.002	1	08/12/20 1530
77	J14	0.0012	0.002	1	08/12/20 1530
87		U	0.002	1	08/12/20 1530
101		U	0.002	1	08/12/20 1530
105		U	0.002	1	08/12/20 1530
118		U	0.002	1	08/12/20 1530
126	J4, J14	0.0014	0.002	1	08/12/20 1530
153	J4, J14	0.0005	0.002	1	08/12/20 1530
128	J14	0.0010	0.002	1	08/12/20 1530
138	J4	U	0.002	1	08/12/20 1530
170		U	0.002	1	08/12/20 1530
180	J4	U	0.002	1	08/12/20 1530
183	J4	U	0.002	1	08/12/20 1530
184		U	0.002	1	08/12/20 1530
187		U	0.002	1	08/12/20 1530
195		U	0.002	1	08/12/20 1530
206	J14	0.0010	0.002	1	08/12/20 1530
209		U	0.002	1	08/12/20 1530

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene		33	30	150	YES



Laboratory ID: 34274-033  
 Field ID: NAE9 Surface Elutriate - Rep 2  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 0940  
 Date Prepared: 08/08/20 0930  
 Batch Number: 272W  
 Matrix: Water  
 Sample Weight (mL): 1085  
 Final Volume (mL): 1  
 Analyst: PL

BZ Number	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date
8		U	0.002	1	08/12/20 1639
18		U	0.002	1	08/12/20 1639
28		U	0.002	1	08/12/20 1639
44	J4, J14	0.0005	0.002	1	08/12/20 1639
49	J4, J14	0.0004	0.002	1	08/12/20 1639
52	J14	0.0004	0.002	1	08/12/20 1639
66		U	0.002	1	08/12/20 1639
77		U	0.002	1	08/12/20 1639
87		U	0.002	1	08/12/20 1639
101		U	0.002	1	08/12/20 1639
105		U	0.002	1	08/12/20 1639
118		U	0.002	1	08/12/20 1639
126	J4, J14	0.0010	0.002	1	08/12/20 1639
153	J4	U	0.002	1	08/12/20 1639
128		U	0.002	1	08/12/20 1639
138	J4	U	0.002	1	08/12/20 1639
170		U	0.002	1	08/12/20 1639
180	J4	U	0.002	1	08/12/20 1639
183	J4	U	0.002	1	08/12/20 1639
184		U	0.002	1	08/12/20 1639
187		U	0.002	1	08/12/20 1639
195		U	0.002	1	08/12/20 1639
206	J14	0.0010	0.002	1	08/12/20 1639
209	J14	0.0009	0.002	1	08/12/20 1639

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene	J17	24	30	150	NO



Laboratory ID: 34274-034  
 Field ID: NAE9 Surface Elutriate - Rep 3  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 0940  
 Date Prepared: 08/08/20 0930  
 Batch Number: 272W  
 Matrix: Water  
 Sample Weight (mL): 1085  
 Final Volume (mL): 1  
 Analyst: PL

BZ Number	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date
8		U	0.002	1	08/12/20 1702
18		U	0.002	1	08/12/20 1702
28		U	0.002	1	08/12/20 1702
44	J4	U	0.002	1	08/12/20 1702
49	J4, J14	0.0007	0.002	1	08/12/20 1702
52		U	0.002	1	08/12/20 1702
66	J14	0.0004	0.002	1	08/12/20 1702
77		U	0.002	1	08/12/20 1702
87	J14	0.0010	0.002	1	08/12/20 1702
101	J14	0.0011	0.002	1	08/12/20 1702
105		U	0.002	1	08/12/20 1702
118		U	0.002	1	08/12/20 1702
126	J4, J14	0.0012	0.002	1	08/12/20 1702
153	J4	U	0.002	1	08/12/20 1702
128		U	0.002	1	08/12/20 1702
138	J4	U	0.002	1	08/12/20 1702
170		U	0.002	1	08/12/20 1702
180	J4	U	0.002	1	08/12/20 1702
183	J4	U	0.002	1	08/12/20 1702
184	J14	0.0007	0.002	1	08/12/20 1702
187		U	0.002	1	08/12/20 1702
195		U	0.002	1	08/12/20 1702
206		U	0.002	1	08/12/20 1702
209	J14	0.0009	0.002	1	08/12/20 1702

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene		32	30	150	YES



Laboratory ID: 34274-051  
 Field ID: NAE3 Surface Elutriate - Rep 1  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 1055  
 Date Prepared: 08/08/20 0930  
 Batch Number: 272W  
 Matrix: Water  
 Sample Weight (mL): 1080  
 Final Volume (mL): 1  
 Analyst: PL

BZ Number	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date
8		U	0.002	1	08/12/20 1833
18	J14	0.0008	0.002	1	08/12/20 1833
28	J14	0.0008	0.002	1	08/12/20 1833
44	J4, J14	0.0006	0.002	1	08/12/20 1833
49	J4, J14	0.0006	0.002	1	08/12/20 1833
52	J14	0.0004	0.002	1	08/12/20 1833
66	J14	0.0006	0.002	1	08/12/20 1833
77	J14	0.0017	0.002	1	08/12/20 1833
87		U	0.002	1	08/12/20 1833
101		U	0.002	1	08/12/20 1833
105		U	0.002	1	08/12/20 1833
118		U	0.002	1	08/12/20 1833
126	J4	U	0.002	1	08/12/20 1833
153	J4	U	0.002	1	08/12/20 1833
128	J4, J14	0.0005	0.002	1	08/12/20 1833
138	J4	U	0.002	1	08/12/20 1833
170		U	0.002	1	08/12/20 1833
180	J4	U	0.002	1	08/12/20 1833
183	J4	U	0.002	1	08/12/20 1833
184		U	0.002	1	08/12/20 1833
187		U	0.002	1	08/12/20 1833
195		U	0.002	1	08/12/20 1833
206		U	0.002	1	08/12/20 1833
209		U	0.002	1	08/12/20 1833

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene		32	30	150	YES



Laboratory ID: 34274-052  
 Field ID: NAE3 Surface Elutriate - Rep 2  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 1055  
 Date Prepared: 08/08/20 0930  
 Batch Number: 272W  
 Matrix: Water  
 Sample Weight (mL): 1085  
 Final Volume (mL): 1  
 Analyst: PL

BZ Number	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date
8		U	0.002	1	08/11/20 1939
18		U	0.002	1	08/11/20 1939
28	J14	0.0007	0.002	1	08/11/20 1939
44	J4, J14	0.0009	0.002	1	08/11/20 1939
49	J4, J14	0.0006	0.002	1	08/11/20 1939
52	J14	0.0004	0.002	1	08/11/20 1939
66	J14	0.0005	0.002	1	08/11/20 1939
77		U	0.002	1	08/11/20 1939
87	J14	0.0010	0.002	1	08/11/20 1939
101		U	0.002	1	08/11/20 1939
105	J14	0.0008	0.002	1	08/11/20 1939
118		U	0.002	1	08/11/20 1939
126	J4	U	0.002	1	08/11/20 1939
153	J4, J14	0.0006	0.002	1	08/11/20 1939
128	J14	0.0012	0.002	1	08/11/20 1939
138	J4	U	0.002	1	08/11/20 1939
170		U	0.002	1	08/11/20 1939
180	J4	U	0.002	1	08/11/20 1939
183	J4	U	0.002	1	08/11/20 1939
184		U	0.002	1	08/11/20 1939
187		U	0.002	1	08/11/20 1939
195		U	0.002	1	08/11/20 1939
206		U	0.002	1	08/11/20 1939
209		U	0.002	1	08/11/20 1939

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene		55	30	150	YES



Laboratory ID: 34274-053  
 Field ID: NAE3 Surface Elutriate - Rep 3  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 1055  
 Date Prepared: 08/08/20 0930  
 Batch Number: 272W  
 Matrix: Water  
 Sample Weight (mL): 1085  
 Final Volume (mL): 1  
 Analyst: PL

BZ Number	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date
8		U	0.002	1	08/11/20 2002
18		U	0.002	1	08/11/20 2002
28		U	0.002	1	08/11/20 2002
44	J4, J14	0.0009	0.002	1	08/11/20 2002
49	J4	U	0.002	1	08/11/20 2002
52		U	0.002	1	08/11/20 2002
66		U	0.002	1	08/11/20 2002
77		U	0.002	1	08/11/20 2002
87		U	0.002	1	08/11/20 2002
101		U	0.002	1	08/11/20 2002
105	J14	0.0009	0.002	1	08/11/20 2002
118		U	0.002	1	08/11/20 2002
126	J4, J14	0.0008	0.002	1	08/11/20 2002
153	J4	U	0.002	1	08/11/20 2002
128		U	0.002	1	08/11/20 2002
138	J4	U	0.002	1	08/11/20 2002
170		U	0.002	1	08/11/20 2002
180	J4	U	0.002	1	08/11/20 2002
183	J4	U	0.002	1	08/11/20 2002
184		U	0.002	1	08/11/20 2002
187		U	0.002	1	08/11/20 2002
195		U	0.002	1	08/11/20 2002
206	J14	0.0013	0.002	1	08/11/20 2002
209		U	0.002	1	08/11/20 2002

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene		39	30	150	YES



Laboratory ID: 34274-069  
 Field ID: NAE6 Surface Elutriate - Rep 1  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 1200  
 Date Prepared: 08/08/20 0930  
 Batch Number: 272W  
 Matrix: Water  
 Sample Weight (mL): 1085  
 Final Volume (mL): 1  
 Analyst: PL

BZ Number	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date
8		U	0.002	1	08/11/20 2025
18		U	0.002	1	08/11/20 2025
28	J14	0.0007	0.002	1	08/11/20 2025
44	J4, J14	0.0008	0.002	1	08/11/20 2025
49	J4	U	0.002	1	08/11/20 2025
52	J14	0.0005	0.002	1	08/11/20 2025
66	J14	0.0004	0.002	1	08/11/20 2025
77	J14	0.0010	0.002	1	08/11/20 2025
87		U	0.002	1	08/11/20 2025
101		U	0.002	1	08/11/20 2025
105	J14	0.0010	0.002	1	08/11/20 2025
118	J14	0.0010	0.002	1	08/11/20 2025
126	J4, J14	0.0006	0.002	1	08/11/20 2025
153	J4, J14	0.0007	0.002	1	08/11/20 2025
128		U	0.002	1	08/11/20 2025
138	J4	U	0.002	1	08/11/20 2025
170		U	0.002	1	08/11/20 2025
180	J4	U	0.002	1	08/11/20 2025
183	J4	U	0.002	1	08/11/20 2025
184	J14	0.0010	0.002	1	08/11/20 2025
187		U	0.002	1	08/11/20 2025
195		U	0.002	1	08/11/20 2025
206		U	0.002	1	08/11/20 2025
209		U	0.002	1	08/11/20 2025

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene		61	30	150	YES



Laboratory ID: 34274-070  
 Field ID: NAE6 Surface Elutriate - Rep 2  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 1200  
 Date Prepared: 08/08/20 0930  
 Batch Number: 272W  
 Matrix: Water  
 Sample Weight (mL): 1080  
 Final Volume (mL): 1  
 Analyst: PL

BZ Number	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date
8		U	0.002	1	08/11/20 2048
18		U	0.002	1	08/11/20 2048
28	J14	0.0005	0.002	1	08/11/20 2048
44	J4, J14	0.0008	0.002	1	08/11/20 2048
49	J4, J14	0.0004	0.002	1	08/11/20 2048
52	J14	0.0009	0.002	1	08/11/20 2048
66		U	0.002	1	08/11/20 2048
77	J14	0.0012	0.002	1	08/11/20 2048
87	J14	0.0013	0.002	1	08/11/20 2048
101	J14	0.0011	0.002	1	08/11/20 2048
105		U	0.002	1	08/11/20 2048
118		U	0.002	1	08/11/20 2048
126	J4, J14	0.0007	0.002	1	08/11/20 2048
153	J4	U	0.002	1	08/11/20 2048
128	J14	0.0004	0.002	1	08/11/20 2048
138	J4	U	0.002	1	08/11/20 2048
170		U	0.002	1	08/11/20 2048
180	J4	U	0.002	1	08/11/20 2048
183	J4	U	0.002	1	08/11/20 2048
184		U	0.002	1	08/11/20 2048
187		U	0.002	1	08/11/20 2048
195		U	0.002	1	08/11/20 2048
206	J14	0.0011	0.002	1	08/11/20 2048
209		U	0.002	1	08/11/20 2048

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene		48	30	150	YES



Laboratory ID: 34274-071  
 Field ID: NAE6 Surface Elutriate - Rep 3  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 1200  
 Date Prepared: 08/08/20 0930  
 Batch Number: 272W  
 Matrix: Water  
 Sample Weight (mL): 1085  
 Final Volume (mL): 1  
 Analyst: PL

BZ Number	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date
8	J14	0.0006	0.002	1	08/11/20 2111
18		U	0.002	1	08/11/20 2111
28		U	0.002	1	08/11/20 2111
44	J4, J14	0.0012	0.002	1	08/11/20 2111
49	J4, J14	0.0014	0.002	1	08/11/20 2111
52	J14	0.0004	0.002	1	08/11/20 2111
66		U	0.002	1	08/11/20 2111
77	J14	0.0007	0.002	1	08/11/20 2111
87		U	0.002	1	08/11/20 2111
101		U	0.002	1	08/11/20 2111
105		U	0.002	1	08/11/20 2111
118	J14	0.0008	0.002	1	08/11/20 2111
126	J4	U	0.002	1	08/11/20 2111
153	J4	U	0.002	1	08/11/20 2111
128	J14	0.0008	0.002	1	08/11/20 2111
138	J4	U	0.002	1	08/11/20 2111
170	J14	0.0013	0.002	1	08/11/20 2111
180	J4	U	0.002	1	08/11/20 2111
183	J4	U	0.002	1	08/11/20 2111
184		U	0.002	1	08/11/20 2111
187		U	0.002	1	08/11/20 2111
195		U	0.002	1	08/11/20 2111
206		U	0.002	1	08/11/20 2111
209	J14	0.0018	0.002	1	08/11/20 2111

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene		49	30	150	YES

Elutriate Analysis  
Analysis Report Pages  
Pesticides



Laboratory ID: 34274-016  
 Field ID: Site Blank - Rep 1  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 0855  
 Date Prepared: 08/04/20 1135  
 Batch Number: 270W  
 Matrix: Water  
 Initial Volume (mL): 1085  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
gamma-BHC (Lindane)		U	0.002	1	08/12/20 1925
heptachlor	J4	U	0.002	1	08/12/20 1925
aldrin		U	0.002	1	08/12/20 1925
chlorpyrifos		U	0.002	1	08/12/20 1925
heptachlor epoxide		U	0.002	1	08/12/20 1925
gamma-chlordane		U	0.002	1	08/12/20 1925
alpha-chlordane		U	0.002	1	08/12/20 1925
endosulfan I		U	0.002	1	08/12/20 1925
dieldrin		U	0.004	1	08/12/20 1925
endrin		U	0.004	1	08/12/20 1925
endosulfan II		U	0.004	1	08/12/20 1925
toxaphene		U	0.092	1	08/12/20 1925
4,4'-DDT		U	0.004	1	08/12/20 1925
Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		58	30	150	YES
Decachlorobiphenyl (209)		94	30	150	YES



Laboratory ID: 34274-017  
 Field ID: Site Blank - Rep 2  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 0855  
 Date Prepared: 08/04/20 1135  
 Batch Number: 270W  
 Matrix: Water  
 Initial Volume (mL): 1080  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
gamma-BHC (Lindane)		U	0.002	1	08/14/20 1040
heptachlor	J4	U	0.002	1	08/14/20 1040
aldrin		U	0.002	1	08/14/20 1040
chlorpyrifos		U	0.002	1	08/14/20 1040
heptachlor epoxide		U	0.002	1	08/14/20 1040
gamma-chlordane		U	0.002	1	08/14/20 1040
alpha-chlordane		U	0.002	1	08/14/20 1040
endosulfan I		U	0.002	1	08/14/20 1040
dieldrin		U	0.004	1	08/14/20 1040
endrin		U	0.004	1	08/14/20 1040
endosulfan II		U	0.004	1	08/14/20 1040
toxaphene		U	0.093	1	08/14/20 1040
4,4'-DDT		U	0.004	1	08/14/20 1040
Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		55	30	150	YES
Decachlorobiphenyl (209)		87	30	150	YES



Laboratory ID: 34274-018  
 Field ID: Site Blank - Rep 3  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 0855  
 Date Prepared: 08/04/20 1135  
 Batch Number: 270W  
 Matrix: Water  
 Initial Volume (mL): 1080  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
gamma-BHC (Lindane)		U	0.002	1	08/14/20 1059
heptachlor	J4	U	0.002	1	08/14/20 1059
aldrin		U	0.002	1	08/14/20 1059
chlorpyrifos		U	0.002	1	08/14/20 1059
heptachlor epoxide		U	0.002	1	08/14/20 1059
gamma-chlordane		U	0.002	1	08/14/20 1059
alpha-chlordane		U	0.002	1	08/14/20 1059
endosulfan I		U	0.002	1	08/14/20 1059
dieldrin		U	0.004	1	08/14/20 1059
endrin		U	0.004	1	08/14/20 1059
endosulfan II		U	0.004	1	08/14/20 1059
toxaphene		U	0.093	1	08/14/20 1059
4,4'-DDT		U	0.004	1	08/14/20 1059
Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		53	30	150	YES
Decachlorobiphenyl (209)		85	30	150	YES



Laboratory ID: 34274-035  
 Field ID: NAE9 Surface Elutriate - Rep 1  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 0940  
 Date Prepared: 08/04/20 1135  
 Batch Number: 270W  
 Matrix: Water  
 Initial Volume (mL): 1085  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
gamma-BHC (Lindane)		U	0.002	1	08/12/20 1753
heptachlor	J4	U	0.002	1	08/12/20 1753
aldrin		U	0.002	1	08/12/20 1753
chlorpyrifos		U	0.002	1	08/12/20 1753
heptachlor epoxide		U	0.002	1	08/12/20 1753
gamma-chlordane		U	0.002	1	08/12/20 1753
alpha-chlordane		U	0.002	1	08/12/20 1753
endosulfan I		U	0.002	1	08/12/20 1753
dieldrin		U	0.004	1	08/12/20 1753
endrin		U	0.004	1	08/12/20 1753
endosulfan II		U	0.004	1	08/12/20 1753
toxaphene		U	0.092	1	08/12/20 1753
4,4'-DDT		U	0.004	1	08/12/20 1753
Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		42	30	150	YES
Decachlorobiphenyl (209)		64	30	150	YES



Laboratory ID: 34274-036  
 Field ID: NAE9 Surface Elutriate - Rep 2  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 0940  
 Date Prepared: 08/04/20 1135  
 Batch Number: 270W  
 Matrix: Water  
 Initial Volume (mL): 1080  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
gamma-BHC (Lindane)		U	0.002	1	08/12/20 1848
heptachlor	J4	U	0.002	1	08/12/20 1848
aldrin		U	0.002	1	08/12/20 1848
chlorpyrifos		U	0.002	1	08/12/20 1848
heptachlor epoxide		U	0.002	1	08/12/20 1848
gamma-chlordane		U	0.002	1	08/12/20 1848
alpha-chlordane		U	0.002	1	08/12/20 1848
endosulfan I		U	0.002	1	08/12/20 1848
dieldrin		U	0.004	1	08/12/20 1848
endrin		U	0.004	1	08/12/20 1848
endosulfan II		U	0.004	1	08/12/20 1848
toxaphene		U	0.093	1	08/12/20 1848
4,4'-DDT		U	0.004	1	08/12/20 1848
Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		42	30	150	YES
Decachlorobiphenyl (209)		59	30	150	YES



Laboratory ID: 34274-037  
 Field ID: NAE9 Surface Elutriate - Rep 3  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 0940  
 Date Prepared: 08/04/20 1135  
 Batch Number: 270W  
 Matrix: Water  
 Initial Volume (mL): 1080  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
gamma-BHC (Lindane)		U	0.002	1	08/12/20 1906
heptachlor	J4	U	0.002	1	08/12/20 1906
aldrin		U	0.002	1	08/12/20 1906
chlorpyrifos		U	0.002	1	08/12/20 1906
heptachlor epoxide		U	0.002	1	08/12/20 1906
gamma-chlordane		U	0.002	1	08/12/20 1906
alpha-chlordane		U	0.002	1	08/12/20 1906
endosulfan I		U	0.002	1	08/12/20 1906
dieldrin		U	0.004	1	08/12/20 1906
endrin		U	0.004	1	08/12/20 1906
endosulfan II		U	0.004	1	08/12/20 1906
toxaphene		U	0.093	1	08/12/20 1906
4,4'-DDT		U	0.004	1	08/12/20 1906
Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		52	30	150	YES
Decachlorobiphenyl (209)		72	30	150	YES



Laboratory ID: 34274-054  
 Field ID: NAE3 Surface Elutriate - Rep 1  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 1055  
 Date Prepared: 08/04/20 1135  
 Batch Number: 270W  
 Matrix: Water  
 Initial Volume (mL): 1080  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
gamma-BHC (Lindane)		U	0.002	1	08/14/20 1117
heptachlor	J4	U	0.002	1	08/14/20 1117
aldrin		U	0.002	1	08/14/20 1117
chlorpyrifos		U	0.002	1	08/14/20 1117
heptachlor epoxide		U	0.002	1	08/14/20 1117
gamma-chlordane		U	0.002	1	08/14/20 1117
alpha-chlordane		U	0.002	1	08/14/20 1117
endosulfan I		U	0.002	1	08/14/20 1117
dieldrin		U	0.004	1	08/14/20 1117
endrin		U	0.004	1	08/14/20 1117
endosulfan II		U	0.004	1	08/14/20 1117
toxaphene		U	0.093	1	08/14/20 1117
4,4'-DDT		U	0.004	1	08/14/20 1117
Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		64	30	150	YES
Decachlorobiphenyl (209)		88	30	150	YES



Laboratory ID: 34274-055  
 Field ID: NAE3 Surface Elutriate - Rep 2  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 1055  
 Date Prepared: 08/04/20 1135  
 Batch Number: 270W  
 Matrix: Water  
 Initial Volume (mL): 1080  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
gamma-BHC (Lindane)		U	0.002	1	08/14/20 1135
heptachlor	J4	U	0.002	1	08/14/20 1135
aldrin		U	0.002	1	08/14/20 1135
chlorpyrifos		U	0.002	1	08/14/20 1135
heptachlor epoxide		U	0.002	1	08/14/20 1135
gamma-chlordane		U	0.002	1	08/14/20 1135
alpha-chlordane		U	0.002	1	08/14/20 1135
endosulfan I		U	0.002	1	08/14/20 1135
dieldrin		U	0.004	1	08/14/20 1135
endrin		U	0.004	1	08/14/20 1135
endosulfan II		U	0.004	1	08/14/20 1135
toxaphene		U	0.093	1	08/14/20 1135
4,4'-DDT		U	0.004	1	08/14/20 1135
Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		65	30	150	YES
Decachlorobiphenyl (209)		94	30	150	YES



Laboratory ID: 34274-056  
 Field ID: NAE3 Surface Elutriate - Rep 3  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 1055  
 Date Prepared: 08/04/20 1135  
 Batch Number: 270W  
 Matrix: Water  
 Initial Volume (mL): 1070  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
gamma-BHC (Lindane)		U	0.002	1	08/14/20 1154
heptachlor	J4	U	0.002	1	08/14/20 1154
aldrin		U	0.002	1	08/14/20 1154
chlorpyrifos		U	0.002	1	08/14/20 1154
heptachlor epoxide		U	0.002	1	08/14/20 1154
gamma-chlordane		U	0.002	1	08/14/20 1154
alpha-chlordane		U	0.002	1	08/14/20 1154
endosulfan I		U	0.002	1	08/14/20 1154
dieldrin		U	0.004	1	08/14/20 1154
endrin		U	0.004	1	08/14/20 1154
endosulfan II		U	0.004	1	08/14/20 1154
toxaphene		U	0.093	1	08/14/20 1154
4,4'-DDT		U	0.004	1	08/14/20 1154
Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		59	30	150	YES
Decachlorobiphenyl (209)		87	30	150	YES



Laboratory ID: 34274-072  
 Field ID: NAE6 Surface Elutriate - Rep 1  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 1200  
 Date Prepared: 08/04/20 1135  
 Batch Number: 270W  
 Matrix: Water  
 Initial Volume (mL): 1070  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
gamma-BHC (Lindane)		U	0.002	1	08/14/20 1212
heptachlor	J4	U	0.002	1	08/14/20 1212
aldrin		U	0.002	1	08/14/20 1212
chlorpyrifos		U	0.002	1	08/14/20 1212
heptachlor epoxide		U	0.002	1	08/14/20 1212
gamma-chlordane		U	0.002	1	08/14/20 1212
alpha-chlordane		U	0.002	1	08/14/20 1212
endosulfan I		U	0.002	1	08/14/20 1212
dieldrin		U	0.004	1	08/14/20 1212
endrin		U	0.004	1	08/14/20 1212
endosulfan II		U	0.004	1	08/14/20 1212
toxaphene		U	0.093	1	08/14/20 1212
4,4'-DDT		U	0.004	1	08/14/20 1212
Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		56	30	150	YES
Decachlorobiphenyl (209)		79	30	150	YES

Laboratory ID: 34274-073  
 Field ID: NAE6 Surface Elutriate - Rep 2  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 1200  
 Date Prepared: 08/04/20 1135  
 Batch Number: 270W  
 Matrix: Water  
 Initial Volume (mL): 1085  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
gamma-BHC (Lindane)		U	0.002	1	08/14/20 1230
heptachlor	J4	U	0.002	1	08/14/20 1230
aldrin		U	0.002	1	08/14/20 1230
chlorpyrifos		U	0.002	1	08/14/20 1230
heptachlor epoxide		U	0.002	1	08/14/20 1230
gamma-chlordane		U	0.002	1	08/14/20 1230
alpha-chlordane		U	0.002	1	08/14/20 1230
endosulfan I		U	0.002	1	08/14/20 1230
dieldrin		U	0.004	1	08/14/20 1230
endrin		U	0.004	1	08/14/20 1230
endosulfan II		U	0.004	1	08/14/20 1230
toxaphene		U	0.092	1	08/14/20 1230
4,4'-DDT		U	0.004	1	08/14/20 1230
Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		61	30	150	YES
Decachlorobiphenyl (209)		88	30	150	YES

Laboratory ID: 34274-074  
 Field ID: NAE6 Surface Elutriate - Rep 3  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 1200  
 Date Prepared: 08/04/20 1135  
 Batch Number: 270W  
 Matrix: Water  
 Initial Volume (mL): 1080  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
gamma-BHC (Lindane)		U	0.002	1	08/14/20 1248
heptachlor	J4	U	0.002	1	08/14/20 1248
aldrin		U	0.002	1	08/14/20 1248
chlorpyrifos		U	0.002	1	08/14/20 1248
heptachlor epoxide		U	0.002	1	08/14/20 1248
gamma-chlordane		U	0.002	1	08/14/20 1248
alpha-chlordane		U	0.002	1	08/14/20 1248
endosulfan I		U	0.002	1	08/14/20 1248
dieldrin		U	0.004	1	08/14/20 1248
endrin		U	0.004	1	08/14/20 1248
endosulfan II		U	0.004	1	08/14/20 1248
toxaphene		U	0.093	1	08/14/20 1248
4,4'-DDT		U	0.004	1	08/14/20 1248
Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		60	30	150	YES
Decachlorobiphenyl (209)		86	30	150	YES

Elutriate Analysis  
Analysis Report Pages  
Pentachlorophenol

Analysis: Semi Volatile Organic Analysis  
 EPA Method: 8270 D



Laboratory ID: 34274-010  
 Field ID: Site Blank - Rep 1  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 0855  
 Date Prepared: 08/06/20 1310  
 Batch Number: 271W  
 Matrix: Water  
 Initial Volume (mL): 1085  
 Final Volume (mL): 1  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
pentachlorophenol	U	U	2.3	1	08/12/20 1813

Surrogate Compounds	Qualifier	Recovery (%)	Acceptance Limits (%)	Meets Acceptance Criteria (Yes or No)
2,4,6-tribromophenol		71	30-150	YES

Laboratory ID: 34274-011  
 Field ID: Site Blank - Rep 2  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 0855  
 Date Prepared: 08/06/20 1310  
 Batch Number: 271W  
 Matrix: Water  
 Initial Volume (mL): 1080  
 Final Volume (mL): 1  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
pentachlorophenol	U	U	2.3	1	08/12/20 1844

Surrogate Compounds	Qualifier	Recovery (%)	Acceptance Limits (%)	Meets Acceptance Criteria (Yes or No)
2,4,6-tribromophenol		57	30-150	YES

Laboratory ID: 34274-012  
 Field ID: Site Blank - Rep 3  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 0855  
 Date Prepared: 08/06/20 1310  
 Batch Number: 271W  
 Matrix: Water  
 Initial Volume (mL): 1080  
 Final Volume (mL): 1  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
pentachlorophenol	U	U	2.3	1	08/12/20 1915

Surrogate Compounds	Qualifier	Recovery (%)	Acceptance Limits (%)	Meets Acceptance Criteria (Yes or No)
2,4,6-tribromophenol		60	30-150	YES

Analysis: Semi Volatile Organic Analysis  
 EPA Method: 8270 D



Laboratory ID: 34274-029  
 Field ID: NAE9 Surface Elutriate - Rep 1  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 0940  
 Date Prepared: 08/06/20 1310  
 Batch Number: 271W  
 Matrix: Water  
 Initial Volume (mL): 1085  
 Final Volume (mL): 1  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
pentachlorophenol	U	2.3	2.3	1	08/12/20 1541

Surrogate Compounds	Qualifier	Recovery (%)	Acceptance Limits (%)	Meets Acceptance Criteria (Yes or No)
2,4,6-tribromophenol		38	30-150	YES

Laboratory ID: 34274-030  
 Field ID: NAE9 Surface Elutriate - Rep 2  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 0940  
 Date Prepared: 08/06/20 1310  
 Batch Number: 271W  
 Matrix: Water  
 Initial Volume (mL): 1085  
 Final Volume (mL): 1  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
pentachlorophenol	U	2.3	2.3	1	08/12/20 1712

Surrogate Compounds	Qualifier	Recovery (%)	Acceptance Limits (%)	Meets Acceptance Criteria (Yes or No)
2,4,6-tribromophenol		55	30-150	YES

Laboratory ID: 34274-031  
 Field ID: NAE9 Surface Elutriate - Rep 3  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 0940  
 Date Prepared: 08/06/20 1310  
 Batch Number: 271W  
 Matrix: Water  
 Initial Volume (mL): 1075  
 Final Volume (mL): 1  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
pentachlorophenol	U	2.3	2.3	1	08/12/20 1743

Surrogate Compounds	Qualifier	Recovery (%)	Acceptance Limits (%)	Meets Acceptance Criteria (Yes or No)
2,4,6-tribromophenol		53	30-150	YES

Analysis: Semi Volatile Organic Analysis  
 EPA Method: 8270 D



Laboratory ID: 34274-048  
 Field ID: NAE3 Surface Elutriate - Rep 1  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 1055  
 Date Prepared: 08/06/20 1310  
 Batch Number: 271W  
 Matrix: Water  
 Initial Volume (mL): 1080  
 Final Volume (mL): 1  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
pentachlorophenol	U	U	2.3	1	08/12/20 1945

Surrogate Compounds	Qualifier	Recovery (%)	Acceptance Limits (%)	Meets Acceptance Criteria (Yes or No)
2,4,6-tribromophenol		47	30-150	YES

Laboratory ID: 34274-049  
 Field ID: NAE3 Surface Elutriate - Rep 2  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 1055  
 Date Prepared: 08/06/20 1310  
 Batch Number: 271W  
 Matrix: Water  
 Initial Volume (mL): 1070  
 Final Volume (mL): 1  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
pentachlorophenol	U	U	2.3	1	08/12/20 2015

Surrogate Compounds	Qualifier	Recovery (%)	Acceptance Limits (%)	Meets Acceptance Criteria (Yes or No)
2,4,6-tribromophenol		84	30-150	YES

Laboratory ID: 34274-050  
 Field ID: NAE3 Surface Elutriate - Rep 3  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 1055  
 Date Prepared: 08/06/20 1310  
 Batch Number: 271W  
 Matrix: Water  
 Initial Volume (mL): 1080  
 Final Volume (mL): 1  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
pentachlorophenol	U	U	2.3	1	08/12/20 2046

Surrogate Compounds	Qualifier	Recovery (%)	Acceptance Limits (%)	Meets Acceptance Criteria (Yes or No)
2,4,6-tribromophenol		84	30-150	YES

Analysis: Semi Volatile Organic Analysis  
 EPA Method: 8270 D



Laboratory ID: 34274-066  
 Field ID: NAE6 Surface Elutriate - Rep 1  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 1200  
 Date Prepared: 08/06/20 1310  
 Batch Number: 271W  
 Matrix: Water  
 Initial Volume (mL): 1080  
 Final Volume (mL): 1  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
pentachlorophenol	U		2.3	1	08/12/20 2116
Surrogate Compounds	Qualifier	Recovery (%)	Acceptance Limits (%)		Meets Acceptance Criteria (Yes or No)
2,4,6-tribromophenol		84	30-150		YES

Laboratory ID: 34274-067  
 Field ID: NAE6 Surface Elutriate - Rep 2  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 1200  
 Date Prepared: 08/06/20 1310  
 Batch Number: 271W  
 Matrix: Water  
 Initial Volume (mL): 1075  
 Final Volume (mL): 1  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
pentachlorophenol	U		2.3	1	08/12/20 2146
Surrogate Compounds	Qualifier	Recovery (%)	Acceptance Limits (%)		Meets Acceptance Criteria (Yes or No)
2,4,6-tribromophenol		78	30-150		YES

Laboratory ID: 34274-068  
 Field ID: NAE6 Surface Elutriate - Rep 3  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/04/20 1200  
 Date Prepared: 08/06/20 1310  
 Batch Number: 271W  
 Matrix: Water  
 Initial Volume (mL): 1075  
 Final Volume (mL): 1  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
pentachlorophenol	U		2.3	1	08/12/20 2216
Surrogate Compounds	Qualifier	Recovery (%)	Acceptance Limits (%)		Meets Acceptance Criteria (Yes or No)
2,4,6-tribromophenol		73	30-150		YES

Elutriate Analysis  
QC Support Documents  
Trace Metals

Quality Control Summary

Parameter: Arsenic, dissolved  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Water  
 QC Batch No: 226N

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34274-001	Site Blank - Rep 1	34274-058	NAE6 Surface Elutriate - Rep 2
34274-002	Site Blank - Rep 2	34274-059	NAE6 Surface Elutriate - Rep 3
34274-003	Site Blank - Rep 3		
34274-020	NAE9 Surface Elutriate - Rep 1		
34274-021	NAE9 Surface Elutriate - Rep 2		
34274-022	NAE9 Surface Elutriate - Rep 3		
34274-039	NAE3 Surface Elutriate - Rep 1		
34274-040	NAE3 Surface Elutriate - Rep 2		
34274-041	NAE3 Surface Elutriate - Rep 3		
34274-057	NAE6 Surface Elutriate - Rep 1		

	Control Limit +/-	Preparation Blank Result mg/L	Q	M
PB226N	0.0005	0.0005	U	Pass

LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result mg/L	True Value mg/L	%R	Lab Control Dup Sample Result mg/L	True Value mg/L	%R	
LCS	85-115	0.0814	0.080	102	0.0807	0.080	101	Pass

DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result mg/L	Q	Sample Result mg/L	Q	RPD	Q	
34274-039	20	0.0058		0.0061		4		Pass

SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result mg/L	Spike Added mg/L	Sample Result mg/L	Q	%R	Q	
34274-039S	80-120	0.0864	0.080	0.0061		100		Pass
34274-039SD	80-120	0.0864	0.080	0.0061		100		Pass

U = Below quantitation limit

Quality Control Summary

Parameter: Cadmium, dissolved  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Water  
 QC Batch No: 226N

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34274-001	Site Blank - Rep 1	34274-058	NAE6 Surface Elutriate - Rep 2
34274-002	Site Blank - Rep 2	34274-059	NAE6 Surface Elutriate - Rep 3
34274-003	Site Blank - Rep 3		
34274-020	NAE9 Surface Elutriate - Rep 1		
34274-021	NAE9 Surface Elutriate - Rep 2		
34274-022	NAE9 Surface Elutriate - Rep 3		
34274-039	NAE3 Surface Elutriate - Rep 1		
34274-040	NAE3 Surface Elutriate - Rep 2		
34274-041	NAE3 Surface Elutriate - Rep 3		
34274-057	NAE6 Surface Elutriate - Rep 1		

	Control Limit +/-	Preparation Blank Result mg/L	Q	M
PB226N	0.0001	0.0001	U	Pass

LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result mg/L	True Value mg/L	%R	Lab Control Dup Sample Result mg/L	True Value mg/L	%R	
LCS	85-115	0.0081	0.008	101	0.0082	0.008	102	Pass

DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result mg/L	Q	Sample Result mg/L	Q	RPD	Q	
34274-039	20	0.0001	U	0.0001	U	NC		Pass

SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result mg/L	Spike Added mg/L	Sample Result mg/L	Q	%R	Q	
34274-039S	80-120	0.0081	0.0080	0.0001	U	101		Pass
34274-039SD	80-120	0.0079	0.0080	0.0001	U	99		Pass

U = Below quantitation limit

NC = Not calculated due to one or both values less than five times the reporting limit.

Quality Control Summary

Parameter: Chromium, dissolved  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Water  
 QC Batch No: 226N

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34274-001	Site Blank - Rep 1	34274-058	NAE6 Surface Elutriate - Rep 2
34274-002	Site Blank - Rep 2	34274-059	NAE6 Surface Elutriate - Rep 3
34274-003	Site Blank - Rep 3		
34274-020	NAE9 Surface Elutriate - Rep 1		
34274-021	NAE9 Surface Elutriate - Rep 2		
34274-022	NAE9 Surface Elutriate - Rep 3		
34274-039	NAE3 Surface Elutriate - Rep 1		
34274-040	NAE3 Surface Elutriate - Rep 2		
34274-041	NAE3 Surface Elutriate - Rep 3		
34274-057	NAE6 Surface Elutriate - Rep 1		

	Control Limit +/-	Preparation Blank Result mg/L	Q	M
PB226N	0.0005	0.0005	U	Pass

LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result mg/L	True Value mg/L	%R	Lab Control Dup Sample Result mg/L	True Value mg/L	%R	
LCS	85-115	0.0812	0.080	102	0.0799	0.080	100	Pass

DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result mg/L	Q	Sample Result mg/L	Q	RPD	Q	
34274-039	20	0.0005	U	0.0005	U	NC		Pass

SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result mg/L	Spike Added mg/L	Sample Result mg/L	Q	%R	Q	
34274-039S	80-120	0.0813	0.080	0.0005	U	102		Pass
34274-039SD	80-120	0.0813	0.080	0.0005	U	102		Pass

U = Below quantitation limit

NC = Not calculated due to one or both values less than five times the reporting limit.

Quality Control Summary

Parameter: Hexavalent chromium  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Water  
 QC Batch No: 525W

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34274-007	Site Blank - Rep 1	34274-064	NAE6 Surface Elutriate - Rep 2
34274-008	Site Blank - Rep 2	34274-065	NAE6 Surface Elutriate - Rep 3
34274-009	Site Blank - Rep 3		
34274-026	NAE9 Surface Elutriate - Rep 1		
34274-027	NAE9 Surface Elutriate - Rep 2		
34274-028	NAE9 Surface Elutriate - Rep 3		
34274-045	NAE3 Surface Elutriate - Rep 1		
34274-046	NAE3 Surface Elutriate - Rep 2		
34274-047	NAE3 Surface Elutriate - Rep 3		
34274-063	NAE6 Surface Elutriate - Rep 1		

	Control Limit +/-	Preparation Blank Result mg/L	Q	M
PB525W	0.005	0.005	U	Pass

LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result mg/L	True Value mg/L	%R	Lab Control Dup Sample Result mg/L	True Value mg/L	%R	
LCS	75-125	0.099	0.100	99	0.105	0.100	105	Pass

DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result	Q	Sample Result	Q	RPD	Q	
34274-026	20	0.005	U	0.005	U	NC		Pass

SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result	Spike Added	Sample Result	Q	%R	Q	
34274-026S	75-125	0.099	0.100	0.005	U	99		Pass

U = Below quantitation limit

NC = Not calculated due to one or both values less than five times the reporting limit.

Quality Control Summary

Parameter: Copper, dissolved  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Water  
 QC Batch No: 226N

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34274-001	Site Blank - Rep 1	34274-058	NAE6 Surface Elutriate - Rep 2
34274-002	Site Blank - Rep 2	34274-059	NAE6 Surface Elutriate - Rep 3
34274-003	Site Blank - Rep 3		
34274-020	NAE9 Surface Elutriate - Rep 1		
34274-021	NAE9 Surface Elutriate - Rep 2		
34274-022	NAE9 Surface Elutriate - Rep 3		
34274-039	NAE3 Surface Elutriate - Rep 1		
34274-040	NAE3 Surface Elutriate - Rep 2		
34274-041	NAE3 Surface Elutriate - Rep 3		
34274-057	NAE6 Surface Elutriate - Rep 1		

	Control Limit +/-	Preparation Blank Result mg/L	Q	M
PB226N	0.0005	0.0005	U	Pass

LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result mg/L	True Value mg/L	%R	Lab Control Dup Sample Result mg/L	True Value mg/L	%R	
LCS	85-115	0.0408	0.040	102	0.0401	0.040	100	Pass

DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result mg/L	Q	Sample Result mg/L	Q	RPD	Q	
34274-039	20	0.0005	U	0.0005	U	NC		Pass

SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result mg/L	Spike Added mg/L	Sample Result mg/L	Q	%R	Q	
34274-039S	80-120	0.0408	0.0400	0.0005	U	102		Pass
34274-039SD	80-120	0.0403	0.0400	0.0005	U	101		Pass

U = Below quantitation limit

NC = Not calculated due to one or both values less than five times the reporting limit.

## Quality Control Summary

Parameter: Lead, dissolved  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Water  
 QC Batch No: 226N

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34274-001	Site Blank - Rep 1	34274-058	NAE6 Surface Elutriate - Rep 2
34274-002	Site Blank - Rep 2	34274-059	NAE6 Surface Elutriate - Rep 3
34274-003	Site Blank - Rep 3		
34274-020	NAE9 Surface Elutriate - Rep 1		
34274-021	NAE9 Surface Elutriate - Rep 2		
34274-022	NAE9 Surface Elutriate - Rep 3		
34274-039	NAE3 Surface Elutriate - Rep 1		
34274-040	NAE3 Surface Elutriate - Rep 2		
34274-041	NAE3 Surface Elutriate - Rep 3		
34274-057	NAE6 Surface Elutriate - Rep 1		

	Control Limit +/-	Preparation Blank Result mg/L	Q	M
PB226N	0.0002	0.0002	U	Pass

### LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result mg/L	True Value mg/L	%R	Lab Control Dup Sample Result mg/L	True Value mg/L	%R	
LCS	85-115	0.0164	0.016	102	0.0165	0.016	103	Pass

### DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result mg/L	Q	Sample Result mg/L	Q	RPD	Q	
34274-039	20	0.0002	U	0.0002	U	NC		Pass

### SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result mg/L	Spike Added mg/L	Sample Result mg/L	Q	%R	Q	
34274-039S	80-120	0.0171	0.016	0.0002	U	107		Pass
34274-039SD	80-120	0.0170	0.016	0.0002	U	106		Pass

U = Below quantitation limit

NC = Not calculated due to one or both values less than five times the reporting limit.

Quality Control Summary

Parameter: Mercury, dissolved  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Water  
 QC Batch No: 540W

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34274-004	Site Blank - Rep 1	34274-061	NAE6 Surface Elutriate - Rep 2
34274-005	Site Blank - Rep 2	34274-062	NAE6 Surface Elutriate - Rep 3
34274-006	Site Blank - Rep 3		
34274-023	NAE9 Surface Elutriate - Rep 1		
34274-024	NAE9 Surface Elutriate - Rep 2		
34274-025	NAE9 Surface Elutriate - Rep 3		
34274-042	NAE3 Surface Elutriate - Rep 1		
34274-043	NAE3 Surface Elutriate - Rep 2		
34274-044	NAE3 Surface Elutriate - Rep 3		
34274-060	NAE6 Surface Elutriate - Rep 1		

	Control Limit +/-	Preparation Blank Result ug/L	Q	M
PB540W	0.01	0.01	U	Pass

LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result ug/L	True Value ug/L	%R	Lab Control Dup Sample Result ug/L	True Value ug/L	%R	
LCS	76-113	0.1030	0.100	103	0.1020	0.100	102	Pass

DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result ug/L	Q	Sample Result ug/L	Q	RPD	Q	
34274-042	18	0.010	U	0.010	U	NC		Pass

SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result ug/L	Spike Added ug/L	Sample Result ug/L	Q	%R	Q	
34274-042S	63-111	0.105	0.100	0.010	U	105		Pass
34274-042SD	63-111	0.108	0.100	0.010	U	108		Pass

U = Below quantitation limit

NC = Not calculated due to one or both values less than five times the reporting limit.

Quality Control Summary

Parameter: Nickel, dissolved  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Water  
 QC Batch No: 226N

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34274-001	Site Blank - Rep 1	34274-058	NAE6 Surface Elutriate - Rep 2
34274-002	Site Blank - Rep 2	34274-059	NAE6 Surface Elutriate - Rep 3
34274-003	Site Blank - Rep 3		
34274-020	NAE9 Surface Elutriate - Rep 1		
34274-021	NAE9 Surface Elutriate - Rep 2		
34274-022	NAE9 Surface Elutriate - Rep 3		
34274-039	NAE3 Surface Elutriate - Rep 1		
34274-040	NAE3 Surface Elutriate - Rep 2		
34274-041	NAE3 Surface Elutriate - Rep 3		
34274-057	NAE6 Surface Elutriate - Rep 1		

	Control Limit +/-	Preparation Blank Result mg/L	Q	M
PB226N	0.001	0.0010	U	Pass

LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result mg/L	True Value mg/L	%R	Lab Control Dup Sample Result mg/L	True Value mg/L	%R	
LCS	85-115	0.0815	0.080	102	0.0803	0.080	100	Pass

DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result mg/L	Q	Sample Result mg/L	Q	RPD	Q	
34274-039	20	0.0115		0.0113		2		Pass

SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result mg/L	Spike Added mg/L	Sample Result mg/L	Q	%R	Q	
34274-039S	80-120	0.0925	0.080	0.0113		102		Pass
34274-039SD	80-120	0.0921	0.080	0.0113		101		Pass

U = Below quantitation limit

NC = Not calculated due to one or both values less than five times the reporting limit.

Quality Control Summary

Parameter: Selenium, dissolved  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Water  
 QC Batch No: 226N

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34274-001	Site Blank - Rep 1	34274-058	NAE6 Surface Elutriate - Rep 2
34274-002	Site Blank - Rep 2	34274-059	NAE6 Surface Elutriate - Rep 3
34274-003	Site Blank - Rep 3		
34274-020	NAE9 Surface Elutriate - Rep 1		
34274-021	NAE9 Surface Elutriate - Rep 2		
34274-022	NAE9 Surface Elutriate - Rep 3		
34274-039	NAE3 Surface Elutriate - Rep 1		
34274-040	NAE3 Surface Elutriate - Rep 2		
34274-041	NAE3 Surface Elutriate - Rep 3		
34274-057	NAE6 Surface Elutriate - Rep 1		

	Control Limit +/-	Preparation Blank Result mg/L	Q	M
PB226N	0.0005	0.0005	U	Pass

LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result mg/L	True Value mg/L	%R	Lab Control Dup Sample Result mg/L	True Value mg/L	%R	
LCS	85-115	0.0795	0.080	99	0.0796	0.080	99	Pass

DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result mg/L	Q	Sample Result mg/L	Q	RPD	Q	
34274-039	20	0.0005	U	0.0005	U	NC		Pass

SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result mg/L	Spike Added mg/L	Sample Result mg/L	Q	%R	Q	
34274-039S	80-120	0.084	0.080	0.0005	U	105		Pass
34274-039SD	80-120	0.083	0.080	0.0005	U	105		Pass

U = Below quantitation limit

NC = Not calculated due to one or both values less than five times the reporting limit.

Quality Control Summary

Parameter: Silver, dissolved  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Water  
 QC Batch No: 226N

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34274-001	Site Blank - Rep 1	34274-058	NAE6 Surface Elutriate - Rep 2
34274-002	Site Blank - Rep 2	34274-059	NAE6 Surface Elutriate - Rep 3
34274-003	Site Blank - Rep 3		
34274-020	NAE9 Surface Elutriate - Rep 1		
34274-021	NAE9 Surface Elutriate - Rep 2		
34274-022	NAE9 Surface Elutriate - Rep 3		
34274-039	NAE3 Surface Elutriate - Rep 1		
34274-040	NAE3 Surface Elutriate - Rep 2		
34274-041	NAE3 Surface Elutriate - Rep 3		
34274-057	NAE6 Surface Elutriate - Rep 1		

	Control Limit +/-	Preparation Blank Result mg/L	Q	M
PB226N	0.0002	0.0002	U	Pass

LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result mg/L	True Value mg/L	%R	Lab Control Dup Sample Result mg/L	True Value mg/L	%R	
LCS	85-115	0.0159	0.016	99	0.0161	0.016	101	Pass

DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result mg/L	Q	Sample Result mg/L	Q	RPD	Q	
34274-039	20	0.0002	U	0.0002	U	NC		Pass

SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result mg/L	Spike Added mg/L	Sample Result mg/L	Q	%R	Q	
34274-039S	80-120	0.0160	0.0160	0.0002	U	100		Pass
34274-039SD	80-120	0.0159	0.0160	0.0002	U	99		Pass

U = Below quantitation limit

NC = Not calculated due to one or both values less than five times the reporting limit.

## Quality Control Summary

Parameter: Zinc, dissolved  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Matrix: Water  
 QC Batch No: 226N

Pertains to samples:

Lab ID	Sample ID	Lab ID	Sample ID
34274-001	Site Blank - Rep 1	34274-058	NAE6 Surface Elutriate - Rep 2
34274-002	Site Blank - Rep 2	34274-059	NAE6 Surface Elutriate - Rep 3
34274-003	Site Blank - Rep 3		
34274-020	NAE9 Surface Elutriate - Rep 1		
34274-021	NAE9 Surface Elutriate - Rep 2		
34274-022	NAE9 Surface Elutriate - Rep 3		
34274-039	NAE3 Surface Elutriate - Rep 1		
34274-040	NAE3 Surface Elutriate - Rep 2		
34274-041	NAE3 Surface Elutriate - Rep 3		
34274-057	NAE6 Surface Elutriate - Rep 1		

	Control Limit +/-	Preparation Blank Result mg/L	Q	M
PB226N	0.001	0.001	U	Pass

### LABORATORY CONTROL SAMPLE RECOVERY

ID	Control Limit %	Lab Control Sample Result mg/L	True Value mg/L	%R	Lab Control Dup Sample Result mg/L	True Value mg/L	%R	
LCS	85-115	0.1650	0.160	103	0.1610	0.160	101	Pass

### DUPLICATE ANALYSIS

ID	Control Limit %	Duplicate Result mg/L	Q	Sample Result mg/L	Q	RPD	Q	
34274-039	20	0.0017		0.0018		NC		Pass

### SPIKE SAMPLE ANALYSIS

ID	Control Limit %	Spiked Sample Result mg/L	Spike Added mg/L	Sample Result mg/L	Q	%R	Q	
34274-039S	80-120	0.164	0.160	0.0018		101		Pass
34274-039SD	80-120	0.163	0.160	0.0018		101		Pass

U = Below quantitation limit

NC = Not calculated due to one or both values less than five times the reporting limit.

Elutriate Analysis  
QC Support Documents  
PCB Congeners



Laboratory ID: PB272W  
 Field ID: NA  
 Project: NA  
 Date Sampled: 08/08/20 0930  
 Date Prepared: 08/08/20 0930  
 Batch Number: 272W  
 Matrix: Water  
 Sample Weight (mL): 1000  
 Final Volume (mL): 1  
 Analyst: PL

BZ Number	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date
8	U	0.002	0.002	1	08/12/20 1422
18	U	0.002	0.002	1	08/12/20 1422
28	U	0.002	0.002	1	08/12/20 1422
44	U	0.002	0.002	1	08/12/20 1422
49	U	0.002	0.002	1	08/12/20 1422
52	U	0.002	0.002	1	08/12/20 1422
66	U	0.002	0.002	1	08/12/20 1422
77	U	0.002	0.002	1	08/12/20 1422
87	U	0.002	0.002	1	08/12/20 1422
101	U	0.002	0.002	1	08/12/20 1422
105	U	0.002	0.002	1	08/12/20 1422
118	U	0.002	0.002	1	08/12/20 1422
126	U	0.002	0.002	1	08/12/20 1422
153	U	0.002	0.002	1	08/12/20 1422
128	U	0.002	0.002	1	08/12/20 1422
138	U	0.002	0.002	1	08/12/20 1422
170	U	0.002	0.002	1	08/12/20 1422
180	U	0.002	0.002	1	08/12/20 1422
183	U	0.002	0.002	1	08/12/20 1422
184	U	0.002	0.002	1	08/12/20 1422
187	U	0.002	0.002	1	08/12/20 1422
195	U	0.002	0.002	1	08/12/20 1422
206	U	0.002	0.002	1	08/12/20 1422
209	U	0.002	0.002	1	08/12/20 1422

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene		42	30	150	YES

Laboratory ID: LCS272W  
Field ID: NA  
Project: NA  
Sample Date & Time: 08/08/20 0930  
Preparation Date & Time: 08/08/20 0930  
Analysis Date: 08/12/20 1444  
Batch Number: 272W  
Matrix: Water  
Sample Weight (mL): 1000  
Final Volume (mL): 1  
Analyst: PL

Laboratory ID: LCSD272W  
Field ID: NA  
Project: NA  
Sample Date & Time: 08/08/20 0930  
Preparation Date & Time: 08/08/20 0930  
Analysis Date: 08/12/20 1507  
Batch Number: 272W  
Matrix: Water  
Sample Weight (mL): 1000  
Final Volume (mL): 1  
Analyst: PL

BZ Number	Qualifier	True Value (ug/L)	Concentration (ug/L)	Percent Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)	Qualifier	True Value (ug/L)	Concentration (ug/L)	Percent Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)	RPD (%)	RPD Limit (%)	Meets Criteria (Yes or No)
8		0.100	0.032	32	30	150	YES		0.100	0.042	42	30	150	YES	26	30	YES
18		0.100	0.035	35	30	150	YES		0.100	0.044	44	30	150	YES	22	30	YES
28		0.100	0.048	48	30	150	YES		0.100	0.065	65	30	150	YES	29	30	YES
44		0.100	0.056	56	30	150	YES	J4	0.100	0.078	78	30	150	YES	33	30	NO
49		0.100	0.041	41	30	150	YES	J4	0.100	0.056	56	30	150	YES	31	30	NO
52		0.100	0.052	52	30	150	YES		0.100	0.068	68	30	150	YES	27	30	YES
66		0.100	0.065	65	30	150	YES		0.100	0.087	87	30	150	YES	28	30	YES
77		0.100	0.094	94	30	150	YES		0.100	0.124	124	30	150	YES	27	30	YES
87		0.100	0.065	65	30	150	YES		0.100	0.087	87	30	150	YES	29	30	YES
101		0.100	0.067	67	30	150	YES		0.100	0.088	88	30	150	YES	27	30	YES
105		0.100	0.072	72	30	150	YES		0.100	0.097	97	30	150	YES	29	30	YES
118		0.100	0.073	73	30	150	YES		0.100	0.100	100	30	150	YES	30	30	YES
126		0.100	0.077	77	30	150	YES	J4	0.100	0.105	105	30	150	YES	31	30	NO
153		0.100	0.075	75	30	150	YES	J4	0.100	0.102	102	30	150	YES	31	30	NO
128		0.100	0.071	71	30	150	YES		0.100	0.096	96	30	150	YES	29	30	YES
138		0.100	0.071	71	30	150	YES	J4	0.100	0.097	97	30	150	YES	31	30	NO
170		0.100	0.093	93	30	150	YES		0.100	0.113	113	30	150	YES	20	30	YES
180		0.100	0.074	74	30	150	YES	J4	0.100	0.103	103	30	150	YES	33	30	NO
183		0.100	0.065	65	30	150	YES	J4	0.100	0.090	90	30	150	YES	33	30	NO
184		0.100	0.062	62	30	150	YES		0.100	0.083	83	30	150	YES	30	30	YES
187		0.100	0.072	72	30	150	YES		0.100	0.098	98	30	150	YES	30	30	YES
195		0.100	0.083	83	30	150	YES		0.100	0.104	104	30	150	YES	23	30	YES
206		0.100	0.077	77	30	150	YES		0.100	0.102	102	30	150	YES	28	30	YES
209		0.100	0.078	78	30	150	YES		0.100	0.104	104	30	150	YES	28	30	YES

Surrogate Compound	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene		32	30	150	YES		36	30	150	YES

Laboratory ID: 34274-032MS  
Field ID: NAE9 Surface Elutriate - Rep 1  
Project: Nordic Aquafarms Pipeline Corridor Dredging  
Sample Date & Time: 08/08/20 0930  
Preparation Date & Time: 08/08/20 0930  
Analysis Date: 08/12/20 1553  
Batch Number: 272W  
Matrix: Water  
Sample Weight (mL): 1080  
Final Volume (mL): 1  
Analyst: PL

Laboratory ID: 34274-032MSD  
Field ID: NAE9 Surface Elutriate - Rep 1  
Project: Nordic Aquafarms Pipeline Corridor Dredging  
Sample Date & Time: 08/08/20 0930  
Preparation Date & Time: 08/08/20 0930  
Analysis Date: 08/12/20 1616  
Batch Number: 272W  
Matrix: Water  
Sample Weight (mL): 1075  
Final Volume (mL): 1  
Analyst: 1

BZ Number	Sample Result	Qualifier	True Value (ug/L)	Concentration (ug/L)	Precent Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)	Qualifier	True Value (ug/L)	Concentration (ug/L)	Precent Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)	RPD (%)	RPD Limit (%)	Meets Criteria (Yes or No)
8	U	J5	0.100	0.023	23	30	150	NO	J7	0.100	0.033	33	30	150	YES	34	30	NO
18	U	J5	0.100	0.024	24	30	150	NO	J7	0.100	0.033	33	30	150	YES	32	30	NO
28	U		0.100	0.039	39	30	150	YES		0.100	0.043	43	30	150	YES	11	30	YES
44	U		0.100	0.047	47	30	150	YES		0.100	0.052	52	30	150	YES	11	30	YES
49	U		0.100	0.034	34	30	150	YES		0.100	0.038	38	30	150	YES	13	30	YES
52	U		0.100	0.041	41	30	150	YES		0.100	0.046	46	30	150	YES	12	30	YES
66	U		0.100	0.053	53	30	150	YES		0.100	0.054	54	30	150	YES	2	30	YES
77	U		0.100	0.067	67	30	150	YES		0.100	0.071	71	30	150	YES	5	30	YES
87	U		0.100	0.050	50	30	150	YES		0.100	0.051	51	30	150	YES	3	30	YES
101	U		0.100	0.052	52	30	150	YES		0.100	0.055	55	30	150	YES	6	30	YES
105	U		0.100	0.053	53	30	150	YES		0.100	0.055	55	30	150	YES	5	30	YES
118	U		0.100	0.054	54	30	150	YES		0.100	0.057	57	30	150	YES	6	30	YES
126	U		0.100	0.054	54	30	150	YES		0.100	0.057	57	30	150	YES	5	30	YES
153	U		0.100	0.053	53	30	150	YES		0.100	0.057	57	30	150	YES	7	30	YES
128	U		0.100	0.049	49	30	150	YES		0.100	0.052	52	30	150	YES	5	30	YES
138	U		0.100	0.050	50	30	150	YES		0.100	0.053	53	30	150	YES	7	30	YES
170	U		0.100	0.055	55	30	150	YES		0.100	0.064	64	30	150	YES	15	30	YES
180	U		0.100	0.054	54	30	150	YES		0.100	0.055	55	30	150	YES	3	30	YES
183	U		0.100	0.046	46	30	150	YES		0.100	0.048	48	30	150	YES	4	30	YES
184	U		0.100	0.046	46	30	150	YES		0.100	0.048	48	30	150	YES	5	30	YES
187	U		0.100	0.049	49	30	150	YES		0.100	0.054	54	30	150	YES	11	30	YES
195	U		0.100	0.052	52	30	150	YES		0.100	0.054	54	30	150	YES	4	30	YES
206	U		0.100	0.055	55	30	150	YES		0.100	0.055	55	30	150	YES	1	30	YES
209	U		0.100	0.051	51	30	150	YES		0.100	0.056	56	30	150	YES	9	30	YES

Surrogate Compound	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)	Qualifier	Recovery (%)	Low Limit (%)	High Limit (%)	Meets Criteria (Yes or No)
tetrachloro-m-xylene	J17	28	30	150	NO		32	30	150	YES

Elutriate Analysis  
QC Support Documents  
Pesticides



Laboratory ID: PB270W  
 Field ID: NA  
 Project: NA  
 Date Sampled: 08/04/20 1135  
 Date Prepared: 08/04/20 1135  
 Batch Number: 270W  
 Matrix: Water  
 Initial Volume (mL): 1000  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
gamma-BHC (Lindane)		U	0.002	1	08/12/20 1659
heptachlor		U	0.002	1	08/12/20 1659
aldrin		U	0.002	1	08/12/20 1659
chlorpyrifos		U	0.002	1	08/12/20 1659
heptachlor epoxide		U	0.002	1	08/12/20 1659
gamma-chlordane		U	0.002	1	08/12/20 1659
alpha-chlordane		U	0.002	1	08/12/20 1659
endosulfan I		U	0.002	1	08/12/20 1659
dieldrin		U	0.004	1	08/12/20 1659
endrin		U	0.004	1	08/12/20 1659
endosulfan II		U	0.004	1	08/12/20 1659
toxaphene		U	0.100	1	08/12/20 1659
4,4'-DDT		U	0.004	1	08/12/20 1659
			Low	High	Meets
Surrogate Compounds	Qualifier	Recovery	Limit	Limit	Criteria
		(%)	(%)	%	(Yes or No)
Tetrachloro-m-xylene (TCMX)		46	30	150	YES
Decachlorobiphenyl (209)		76	30	150	YES



Laboratory ID: LCS270W  
 Field ID: NA  
 Project: NA  
 Date & Time Sampled: 08/04/20 1135  
 Date & Time Prepared: 08/04/20 1135  
 Date & Time Analyzed: 08/12/20 1717  
 Batch Number: 270W  
 Matrix: Water  
 Initial Volume (mL): 1000  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Qualifier	Concentration (ug/L)	True Value (ug/L)	Percent Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
gamma-BHC (Lindane)		0.036	0.04	90	30	150	YES
heptachlor		0.032	0.04	80	30	150	YES
aldrin		0.025	0.04	63	30	150	YES
chlorpyrifos		0.035	0.04	88	30	150	YES
heptachlor epoxide		0.031	0.04	78	30	150	YES
gamma-chlordane		0.028	0.04	70	30	150	YES
alpha-chlordane		0.028	0.04	70	30	150	YES
endosulfan I		0.079	0.08	99	30	150	YES
dieldrin		0.038	0.04	95	30	150	YES
endrin		0.04	0.04	100	30	150	YES
endosulfan II		0.065	0.08	81	30	150	YES
toxaphene		NA	NA	NA	NA	NA	NA
4,4'-DDT		0.045	0.04	113	30	150	YES
Surrogate Compounds	Qualifier			Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)				51	30	150	YES
Decachlorobiphenyl (209)				81	30	150	YES



Laboratory ID: LCSD270W  
 Field ID: NA  
 Project: NA  
 Date & Time Sampled: 08/04/20 1135  
 Date & Time Prepared: 08/04/20 1135  
 Date & Time Analyzed: 08/12/20 1735  
 Batch Number: 270W  
 Matrix: Water  
 Initial Volume (mL): 1000  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Qualifier	Concentration (ug/L)	True Value (ug/L)	Percent Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)	RPD (%)	RPD Limit (%)
gamma-BHC (Lindane)		0.035	0.04	88	30	150	YES	3	30
heptachlor	J4	0.022	0.04	55	30	150	YES	37	30
aldrin		0.021	0.04	53	30	150	YES	17	30
chlorpyrifos		0.036	0.04	90	30	150	YES	3	30
heptachlor epoxide		0.032	0.04	80	30	150	YES	3	30
gamma-chlordane		0.029	0.04	73	30	150	YES	4	30
alpha-chlordane		0.028	0.04	70	30	150	YES	0	30
endosulfan I		0.079	0.08	99	30	150	YES	0	30
dieldrin		0.037	0.04	93	30	150	YES	3	30
endrin		0.04	0.04	100	30	150	YES	0	30
endosulfan II		0.066	0.08	83	30	150	YES	2	30
toxaphene		NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT		0.045	0.04	113	30	150	YES	0	30

Surrogate Compounds	Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)		43	30	150	YES
Decachlorobiphenyl (209)		81	30	150	YES



Laboratory ID: 34274-035MS  
 Field ID: NAE9 Surface Elutriate - Rep 1  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date & Time Sampled: 08/04/20 1135  
 Date & Time Prepared: 08/04/20 0940  
 Date & Time Analyzed: 08/12/20 1812  
 Batch Number: 270W  
 Matrix: Water  
 Initial Volume (mL): 1085  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Qualifier	Sample Result (ug/L)	Concentration (ug/L)	True Value (ug/L)	Percent Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
gamma-BHC (Lindane)	U	0.027	0.04	0.04	73	30	150	YES
heptachlor	U	0.026	0.04	0.04	71	30	150	YES
aldrin	U	0.017	0.04	0.04	46	30	150	YES
chlorpyrifos	U	0.027	0.04	0.04	73	30	150	YES
heptachlor epoxide	U	0.023	0.04	0.04	62	30	150	YES
gamma-chlordane	U	0.022	0.04	0.04	60	30	150	YES
alpha-chlordane	U	0.024	0.04	0.04	65	30	150	YES
endosulfan I	U	0.064	0.07	0.07	87	30	150	YES
dieldrin	U	0.032	0.04	0.04	87	30	150	YES
endrin	U	0.032	0.04	0.04	87	30	150	YES
endosulfan II	U	0.052	0.07	0.07	71	30	150	YES
toxaphene	U	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	U	0.036	0.04	0.04	98	30	150	YES
Surrogate Compounds				Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)
Tetrachloro-m-xylene (TCMX)					48	30	150	YES
Decachlorobiphenyl (209)					71	30	150	YES

Laboratory ID: 34274-035MSD  
 Field ID: NAE9 Surface Elutriate - Rep 1  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date & Time Sampled: 08/04/20 0940  
 Date & Time Prepared: 08/04/20 1135  
 Date & Time Analyzed: 08/12/20 1830  
 Batch Number: 270W  
 Matrix: Water  
 Initial Volume (mL): 1085  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Qualifier	Sample Result (ug/L)	Concentration (ug/L)	True Value (ug/L)	Percent Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)	RPD (%)	RPD Limit (%)
gamma-BHC (Lindane)	U	0.032	0.04	0.04	87	30	150	YES	17	30
heptachlor	U	0.024	0.04	0.04	65	30	150	YES	8	30
aldrin	U	0.023	0.04	0.04	62	30	150	YES	30	30
chlorpyrifos	U	0.031	0.04	0.04	84	30	150	YES	14	30
heptachlor epoxide	U	0.027	0.04	0.04	73	30	150	YES	16	30
gamma-chlordane	U	0.026	0.04	0.04	71	30	150	YES	17	30
alpha-chlordane	U	0.027	0.04	0.04	73	30	150	YES	12	30
endosulfan I	U	0.070	0.07	0.07	95	30	150	YES	9	30
dieldrin	U	0.034	0.04	0.04	92	30	150	YES	6	30
endrin	U	0.036	0.04	0.04	98	30	150	YES	12	30
endosulfan II	U	0.059	0.07	0.07	80	30	150	YES	13	30
toxaphene	U	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	U	0.039	0.04	0.04	106	30	150	YES	8	30
Surrogate Compounds					Qualifier	Recovery (%)	Low Limit (%)	High Limit %	Meets Criteria (Yes or No)	
Tetrachloro-m-xylene (TCMX)						45	30	150	YES	
Decachlorobiphenyl (209)						74	30	150	YES	

Elutriate Analysis  
QC Support Documents  
Pentachlorophenol

Analysis: Semi Volatile Organic Analysis  
 EPA Method: 8270 D



Laboratory ID: PB271W  
 Field ID: NA  
 Project: NA  
 Date Sampled: 08/06/20 1310  
 Date Prepared: 08/06/20 1310  
 Batch Number: 271W  
 Matrix: Water  
 Initial Volume (mL): 1000  
 Final Volume (mL): 1  
 Analyst: PL

Target Compounds	Qualifier	Concentration (ug/L)	Quantitation Limit (ug/L)	Dilution Factor	Analysis Date and Time
pentachlorophenol	U		2.5	1	08/12/20 1409

Surrogate Compounds	Qualifier	Recovery (%)	Acceptance Limits (%)	Meets Acceptance Criteria (Yes or No)
2,4,6-tribromophenol		60	30-150	YES

Analysis: Semi Volatile Organic Analysis  
 EPA Method: 8270 D



Laboratory ID: LCS271W  
 Field ID: NA  
 Project: NA  
 Date Sampled: 08/06/20 1310  
 Date Prepared: 08/06/20 1310  
 Date Analyzed: 08/12/20 1439  
 Batch Number: Water  
 Matrix: 1000  
 Initial Volume (mL): 1  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Concentration (ug/L)	True Value (ug/L)	Recovery (%)	Acceptance Limits (%)	Meets Acceptance Criteria (Yes or No)
pentachlorophenol	7.4	10	74	30-150	YES
Surrogate Compounds			Recovery (%)	Acceptance Limits (%)	Meets Acceptance Criteria (Yes or No)
2,4,6-tribromophenol			62	30-150	YES

Laboratory ID: LCSD271W  
 Field ID: NA  
 Project: NA  
 Date Sampled: 08/06/20 1310  
 Date Prepared: 08/06/20 1310  
 Date Analyzed: 08/12/20 1510  
 Batch Number: Water  
 Matrix: 1000  
 Initial Volume (mL): 1  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Concentration (ug/L)	True Value (ug/L)	Recovery (%)	Acceptance Limits (%)	Meets Acceptance Criteria (Yes or No)	RPD (%)	RPD Limit (%)
pentachlorophenol	5.3	10	53	30-150	YES	33	58
Surrogate Compounds			Recovery (%)	Acceptance Limits (%)	Meets Acceptance Criteria (Yes or No)		
2,4,6-tribromophenol			38	30-150	YES		

Analysis: Semi Volatile Organic Analysis  
 EPA Method: 8270 D



Laboratory ID: 34274-029MS  
 Field ID: NAE9 Surface Elutriate - Rep 1  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/06/20 1310  
 Date Prepared: 08/06/20 1310  
 Date Analyzed: 08/12/20 1611  
 Batch Number: 271W  
 Matrix: Water  
 Initial Volume (mL): 1085  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Sample		True Value (ug/L)	Recovery (%)	Acceptance Limits (%)	Meets Acceptance Criteria (Yes or No)
	Result (ug/L)	Concentration (ug/L)				
pentachlorophenol	U	6.9	9.2	75	30-150	YES
Surrogate Compounds				Recovery (%)	Acceptance Limits (%)	Meets Acceptance Criteria (Yes or No)
2,4,6-tribromophenol				64	30-150	YES

Laboratory ID: 34274-029MSD  
 Field ID: NAE9 Surface Elutriate - Rep 1  
 Project: Nordic Aquafarms Pipeline Corridor Dredging  
 Date Sampled: 08/06/20 1310  
 Date Prepared: 08/06/20 1310  
 Date Analyzed: 08/12/20 1642  
 Batch Number: 271W  
 Matrix: Water  
 Initial Volume (mL): 1080  
 Final Volume (mL): 1  
 Analyst: PL

Target Compound	Sample		True Value (ug/L)	Recovery (%)	Acceptance Limits (%)	Meets Acceptance Criteria (Yes or No)	RPD	
	Result (ug/L)	Concentration (ug/L)					RPD (%)	Limit (%)
pentachlorophenol	U	6.9	9.3	75	30-150	YES	0	58
Surrogate Compounds				Recovery (%)	Acceptance Limits (%)	Meets Acceptance Criteria (Yes or No)		
2,4,6-tribromophenol				53	30-150	YES		

Elutriate Analysis  
QC Support Documents  
MDL Studies

**Method Detection Limit Spike Evaluation**

Total Metals in Water

SW 846 3rd ed. 6020B

SOP ID(s): QA-1369, 1323

SOP ID (MDL): QA-1111

Lab Number:	0518_1_w	0527_1_w	0611_1_w	0619_1_w	0707_1_w	0713_1_w	0731_1_w					
Date Prepared/Initials:	05/18/20 JLH	05/27/20 JLH	06/11/20 JLH	06/19/20 JLH	07/07/20 JLH	07/13/20 JLH	07/31/20 JLH					
Date Analyzed/Initials:	05/18/20 JLH	05/27/20 JLH	06/11/20 JLH	06/19/20 JLH	07/07/20 JLH	07/13/20 JLH	07/31/20 JLH					
Matrix:	Water											
Moisture:	NA											
Initial Vol (mL)	50	50	50	50	50	50	50					
Final Volume (mL)	50	50	50	50	50	50	50					
Dilution Factor:	1	1	1	1	1	1	1					
Sample Designation:	True Value	MDL01 Found	MDL02 Found	MDL03 Found	MDL04 Found	MDL05 Found	MDL06 Found	MDL07 Found				
Metal	(µg/L)	(µg/L)	STD	MDL (µg/L)	Spike/MDL	MDL< Spike (Y/N)						
Arsenic, total	0.08	0.079	0.089	0.08	0.103	0.097	0.079	0.097	0.0093	0.029	3	Y
Cadmium, total	0.008	0.009	0.009	0.009	0.008	0.008	0.007	0.007	0.00083	0.0026	3	Y
Chromium, total	0.08	0.078	0.066	0.097	0.078	0.09	0.06	0.077	0.012	0.037	2	Y
Copper, total	0.04	0.043	0.045	0.037	0.04	0.042	0.039	0.047	0.0032	0.010	4	Y
Lead, total	0.016	0.016	0.018	0.017	0.017	0.018	0.018	0.018	0.00073	0.0023	7	Y
Nickel, total	0.08	0.08	0.084	0.09	0.07	0.083	0.074	0.083	0.0062	0.019	4	Y
Selenium, total	0.08	0.08	0.079	0.083	0.092	0.07	0.079	0.084	0.0061	0.019	4	Y
Silver, total	0.016	0.016	0.017	0.015	0.018	0.015	0.015	0.016	0.0011	0.0034	5	Y
Zinc, total	0.16	0.156	0.176	0.159	0.172	0.205	0.144	0.191	0.020	0.061	3	Y

**Method Detection Limit Spike Evaluation**

Hexavalent Chromium in Water  
Standard Method 3500 Cr B

SOP ID(s): QA-1353, 1323

SOP ID (MDL): QA-1111

Lab Number:	LOD517W	LOD517W	LOD520W-a	LOD520W-b	LOD522WA	LOD522WB	RL524Wa	RL524Wb					
Date Prepared/Initials:	02/20/20 PL	02/20/20 PL	05/07/20 PL	05/07/20 PL	07/07/20 PL	07/07/20 PL	07/29/20 PL	07/29/20 PL					
Date Analyzed/Initials:	02/20/20 PL	02/20/20 PL	05/07/20 PL	05/07/20 PL	07/07/20 PL	07/07/20 PL	07/29/20 PL	07/29/20 PL					
Matrix:	Water												
Moisture:	NA												
Initial Vol (mL)	10	10	10	10	10	10	10	10					
Final Volume (mL)	10	10	10	10	10	10	10	10					
Dilution Factor:	1	1	1	1	1	1	1	1					
Sample Designation:	True	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08				
	Value	Found	Found	STD	MDL	Spike/	MDL<						
Metal	(mg/L)	(mg/L)		(mg/L)	MDL	Spike							
												(Y/N)	
Chromium VI, total	0.004	0.004	0.004	0.005	0.004	0.005	0.005	0.004	0.004	0.00049	0.0016	3	Y

**Method Detection Limit Spike Evaluation**

Mercury in Water

EPA 254.7

SOP ID(s): QA-1365, 1323

SOP ID (MDL): QA-1111

Lab Number:	RL0199	RL0200	RL0206	RL0207	RL0208	RL0209	RL0211	RL0212 - 4				
Date Prepared/Initials:	02/26/20 AS/JLH	03/02/20 AS/JLH	03/09/20 AS/JLH	03/10/20 AS/JLH	03/24/20 AS	03/30/20 AS/JLH	04/09/20 JLH	05/05/20 JLH				
Date Analyzed/Initials:	02/27/20 AS/JLH	03/03/20 AS/JLH	03/10/20 AS/JLH	03/10/20 AS/JLH	03/25/20 AS	03/30/20 AS/JLH	04/09/20 JLH	05/05/20 JLH				
Matrix:	Water	Water	Water	Water	Water	Water	Water	Water				
Moisture:	NA	NA	NA	NA	NA	NA	NA	NA				
Initial Vol (mL)	25	25	25	25	25	25	25	25				
Final Volume (mL)	25	25	25	25	25	25	25	25				
Dilution Factor:	1	1	1	1	1	1	1	1				
Sample Designation:	True MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08				
Value	Found	Found	Found	Found	Found	Found	Found	Found	STD	MDL	Spike/MDL	MDL< Spike (Y/N)
Metal (ng/L)	(ng/L)	(ng/L)	(ng/L)	(ng/L)	(ng/L)	(ng/L)	(ng/L)	(ng/L)		(ng/L)		
Mercury, total	4.0	3.9	3.7	4.1	4.1	4.1	4.1	3.8	0.16	0.50	8	Y

**Method Detection Limit Spike Evaluation**

PCB Congeners in Water Matrix  
SW 846 8270 SIM

SOP ID(s): QA-1390, 1391

SOP ID (MDL): QA-1111

Lab Number:		RL249WA	RL249WB	RL249WC	RL256WB	RL262WA	RL262WB	RL263WA				
Date Extracted/Initials:		12/30/19 PL	12/30/19 PL	12/30/19 PL	02/26/20 PL	04/23/20 PL	04/23/20 PL	06/17/20 PL				
Date Analyzed/Initials:		01/09/20 REB	01/09/20 REB	01/09/20 REB	03/13/20 PL	04/27/20 PL	04/27/20 PL	06/24/20 PL				
Matrix:		Water	Water	Water	Water	Water	Water	Water				
Moisture:		NA	NA	NA	NA	NA	NA	NA				
Sample Amount (g):		5	5	5	5	5	5	5				
Final Volume (mL)		1	1	1	1	1	1	1				
Dilution Factor:		1	1	1	1	1	1	1				
Sample Designation:	True	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	STD	MDL	Spike/M	MDL<
BZ Congener Number	Value	Found	Found	Found	Found	Found	Found	Found		(µg/L)	DL	Spike
	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)				(Y/N)
PCB 8	0.001	0.00119	0.00096	0.00084	0.00086	0.000891	0.000691	0.000662	0.000165	0.000519	2	Y
PCB 18	0.001	0.00098	0.00129	0.00115	0.00089	0.001356	0.001473	0.001311	0.000197	0.000618	2	Y
PCB 28	0.001	0.00122	0.00092	0.00121	0.00090	0.001342	0.001111	0.001065	0.000151	0.000475	2	Y
PCB 52	0.001	0.00114	0.00120	0.00122	0.00134	0.001271	0.000961	0.001271	0.000114	0.000360	3	Y
PCB 49	0.001	0.00100	0.00082	0.00095	0.00107	0.000838	0.000826	0.001076	0.000105	0.000331	3	Y
PCB 44	0.001	0.00105	0.00108	0.00111	0.00099	0.001131	0.001249	0.001458	0.000146	0.000460	2	Y
PCB 66	0.001	0.00112	0.00118	0.00096	0.00122	0.001087	0.000900	0.001212	0.000117	0.000366	3	Y
PCB 101	0.001	0.00117	0.00120	0.00117	0.00110	0.000410	0.001291	0.000977	0.000274	0.000861	1	Y
PCB 87	0.001	0.00116	0.00117	0.00109	0.00114	0.001691	0.001669	0.001032	0.000257	0.000807	1	Y
PCB 77	0.001	0.00122	0.00115	0.00145	0.00106	0.001573	0.000998	0.001272	0.000191	0.000600	2	Y
PCB 118	0.001	0.00122	0.00098	0.00124	0.00091	0.000996	0.001327	0.001168	0.000147	0.000461	2	Y
PCB 184	0.001	0.00116	0.00111	0.00124	0.00099	0.001585	0.001385	0.001362	0.000183	0.000576	2	Y
PCB 153	0.001	0.00095	0.00116	0.00108	0.00093	0.001290	0.001190	0.000931	0.000134	0.000421	2	Y
PCB 105	0.001	0.00128	0.00110	0.00118	0.00122	0.001530	0.001785	0.000993	0.000252	0.000791	1	Y
PCB 138	0.001	0.00103	0.00139	0.00097	0.00121	0.001579	0.001389	0.001052	0.000211	0.000663	2	Y
PCB 126	0.001	0.00083	0.00104	0.00121	0.00113	0.000992	0.001442	0.001046	0.000177	0.000558	2	Y
PCB 187	0.001	0.00093	0.00112	0.00168	0.00086	0.001269	0.001033	0.001512	0.000283	0.000888	1	Y
PCB 183	0.001	0.00122	0.00106	0.00067	0.00104	0.001322	0.000645	0.000641	0.000268	0.000842	1	Y
PCB 128	0.001	0.00087	0.00126	0.00124	0.00112	0.001048	0.000973	0.001131	0.000128	0.000404	2	Y
PCB 180	0.001	0.00108	0.00086	0.00085	0.00074	0.000969	0.001270	0.001217	0.000184	0.000578	2	Y
PCB 170	0.001	0.00097	0.00114	0.00123	0.00121	0.001520	0.000507	0.000766	0.000309	0.000971	1	Y
PCB 195	0.001	0.00133	0.00011	0.00114	0.00111	0.000868	0.000770	0.002249	0.000599	0.001884	1	N
PCB 206	0.001	0.00111	0.00076	0.00113	0.00109	0.000576	0.000472	0.000829	0.000247	0.000777	1	Y
PCB 209	0.001	0.00121	0.00083	0.00123	0.00053	0.001085	0.000747	0.001290	0.000267	0.000840	1	Y

**Enthalpy Analytical**

**Method Detection Limit Spike Evaluation 2020 (Initial)**

Pesticides in Water Matrix  
EPA 608.3 and SW 846 8081

SOP ID(s): QA-1351 Rev. 14, QA-1344 Rev. 12

SOP ID (MDL): QA-1111 Rev. 7

Lab Number:	RL233W A	RL233W B	RL248W A	RL248W B	RL252W A	RL252W B	RL264WA	RL264WB					
Sample Designation:	Water	Water	Water	Water	Water	Water	Water	Water					
Date Extracted/Initials:	08/05/19 PL	08/05/19 PL	12/28/19 PL	12/28/19 PL	02/22/20 PL	02/22/20 PL	06/18/20 PL	06/18/20 PL					
Date Analyzed/Initials:	08/19/19 PL	08/19/19 PL	01/06/20 PL	01/06/20 PL	03/04/20 PL	03/04/20 PL	06/29/20 PL	06/29/20 PL					
Matrix:	Water	Water	Water	Water	Water	Water	Water	Water					
Moisture:	NA	NA	NA	NA	NA	NA	NA	NA					
Sample Amount (mL):	1000	1000	1000	1000	1000	1000	1000	1000					
Final Volume (mL)	1	1	1	1	1	1	1	1					
Dilution Factor:	1	1	1	1	1	1	1	1					
	True Value (ug/L)	MDL01 Found (ug/L)	MDL02 Found (ug/L)	MDL03 Found (ug/L)	MDL04 Found (ug/L)	MDL05 Found (ug/L)	MDL06 Found (ug/L)	MDL07 Found (ug/L)	MDL08 Found (ug/L)	STD (ug/L)	MDL (ug/L)	Spike/MDL	MDL< Spike (Y/N)
hexachlorobenzene	0.001	0.000593	0.000587	0.001396	0.002184	0.001306	0.000646	0.001355	0.001682	0.00054	0.0016	1	N
alpha-BHC	0.001	0.000543	0.001001	0.000302	0.000760	0.001374	0.001054	0.000601	0.000486	0.00033	0.0010	1	Y
gamma-BHC (Lindane)	0.001	0.000897	0.000533	0.000762	0.000802	0.001080	0.000888	0.001168	0.000664	0.00019	0.0006	2	Y
beta-BHC	0.001	0.000714	0.001637	0.001040	0.001174	0.001400	0.000947	0.000832	0.000456	0.00035	0.0011	1	N
delta-BHC	0.001	0.000664	0.001144	0.000327	0.000357	0.001083	0.000679	0.000744	0.001055	0.00030	0.0009	1	Y
heptachlor	0.001	0.001483	0.001393	0.000536	0.000888	0.000736	0.000573	0.000549	0.000591	0.00036	0.0011	1	N
aldrin	0.001	0.000493	0.000514	0.000466	0.000318	0.000569	0.000652	0.000371	0.000362	0.00011	0.0003	3	Y
oxychlorodane	0.001	0.000339	0.000690	0.000736	0.001319	0.000329	0.000563	0.001496	0.000804	0.00040	0.0012	1	N
chlorpyrifos	0.001	0.000408	0.000628	0.000945	0.000917	0.000719	0.000968	0.001005	0.000758	0.00019	0.0006	2	Y
heptachlor epoxide	0.001	0.001392	0.001183	0.000710	0.000855	0.001055	0.001206	0.000644	0.000540	0.00029	0.0009	1	Y
gamma-chlordane	0.001	0.000674	0.000681	0.000827	0.000882	0.000607	0.000583	0.001085	0.000709	0.00016	0.0005	2	Y
trans-nonachlor	0.001	0.000364	0.000719	0.000529	0.000876	0.000802	0.000854	0.000641	0.000761	0.00016	0.0005	2	Y
alpha-chlordane	0.001	0.000588	0.000626	0.001117	0.001004	0.000695	0.000781	0.000697	0.000604	0.00018	0.0005	2	Y
endosulfan I	0.002	0.000980	0.001029	0.001237	0.002195	0.002148	0.001649	0.002255	0.001781	0.00049	0.0015	1	Y
4,4'-DDE	0.001	0.000497	0.000632	0.000804	0.000718	0.000816	0.000550	0.000636	0.000649	0.00011	0.0003	3	Y
dieldrin	0.001	0.000522	0.000454	0.000892	0.001665	0.000737	0.000979	0.001182	0.001145	0.00037	0.0011	1	N
endrin	0.001	0.000647	0.000642	0.001361	0.001102	0.000829	0.000971	0.000871	0.000840	0.00022	0.0007	1	Y
cis-nonachlor	0.001	0.000342	0.000321	0.000743	0.000921	0.000814	0.001122	0.000710	0.000858	0.00026	0.0008	1	Y
4,4'-DDD	0.001	0.000821	0.001102	0.000624	0.000893	0.000819	0.000848	0.000714	0.000773	0.00013	0.0004	3	Y
endosulfan II	0.002	0.000814	0.001092	0.002651	0.003745	0.001802	0.001872	0.001372	0.001452	0.00089	0.0027	1	N
4,4'-DDT	0.001	0.001246	0.001233	0.001166	0.000669	0.001229	0.000969	0.000801	0.001033	0.00020	0.0006	2	Y
endrin aldehyde	0.001	0.001014	0.001249	0.001196	0.001247	0.000786	0.000841	0.001125	0.000974	0.00017	0.0005	2	Y
endosulfan sulfate	0.001	0.000685	0.000793	0.001329	0.001016	0.000723	0.000844	0.000768	0.000760	0.00020	0.0006	2	Y
methoxychlor	0.010	0.006282	0.006338	0.005730	0.005433	0.010894	0.012821	0.011631	0.012313	0.00304	0.0091	1	Y
endrin ketone	0.001	0.000586	0.000763	0.001223	0.000894	0.000839	0.000999	0.001047	0.000948	0.00018	0.0005	2	Y

**Enthalpy Analytical**

**Method Detection Limit Spike Evaluation 2020 (Initial)**

Pesticides in Water Matrix  
EPA 608.3 and SW 846 8081

SOP ID(s): QA-1351 Rev. 14, QA-1344 Rev. 12

SOP ID (MDL): QA-1111 Rev. 7

Lab Number:	RL428WA	RL428WA	RL252WA	RL252WB	RL264WA	RL264WB	RL264WC					
Sample Designation:	Water	Water	Water	Water	Water	Water	Water					
Date Extracted/Initials:	12/28/19 PL	12/28/19 PL	02/22/20 PL	02/22/20 PL	06/18/20 PL	06/18/20 PL	06/18/20 PL					
Date Analyzed/Initials:	06/03/20 PL	06/03/20 PL	02/27/20 PL	02/27/20 PL	07/02/20 PL	07/02/20 PL	07/02/20 PL					
Matrix:	Water	Water	Water	Water	Water	Water	Water					
Sample Amount (mL):	1000	1000	1000	1000	1000	1000	1000					
Final Volume (mL)	1	1	1	1	1	1	1					
Dilution Factor:	1	1	1	1	1	1	1					
	True Value (µg/kg)	MDL01 Found (µg/kg)	MDL02 Found (µg/kg)	MDL03 Found (µg/kg)	MDL04 Found (µg/kg)	MDL05 Found (µg/kg)	MDL06 Found (µg/kg)	MDL07 Found (µg/kg)	STD (ug/L)	MDL (µg/kg)	Spike/MDL	MDL< Spike (Y/N)
toxaphene*	0.050	0.0367	0.0388	0.0370	0.0432	0.03	0.0389	0.0299	0.00402	0.0126	4	Y

Reviewed by QA:

Reviewed by Tech. Management:

**Method Detection Limit Spike Evaluation**

Pentachlorophenol in Water

SW-846 8270E

SOP ID(s): QA-1345, 1367

SOP ID (MDL): QA-1111

Lab Number:	RL254W A	RL254W B	RL254W C	RL254W D	RL266W A	RL266W B	RL266W C					
Date Sampled/Initials:												
Date Prepared/Initials:	2/25/2020 PL	2/25/2020 PL	2/25/2020 PL	2/25/2020 PL	07/08/20 PL	07/08/20 PL	07/08/20 PL					
Date Analyzed/Initials:	03/12/20 PL	03/12/20 PL	03/12/20 PL	03/12/20 PL	07/28/20 PL	07/28/20 PL	07/28/20 PL					
Matrix:	Water	Water	Water	Water	Water	Water	Water					
Moisture:	NA	NA	NA	NA	NA	NA	NA					
Initial Vol (mL)	1000	1000	1000	1000	1000	1000	1000					
Final Volume (mL)	1000	1000	1000	1000	1000	1000	1000					
Dilution Factor:	1	1	1	1	1	1	1					
Sample Designation:	True Value	MDL01 Found	MDL02 Found	MDL03 Found	MDL04 Found	MDL05 Found	MDL06 Found	MDL07 Found	STD	MDL	Spike/MDL	MDL< Spike (Y/N)
SVOC	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		(µg/L)		
Pentachlorophenol	1.25	0.924	0.954	0.927	0.907	2.063	2.148	2.239	0.607	1.91	1	N

Elutriate Analysis  
Support Documents  
New England District QC Summary Tables

**Table II-1: Completeness Checklist**

<b>Quality Assurance/Quality Control Questions</b>	<b>Yes/No? Comments?</b>
1. Was the report signed by the responsible applicant approved representative?	Yes
2. Were the methods for sampling, chemical and biological testing described in the Sampling and Analysis Plan (SAP) and the Laboratory QA Plan (LQAP) followed?	Yes
3. If not, were deviations documented?	NA
4. Was the SAP approved by the New England District?	Yes
5. Did the applicant use a laboratory with a LQAP on file at the New England District?	Yes
6. Did the samples adequately represent the physical/chemical variability in the dredging area?	Yes
7. Were the correct stations sampled (include the precision of the navigation method used)?	Yes
8. Were the preservation and storage requirements in Chapter 8 of the EPA/Corps QA/QC Manual (EPA/USACE 1995) and EPA (2001d) followed?	Yes
9. Were the samples properly labeled?	Yes
10. Were all the requested data included?	Yes
11. Were the reporting limits met?	Yes, except as noted for toxaphene.
12. Were the chain-of-custody forms properly processed?	Yes
13. Were the method blanks run and were the concentration below the acceptance criteria?	Yes
14. Was the MDL study performed on each matrix (with this data submission) or within the last 12 months?	Yes
15. Were the SRM/CRM analyses within acceptance criteria?	Yes
16. Were the matrix spike/matrix spike duplicates run at the required frequency and was the percent recovery/RPD within the acceptance criteria?	Yes
17. Were the duplicate samples analyzed and were the RPDs within the required acceptance criteria?	Samples analyzed in triplicate.
18. For each analytical fraction of organic compounds, were recoveries for the internal standard within the acceptance criteria?	Yes
19. Were surrogate recoveries within the required acceptance criteria?	Yes
20. Were corrective action forms provided for all non-conforming data?	NA
21. Were all the species-specific test conditions in Appendix V met?	NA
22. Were the test-specific age requirements met for each test species?	NA
23. Was the bulk physical/chemical testing performed on the sediments/composites that were biologically tested?	No biological testing is planned
24. Were the mortality acceptance criteria met for the water column and sediment toxicity tests?	NA
25. Were the test performance requirements in Table 11.3 of EPA (1994a) met?	NA

**Table II-3: Quality Control Summary for Analyses of Pesticides in Sediment, Tissue and Water Matrices**

Method Reference Number: 8081B

<b>Quality Control (QC) Element</b>	<b>Acceptance Criteria*</b>	<b>Criteria Met? Yes/No</b>	<b>List results outside criteria (Cross-reference results table in data report)</b>	<b>Location of Results (Retained at Lab or in Data Package)</b>
Initial Calibration	Must be performed prior to the analysis of any QC sample or field sample (< 20 % RSD for each compound)	Yes		Retained at lab
Calculation of Method Detection Limits (MDLs)	For each matrix, analyzed once per 12 month period (see Section 5.2 for MDL procedure)	Yes		Data Package
Calibration Verification (Second Source)	Once, after initial calibration (80 to 120% recovery of each compound)	Yes		Retained at lab
Continuing Calibration	Every 20 injections ( $\leq$ 15 % D)	Yes		Retained at lab
Standard Reference Materials	Within the limits provided by vendor	NA		
Method Blank	No target analytes > RL	Yes		Data Package
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	One set (MS/MSD) per group of field samples. Must contain all target analytes. (Recovery Limits 50 to 120%; RPD $\leq$ 30%).	Yes	In house limits of 30-150 %R were used.	Data Package
Analytical Replicates	Analyze one sample in duplicate for each group of field samples (RPD < 30%)	Yes		Data Package
Surrogate Recoveries	Calculate % recovery (30 to 150% recovery)	Yes		Data Package

\* The Quality Control Acceptance Criteria are general guidelines. If alternate criteria are used, they must be documented in this table

**Table II-4: Quality Control Summary for Analyses of Polychlorinated Biphenyls (PCB congeners) in Sediment, Tissue and Water Matrices**

Method Reference Number: 8270E Mod

<b>Quality Control (QC) Element</b>	<b>Acceptance Criteria*</b>	<b>Criteria Met? Yes/No</b>	<b>List results outside criteria (Cross-reference results table in data report)</b>	<b>Location of Results (Retained at Lab or in Data Package)</b>
Initial Calibration	Must be performed prior to the analysis of any QC sample or field sample (<20 % RSD for each compound)	Yes		Retained at lab
Calculation of Method Detection Limits (MDLs)	For each matrix, analyzed once per 12 month period (see Section 5.2 for MDL procedure)	Yes		Data Package
Calibration Verification (Second Source)	Once, after initial calibration. (80 to 120% recovery of each compound)	Yes		Retained at lab
Continuing Calibration	Every 20 injections ( $\pm 15$ % D)	Yes		Retained at lab
Standard Reference Materials	Within the limits provided by vendor	NA		
Method Blank	No target analytes > RL	Yes		Data Package
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	One set (MS/MSD) per group of field samples. Must contain all target analytes. (Recovery Limits 50 to 120%; RPD <30%).	Yes	In house limits of 30-150 %R were used. The %R was low and the RPD was high for PCB congeners 8 and 18. See pages 84 and 85 of the data package.	Data Package
Analytical Replicates	Analyze one sample in duplicate for each group of field samples (RPD < 30%)	Yes		Data Package
Surrogate Recoveries	Calculate % recovery (30 to 150% recovery)	Yes		Data Package

\* The Quality Control Acceptance Criteria are general guidelines. If alternate criteria are used, they must be documented in this table.

**Table II-5: Quality Control Summary for Analyses of Metals in Sediments, Tissue and Water Matrices**

Method Reference Numbers: EPA 6020B and 245.7

<b>Quality Control (QC) Element</b>	<b>Acceptance Criteria*</b>	<b>Criteria Met? Yes/No</b>	<b>List results outside criteria (Cross-reference results table in data report)</b>	<b>Location of Results (Retained at Lab or in Data Package)</b>
Linear Range Determination for ICP	Performed Quarterly	Yes		Retained at lab
Initial Calibration for AA, Hg	Performed Daily (Correlation Coefficient $\geq 0.995$ )	Yes		Retained at lab
Calculation of Method Detection Limits (MDLs)	For each matrix, analyzed once per 12 month period (see Section 5.2 for MDL procedure)	Yes		Data Package
Initial Calibration Verification/ Continuing Calibration Verification	Hg: 80 to 120% recovery Other metals: 90 to 110% recovery	Yes		Retained at lab
Initial Calibration Blank/ Continuing Calibration Blank	No target analytes > Instrument Detection Limit (IDL)	Yes		Retained at lab
Standard Reference Materials	Within the limits provided by vendor	NA		
Method Blank	No target analytes > RL	Yes		Data Package
Sample Spike/ Sample Duplicate	One set per group of field samples. Must contain all target analytes. Recovery Limits (75 to 125%; RPD < 20% or < 35%).	Yes	In house limits of 80-120 %R were used.	Data Package
Analytical Replicates	Analyze one sample in duplicate for each group of field samples (RPD < 30%)	Yes		Data Package

\* The Quality Control Acceptance Criteria are general guidelines. If alternate criteria are used, they must be documented in this table.

**Table II-6: Quality Control Summary for Analyses of other Organic Chemicals not listed in Sediment, Tissue and Water Matrices**

Method Reference Numbers: 8270D (Pentachlorophenol)

Quality Control (QC) Element	Acceptance Criteria*	Criteria Met? Yes/No	List results outside criteria (Cross-reference results table in data report)	Location of Results (Retained at Lab or in Data Package)
Initial Calibration	Must be performed prior to the analysis of any QC sample or field sample (<20 % RSD for each compound)	Yes		Retained at lab
Calculation of Method Detection Limits (MDLs)	For each matrix, analyzed once per 12 month period (see Section 5.2 for MDL procedure)	Yes		Data Package
Calibration Verification (Second Source)	Once, after initial calibration (80 to 120% recovery of each compound)	Yes		Retained at lab
Continuing Calibration	At the beginning of every 12 hour shift ( $\pm 15\%$ D)	Yes		Retained at lab
Standard Reference Materials	Within the limits provided by vendor	NA		
Method Blank	No target analytes > RL	Yes		Data Package
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	One set (MS/MSD) per group of field samples. Must contain all target analytes. (Recovery Limits 50 to 120%; RPD <30%)	Yes	In house limits of 30-150 %R were used.	Data Package
Analytical Replicates	Analyze one sample in duplicate for each group of field samples (RPD < 30%)	Yes		Data Package
Surrogate Recoveries	Calculate % recovery (30 to 150% recovery)	Yes		Data Package
Internal Standard Areas (if applicable)	Within 50 to 200% of internal standards in continuing calibration check	Yes		Retained at lab

\* The Quality Control Acceptance Criteria are general guidelines. If alternate criteria are used, they must be documented in this table