Newark Bay Study Area

Sediment Quality Triad and Porewater Field Report

Baseline Human Health and Ecological Risk Assessment

Glenn Springs Holdings, Inc.

East Brunswick, New Jersey

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Revision 1

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Acronyms and Abbreviations

BERA baseline ecological risk assessment

BHHERA baseline human health and ecological risk assessment

BHHRA baseline human health risk assessment

°C degrees Celsius

CERCLA Comprehensive Environmental Response, Compensation, and

Liability Act

COPC constituent of potential concern

COPEC constituent of potential ecological concern

DI deionized
L liter

NBSA Newark Bay Study Area

NY/NJ New York/New Jersey

NYC/LI New York City/Long Island

PAHs polycyclic aromatic hydrocarbons

PCBs polychlorinated biphenyls

PCDDs/PCDFs polychlorinated dibenzo-p-dioxins/polychlorinated dibenzofurans

PE polyethylene

PID photoionization detector

POM polyoxymethylene

PPE personal protective equipment
PQL project quantitation limit

Problem Formulation Final Newark Bay Study Area Problem Formulation

QA/QC quality assurance/quality control SOP standard operating procedure

SQT sediment quality triad

SQT Field Report Sediment Quality Triad and Porewater Field Report

SQT QAPP Sediment Quality Triad and Porewater Sampling and Analysis Quality

Assurance Project Plan

Tierra Solutions, Inc.

USCG United States Coast Guard

USEPA U.S. Environmental Protection Agency

VOC volatile organic compound

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1. Introduction

This Sediment Quality Triad and Porewater Field Report (SQT Field Report) documents the field activities associated with implementation of the Sediment Quality Triad and Porewater Sampling and Analysis Quality Assurance Project Plan (SQT QAPP; Tierra Solutions, Inc. [Tierra] 2015b) in the Newark Bay Study Area (NBSA), as approved by the United States Environmental Protection Agency (USEPA) on September 3, 2015. The SQT QAPP field program was performed in September 2015. Pursuant to an Administrative Order on Consent under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA Index 02-2004-2010; USEPA 2004), Glenn Springs Holdings, Inc. is conducting a Remedial Investigation/Feasibility Study, on behalf of Occidental Chemical Corporation (the successor to Diamond Shamrock Chemicals Company [formerly known as Diamond Alkali Company]), for the NBSA.

The SQT QAPP program involved collecting sediment samples for the following analyses:

- Sediment chemistry for constituents of potential concern (COPCs) and constituents of potential ecological concern (COPECs) that include a suite of organic and inorganic analytes.
- Sediment toxicity testing in a laboratory using surface sediment collected during the SQT QAPP field program and laboratory-supplied standard amphipod test species *Leptocheirus plumulosus*. Survival and growth were measured in the toxicity tests.
- Benthic invertebrate community analyses using surface sediment collected during the SQT QAPP field program. Specimens were counted and identified from bulk surface sediment samples.
- Sediment bioaccumulation testing in a laboratory using surface sediment collected during the SQT
 QAPP field program and laboratory-supplied polychaete test species *Nereis virens*. Tissue samples of
 the polychaete were analyzed for COPECs.
- Porewater chemistry collected from surface sediment ex-situ in the laboratory. Porewater samples were
 directly analyzed using dialysis bags for inorganics (metals, mercury, methyl mercury, dissolved organic
 carbon, ammonia, and total sulfide); and indirectly analyzed using passive samplers for a select group of
 organic COPECs for which porewater/solids partitioning coefficients have been experimentally
 determined and reported in the literature. These include polychlorinated biphenyls (PCBs), polycyclic
 aromatic hydrocarbons (PAHs), pesticides, and polychlorinated dibenzo-p-dioxins/polychlorinated
 dibenzofurans (PCDDs/PCDFs).

The data collected during the SQT QAPP field program will be used in the baseline human health and ecological risk assessment (BHHERA) for the following purposes:

SQT data to support the baseline ecological risk assessment (BERA). The sediment quality triad (SQT)
assessment is an effects-based, weight-of-evidence approach used to evaluate risks to benthic
invertebrate communities using three primary lines of evidence: 1) sediment chemistry, 2) sediment

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toxicity, and 3) benthic invertebrate community metrics. The SQT method incorporates a combination of both quantitative and qualitative analyses to identify if there are apparent cause-and-effect relationships between sediment and/or porewater chemistry and other SQT components. The approach provides information needed to identify degraded conditions and assess impacts of pollution-induced effects on benthic invertebrates.

- 2. Bioaccumulation data and porewater data as additional lines of evidence to support the BERA.
- 3. Surface sediment chemistry analyses to support the BHHRA.

To support the NBSA BERA, two additional lines of evidence, or measurement endpoints, were added to the SQT to help better assess potential chemical-specific toxicological effects and bioaccumulation in benthic invertebrates: laboratory bioaccumulation testing and ex-situ porewater passive sampling. The bioaccumulation study will provide data on the direct uptake of various chemical contaminants through the analysis of tissue samples by a representative invertebrate organism—the polychaete worm (*Nereis virens*)—that lives in the sediments of the NBSA. This tissue data will be used to help assess risks to invertebrates, and will also be used to model trophic transfer of chemicals to upper trophic level wildlife receptors (e.g., birds and mammals).

The second additional line of evidence is the collection of porewater chemistry data using passive samplers deployed in NBSA sediments in the laboratory (i.e., ex-situ). Passive samplers will provide information to estimate the dissolved-phase porewater concentrations of some contaminants in NBSA sediment. The dissolved-phase concentration is a useful measure of the amount of a contaminant that is bioavailable to infaunal benthic invertebrates. Passive sampler data collected under the SQT QAPP supports the following objectives of the BERA:

- 1. Estimate the bioavailable fraction of non-polar organic COPECs (i.e., uptake of dissolved fraction of compounds) in ex-situ test sediment. Polyethylene (PE) and polyoxymethylene (POM) passive samplers will be used to add this additional line of evidence for non-polar organic compounds.
- 2. Estimate the bioavailable fraction of metals/inorganic COPECs (i.e., uptake of dissolved fraction of chemicals) in ex-situ test sediment. Diffusion samplers (i.e., dialysis bags) will be used to add this additional line of evidence for inorganic COPECs.
- Evaluate exposure-response relationships between the biological measures of effect (i.e., laboratory toxicity tests and benthic community impairment metrics) of the SQT tests and various measures of chemistry in the NBSA sediment samples (i.e., bulk sediment and porewater passive sampler chemistry).

Sediment samples were also collected from shoreline locations where human access is possible/likely to assess the potential human health hazard and risk of chemicals from the dermal contact and incidental ingestion exposure routes. Some of these sediment samples were collected from the sample locations as

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intertidal area samples for the SQT evaluation, and some were additional, non-SQT samples from other target shoreline locations.

1.1 Newark Bay Study Area

Newark Bay, part of the New York/New Jersey (NY/NJ) Harbor Estuary, is located between the shores of Newark and Elizabeth to the west, Jersey City and Bayonne to the east, the confluence of the Passaic and Hackensack Rivers to the north, and Staten Island to the south. Newark Bay is linked to Upper New York Bay by the Kill van Kull and to the Raritan Bay by the Arthur Kill (Figure 1). Figure 2 provides an aerial photograph demarcating local landmarks, bay reaches, and navigation channels.

The NBSA is situated within one of the most urbanized and industrialized areas in the United States and is known to be contaminated with a number of chemicals, including, but not limited to, PCBs, PAHs, pesticides, herbicides, volatile organic compounds (VOCs), semivolatile organic compounds, PCDDs/PCDFs, and metals (National Oceanic and Atmospheric Administration 1995; USEPA 1998).

The majority of the NBSA shoreline consists of commercial, developed, or abandoned properties. Information from the Reconnaissance Survey in September 2013 indicates that a majority of the shoreline (66%) consists of bulkhead and riprap (Tierra 2015a). Residential and recreational areas are located along the waterfront in many of these bulkhead and riprap areas, particularly along the eastern shoreline. Four new residential areas have been proposed for development (Tierra 2013).

1.2 Investigative Approach

The data collected pursuant to the SQT QAPP (Tierra 2015b) will be used for developing the BERA, and to partially support the BHHRA. Benthic invertebrate tissue and the co-located sediment data collected under the SQT QAPP will be used in the BERA as input parameters to a food web model, which will estimate dietary exposure of upper trophic level ecological receptors (i.e., birds and mammals) to COPECs. Surface sediment data will also be compared to appropriate toxicity benchmarks to qualitatively evaluate potential ecological risks to aquatic plants, fish, and reptiles in the NBSA. Data collected from other sampling efforts in the NBSA will also be used, in conjunction with the data collected under the SQT QAPP, to support the BHHERA. For example, fish and shellfish tissue data collected in 2014, 2015, and 2016 as part of the tissue sampling efforts described in the *Crab and Clam Sampling and Analysis Quality Assurance Project Plan* (Tierra 2014a) and *Fish Sampling and Analysis Quality Assurance Project Plan* (Tierra 2014b), and sediment data collected in 2014 co-located with the softshell clam collection locations, will also be used to evaluate potential ecological and human health risks from exposure to chemicals in the NBSA. The ex-situ porewater analytical data will also be used to evaluate the potential narcotic effect of PAHs and pesticides on benthic organisms using the sum Toxic Unit approach, as described in USEPA (2012) and USEPA (2003a).

The primary sample type collected as part of the SQT QAPP sampling event was sediment, which was collected from locations in the Intertidal Areas, Subtidal Flat areas, and Transitional Slope areas of the NBSA (Figure 3). Surface sediment samples were collected from approximately the top 6 inches

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(approximately 15 centimeters) for chemical analysis, toxicity testing, benthic community analyses, and bioaccumulation testing. Sediment was also collected and shipped to the University of Maryland Baltimore County for ex-situ deployment of passive samplers to collect information about the dissolved-phase porewater concentrations of contaminants in NBSA sediment. The dissolved-phase concentration is a useful measure of the amount of a contaminant that is bioavailable to infaunal benthic invertebrates. Sediment used in the passive sampler tests was collected from the same stations as those identified for the SQT evaluation.

The bioaccumulation tests were performed using surface sediment samples collected during the SQT QAPP field program and laboratory-supplied polychaete worms. At the conclusion of the bioaccumulation test, tissue samples of the polychaete worm were analyzed for a subset of chemical parameters as described in the SQT QAPP (Tierra 2015b).

1.2.1 Baseline Ecological Risk Assessment

The data collected pursuant to the SQT QAPP, in conjunction with additional sediment and tissue data collected under the other NBSA risk assessment Quality Assurance Project Plans (i.e., sediment data collected in 2014 co-located with the softshell clam collection locations and fish, crab, and clam tissue data collected in 2014, 2015, and 2016), will collectively support the BERA in evaluating the assessment endpoints for plant, benthic invertebrate, fish, bird, and mammal populations. These assessment endpoints and their associated risk questions were established in the Final Newark Bay Study Area Problem Formulation (Problem Formulation; Tierra 2013) and were re-stated in the SQT QAPP (Tierra 2015b).

1.2.2 Baseline Human Health Risk Assessment

Sediment data collected during the SQT QAPP field sampling effort, as well as sediment data collected in 2014 co-located with the softshell clam collection locations, will be used to support the BHHRA by assessing the potential human health hazard and risk of chemicals from the dermal contact and incidental ingestion exposure routes. Potential surface sediment exposure scenarios are presented in the human health conceptual site model included in the Problem Formulation (Tierra 2013).

1.3 Sampling Rationale

The SQT QAPP field program was developed pursuant to a USEPA-approved Technical Memorandum (Arcadis 2015a) entitled *Risk Assessment Field Sampling and Analysis Program – Newark Bay Study Area*. A random, stratified, gridded sample design was based on the size (areal extent) of the portion of the zone available for sampling, as described in the SQT QAPP (Tierra 2015b). A sediment sample size of 30 was determined, statistically, to be adequate to evaluate relationships among chemical concentrations, amphipod survival, and the various benthic metrics in the NBSA. Using Systat® 12.0, a sample size of 29 was calculated as the minimum size necessary to detect a significant correlation coefficient when the true correlation is 0.5 or greater, with 95% confidence and 80% power. By way of comparison, a sample size of 28 was used to collect SQT samples from each sub-basin in the NY/NJ Harbor Estuary by USEPA's

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Regional Environmental Monitoring and Assessment Program (USEPA 2003b). As such, the proposed sample size of 30 is consistent with that utilized by USEPA in the past within Newark Bay.

For logistical purposes only, the NBSA was divided into three geographic zones: Newark Bay North, Newark Bay Central, and Newark Bay South. The 30 sampling stations were randomly placed within each geographic zone to generally provide even spatial distribution of sediment sampling locations. Thirteen stations were located in Newark Bay North, seven stations were located in Newark Bay Central, and 10 stations were located in Newark Bay South (Figure 3). Newark Bay also contains several geomorphic areas, three of which have been identified as important for sampling considerations: Intertidal Areas, Subtidal Flats, and Transitional Slopes¹. Nine of the 30 stations were located in the Intertidal Areas, 18 were located in the Subtidal Flats (including three stations located in the formerly dredged area in Newark Bay North), and three stations were located in the Transitional Slopes (Figure 3).

SQT analyses and porewater chemistry analyses were conducted at the 30 stations. Bioaccumulation tests were conducted at a subset of eight stations (three stations in the Subtidal Flats, one station in the Transitional Slopes, and four stations in the Intertidal Areas).

The table below provides a summary of the numbers of samples and associated analyses for the SQT, additional lines of evidence to support the BERA, and BHHRA analyses and numbers of stations.

Proposed Analysis	Number of Subtidal Flat Stations*	Number of Transitional Slope Stations	Number of Intertidal Stations	Total Number of Sampling Stations
SQT Analyses		•		
Sediment Chemistry (BHHRA)	18**	3	9***	30
Toxicity Testing with <i>L. plumulosus</i> (10-day)	18	3	9	30
Toxicity Testing with <i>L. plumulosus</i> (28-day)	18	3	9	30
Benthic Invertebrate Community Analysis	18	3	9	30
Additional Lines of Evidence to Support	the BERA			
Bioaccumulation Study (N. virens)	3	1	4	8
Porewater Chemistry	18	3	9	30
Additional sediment chemistry for BHHRA			13	13

Notes:

* Includes formerly dredged areas in Newark Bay North.

^{** 3} of these subtidal stations are being used to support the BHHRA.

^{*** 7} of these intertidal stations are being used to support the BHHRA.

¹ Refer to the Problem Formulation (Tierra 2013) for detailed descriptions of the geographic and geomorphic areas.

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1.4 Quality Assurance/Quality Control Program

Field and laboratory quality assurance/quality control (QA/QC) procedures were performed according to, and consistent with, the protocols described in the SQT QAPP (Tierra 2015b). QA/QC samples were collected to evaluate the precision, accuracy, representativeness, completeness, and comparability of both field and laboratory procedures. Data were generated using methods designed to confirm that the data collected are of sufficient quantity and quality to meet the Assessment Endpoints noted in Section 1.2.1. Two types of QC checks (field and laboratory) were used to evaluate the data quality. Field and laboratory QA procedures, as outlined in the field and laboratory standard operating procedures (SOPs) of the SQT QAPP, were followed to document proper sample handling and tracking. The field QA/QC program that was used is described in Section 2.9.3 of this SQT Field Report.

2. Field Activities

The SQT QAPP field program was conducted in accordance with the SQT QAPP (Tierra 2015b) and included the following field activities:

- · Sampling pre-mobilization activities
- Sampling mobilization activities
- Sediment, benthic invertebrate, and surface water collection (surface water was not a targeted sampling matrix, surface water was collected and used in the field facility for the shipment of sediment for porewater analyses)
- Sediment transport and storage
- Sample processing
- Sample handling, preservation, and shipment to laboratories
- Sample identification and tracking
- · Management of field data
- Field activity assessment

These field activities are described below.

2.1 Sampling Pre-Mobilization Activities

Prior to initiating sediment collection activities, a series of pre-mobilization activities were completed. These activities included permitting, sediment sample location utility clearance, field readiness review, and collection of a Teflon®-liner field blank sample. These activities are described below.

2.1.1 Permitting

The SQT QAPP field activities did not require obtaining permits, but did require notification of the project scope to the United States Coast Guard (USCG) Local Notice to Mariners. The USCG was notified by letter on September 3, 2015.

2.1.2 Grab Sample Location Utility Clearance

Utilities located near sediment sampling locations were identified with assistance from NJ One Call and New York City/Long Island (NYC/LI) One Call. NJ and NYC/LI One Call identified 46 companies as potentially having underground utilities near the proposed SQT QAPP sampling locations. These companies were contacted to confirm if the proposed sampling locations were near their respective subsurface utilities.

Three proposed sampling stations (153, 167, and 173) were relocated prior to implementing the SQT QAPP field program due to their proximity to identified utilities. Location 153 was moved approximately 75 feet north parallel to the shoreline, location 167 was moved approximately 20 feet south along the shoreline, and location 173 was moved approximately 20 feet south along the shoreline. Each of these new sampling locations remained within the proposed geomorphic areas from the SQT QAPP and were approved by USEPA. A summary of changes is provided in Table 1. The USEPA-approved Protocol Modification Form documenting these sampling location changes is provided in Appendix A.

Prior to sampling at stations 149, 150, 167, 172, 176, and 178, utility representatives requested notification the day before sampling so they could observe sampling activities. Utility representatives were contacted the day before sampling at these stations.

2.1.3 Readiness Review

In accordance with the SQT QAPP (Tierra 2015b), a readiness review was conducted on August 27, 2015. This readiness review was conducted to review the details of SQT field activities, including pre-mobilization and mobilization activities and sample collection and processing. Representatives from Tierra, Arcadis, and FTS were present during the readiness review.

2.1.4 Teflon®-Liner Pre-Program Field Blank Collection

Teflon® liners were used to line the 5-gallon plastic buckets used to hold and ship sediment collected from each sampling station. The liners were used to provide a barrier and eliminate contact between the plastic 5-gallon buckets and the collected sediment. The liners provided protection from potential cross-contamination due to possible leaching of COPCs/COPECs from the plastic buckets into the sediment. Prior to use, a field blank was collected on August 6, 2015 to confirm the Teflon® liners were clean (i.e., void of any chemical contaminants), and therefore, appropriate for use. COPCs/COPECs were not detected above the project quantitation limits (PQLs) in the field blank, indicating the Teflon® liners would not be a source of cross-contamination. The Teflon®-liner pre-program field blank analytical results are provided in Appendix B.

2.2 Sampling Mobilization Activities

Following pre-mobilization, Arcadis began mobilization procedures for SQT QAPP sampling. The mobilization activities included equipment decontamination, processing area setup, and vessel mobilization. These activities are described below.

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2.2.1 Equipment Decontamination

In accordance with SOP No. 3 – Decontamination of the SQT QAPP (Tierra 2015b), sediment collection and sample processing equipment were decontaminated on September 9, 2015 at the 80 Lister Avenue facility in Newark, New Jersey. The decontamination procedures included an Alconox scrub, followed by a tap water rinse, followed by a nitric acid rinse, followed by a deionized (DI) water rinse, followed by a methanol rinse, followed by a hexane rinse, and finally, followed by a DI water rinse. This decontamination process was continued throughout sediment collection activities. Section 2.9.3.1 describes the collection of field blanks associated with this decontamination procedure.

2.2.2 Processing Area Mobilization

A processing area was set up at the 80 Lister Avenue facility in Newark, New Jersey on September 9, 2015. For health and safety purposes, an area immediately outside the facility served as the exclusion zone, where sediment processing and sampling activities were conducted. The contamination reduction zone, including personal protective equipment (PPE) and chemical storage, was located between the exclusion zone and the garage door leading to the facility. Additional PPE and chemicals were stored in the designated decontamination area within the facility. The facility contained a walk-in refrigerator (temperature controlled to 4 degrees Celsius [°C]) for bulk sediment and surface water storage. Sediment samples for chemistry analysis were stored in coolers within the walk-in refrigerator during processing activities, prior to being shipped to their respective laboratories.

2.2.3 Sampling Vessel Mobilization

On September 9, 2015, Arcadis mobilized a sampling vessel to the NBSA. The vessel was a 26-foot pontoon boat, equipped with (among other standard marine equipment) the following or equivalent instrumentation and equipment: a real-time kinematic differential global positioning system; HYPACK Max marine survey positioning software; petite PONAR dredges (6-inch); standard PONAR dredges (9-inch); 5-gallon plastic buckets; Teflon® liners for 5-gallon buckets; and large coolers for sediment, surface water, and benthic invertebrate sample storage. The Arcadis sampling vessel was launched daily from the Passaic River Yacht Club in Kearny, New Jersey.

2.3 Sediment, Benthic Invertebrate, and Surface Water Collection

In accordance with the procedures outlined in the SQT QAPP (Tierra 2015b), sediment and benthic invertebrate samples were collected using grab sampling techniques, and surface water was collected using a peristaltic pump. Surface water was collected to provide overlying water for the sediment to be used in the porewater tests. These activities are described below.

2.3.1 Sediment Collection

Sediment grab samples were collected from 43 stations over 13 days (September 13 to 17, September 20 to 24, and September 28 to 30, 2015). Sample stations were located in accordance with SOP No. 1 – Locating Sample Points Using Global Positioning System and SOP No. 2 – Positioning of the SQT QAPP (Tierra 2015b). The original locations of stations 140, 143, 145, 160, 176, 177, and 178 were field adjusted/moved due to lack of sufficient recoverable sediment at the proposed locations (see Table 1), as required per the SQT QAPP. These revised sampling station locations were discussed with and verbally approved by USEPA in the field. Coordinates of the final sampling stations are provided in Table 2, and the final sediment sampling stations are shown on Figure 3.

Sediment grab samples were collected in accordance with SOP No. 6 – Sediment Sample Collection of the SQT QAPP (Tierra 2015b). Following positioning over the grab sample locations, sediment was collected using a petite PONAR dredge (6 inches by 6 inches) lowered by hand to the sediment surface. If insufficient recovery was encountered using the petite PONAR dredge, a standard PONAR dredge (9 inches by 9 inches) was used. Table 2 includes the PONAR size used for each sample location. Multiple attempts were needed at each location to collect sufficient sediment mass for the planned laboratory analyses. Surface sediment collection forms are provided in Appendix C.

The first sediment grab sample retrieved from each location was emptied into a decontaminated stainless steel bowl, and chemistry samples were collected using a decontaminated stainless steel spoon for laboratory analysis of VOCs, acid volatile sulfide/simultaneously extracted metals, and total extractable petroleum hydrocarbons- (TEPH-) purgeables, as described in SOP No. 6 – Sediment Sample Collection of the SQT QAPP (Tierra 2015b). This sediment was not composited or homogenized with the rest of the collected sediment. After this first sediment grab sample was collected, a series of additional grab samples were collected at each station to obtain sufficient sediment mass to perform the remaining sediment chemistry analyses, sediment toxicity testing, benthic invertebrate collection, bioaccumulation testing (as necessary), and ex-situ porewater passive sampling. This sediment was placed directly into Teflon®-lined 5gallon plastic buckets from the petite PONAR dredge. However, if the standard sized PONAR was used. sediment grabs were first emptied into a decontaminated stainless steel bowl and then transferred into the Teflon®-lined bucket to avoid ripping the liner with the dredge. Each Teflon®-lined bucket was filled approximately three-quarters full of sediment, each liner was sealed with electrical tape, lids were placed on each bucket, and the buckets were labeled prior to storage in the on-board coolers filled with ice. The amount of bulk sediment needed at each location varied depending on the planned analyses/tests. Table 3 shows the analyses/tests conducted at each sampling station.

There was one deviation from the SQT QAPP (Tierra 2015b) recorded during sediment collection activities. Section 2.2 of SOP No. 6 – Sediment Sample Collection of the SQT QAPP (Tierra 2015b) does not provide an acceptable percent recovery value for a grab sample. As such, an acceptable percent recovery of the grab sampler was defined as approximately 3 inches (or 50 percent penetration with the 6-inch PONAR). If hard bottom or an unacceptable percent recovery was encountered at a sampling location, the field crew probed the sediment bottom around the targeted location (no more than 500 feet from the target

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coordinates) to locate a more suitable sampling location. If no suitable location could be located, Tierra contacted USEPA to suggest an alternate sampling location. The USEPA-approved Protocol Modification Form for this deviation is provided in Appendix A.

2.3.2 Benthic Invertebrate Collection

Three discrete grab samples were collected from each of the 30 SQT sampling stations for benthic invertebrate community analysis using a petite PONAR dredge or a standard PONAR dredge, depending on sediment recovery at each sampling location. Table 2 lists the PONAR size used at each sampling location. Vessel positioning and sediment collection are described in Section 2.3.1. Each of the three grab samples were sieved immediately and independently after collection, as described in SOP No. 6 – Sediment Sample Collection of the SQT QAPP (Tierra 2015b). The contents of each sieved grab sample were photographed, placed in appropriately labelled sample containers, preserved with isopropyl alcohol, and sealed as described in SOP No. 5 – Containers, Preservation, Handling, and Tracking of Samples for Analysis and SOP No. 6 – Sediment Sample Collection of the SQT QAPP. These samples were not homogenized. Appendix D contains photographs of the benthic invertebrate samples collected at each sampling station.

There was one deviation from the SQT QAPP (Tierra 2015b) recorded during benthic invertebrate sample collection. Worksheet #19-5 indicated that two 1-gallon Ziploc freezer bags (or equivalent) would be used as the containers for the benthic invertebrate community assessment; however, the laboratory conducting the benthic invertebrate community assessment sent 1-liter plastic bottles for the samples. As such, 1-liter plastic bottles were used to collect the benthic invertebrate community samples. The USEPA-approved Protocol Modification Form for this deviation is provided in Appendix A.

2.3.3 Surface Water Collection

Approximately 70 gallons of surface water were collected using a peristaltic pump and Teflon® tubing from one location in northern Newark Bay for use in the ex-situ porewater passive sampling study. The surface water was collected in Teflon®-lined 5-gallon buckets. Approximately 20 gallons of surface water was collected on September 13, 2015, approximately 20 gallons was collected on September 14, 2015, and approximately 30 gallons was collected on September 28, 2015. The surface water was collected from the mid-depth of the water column at the sampling location. The surface water collection location is shown on Figure 3.

2.3.4 Surface Water Quality Measurements

Surface water quality measurements were recorded in the field notebook at each sampling station in accordance with SOP No. 7 – Measuring Surface Water Quality of the SQT QAPP (Tierra 2015b). Surface water quality parameters recorded during SQT sampling activities include temperature, conductivity, salinity, dissolved oxygen, pH, and oxidation reduction potential. The measurements are provided in Table 4.

2.4 Sample Transport and Storage

Samples were transported and stored in accordance with the procedures outlined in SOP No. 6 – Sediment Sample Collection of the SQT QAPP (Tierra 2015b). During sediment collection activities, sediment was stored on the vessel in Teflon®-lined 5-gallon buckets stored in large coolers filled with ice. To maintain the appropriate storage temperature, the ice in the coolers was replaced daily. At the end of each sampling day, the coolers containing the 5-gallon buckets were unloaded from the vessel and transported from the marina to the 80 Lister Avenue facility in Newark for storage in a walk-in refrigerator maintained at 4°C for subsequent processing.

Field-preserved benthic invertebrate samples were stored on the vessel in dedicated coolers without ice. At the end of each sampling day, the coolers were unloaded from the vessel and transported from the marina to the 80 Lister Avenue facility for storage in a dedicated area of the facility. Refrigeration of these samples was not required, as per the SQT QAPP (Tierra 2015b).

2.5 Sediment Processing and Sample Collection

Sediment was processed over 13 days (September 14 to 18, September 21 to 25, and September 29 to October 1, 2015) in accordance with SOP No. 5 – Containers, Preservation, Handling, and Tracking of Samples for Analysis and SOP No. 6 – Sediment Sample Collection of the SQT QAPP (Tierra 2015b). Sediment collected from each sampling location was processed the day after collection. Additional details are provided below.

2.5.1 Procedures Used for Sample Collection

Prior to sample preparation, the bulk sediment samples from each sampling station were homogenized in a large decontaminated stainless steel mechanical mixer in accordance with SOP No. 6 – Sediment Sample Collection of the SQT QAPP (Tierra 2015b). Sediment samples were mixed until textural, color, and moisture homogeneity were achieved. The mechanical mixer was decontaminated between sampling stations as described in SOP No. 3 – Decontamination of the SQT QAPP (Tierra 2015b). Once homogenized, the appropriate amount of sediment for each analysis was placed in appropriately labeled sample containers, as described in the SQT QAPP. Sediment for chemistry analysis was transferred from the mixer into a decontaminated stainless steel bowl and then transferred into the appropriate sample jars using decontaminated stainless steel spoons. Sediment for toxicity, bioaccumulation, and porewater analyses was transferred directly from the mixer into the appropriate sample containers. For sampling locations where sediment was collected for chemistry analysis only, sediment was mixed in a Teflon®-lined 5-gallon bucket using a large decontaminated stainless steel spoon until homogeneity was achieved, and then the sediment was transferred into the appropriate sample jars using decontaminated stainless steel spoons.

Sediment sample redox conditions likely changed during homogenization in the mechanical mixer, in comparison to the in-situ conditions. As described in the USEPA-approved QAPP (Tierra 2015b), the

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homogenized samples in the 5-gallon buckets used for analysis of metals and other inorganics were allowed to sit for two weeks prior to the start of the porewater study to re-establish redox conditions since most dissolved inorganics and metals are redox sensitive. The potential impacts of changes in redox conditions on the ex-situ porewater analytical results will be discussed in the risk assessment's uncertainty analysis.

During sample processing, one Surface Sediment Sample Processing Form was completed for each sampling location. A visual description of each sample was recorded on the Surface Sediment Sample Processing Form during sample collection both prior to and after homogenization using the mechanical mixer. In addition, a photograph of each sample was taken after homogenization. Photographs of each sample are provided in Appendix D and the Surface Sediment Sample Processing Forms are provided in Appendix E.

There was one deviation from the SQT QAPP (Tierra 2015b) recorded during analytical chemistry sample processing activities. Section 2.2 of SOP No. 6 – Sediment Sample Collection of the SQT QAPP (Tierra 2015b) states "Collect a small aliquot (approximately 1 ounce) of sediment representative of the quality encountered during sampling activities"; however, continuous air monitoring was conducted within the sample processing area during sample processing activities; therefore, a separate photoionization detector (PID) headspace screening was not necessary. As such, PID headspace screening was not conducted during sediment sample collection activities. The USEPA-approved Protocol Modification Form for this deviation is provided in Appendix A.

2.5.1.1 Sediment Chemistry

For sediment chemistry analyses, the appropriate amount of homogenized sediment for each analysis, as described in the SQT QAPP (Tierra 2015b), was placed in appropriately labeled sample containers. Once filled, each container was sealed and stored for shipment to the laboratory at the end of the sampling day.

2.5.1.2 Toxicity and Bioaccumulation Testing

For the 22 out of 30 stations where only toxicity testing was conducted (no bioaccumulation testing), one Teflon®-lined 5-gallon plastic bucket was prepared for each station. Approximately 1.5 gallons of homogenized sediment was placed in each 5-gallon bucket. For the eight stations where both toxicity and bioaccumulation testing were conducted, two Teflon®-lined 5-gallon plastic buckets were prepared for each station. Approximately 4 gallons of homogenized sediment were placed in each 5-gallon bucket.

Once the 5-gallon buckets were filled, air was squeezed out of the Teflon® liner, the top of the Teflon® liner was secured with electrical tape, and the bucket was sealed and stored in the walk-in refrigerator for shipment to the laboratory.

2.5.1.3 Porewater Passive Sampling

For ex-situ porewater passive sampling, one 5-gallon plastic bucket was prepared for each station. Approximately 4 gallons of homogenized sediment were placed in each 5-gallon bucket. The remaining space in each bucket (approximately 1 gallon) was then filled with site surface water. In addition to the 5-gallon plastic bucket, a 1-gallon plastic bucket was prepared for each sampling station. Approximately 1 gallon of homogenized sediment was placed in each 1-gallon bucket. Site surface water was not placed in this 1-gallon bucket. A 1-liter (L) amber glass bottle was filled with approximately 0.8-L of homogenized sediment for each sampling station. Once filled, each bucket and each 1-L amber glass bottle was sealed and stored in the walk-in refrigerator for transport to the laboratory.

In addition to sediment, six Teflon®-lined 5-gallon plastic buckets were filled with approximately 23 gallons of site surface water for use in the ex-situ porewater passive sampling program. Once filled, the top of the Teflon® liner in each bucket was secured with electrical tape, and each bucket was sealed and stored in the walk-in refrigerator for shipment to the laboratory.

2.5.2 United States Environmental Protection Agency Split Samples

2.5.2.1 Sediment Chemistry

Five split samples were collected for sediment chemistry analysis. Arcadis personnel filled the USEPA-provided sample jars with sediment to at least the required minimum sample mass and provided the jars to USEPA oversight personnel for handling, preservation, and shipment to laboratories. Split sample details are presented in Table 5.

2.5.2.2 Toxicity and Bioaccumulation Testing

Five split samples were collected for toxicity testing and two split samples were collected for bioaccumulation testing. Arcadis filled sample containers with sediment to at least the required minimum sample mass and transported the sample containers to the laboratories for testing. Split sample details are presented in Table 5.

2.5.2.3 Porewater Passive Sampling

Four split samples were collected for porewater passive sampling chemical analysis. Arcadis and University of Maryland Baltimore County personnel filled the USEPA-provided sample jars with porewater from the dialysis bags, or PE/POM strips, and shipped the samples to the laboratories as instructed by USEPA. Split sample details are presented in Table 5.

2.5.3 Investigation-Derived Waste

Investigation-derived waste was managed in accordance with SOP No. 4 – Management and Disposal of Residuals of the SQT QAPP (Tierra 2015b). Drums were used to collect leftover sediment, used PPE, trash, and aqueous waste generated during sediment collection and processing activities. Sediment, PPE, and trash were placed in drums for storage and shipped off-site for disposal. Aqueous waste was placed in drums for treatment at the on-site water treatment system, which is capable of treating aqueous, investigation-derived wastes that result from sediment processing and decontamination activities.

2.6 Sample Handling, Preservation, and Shipment to Laboratories

2.6.1 Analytical Chemistry Samples

Sediment samples for analytical chemistry analysis were handled, preserved, and shipped to laboratories in accordance with SOP No. 5 – Containers, Preservation, Handling, and Tracking of Samples for Analysis of the SQT QAPP (Tierra 2015b). Following placement of sediment in jars, jar lids were secured and jar labels were sealed with clear tape. Sample jars were then placed in appropriately sized bubble-wrap and sealed inside plastic Ziploc® bags. Sealed and wrapped jars were placed in padded coolers filled with ice. Trip blanks, where required, and temperature blanks were placed in coolers as per SOP No. 5 – Containers, Preservation, Handling and Tracking of Samples for Analysis of the SQT QAPP. Coolers were appropriately sealed with signed custody seals prior to shipment to, or pickup by, the analytical laboratories.

The deviations from the SQT QAPP (Tierra 2015b) recorded during analytical chemistry sample handling activities are described below.

- Worksheet #19-1, Preservation Requirements for mercury. The preservative (BrCl) needed for mercury
 field blanks could not be shipped because it is a hazardous liquid; therefore, mercury samples were
 preserved upon arrival at the laboratory and not in the field.
- Worksheet #19-1, Containers (Number and Type) for mercury. Smaller bottles (250 milliliter) were
 provided for mercury samples than those listed in Worksheet #19-1. It was confirmed with the laboratory
 that the change in bottle size was intended and the smaller volume would still provide the volume
 required to meet the PQLs.
- Worksheet #19-1, Containers (Number and Type) for phosphorus/nitrogen and ammonia. Labels
 applied to the phosphorus/nitrogen and ammonia sample bottles were inadvertently switched during
 sample processing activities. This was corrected and all jars were labeled correctly for the remainder of
 the program.
- Worksheet #19-2, Containers (number and type) for sediment samples. The jar size listed on the sample labels was incorrect, some 12 ounce jars were labeled as 8 ounce jars. This was corrected and all jars were labeled correctly for the remainder of the program.

The USEPA-approved Protocol Modification Form for these deviations is provided in Appendix A.

2.6.2 Benthic Invertebrate Samples

Benthic invertebrate samples were handled and preserved in accordance with SOP No. 5 – Containers, Preservation, Handling, and Tracking of Samples for Analysis of the SQT QAPP (Tierra 2015b). Following collection, the contents of each sieved grab sample were placed in laboratory-cleaned 1-L Nalgene sample containers, preserved with isopropyl alcohol, sealed, and stored in dedicated coolers without ice. Refrigeration of these samples was not required. Benthic invertebrate samples were picked up by the laboratory on September 30, 2015.

2.6.3 Toxicity and Bioaccumulation Samples

Sediment samples for toxicity and bioaccumulation tests were handled, preserved, and shipped to laboratories in accordance with SOP No. 5 – Containers, Preservation, Handling, and Tracking of Samples for Analysis of the SQT QAPP (Tierra 2015b). Following placement of sediment in Teflon®-lined plastic buckets, air was squeezed out of the Teflon® liner, the top of the Teflon® liner was secured with electrical tape, and the bucket was sealed and stored in the walk-in refrigerator for shipment to the laboratory. Toxicity and bioaccumulation samples were picked up by the laboratory on September 23, 2015 and October 1, 2015.

2.6.4 Porewater Passive Sampling

Sediment samples and surface water for porewater passive sampling were handled, preserved, and shipped to laboratories in accordance with SOP No. 5 – Containers, Preservation, Handling, and Tracking of Samples for Analysis of the SQT QAPP (Tierra 2015b). Following placement of sediment and surface water in sample containers, each bucket and each 1-L amber glass bottle was sealed and stored in the walk-in refrigerator for transport to the laboratory. Sediment and surface water for the porewater passive sampling study were transported to the laboratory via refrigerated truck on October 1, 2015.

2.7 Sample Identification and Tracking

Samples were identified and tracked using the nomenclature, conventions, and procedures described in SOP No. 5 – Containers, Preservation, Handling, and Tracking of Samples for Analysis of the SQT QAPP (Tierra 2015b). Prescribed custody procedures were followed, with shipping receipts acting as documentation of custody during sample shipment.

Upon receipt, laboratory personnel inspected samples for integrity, agreement with chain-of-custody forms, and for evidence of tampering during shipment. Laboratory personnel also verified that the shipping container temperatures were within the acceptable range. Laboratory internal chain-of-custody procedures were followed, as outlined in the SQT QAPP.

2.8 Management of Field Data

Field documentation was completed in accordance with SOP No. 8 – Documenting Field Activities and SOP No. 9 – Data Management of the SQT QAPP (Tierra 2015b). Pertinent field data, including weather conditions, air temperature, field personnel, field equipment, field equipment calibration, health and safety documentation, utility clearance, sample collection, sample coordinates, and processing were recorded in daily logbooks and on field forms. Surface Sediment Collection Forms are provided in Appendix C and Surface Sediment Processing Forms are included in Appendix E.

2.9 Field Activity Assessments

2.9.1 Internal Field Audits

In accordance with the SQT QAPP (Tierra 2015b), Arcadis personnel performed an internal field audit. The field audit was performed on September 16, 2015. The audit evaluated SQT QAPP tasks, including sample processing, transport, and storage; sample handling, preservation, and shipment; data collection and management; and project documentation.

Observations and audit findings were documented in a summary memorandum (Arcadis 2015b) and provided to the Quality Assurance Officer. Corrective actions were verified and documented by project personnel in the field audit summary memorandum (Arcadis 2015b).

2.9.2 Field Quality Assurance/Quality Control Program

Field QC samples were submitted to the laboratory from the field. Two types of field QC samples were used: blanks (field and trip blanks) and field duplicates.

2.9.2.1 Field Blanks

Field blanks were used to monitor potential contamination present on field equipment. Such contamination, if present, can be a result of ineffective decontamination. Two sets of equipment were used for sampling and processing to accommodate the collection of sediment and processing of samples on alternating days. Following each sample collection and processing event, pieces of equipment (both used and unused) belonging to the equipment set that was assigned to that day were decontaminated in accordance with SOP No. 3 – Decontamination of the SQT QAPP (Tierra 2015b). A field blank was collected following decontamination. The field blank samples were collected using laboratory-supplied DI water (or hexane for dioxins/furans) and analyzed for the analytes listed in Worksheet #15-1 of the SQT QAPP. One set of equipment was used throughout one sample collection and processing event so that the field blank corresponded to one set of samples.

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2.9.2.2 Trip Blanks

Trip blanks were submitted for VOC, mercury, and methylmercury analyses only. The trip blanks were obtained from the analytical laboratories and carried with the field sample bottles during shipment from the sediment processing area to the laboratories.

2.9.2.3 Field Duplicates

Field duplicates were processed at a frequency of one field duplicate per 20 field samples per matrix and per analytical method. Field duplicates were prepared by transferring an aliquot of a given sediment homogenate into two separate sets of sample containers. The duplicate pair was then submitted "blind" to the laboratory. These blind samples were noted in a logbook and given a unique sample number that did not indicate to the laboratory that the sample was a QC check. Field duplicate information is provided in Table 3.

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3. References

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USEPA. 2012. Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: Procedures for the Determination of the Freely Dissolved Interstitial Water Concentrations of Nonionic Organics. Office of Research and Development. EPA/600/R-02/012.

Tables

Table 1
Summary of Changes to Sampling Station Locations During SQT Sampling Activities

	Target Station	n Location as QT QAPP		Approved Location	
	Northing	Easting	Northing	Easting	
Station	(NAD83) (NAD83)		(NAD83)	(NAD83)	Reason for Location Change
140	672244 598110		686503	599390	Refusal on rocks and clay
143	3 667683 595195		668400	595258	Refusal on rocks and clay
145	664638 593252		665489	593617	Refusal on rocks and clay
153	663086	587950	663689 587675		Moved due to proximity to utilities
160	678863	595986	678968	595729	Refusal on rocks and clay
167	677862	600220	677867	600221	Moved due to proximity to utilities
173	663349	591874	662628	591214	Moved due to proximity to utilities
176	659504	587266	659960	584955	Refusal on rocks and clay
177	660071 578784		659787 579784		Refusal on rocks and clay
178	659930	590417	660174	590293	Refusal on rocks and clay

NAD83 = North American Datum of 1983, New Jersey State Plane in feet

SQT = sediment quality triad

USEPA = United States Environmental Protection Agency

Table 2 SQT Sampling Stations

Station	Date Sediment Collected ¹	PONAR Used To Collect Sediment ²	Northing (NAD83)	Easting (NAD83)	Geographic Area	Sampled Geomorphic Area
136	9/14/2015	Petite	681135	601799	North	Intertidal Area
137	9/14/2015	Petite	680935	600448	North	Subtidal Flats
138	9/14/2015	Petite	679668	599218	North	Subtidal Flats
139	9/15/2015	Petite	674973	597445	North	Subtidal Flats
140	9/29/2015	Petite	686503	599390	North	Intertidal Area
141	9/16/2015	Petite	670947	595954	Central	Subtidal Flats
142	9/28/2015	Standard	670005	596486	Central	Intertidal Area
143	9/29/2015	Petite	668400	595258	Central	Subtidal Flats
144	9/17/2015	Petite	666937	592990	Central	Subtidal Flats
145	9/29/2015	Petite	665489	593617	Central	Subtidal Flats
146	9/21/2015	Standard	660460	589829	South	Transitional Slopes
147	9/21/2015	Petite	657473	588745	South	Intertidal Area
148	9/21/2015	Petite	657978	587445	South	Subtidal Flats
149	9/22/2015	Standard	659186	583305	South	Intertidal Area
150	9/22/2015	Petite	659366	585546	South	Transitional Slopes
151	9/20/2015	Petite	661397	582469	South	Subtidal Flats
152	9/29/2015	Standard	663446	584459	South	Intertidal Area
153	9/23/2015	Petite	663689	587675	South	Subtidal Flats
154	9/20/2015	Standard	663935	585937	South	Subtidal Flats
155	9/20/2015	Standard	665442	586321	South	Intertidal Area
156	9/17/2015	Petite	669963	593889	Central	Transitional Slopes
157	9/16/2015	Petite	674688	593261	Central	Subtidal Flats
158	9/24/2015	Standard	675427	596016	North	Subtidal Flats
159	9/24/2015	Standard	676931	595916	North	Navigation Channels
160	9/28/2015	Standard	678968	595729	North	Intertidal Area
161	9/15/2015	Petite	680822	596884	North	Subtidal Flats
162	9/21/2015	Petite	681975	598454	North	Navigation Channels
163	9/22/2015	Petite	683444	598470	North	Navigation Channels
164	9/13/2015	Petite	686860	600335	North	Intertidal Area
165	9/13/2015	Petite	683469	600942	North	Subtidal Flats
166	9/13/2015	Petite	684599	601798	North	NA
167	9/14/2015	Petite	677867	600221	North	NA
168	9/15/2015	Petite	677071	599928	North	NA
169	9/15/2015	Petite	675559	599355	North	NA
170	9/16/2015	Petite	669350	595489	Central	NA
171	9/17/2015	Petite	668454	595309	Central	NA
172	9/23/2015	Petite	664204	592141	Central	NA
173	9/23/2015	Petite	662628	591214	South	NA
174	9/20/2015	Petite	661860	590655	South	NA
175	9/21/2015	Petite	658096	590879	South	NA
176	9/23/2015	Petite	659960	584955	South	NA
177	9/29/2015	Petite	659787	579784	South	NA
178	9/23/2015	Petite	660174	590293	South	NA
Surface Water ³	9/13/2015; 9/14/2015; 9/28/2015	NA	685568	601084	NA	NA

NA = not applicable

NAD83 = North American Datum of 1983, New Jersey State Plane in feet

SQT = sediment quality triad

¹Sample processing was completed the day after sediment collection. The sample date on sample bottles and chain of custody forms is the processing date.

²Petite PONAR measures 6 inches square and a standard PONAR measures 9 inches square.

³Surface water was not a targeted sampling matrix. Surface water was collected and used in the field facility for the shipment of sediment for porewater analyses.

Table 3 **Sampling Detail**

	Date	Date				Bioaccumulation	BHHRA	
	Sediment	Samples	Sediment		Porewater	Test using <i>N.</i>	Sediment	
Station	Collected ¹	Processed ¹	Chemistry	Toxicity	Chemistry	virens	Chemistry	Notes
136	9/14/2015	9/15/2015	X	X	X	X	X	
137	9/14/2015	9/15/2015	Х	Х	Х			
138	9/14/2015	9/15/2015	Х	Х	Х	Χ		
139	9/15/2015	9/16/2015	Х	Χ	Х			
140	9/29/2015	9/30/2015	Х	Χ	Х		Х	
141	9/16/2015	9/17/2015	Х	Χ	Х	Х		
142	9/28/2015	9/29/2015	X	Х	Х		Х	
143	9/29/2015	9/30/2015	X	Χ	X		Х	
144	9/17/2015	9/18/2015	Х	Χ	X			
145	9/29/2015	9/30/2015	X	Χ	Χ		Χ	
146	9/21/2015	9/22/2015	X	Χ	X	X		
147	9/21/2015	9/22/2015	X FD, MS/MSD	Х	X FD	X		Collected field duplicates for chemistry and porewater (NB03SEDDUP-04)
148	9/21/2015	9/22/2015	X	Х	Х			i i
149	9/22/2015	9/23/2015	Х	Х	Х	X FD, MS/MSD	Х	Collected field duplicate for bioaccumulation (NB03SEDDUP-05)
150	9/22/2015	9/23/2015	Х	Х	Х	,		, , , , , , , , , , , , , , , , , , ,
151	9/20/2015	9/21/2015	Х	X FD	Х			Collected field duplicate for toxicity (NB03SEDDUP-02)
152	9/29/2015	9/30/2015	X FD, MS/MSD	Х	X FD, MS/MSD			Collected field duplicate for chemistry and porewater (NB03SEDDUP-06)
153	9/23/2015	9/24/2015	Х	Х	X MS/MSD			
154	9/20/2015	9/21/2015	Х	X FD	X			Collected field duplicate for toxicity (NB03SEDDUP-03)
155	9/20/2015	9/21/2015	Х	Χ	X		Χ	
156	9/17/2015	9/18/2015	Χ	Χ	Χ			
157	9/16/2015	9/17/2015	X	Χ	X			
158	9/24/2015	9/25/2015	X	Х	X			
159	9/24/2015	9/25/2015	X	Χ	X			
160	9/28/2015	9/29/2015	X	Χ	X	X	X	
161	9/15/2015	9/16/2015	Х	Х	X	X	X	
162	9/21/2015	9/22/2015	X	Χ	X			
163	9/22/2015	9/23/2015	X	Χ	X			
164	9/13/2015	9/14/2015	X	Χ	X		X	
165	9/13/2015	9/14/2015	Х	Х	X			
166	9/13/2015	9/14/2015					X	

Table 3
Sampling Detail

	Date	Date				Bioaccumulation	BHHRA	
	Sediment	Samples	Sediment		Porewater	Test using N.	Sediment	
Station	Collected ¹	Processed ¹	Chemistry	Toxicity	Chemistry	virens	Chemistry	Notes
167	9/14/2015	9/15/2015					Χ	
168	9/15/2015	9/16/2015					X	Collected field duplicate for sediment
100	9/13/2013	9/10/2013					FD, MS/MSD	chemistry (NB03SEDDUP-01)
169	9/15/2015	9/16/2015					Χ	
170	9/16/2015	9/17/2015					Х	
171	9/17/2015	9/18/2015					Х	
172	9/23/2015	9/24/2015					X	
173	9/23/2015	9/24/2015					Х	
174	9/20/2015	9/21/2015					Х	
175	9/21/2015	9/22/2015					Х	
176	9/23/2015	9/24/2015					Х	
177	9/29/2015	9/30/2015					Х	
178	9/23/2015	9/24/2015					X	

FD = field duplicate

MS/MSD = matrix spike/matrix spike duplicate

¹Sample processing was completed the day after sediment collection. The sample date on sample bottles and chain of custody forms is the processing date. BHHRA = baseline human health risk assessment

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Table 4
Surface Water Quality Measurements

		Water	Depth				Dissolved		
	Date	Depth	(feet below	Temperature	Conductivity	Salinity	Oxygen	рН	ORP
Station	Measured	(feet)	water surface)	(°C)	(μS/cm)	(ppt)	(mg/L)	(SU)	(mV)
North Zo	ne								
136	9/14/2015	7.5	1.0	21.76	31.94	20.06	5.85	7.70	14.2
			2.0	22.34	34.62	20.52	5.84	7.70	17.3
			3.0	22.42	35.28	21.47	5.80	7.69	17.8
			4.0	22.43	35.49	22.15	5.69	7.68	17.5
			5.0	22.43	35.52	22.34	5.65	7.68	17.4
			6.0	22.40	35.59	22.40	5.67	7.68	17.6
137	9/14/2015	6.8	1.0	23.19	35.91	22.67	6.44	7.60	-22.3
			2.0	23.21	35.92	22.68	6.31	7.65	-16.7
			3.0	23.22	35.92	22.69	6.16	7.67	-13.5
			4.0	23.21	35.91	22.68	6.04	7.68	-10.8
			5.0	23.23	35.94	22.70	5.95	7.69	-5.8
138	9/14/2015	11.4	1.0	23.11	37.23	23.60	6.81	7.76	41.6
			2.0	23.11	37.22	23.60	6.34	7.75	31.2
			3.0	23.12	37.32	23.67	6.18	7.74	28.5
			4.0	23.64	38.37	24.39	5.70	7.71	26.0
			5.0	23.70	38.39	24.41	5.65	7.71	25.5
			6.0	23.71	38.42	24.43	5.61	7.71	25.2
			7.0	23.24	38.46	24.46	5.46	7.70	25.2
			8.0	23.75	38.49	24.48	5.39	7.70	26.0
			9.0	23.79	38.54	24.51	5.29	7.69	26.1
			10.0	23.81	38.56	24.52	5.25	7.68	25.2
139	9/15/2015	10.7	1.0	23.15	36.66	23.19	6.17	7.60	-11.2
			2.0	23.28	36.84	23.37	5.96	7.64	-9.6
			3.0	23.62	37.93	24.10	6.08	7.68	-7.4
			4.0	23.65	38.23	24.33	5.94	7.69	-6.3
			5.0	23.61	38.37	24.40	5.82	7.69	-5.4
			6.0	23.58	38.40	24.43	5.81	7.69	-4.8
			7.0	23.56	38.46	24.46	5.71	7.69	-4.3
			8.0	23.55	38.48	24.47	5.54	7.68	-4.0
			9.0	23.55	38.48	24.48	5.50	7.68	-3.9
4.40	0/40/0045	0.0	10.0	23.55	38.49	24.48	5.45	7.60	-4.0
140	9/16/2015	6.0	1.0	23.11	37.36	23.69	7.02	7.51	53.1
			2.0	23.08	37.37	23.70	7.54	6.26	38.6
			3.0	23.08	37.36	23.69	5.97	7.59	24.1
			4.0	23.09	37.37	23.70	5.71	7.61	17.4
4.40	0/20/2045	4.0	5.0	23.04	37.37	23.70	5.49	7.62	13.5
140	9/29/2015	4.2	2.1	21.45	34.68	21.85	5.77	8.00	6.9
158	9/17/2015	13.9	2.0	23.85	37.57	23.77	5.47	7.55	121.1
			7.0	23.84	38.07	24.19	5.94	7.57	134.1
450	0/04/0045	40 7	11.9	23.82	38.57	24.53	8.26	7.59	155.1
158	9/24/2015	12.7	1.0	21.89	38.36	24.42	6.82	7.94	10.3
			6.4	21.90	38.36	24.41	7.02	8.03	5.4
450	0/04/0045	07.0	10.7	21.86	38.33	24.40	7.01	8.19	1.6
159	9/24/2015	37.6	1.0	21.87	37.36	23.71	6.72	7.63	117.0
			18.8	22.03	37.91	24.09	6.45	7.63	118.1
	<u> </u>	<u> </u>	35.6	22.15	38.48	24.50	6.57	7.62	122.2

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Table 4
Surface Water Quality Measurements

		Water	Depth				Dissolved		
	Date	Depth	(feet below	Temperature	Conductivity	Salinity	Oxygen	рΗ	ORP
Station	Measured	(feet)	water surface)	(°C)	(μS/cm)	(ppt)	(mg/L)	(SU)	(mV)
160	9/15/2015	4.0	1.0	22.85	36.71	23.27	5.84	7.05	4.0
			2.0	23.24	37.42	23.77	5.22	7.29	1.2
			3.0	23.29	37.71	23.95	5.20	7.45	-0.4
160	9/28/2015	3.4	1.7	21.15	37.31	23.70	5.95	7.92	12.0
161	9/15/2015	6.5	1.0	23.35	34.79	21.91	5.35	7.43	-7.6
			2.0	23.57	35.89	22.77	5.07	7.48	-6.2
			3.0	23.60	36.22	22.89	5.05	7.50	-5.8
			4.0	23.61	36.42	23.05	5.01	7.52	-5.1
			5.0	23.61	36.56	23.14	4.97	7.53	-4.3
162	9/21/2015	23.0	1.0	23.01	36.19	22.85	5.74	7.67	105.9
			11.5	23.05	36.71	23.23	5.49	7.66	100.4
			21.0	23.11	37.35	23.74	5.47	7.60	82.7
163	9/16/2015	30.6	1.0	23.90	35.85	22.63	5.57	7.36	72.4
			15.3	23.91	36.79	23.29	5.66	7.38	73.4
			28.6	23.95	36.89	23.35	7.27	7.37	76.7
163	9/22/2015	30.1	1.0	22.51	36.25	22.88	6.00	7.64	148.7
			15.1	22.44	37.11	23.52	5.92	7.65	157.4
			28.1	22.42	37.24	23.62	5.62	7.66	157.0
164	9/13/2015	6.4	1.0	24.61	37.07	NR	5.00	7.65	-32.8
			2.0	24.61	38.18	NR	4.94	7.66	-31.1
			3.0	24.56	38.21	NR	4.89	7.66	-29.9
			4.0	24.56	38.22	NR	4.88	7.66	-29.6
			5.0	24.56	38.22	NR	4.83	7.66	-29.9
			6.0	24.56	38.22	NR	4.80	7.66	-27.7
164	9/21/2015	8.0	1.0	NR	NR	23.39	NR	NR	NR
			4.0	NR	NR	24.32	NR	NR	NR
405	0/40/0045	0.0	6.0	NR	NR	24.29	NR 0.45	NR	NR
165	9/13/2015	6.0	1.0	24.87	37.60	NR	6.15	7.73	-50.6
			2.0	24.87	37.62	NR	5.76	7.71	-46.1
			3.0	24.84	37.65	NR	5.55	7.70	-46.2
			4.0 5.0	24.81 24.79	37.69 37.71	NR NR	5.43 5.33	7.70 7.69	-46.2 -45.0
165	0/24/2015	0.0							
165	9/21/2015	9.0	1.0	NR NR	NR NB	23.65	NR ND	NR ND	NR NB
			4.5 7.0	NR NR	NR NR	23.68 23.68	NR NR	NR NR	NR NR
166	9/13/2015	4.5	1.0	25.12	31.98	NR	6.01	7.72	-47.7
100	9/13/2013	4.5	2.0	24.82	36.18	NR	5.79	7.72	-66.4
			3.0	24.62 24.57	37.40	NR NR	5.79 5.56	7.67	-65.1
			4.0	24.68	37.40 37.98	NR	5.54	7.67	-57.3
166	9/21/2015	7.5	1.0	NR	NR	23.15	NR	NR	NR
	5/2 1/2013	7.5	3.8	NR	NR	23.13	NR	NR	NR
			5.5	NR	NR	23.50	NR NR	NR	NR
167	9/14/2015	5.5	1.0	22.07	36.59	23.17	6.56	7.84	9.8
'3'	5, 1 1, 2010	0.0	2.0	22.07	36.58	23.16	6.34	7.79	13.1
			3.0	22.06	36.58	23.17	6.24	7.77	16.0
1			4.0	22.06	36.58	23.16	6.18	7.76	17.2

Table 4
Surface Water Quality Measurements

Station	Date Measured	Water Depth (feet)	Depth (feet below water surface)	Temperature (°C)	Conductivity (μS/cm)	Salinity (ppt)	Dissolved Oxygen (mg/L)	pH (SU)	ORP (mV)
168	9/15/2015	7.3	1.0	22.66	36.22	22.90	6.14	7.48	-20.8
			2.0	22.62	36.19	22.89	5.77	7.53	-17.1
			3.0	22.67	36.31	22.97	5.60	7.55	-15.2
			4.0	22.90	36.75	23.29	5.38	7.56	-13.5
			5.0	23.35	37.53	23.84	5.19	7.57	-11.7
			6.0	23.44	37.74	23.96	5.12	7.57	-11.0
169	9/15/2015	7.4	1.0	23.29	36.34	22.95	6.41	7.21	23.3
			2.0	23.32	37.16	23.57	6.12	7.53	0.2
			3.0	23.28	37.40	23.74	5.85	7.57	-3.2
			4.0	23.28	37.52	23.80	5.70	7.62	-6.5
			5.0	23.27	37.53	23.81	5.59	7.64	-7.7
			6.0	23.27	37.55	23.83	5.56	7.65	-7.8
Central Z									
141	9/16/2015	10.0	1.0	23.39	37.54	23.82	7.82	7.25	29.2
			2.0	23.41	37.57	23.84	6.92	7.48	23.4
			3.0	23.36	37.64	23.88	6.22	7.55	18.1
			4.0	23.31	37.69	23.94	6.37	7.59	15.5
			5.0	23.25	37.79	24.00	5.80	7.60	15.3
			6.0	23.16	37.90	24.08	5.64	7.61	14.9
			7.0	23.08	37.96	24.12	5.43	7.62	14.3
			8.0 9.0	23.07 23.06	37.96	24.12 24.12	5.38	7.62 7.63	13.9
4.40	0/00/0045	0.0			37.96		5.32		13.3
142	9/28/2015	6.6	1.0 4.6	21.04 21.04	37.79 37.86	24.02 24.07	7.52 7.86	7.97 8.00	12.0 8.4
143	9/29/2015	8.4	1.0	21.88	39.25	24.07	6.32	8.10	-9.0
143	9/29/2013	0.4	6.4	21.80	39.84	25.46	6.41	8.14	-12.0
144	9/17/2015	12.6	1.0	23.39	37.38	23.72	6.21	7.56	47.1
144	9/17/2013	12.0	6.3	23.49	37.60	23.84	6.18	7.54	53.0
			11.6	23.52	37.78	23.97	6.56	7.46	66.6
145	9/29/2015	8.0	1.0	21.73	39.56	25.25	6.32	8.04	-4.5
	0,20,2010	0.0	6.0	21.63	39.93	25.53	6.03	8.59	-9.0
156	9/17/2015	36.0	1.0	23.68	37.65	23.92	5.60	7.54	136.7
			18.0	23.69	38.24	24.29	5.80	7.56	128.9
			34.0	23.71	38.55	24.52	6.06	7.56	119.1
157	9/16/2015	9.6	1.0	24.22	37.79	23.98	7.54	7.60	29.1
			2.0	24.10	37.82	24.01	6.88	7.61	24.4
			3.0	23.87	37.93	24.08	6.52	7.62	20.7
			4.0	23.74	38.03	24.16	6.24	7.63	17.0
			5.0	23.70	38.10	24.23	6.06	7.63	15.4
			6.0	23.69	38.21	24.28	5.86	7.63	14.2
			7.0	23.68	38.22	24.29	5.76	7.63	13.7
			8.0	23.68	38.24	24.32	5.72	7.64	13.0

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Table 4
Surface Water Quality Measurements

		Water	Depth				Dissolved		
	Date	Depth	(feet below	Temperature	Conductivity	Salinity	Oxygen	рΗ	ORP
Station	Measured	(feet)	water surface)	(°C)	(μS/cm)	(ppt)	(mg/L)	(SU)	(mV)
170	9/16/2015	9.1	1.0	23.51	37.40	23.71	6.58	7.64	-13.8
			2.0	23.51	37.40	23.72	6.24	7.68	-8.5
			3.0	23.44	37.44	23.75	6.10	7.69	-7.6
			4.0	23.35	37.65	23.91	5.95	7.70	5.5
			5.0	23.28	37.79	24.00	5.88	7.70	-3.6
			6.0	23.30	37.85	24.04	5.84	7.71	-3.6
			7.0	23.27	37.88	24.06	5.76	7.71	-3.1
			8.0	23.26	37.88	24.05	5.69	7.71	-3.5
171	9/17/2015	8.0	2.0	23.64	37.84	24.02	6.33	7.57	47.9
			4.0	23.63	37.85	24.03	6.35	7.58	48.8
			6.0	23.66	37.90	24.06	6.42	7.59	51.5
172	9/23/2015	7.2	1.0	22.35	38.12	24.24	9.91	8.05	3.6
			5.2	21.91	38.17	24.27	11.76	8.04	0.5
South Zo									
146	9/21/2015	19.0	1.0	22.89	39.05	24.89	5.11	7.76	13.8
			9.5	22.87	39.08	24.91	5.00	7.78	8.8
			17.0	22.87	39.08	24.91	4.97	7.79	6.7
147	9/21/2015	11.1	1.0	22.64	38.68	24.63	6.11	7.79	21.6
			5.6	22.63	38.68	24.63	6.02	7.00	19.4
			9.1	22.63	38.69	24.64	6.00	7.83	13.9
148	9/21/2015	14.3	1.0	22.65	38.77	24.69	5.42	7.79	23.1
			7.2	22.66	38.78	24.70	5.47	7.79	21.8
			12.3	22.64	38.77	24.69	5.21	7.80	15.0
149	9/22/2015	2.4	1.2	21.82	38.67	24.63	7.12	7.96	24.0
150	9/22/2015	12.1	1.0	22.39	38.78	24.70	6.88	7.83	25.4
			6.1	29.40	38.77	24.70	6.80	7.83	23.2
			10.1	22.39	38.74	24.67	6.76	7.82	21.0
151	9/20/2015	10.2	1.0	23.52	39.01	24.85	6.74	7.69	23.9
			5.1	23.53	39.06	24.88	6.75	7.65	20.7
			8.2	23.49	39.11	24.91	6.85	7.50	13.5
152	9/29/2015	7.7	1.0	21.60	38.90	24.80	6.04	8.02	5.2
			5.7	21.60	38.95	24.03	5.85	8.06	2.5
153	9/23/2015	10.4	1.0	22.21	38.83	24.74	6.13	7.69	162.1
			8.4	22.18	38.74	24.73	6.86	7.56	175.5
154	9/20/2015	11.4	1.0	23.92	38.88	24.75	7.52	7.80	15.4
			5.7	23.87	38.95	24.80	7.53	7.81	15.4
			9.4	23.73	39.06	24.86	7.87	7.83	17.9
155	9/20/2015	3.3	1.7	23.57	38.81	24.71	10.50	7.77	36.9
173	9/23/2015	8.0	1.0	21.76	38.34	24.39	5.74	7.96	5.9
			6.0	21.84	38.52	24.52	6.02	8.00	7.3
174	9/20/2015	15.0	1.0	23.29	39.84	25.39	8.10	7.70	22.0
			7.5	23.22	40.02	25.56	8.75	7.71	18.1
			13.0	23.23	40.05	25.60	12.80	7.74	14.6
175	9/21/2015	10.2	1.0	22.92	38.82	24.72	7.39	7.39	11.5
			5.1	22.90	38.86	24.75	7.38	7.89	9.3
			8.2	22.89	38.94	24.81	7.46	7.92	6.7

Table 4
Surface Water Quality Measurements

Station	Date Measured	Water Depth (feet)	Depth (feet below water surface)	Temperature (°C)	Conductivity (μS/cm)	Salinity (ppt)	Dissolved Oxygen (mg/L)	pH (SU)	ORP (mV)
176	9/22/2015	6.5	3.3	22.56	38.83	24.73	6.88	8.00	5.3
176	9/23/2015	6.8	1.0	22.69	38.64	24.60	7.14	7.90	5.0
			4.8	22.48	38.74	24.67	8.07	7.96	0.3
177	9/23/2015	31.8	1.0	23.05	38.64	24.60	6.22	7.59	172.4
			15.9	22.99	38.72	24.64	6.25	7.59	171.8
			29.8	22.87	38.95	24.82	6.41	7.54	174.9
177	9/29/2015	4.5	2.3	23.23	39.08	24.91	5.23	8.18	-23.4
178	9/22/2015	11.0	1.0	22.33	38.87	24.76	7.20	7.95	9.8
			9.0	22.34	38.88	24.78	7.20	7.99	4.5
178	9/23/2015	8.2	1.0	22.07	38.61	24.59	5.37	7.92	1.0
			6.2	22.05	38.93	24.81	5.44	7.92	-3.3

% = percent

°C = degrees Celsius

μS/cm = microSiemens per centimeter

mg/L = milligrams per liter

mV = millivolts

NR = not recorded

ppt = parts per trillion

SU = standard units

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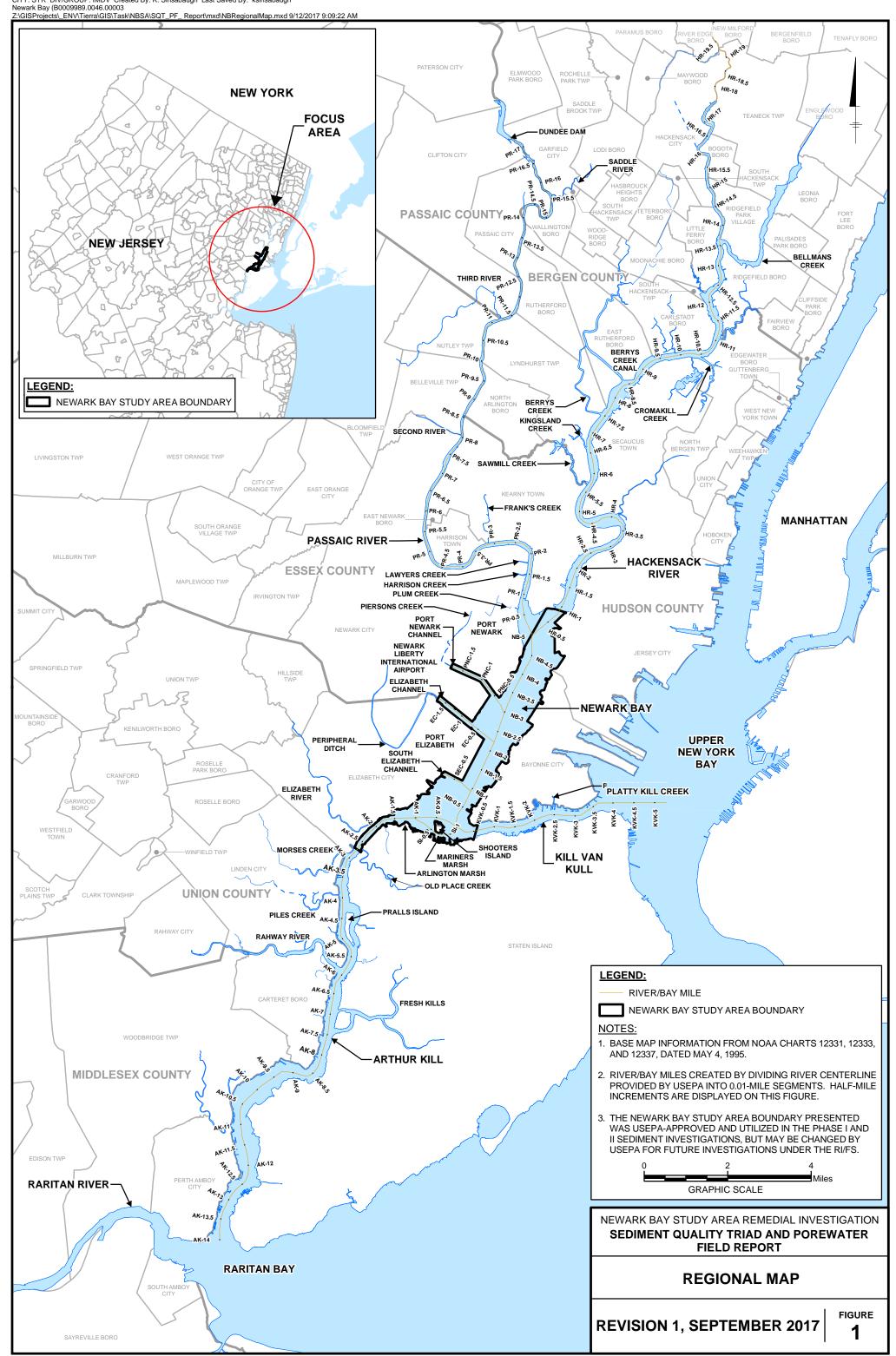
Table 5 USEPA Split Samples

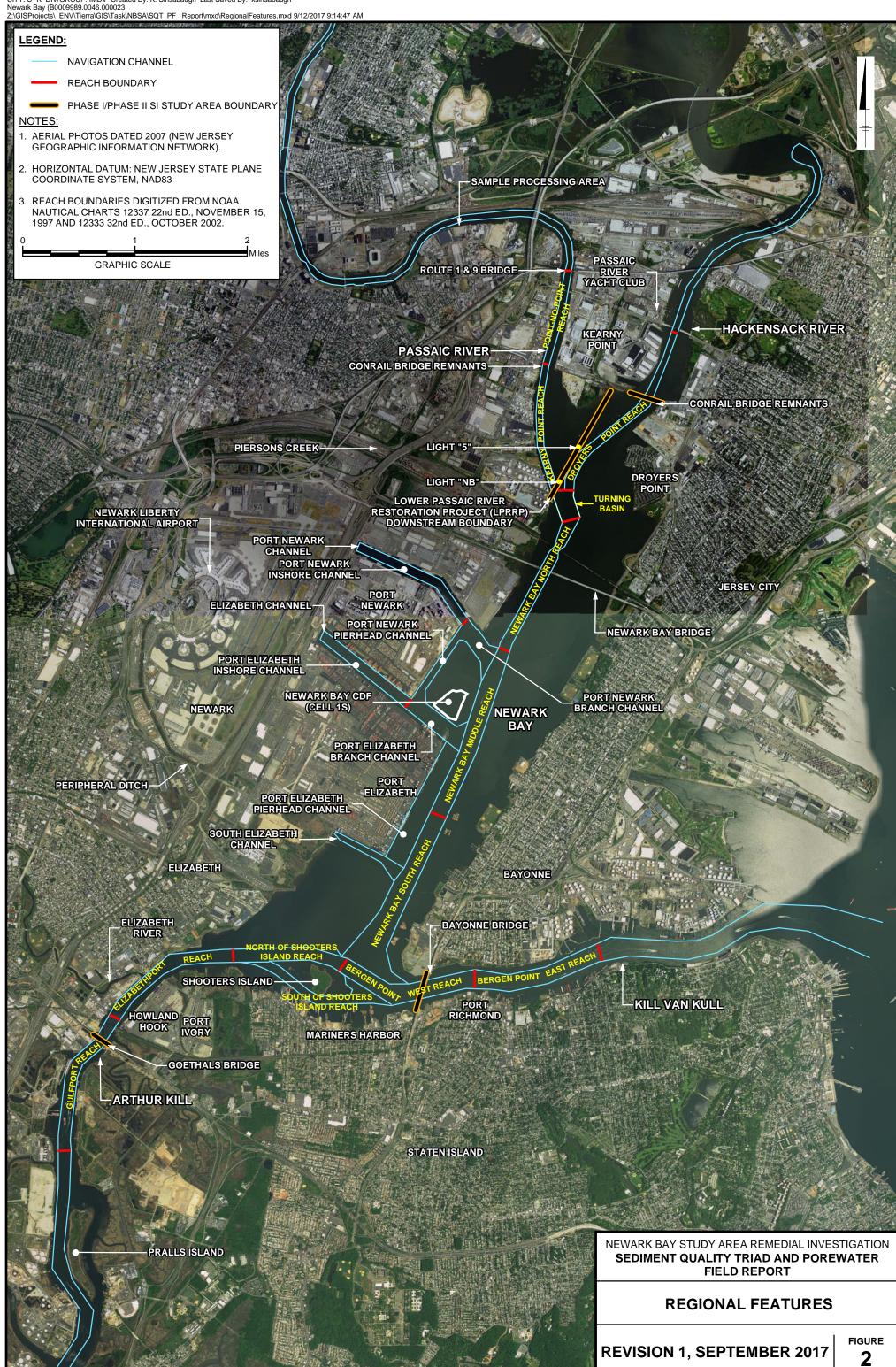
				USEPA Split Sample Analyses				
							Bioaccumulation	
			Date	Sediment	Porewater		Test using N.	
Station	Tierra Sample ID	USEPA Sample ID	Processed	Chemistry	Chemistry	Toxicity	virens	Notes
136	NB03SED-CHM136	NB03SED-CHM136-LB	9/15/2015	Χ				
161	NB03SED-BIO161;	B03SED-BIO161-LB;	9/16/2015			Х	Х	
	NB03SED-TOX161	NB03SED-TOX161-LB				^	^	
169	NB03SED-CHM169	NB03SED-CHM169-LB	9/16/2015	X				
141	NB03SED-BIO141	NB03SED-BIO141-LB	9/17/2015				Χ	
157	NB03SED-TOX157	NB03SED-TOX157-LB	9/17/2015			Х		
144	NB03SED-TOX144	NB03SED-TOX144-LB	9/18/2015			Х		
156	NB03SED-TOX156;	NB03SED-TOX156-LB;	9/18/2015		X	Х		USEPA only collected porewater
	NB03SED-POR156	NB03SED-POR156-LB						split for organics analysis
154	NB03SED-CHM154	NB03SED-CHM154-LB	9/21/2015	Х				
155	NB03SED-TOX155	NB03SED-TOX155-LB	9/21/2015			Х		
163	NB03SED-CHM163;	NB03SED-CHM163-LB;	9/23/2015	Х	X			
	NB03SED-POR163	NB03SED-POR163-LB						
153	NB03SED-POR153	NB03SED-POR153-LB	9/24/2015		Х			USEPA only collected porewater
								split for metals analysis
173	NB03SED-CHM173	NB03SED-CHM173-LB	9/24/2015	X				
159	NB03SED-POR159	NB03SED-POR159-LB	9/25/2015		X			

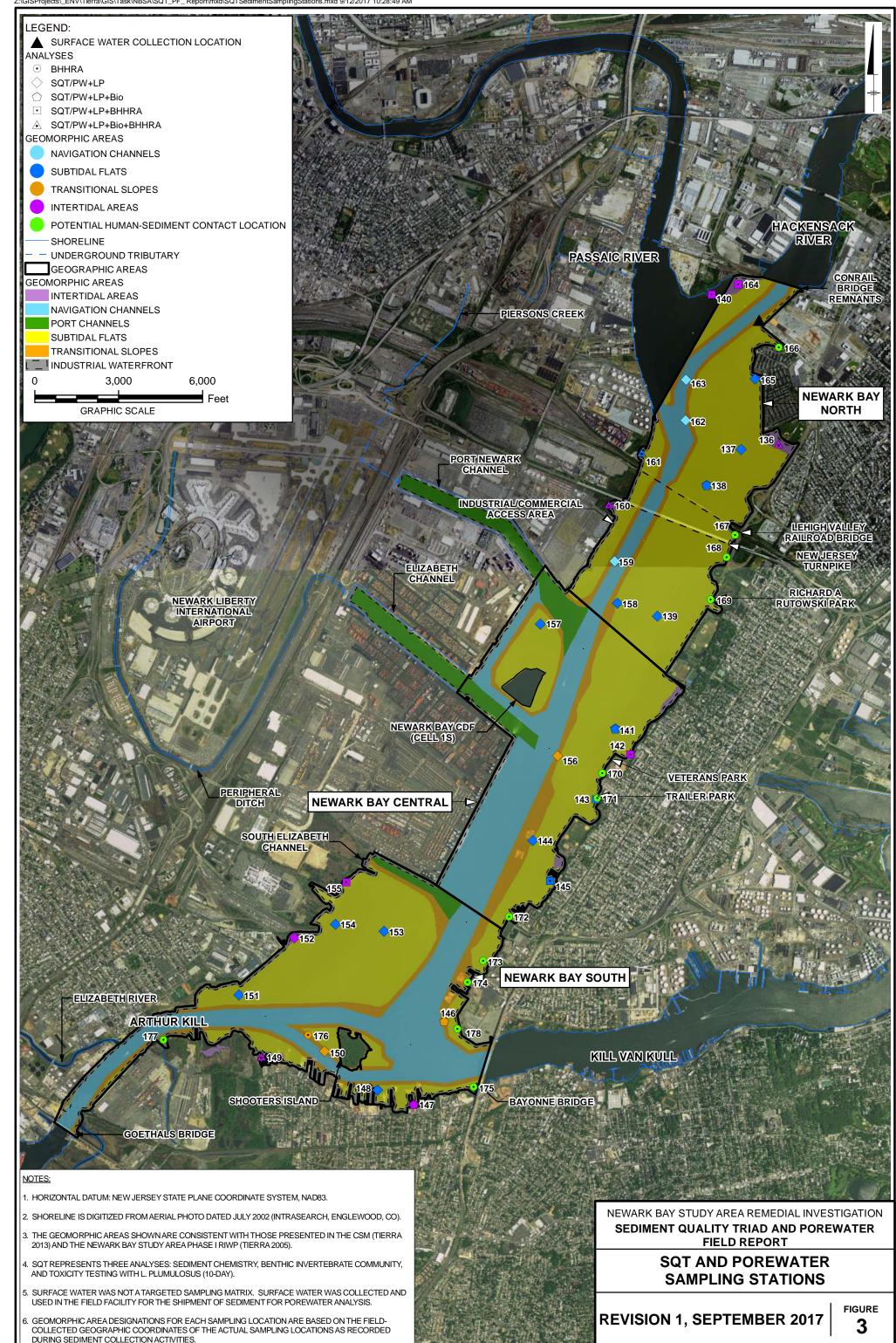
Notes:

USEPA = United States Environmental Protection Agency

Figures







		Appendix A

Project Name and	Number:	Newark Bay		
Material to be Sam	pled:	Sediment		
Measurement Para	ameter:	Benthic Invertebrate Community Asse	ssment Sample	e Containers
Standard Procedur	e for Fiel	d Collection & Laboratory Analysis (cite reference	e):
Worksheet 19-5, "Co	ntainers (number and type)" for the benthic inven	tebrate commu	nity assessment.
Reason for Change	e in Field	Procedure or Analysis Variation:		
Worksheet 19-5 indic	cates that	two 1-gallon Ziploc freezer bags (or equ	uivalent) would	be used as the
containers for the be	nthic inve	rtebrate community assessment; howev	er, the laborate	ory
conducting the benth	nic invertel	brate community assessment (Normand	deau Associate	s) sent 1-liter
plastic bottles for the	samples	be collected in.		
Variation from Field	d or Analy	tical Procedure:		
1-liter plastic bottles	will be use	ed to collect the benthic invertebrate co	mmunity asses	sment
samples instead of 1	-gallon Zi _l	oloc bags.		
	-	ls or Personnel Required:		
1-liter plastic bottles	will be pro	ovided to ARCADIS by Normandeau As	sociates	
Initiator's Name:	Clifford F	Firstenberg, Tierra Solutions	Date:	9/17/15
Project Manager:	Clifford F	Firstenberg, Tierra Solutions	Date:	9/17/15
QA Manager:	Angela (Satchie, Field & Technical Services	Date:	9/17/15
USEPA Authority:	Eugenia	Naranjo	Date:	10/1/15

Project Name and	Number:	Newark Bay							
Material to be Sampled: Sediment									
Measurement Parameter: Sediment sampling locations									
Standard Procedur	e for Field	d Collection & Laboratory Analysis (cite reference	e):					
Figure 1 and Table 1	of the Ne	wark Bay Study Area Sediment Quality	Triad and Por	ewater Sampling					
and Analysis Quality	Assurance	e Project Plan, August 2015.							
Reason for Change	e in Field	Procedure or Analysis Variation:							
Utility clearance activ	∕ities resul	ted in the need to adjust three sedimen	t sampling loca	ations					
(153, 167, and 173)	away from	active utility lines in Newark Bay.							
Variation from Field	d or Analy	rtical Procedure:							
Location 153 was mo	oved appro	oximately 75 feet north, parallel to the s	horeline. The r	new sampling					
coordinates are: Nor	thing – 66	3086, Easting – 587950.							
Location 167 was mo	oved appro	oximately 20 feet south, along the shore	eline. The new	sampling					
coordinates are: Nor	thing – 67	7862, Easting – 600220.							
Location 173 was mo	oved appro	oximately 20 feet south, along the shore	eline. The new	sampling					
coordinates are: Nor	thing – 66	3349, Easting – 591874.							
Special Equipment	, Material	s or Personnel Required:							
No additional special	l equipmer	nt, materials or personnel are required a	as a result of th	is change.					
Initiator's Name:	Clifford F	irstenberg, Tierra Solutions	Date:	9/17/15					
Project Manager:	Clifford F	irstenberg, Tierra Solutions	Date:	9/17/15					
QA Manager:	Angela G	Satchie, Field & Technical Services	Date: _	9/17/15					
USEPA Authority:	Eugenia	Naranjo	Date:	10/1/15					

Project Name and	Number:	Newark Bay		
Material to be Sam	pled:	Sediment		
Measurement Para	ameter:	PID headspace screening		
Standard Procedur	e for Fiel	d Collection & Laboratory Analysis (cite reference	e):
SOP No. 6: Sedimer	nt Sample	Collection, page 7 of 9.		
Reason for Change	e in Field	Procedure or Analysis Variation:		
Section 2.2, 6 of SO	P 6 states	"Collect a small aliquot (approximately	1 ounce) of se	diment
representative of the	quality er	ncountered during sampling activities", h	owever, contin	nuous air
monitoring will be co	nducted w	vithin the sample processing area during	sample proce	ssing activities,
therefore a separate	PID head	space screening is not necessary.		
Variation from Field	d or Anal	ytical Procedure:		
PID headspace scre	ening, as	described in Section 2.2, 6 of SOP No.	5, will not be co	onducted.
0	NA-1	la an Danasan al Danasina di		
		ls or Personnel Required:		ie et en en
ivo additionai special	i equipme	nt, materials or personnel are required a	is a result of th	ils cnange.
			_	
Initiator's Name:	Clifford F	Firstenberg, Tierra Solutions	Date:	9/17/15
Project Manager:	Clifford F	Firstenberg, Tierra Solutions	Date:	9/17/15
QA Manager:	Angela (Gatchie, Field & Technical Services	Date:	9/17/15
USEPA Authority:	Eugenia	Naranjo	Date:	10/1/15

Project Name and	Number:	Newark Bay									
Material to be Sam	pled:	Sediment, Water (Field Blank)									
Measurement Para	meter:	er: Sample Containers									
Standard Procedure for Field Collection & Laboratory Analysis (cite reference):											
1. Worksheet 19-1, "I	Preservation	on Requirements" for mercury									
2. Worksheet 19-1, "	Containers	(number and type)" for mercury, phosp	phorous/nitro	gen, and ammonia							
3. Worksheet 19-2, "	Containers	(number and type)" for sediment samp	oles								
•		Procedure or Analysis Variation:									
		led for mercury field blanks could not be									
		cury samples will be preserved upon a	rrival at the la	boratory. This was							
		rior to implementation.									
2. Smaller bottles we	re provide	d for mercury samples. It was confirme	d with the lab	that the change							
was intended and still	ll provided	the volume required to meet the PQOs	. Labels for								
phosphorus/nitrogen	and ammo	onia were inadvertently switched.									
3. The jar size shown	n on sedim	ent sample labels was incorrect.									
Variation from Field	•										
1. Mercury samples v	will be pres	served once they arrive at the laborator	у.								
2. 250mL bottles will	be used fo	r mercury field blanks. Phosphorus/nitr	ogen and am	monia labels were							
switched on some of	the bottles	but will be used on the correct bottles	going forward	d.							
3. Some 12oz jars we	ere labeled	l as 8oz jars; all jars will be labeled with	the correct s	size going forward.							
	, Material	s or Personnel Required:									
None required											
Initiator's Name:	Clifford F	irstenberg, Tierra Solutions	Date:	11/30/15							
Project Manager:	Clifford F	irstenberg, Tierra Solutions	Date:	11/30/15							
QA Manager:	Angela G	atchie, Field & Technical Services	Date:	11/30/15							
USEPA Authority:	Eugenia	Naranjo	Date:	12/6/15							

Project Name and	Number:	Newark Bay		
Material to be Sam	pled:	Sediment		
Measurement Para	meter:	Acceptable percent recovery for a gra	b sample.	
		d Collection & Laboratory Analysis (cite reference	e):
SOP No. 6: Sedimen	t Sample	Collection, page 6 of 9.		
Reason for Change	e in Field	Procedure or Analysis Variation:		
Section 2.2, 4.i of SC	P 6 does	not provide an acceptable percent reco	very value for	a grab sample.
Variation from Field	d or Analy	/tical Procedure:		
An acceptable perce	nt recover	y of the grab sampler will be approxima	ntely 3 inches (or 50 percent
penetration with the	6-inch por	ar). If hard bottom or an unacceptable	percent recove	ery is
encountered at a sar	mpling loca	ation, the field crew will probe the sedin	nent bottom ard	ound the targeted
location (no more tha	an 500 fee	t from the target coordinates) to locate	a more suitable	e sampling
location. If no suitab	le location	can be located, Tierra will contact USE	PA to sugges	t an alternative
sampling location.				
		s or Personnel Required:		
No additional special	l equipmei	nt, materials or personnel are required a	as a result of th	nis change.
Initiator's Name:	Clifford F	Firstenberg, Tierra Solutions	Date:	9/17/15
Project Manager:	Clifford F	Firstenberg, Tierra Solutions	Date:	11/30/15
QA Manager:	Angela C	Satchie, Field & Technical Services	Date:	11/30/15
USEPA Authority:	Eugenia	Naranjo	Date:	12/6/15

Appendix B	

The analytical results provided in Appendix B are for the Teflon®-liner preprogram field blank collected as part of the sampling pre-mobilization activities. Refer to Section 2.1.4 for additional details.



2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 •717-656-2300 Fax:717-656-2681 • www.lancasterlabs.com

Sample Description: NB3101FB Composite Water Sample INORG

SQT and Porewater Sampling and Analysis

LL Sample # WW 7996823 LL Group # 1582903 Account # 12798

Project Name: SQT and Porewater Sampling and Analysis

Collected: 08/06/2015 12:30 by JH Tierra Solutions, Inc.

Floor 10

 Submitted:
 08/06/2015 18:30
 Two Tower Center Boulevard

 Reported:
 11/11/2015 05:13
 East Brunswick NJ 08816

NB31I SDG#: NB350-01FB

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit	Dilution Factor
Metal	s	SW-846	6010C	mg/l	mg/l	
	Titanium in Water	2 010	7440-32-6	N.D.	0.0017	1
		SW-846	6020	mg/l	mg/l	
06023	Aluminum		7429-90-5	N.D.	0.0260	1
06024	Antimony		7440-36-0	N.D.	0.00033	1
06025	Arsenic		7440-38-2	N.D.	0.00054	1
06026	Barium		7440-39-3	N.D.	0.00092	1
06027	Beryllium		7440-41-7	N.D.	0.000071	1
06028	Cadmium		7440-43-9	N.D.	0.00023	1
06029	Calcium		7440-70-2	N.D.	0.0730	1
06031	Chromium		7440-47-3	N.D.	0.00070	1
06032	Cobalt		7440-48-4	N.D.	0.00010	1
06033	Copper		7440-50-8	N.D.	0.00040	1
06034	Iron		7439-89-6	N.D.	0.0230	1
06035	Lead		7439-92-1	N.D.	0.00013	1
06036	Magnesium		7439-95-4	N.D.	0.0170	1
06037	9		7439-96-5	N.D.	0.00094	1
06039	Nickel		7440-02-0	N.D.	0.00094	1
06040	Potassium		7440-09-7	N.D.	0.0877	1
06041	Selenium		7782-49-2	N.D.	0.00050	1
06042	Silver		7440-22-4	N.D.	0.00011	1
06043	Sodium		7440-23-5	N.D.	0.0500	1
06045	Thallium		7440-28-0	N.D.	0.00015	1
06048	Vanadium		7440-62-2	N.D.	0.00022	1
06049	Zinc		7440-66-6	N.D.	0.0074	1
Wet C	hemistry	EPA 351	L.2	mg/l	mg/l	
	Kjeldahl Nitrogen		n.a.	N.D.	0.50	1
		EPA 365	5.1	mg/l	mg/l	
00227	Total Phosphorus as	P (water	7723-14-0	N.D.	0.050	1
		EPA 415	5.1	mg/l	mg/l	
00273	Total Organic Carbo	n	n.a.	N.D.	0.50	1
		SW-846	9012A	mg/l	mg/l	
08255	Total Cyanide (wate	r)	57-12-5	N.D.	0.0050	1
		EPA 350	0.3	mg/l	mg/l	
12677	Ammonia-Nitrogen		7664-41-7	N.D.	0.050	1
		SM 4500)-H+ B-2000	Std. Units	Std. Units	
12152	рН		n.a.	9.5	0.010	1
				is be performed imme Because this was not		

The 40 CFR Part 136 requires that this analysis be performed immediately (within 15 minutes) upon sample collection. Because this was not possible, the result may not be used for reporting purposes.

SW-846 7196A mg/l mg/l



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Sample Description: NB3101FB Composite Water Sample INORG

SQT and Porewater Sampling and Analysis

LL Sample # WW 7996823 LL Group # 1582903 Account # 12798

Project Name: SQT and Porewater Sampling and Analysis

Collected: 08/06/2015 12:30 by JH Tierra Solutions, Inc.

Floor 10

Submitted: 08/06/2015 18:30 Two Tower Center Boulevard East Brunswick NJ 08816 Reported: 11/11/2015 05:13

NB31I SDG#: NB350-01FB

CAT Dilution Method Analysis Name CAS Number No. Result Factor Detection Limit

mg/1SW-846 7196A Wet Chemistry

00276 Hexavalent Chromium 18540-29-9 0.0070

General Sample Comments

State of New Jersey Lab Certification No. PA011

B (for Inorganic tests) = estimated value: The result is >/= the Method Detection Limit (MDL)

and < the Limit of Quantitation (LOQ).

G (for Organic tests) = estimated value: The result is >/= the Method

Detection Limit (MDL)

and < the Limit of Quantitation (LOQ).

Note: LOQ = PQL

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor
07070	Titanium in Water	SW-846 6010C	1	152190635003	08/12/2015	01:27	Elaine F Stoltzfus	1
06023	Aluminum	SW-846 6020	1	152196050003A	08/12/2015	22:53	Mallory L Clark	1
06024	Antimony	SW-846 6020	1	152196050003A	08/12/2015	19:43	Mallory L Clark	1
06025	Arsenic	SW-846 6020	1	152196050003A	08/12/2015	19:43	Mallory L Clark	1
06026	Barium	SW-846 6020	1	152196050003D	08/12/2015	19:43	Mallory L Clark	1
06027	Beryllium	SW-846 6020	1	152196050003A	08/12/2015	19:43	Mallory L Clark	1
06028	Cadmium	SW-846 6020	1	152196050003A	08/12/2015	19:43	Mallory L Clark	1
06029	Calcium	SW-846 6020	1	152196050003B	08/12/2015	22:53	Mallory L Clark	1
06031	Chromium	SW-846 6020	1	152196050003A	08/12/2015	22:53	Mallory L Clark	1
06032	Cobalt	SW-846 6020	1	152196050003A	08/12/2015	19:43	Mallory L Clark	1
06033	Copper	SW-846 6020	1	152196050003A	08/12/2015	19:43	Mallory L Clark	1
06034	Iron	SW-846 6020	1	152196050003A	08/12/2015	22:53	Mallory L Clark	1
06035	Lead	SW-846 6020	1	152196050003A	08/12/2015	19:43	Mallory L Clark	1
06036	Magnesium	SW-846 6020	1	152196050003A	08/12/2015	22:53	Mallory L Clark	1
06037	Manganese	SW-846 6020	1	152196050003A	08/12/2015	22:53	Mallory L Clark	1
06039	Nickel	SW-846 6020	1	152196050003A	08/12/2015	19:43	Mallory L Clark	1
06040	Potassium	SW-846 6020	1	152196050003A	08/12/2015	22:53	Mallory L Clark	1
06041	Selenium	SW-846 6020	1	152196050003B	08/12/2015	19:43	Mallory L Clark	1
06042	Silver	SW-846 6020	1	152196050003A	08/12/2015	19:43	Mallory L Clark	1
06043	Sodium	SW-846 6020	1	152196050003A	08/12/2015	22:53	Mallory L Clark	1
06045	Thallium	SW-846 6020	1	152196050003A	08/12/2015	19:43	Mallory L Clark	1
06048	Vanadium	SW-846 6020	1	152196050003A	08/12/2015	22:53	Mallory L Clark	1
06049	Zinc	SW-846 6020	1	152196050003A	08/12/2015	19:43	Mallory L Clark	1
10635	ICP-WW, 3005A (tot rec) - U4	SW-846 3005A	1	152190635003	08/11/2015	09:20	Katlin N Cataldi	1
06050	ICPMS-Water, 3020A - U3	SW-846 3010A modified	1	152196050003	08/11/2015	08:20	Katlin N Cataldi	1
00217	Kjeldahl Nitrogen	EPA 351.2	1	15223108101A	08/12/2015	12:31	Joseph E McKenzie	1



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Sample Description: NB3101FB Composite Water Sample INORG

SW-846 7196A

SQT and Porewater Sampling and Analysis

LL Sample # WW 7996823 LL Group # 1582903 Account # 12798

Project Name: SQT and Porewater Sampling and Analysis

Collected: 08/06/2015 12:30 by JH Tierra Solutions, Inc.

Floor 10

1 15219027601A 08/07/2015 10:25 Michelle L Lalli 1

 Submitted:
 08/06/2015 18:30
 Two Tower Center Boulevard

 Reported:
 11/11/2015 05:13
 East Brunswick NJ 08816

NB31I SDG#: NB350-01FB

00276 Hexavalent Chromium

	Laboratory Sample Analysis Record											
CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Ti	me	Analyst	Dilution Factor				
00227	Total Phosphorus as P (water)	EPA 365.1	1	15223109105A	08/12/2015	09:54	Joseph E McKenzie	1				
00273	Total Organic Carbon	EPA 415.1	1	15224049505A	08/12/2015	23:26	James S Mathiot	1				
08255	Total Cyanide (water)	SW-846 9012A	1	15224117101A	08/12/2015	14:24	David A Seavey	1				
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	15223108101A	08/11/2015	16:40	Venia B McFadden	1				
08263	Total Phos as P Prep (water)	EPA 365.1	1	15223109105A	08/11/2015	09:35	Nancy J Shoop	1				
08256	Cyanide Water Distillation	SW-846 9012A	1	15224117101A	08/12/2015	08:45	Nancy J Shoop	1				
12677	Ammonia-Nitrogen	EPA 350.3	1	15222005201A	08/10/2015	23:10	Michelle L Lalli	1				
12152	На	SM 4500-H+ B-2000	1	15223003102A	08/11/2015	17:29	Michele L Graham	1				



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Sample Description: NB3101FB Composite Water Sample ORG

SQT and Porewater Sampling and Analysis

LL Sample # WW 7996824 LL Group # 1582903 Account # 12798

Project Name: SQT and Porewater Sampling and Analysis

Collected: 08/06/2015 12:30 by JH Tierra Solutions, Inc.

Floor 10

 Submitted:
 08/06/2015 18:30
 Two Tower Center Boulevard

 Reported:
 11/11/2015 05:13
 East Brunswick NJ 08816

NB310 SDG#: NB350-02FB

CAT No.	Analysis Name		CAS	S Number	Result		Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846	8260B	25mL	ug/l		ug/l	
		purge						
02898	1,2-Dichlorobenzene		95	-50-1	N.D.		1.0	1
02898	1,3-Dichlorobenzene		543	1-73-1	N.D.		1.0	1
02898	1,4-Dichlorobenzene		106	6-46-7	N.D.		1.0	1
02898	1,2,4-Trichlorobenz	ene	120	0-82-1	N.D.		1.0	1
GC/MS	Semivolatiles	SW-846	8270D		ug/l		ug/l	
13624	Acetophenone			-86-2	N.D.		1	1
13624	Atrazine			12-24-9	N.D.		5	1
13624	Benzaldehyde			0-52-7	N.D.		5	1
13624	Benzidine			-87-5	N.D.		62	1
13624	Benzoic acid			-85-0	N.D.		15	1
13624	1,1'-Biphenyl			-52-4	N.D.		1	1
13624	4-Bromophenyl-pheny	lether		1-55-3	N.D.		1	1
13624	Butylbenzylphthalat			-68-7	N.D.		5	1
13624	Di-n-butylphthalate			-74-2	N.D.		5	1
13624	Caprolactam			5-60-2	N.D.		15	1
13624	Carbazole			-74-8	N.D.		1	1
13624	4-Chloro-3-methylph	enol		-50-7	N.D.		1	1
13624	4-Chloroaniline	CIOI		6-47-8	N.D.		4	1
13624	bis (2-Chloroethoxy)	methane		1-91-1	N.D.		1	1
13624	bis(2-Chloroethyl)e			1-44-4	N.D.		1	1
13624	2-Chloronaphthalene			-58-7	N.D.		1	1
13624	2-Chlorophenol			-57-8	N.D.		1	1
13624	4-Chlorophenyl-phen	vlether		05-72-3	N.D.		1	1
13624	2,2'-oxybis(1-Chlor			8-60-1	N.D.		1	1
13021	Bis (2-chloroisoprop						±.	_
	2,2'-Oxybis(1-chlor	-						
	chromatographically total of both compo	The re				d		
13624	Dibenzofuran	anas.	131	2-64-9	N.D.		1	1
13624	3,3'-Dichlorobenzid	ine		-94-1	N.D.		5	1
13624	2,4-Dichlorophenol	1110		0-83-2	N.D.		1	1
13624	Diethylphthalate			-66-2	N.D.		5	1
13624	2,4-Dimethylphenol			5-67-9	N.D.		1	1
13624	Dimethylphthalate			1-11-3	N.D.		5	1
13624	4,6-Dinitro-2-methy	lnhenol		4-52-1	N.D.		15	1
13624	2,4-Dinitrophenol	ipiiciioi		-28-5	N.D.		31	1
13624	2,4-Dinitrotoluene			1-14-2	N.D.		5	1
13624	2,6-Dinitrotoluene			6-20-2	N.D.		1	1
13624	1,2-Diphenylhydrazi	ne		2-66-7	N.D.		1	1
13624	bis (2-Ethylhexyl) ph			7-81-7	N.D.		5	1
13624	Hexachlorobutadiene			-68-3	N.D.		1	1
13624	Hexachlorocyclopent			-47-4	N.D.		15	1
13624	Hexachloroethane			-72-1	N.D.		5	1
13624	Isophorone			-72-1 -59-1	N.D.		1	1
13624	2-Methylphenol			-48-7	N.D.		1	1
13624	4-Methylphenol			6-44-5	N.D.		1	1
10021	3-Methylphenol and	4-methyln					=	_

 $3\operatorname{-Methylphenol}$ and $4\operatorname{-methylphenol}$ cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for $4\operatorname{-methylphenol}$ represents the combined total of both compounds.



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Sample Description: NB3101FB Composite Water Sample ORG

SQT and Porewater Sampling and Analysis

LL Sample # WW 7996824 LL Group # 1582903 Account # 12798

Project Name: SQT and Porewater Sampling and Analysis

Collected: 08/06/2015 12:30 by JH Tierra Solutions, Inc.

Floor 10

 Submitted:
 08/06/2015 18:30
 Two Tower Center Boulevard

 Reported:
 11/11/2015 05:13
 East Brunswick NJ 08816

NB310 SDG#: NB350-02FB

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 82	70D	ug/l	ug/l	
13624	2-Nitroaniline	88-74-4	N.D.	1	1
13624	3-Nitroaniline	99-09-2	N.D.	1	1
13624	4-Nitroaniline	100-01-6	N.D.	1	1
13624	Nitrobenzene	98-95-3	N.D.	1	1
13624	2-Nitrophenol	88-75-5	N.D.	1	1
13624	4-Nitrophenol	100-02-7	N.D.	31	1
13624	N-Nitroso-di-n-propylamine	621-64-7	N.D.	1	1
13624	N-Nitrosodiphenylamine	86-30-6	N.D.	1	1
13021	N-nitrosodiphenylamine decompose			-	-
	diphenylamine. The result report	ted for N-nitro	osodiphenylamine		
12624	represents the combined total of	_		5	1
13624	Di-n-octylphthalate	117-84-0	N.D.	5	1
13624 13624	Pentachlorophenol	87-86-5	N.D. N.D.	1	1 1
	Phenol	108-95-2			
13624	Pyridine	110-86-1	N.D.	5	1
13624	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	1	1
13624	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	1	1
13624	2,4,5-Trichlorophenol	95-95-4	N.D.	1	1
13624	2,4,6-Trichlorophenol	88-06-2	N.D.	1	1
GC/MS	Semivolatiles SW-846 82	70D SIM	ug/l	ug/l	
	Modified				
10262	Acenaphthene	83-32-9	N.D.	0.05	1
10262	Acenaphthylene	208-96-8	N.D.	0.05	1
10262	Anthracene	120-12-7	N.D.	0.05	1
10262	Benzo(a)anthracene	56-55-3	N.D.	0.05	1
10262	Benzo(a)pyrene	50-32-8	N.D.	0.05	1
10262	Benzo(b)fluoranthene	205-99-2	N.D.	0.05	1
10262	Benzo(e)pyrene	192-97-2	N.D.	0.05	1
10262	Benzo(g,h,i)perylene	191-24-2	N.D.	0.05	1
10262	Benzo(k)fluoranthene	n.a.	N.D.	0.05	1
10262	C1-Benzanthrene/chrysenes	n.a.	N.D.	0.05	1
10262	C1-Fluoranthrenes/pyrenes	n.a.	N.D.	0.05	1
10262	C1-Fluorenes	n.a.	N.D.	0.05	1
10262	C1-Naphthalenes	n.a.	N.D.	0.05	1
10262	C1-Phenanthrenes/anthracenes	n.a.	N.D.	0.05	1
10262	C2-Benzanthrene/chrysenes	n.a.	N.D.	0.05	1
10262	C2-Fluoranthrenes/pyrenes	n.a.	N.D.	0.05	1
10262	C2-Fluorenes	n.a.	N.D.	0.05	1
10262	C2-Naphthalenes	n.a.	N.D.	0.05	1
10262	C2-Phenanthrenes/anthracenes	n.a.	N.D.	0.05	1
10262	C3-Benzanthrene/chrysenes	n.a.	N.D.	0.05	1
10262	C3-Fluoranthrenes/pyrenes	n.a.	N.D.	0.05	1
10262	C3-Fluorenes	n.a.	N.D.	0.05	1
10262	C3-Naphthalenes	n.a.	N.D.	0.05	1
10262	C3-Phenanthrenes/anthracenes	n.a.	N.D.	0.05	1
10262	C4-Benzanthrene/chrysenes	n.a.	N.D.	0.05	1
10262	C4-Naphthalenes	n.a.	N.D.	0.05	1
10262	C4-Phenanthrenes/anthracenes	n.a.	N.D.	0.05	1
10262	Chrysene	218-01-9	N.D.	0.05	1
10262	Dibenz(a,h)anthracene	53-70-3	N.D.	0.05	1



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Sample Description: NB3101FB Composite Water Sample ORG

SQT and Porewater Sampling and Analysis

LL Sample # WW 7996824 LL Group # 1582903 Account # 12798

Project Name: SQT and Porewater Sampling and Analysis

Collected: 08/06/2015 12:30 by JH Tierra Solutions, Inc.

Floor 10

 Submitted:
 08/06/2015 18:30
 Two Tower Center Boulevard

 Reported:
 11/11/2015 05:13
 East Brunswick NJ 08816

NB310 SDG#: NB350-02FB

CAT No.	Analysis Name		CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846	8270D SIM	ug/l	ug/l	
-		Modifie	ed			
10262	Fluoranthene		206-44-0	N.D.	0.05	1
10262	Fluorene		86-73-7	N.D.	0.05	1
10262	Indeno(1,2,3-cd)pyre	ene	193-39-5	N.D.	0.05	1
10262	1-Methylnaphthalene		90-12-0	N.D.	0.05	1
10262	2-Methylnaphthalene		91-57-6	N.D.	0.05	1
10262	Naphthalene		91-20-3	N.D.	0.05	1
10262	Pervlene		198-55-0	N.D.	0.05	1
10262	Phenanthrene		85-01-8	N.D.	0.05	1
10262	Pyrene		129-00-0	N.D.	0.05	1
	_					
GC Vol	latiles	SW-846	8015B	ug/l	ug/l	
01635	TPH-GRO water C6-C10)	n.a.	N.D.	50	1
					, -	
Herbio		SW-846		ug/l	ug/l	
10407	2,4-D		94-75-7	N.D.	0.52	1
10407	2,4-DB		94-82-6	N.D.	1.0	1
10407	2,4,5-T		93-76-5	N.D.	0.052	1
10407	2,4,5-TP		93-72-1	N.D.	0.052	1
Pestic	cides/PCBs	SW-846	8082	ug/l	ug/l	
12013	PCB-1016	D	12674-11-2	N.D.	0.0098	1
12013	PCB-1221		11104-28-2	N.D.	0.0098	1
12013	PCB-1232		11141-16-5	N.D.	0.0098	1
12013	PCB-1242		53469-21-9	N.D.	0.0098	1
12013	PCB-1248		12672-29-6	N.D.	0.0098	1
12013	PCB-1254		11097-69-1	N.D.	0.0098	1
12013	PCB-1260		11096-82-5	N.D.	0.0098	1
12013	PCB-1262		37324-23-5	N.D.	0.0098	1
12013	PCB-1268		11100-14-4	N.D.	0.0098	1
GC Pet	roleum	SW-846	8015B modified	ug/l	ug/l	
Hydrod	arbons					
11554	n-Decane		124-18-5	N.D.	0.98	1
11554	n-Docosane		629-97-0	N.D.	0.98	1
11554	n-Dodecane		112-40-3	N.D.	0.98	1
11554	n-Dotriacontane		544-85-4	N.D.	0.98	1
11554	n-Eicosane		112-95-8	N.D.	0.98	1
11554	n-Heneicosane		629-94-7	N.D.	0.98	1
11554	n-Hentriacontane		630-04-6	N.D.	0.98	1
11554	n-Heptacosane		593-49-7	N.D.	0.98	1
11554	n-Heptadecane		629-78-7	N.D.	0.98	1
11554	n-Heptatriacontane		7194-84-5	N.D.	0.98	1
11554	n-Hexacosane		630-01-3	N.D.	0.98	1
11554	n-Hexadecane		544-76-3	N.D.	0.98	1
11554	n-Hexatriacontane		630-06-8	N.D.	0.98	1
11554	n-Nonacosane		630-03-5	N.D.	0.98	1
11554	n-Nonadecane		629-92-5	N.D.	0.98	1
11554	n-Nonane		111-84-2	N.D.	0.98	1



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Sample Description: NB3101FB Composite Water Sample ORG

SQT and Porewater Sampling and Analysis

LL Sample # WW 7996824 LL Group # 1582903 Account # 12798

Project Name: SQT and Porewater Sampling and Analysis

Collected: 08/06/2015 12:30 by JH Tierra Solutions, Inc.

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 Reported:
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 East Brunswick NJ 08816

NB310 SDG#: NB350-02FB

CAT No.	Analysis Name		CAS	Number	Result	Limit of Quantitation	Dilution Factor
GC Pe	troleum	SW-846	8015B	modified	ug/l	ug/l	
Hydro	carbons						
11554	n-Nonatriacontane		719	4-86-7	N.D.	0.98	1
11554	n-Octacosane		630	-02-4	N.D.	0.98	1
11554	n-Octadecane		593	-45-3	N.D.	0.98	1
11554	n-Octatriacontane		719	4-85-6	N.D.	0.98	1
11554	n-Pentacosane		629	-99-2	N.D.	0.98	1
11554	n-Pentadecane		629	-62-9	N.D.	0.98	1
11554	n-Pentatriacontane		630	-07-9	N.D.	0.98	1
11554	Phytane		638	-36-8	N.D.	0.98	1
11554	Pristane		192	1-70-6	N.D.	0.98	1
11554	n-Tetracontane		418	1-95-7	N.D.	0.98	1
11554	n-Tetracosane		646	-31-1	N.D.	0.98	1
11554	n-Tetradecane		629	-59-4	N.D.	0.98	1
11554	n-Tetratriacontane		141	67-59-0	N.D.	0.98	1
11554	Total TPH (C9-C40)		n.a		N.D.	98	1
11554	n-Triacontane		638	-68-6	N.D.	0.98	1
11554	n-Tricosane		638	-67-5	N.D.	0.98	1
11554	n-Tridecane		629	-50-5	N.D.	0.98	1
11554	n-Tritriacontane		630	-05-7	N.D.	0.98	1
11554	n-Undecane		112	0-21-4	N.D.	0.98	1

Project defined QC acceptance limits are not met. All QC is compliant with the method defined criteria (50-150) except for nonane.

Sufficient sample was not available to repeat the analysis.



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SQT and Porewater Sampling and Analysis

LL Sample # WW 7996824 LL Group # 1582903 Account # 12798

Project Name: SQT and Porewater Sampling and Analysis

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NB310 SDG#: NB350-02FB

CAT No.	Analysis Name		CAS Number	Result	MRL	Dilution Factor
Dioxi	ns/Furans	EPA 1613B	October	pg/l	pg/l	
	,	1994				
10915	2378-TCDD	1001	1746-01-6	N.D.	1.99	1
10915	12378-PeCDD		40321-76-4	N.D.	9.93	1
10915	123478-HxCDD		39227-28-6	0.309 JBQ	9.93	1
10915	123678-HxCDD		57653-85-7	N.D.	9.93	1
10915	123789-HxCDD		19408-74-3	N.D.	9.93	1
10915	1234678-HpCDD		35822-46-9	0.819 JBQ	9.93	1
10915	OCDD		3268-87-9	N.D.	19.9	1
10915	2378-TCDF		51207-31-9	N.D.	1.99	1
10915	12378-PeCDF		57117-41-6	0.348 JBQ	9.93	1
10915	23478-PeCDF		57117-31-4	0.270 JBQ	9.93	1
10915	123478-HxCDF		70648-26-9	0.241 JB	9.93	1
10915	123678-HxCDF		57117-44-9	0.251 JBQ	9.93	1
10915	123789-HxCDF		72918-21-9	1.16 JB	9.93	1
10915	234678-HxCDF		60851-34-5	N.D.	9.93	1
10915	1234678-HpCDF		67562-39-4	0.271 JBQ	9.93	1
10915	1234789-HpCDF		55673-89-7	0.215 JBQ	9.93	1
10915	OCDF		39001-02-0	N.D.	19.9	1
PCB C	ongeners	EPA 1668A	PCB	pg/l	pg/l	
	3	Congeners				
13708	PCB1	congeners	2051-60-7	N.D.	20.0	1
13708	PCB10		33146-45-1	N.D.	49.9	1
13708	PCB103		60145-21-3	N.D.	49.9	1
13708	PCB104		56558-16-8	N.D.	49.9	1
13708	PCB105		32598-14-4	N.D.	49.9	1
13708	PCB106		70424-69-0	N.D.	49.9	1
13708	PCB107		70424-68-9	N.D.	49.9	1
13708	PCB108+124		n.a.	N.D.	99.8	1
13708	PCB11		2050-67-1	N.D.	99.8	1
13708	PCB110+115		n.a.	N.D.	99.8	1
13708	PCB111		39635-32-0	N.D.	49.9	1
13708	PCB112		74472-36-9	N.D.	49.9	1
13708	PCB114		74472-37-0	N.D.	49.9	1
13708	PCB118		31508-00-6	N.D.	99.8	1
13708	PCB12+13		n.a.	N.D.	49.9	1
13708	PCB120		68194-12-7	N.D.	49.9	1
13708	PCB121		56558-18-0	N.D.	49.9	1
13708	PCB122		76842-07-4	N.D.	49.9	1
13708	PCB123		65510-44-3	N.D.	49.9	1
13708	PCB126		57465-28-8	N.D.	49.9	1
13708	PCB127		39635-33-1	N.D.	49.9	1
13708	PCB128+166		n.a.	N.D.	99.8	1
13708	PCB129+138+163		n.a.	N.D.	200	1
13708	PCB130		52663-66-8	N.D.	49.9	1
13708 13708	PCB131 PCB132		61798-70-7	N.D. N.D.	49.9 49.9	1
13708	PCB132 PCB133		38380-05-1 35694-04-3	N.D.	49.9	1
13708	PCB134		52704-70-8	N.D.	99.8	1
13708	PCB135+151		n.a.	N.D.	99.8	1
13/00	2 30133 1131				JJ.0	_



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Sample Description: NB3101FB Composite Water Sample ORG

SQT and Porewater Sampling and Analysis

LL Group # 1582903 Account # 12798

LL Sample # WW 7996824

Project Name: SQT and Porewater Sampling and Analysis

Collected: 08/06/2015 12:30 by JH Tierra Solutions, Inc.

Floor 10

 Submitted:
 08/06/2015 18:30
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 Reported:
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 East Brunswick NJ 08816

NB310 SDG#: NB350-02FB

CAT No.	Analysis Name			CAS Number	Result	MRL	Dilution Factor
PCB C	ongeners	EPA	1668A	PCB	pg/l	pg/l	
		Con	geners				
13708	PCB136			38411-22-2	N.D.	49.9	1
13708	PCB137			35694-06-5	N.D.	49.9	1
13708	PCB139+140			n.a.	N.D.	99.8	1
13708	PCB14			34883-41-5	N.D.	20.0	1
13708	PCB141			52712-04-6	N.D.	49.9	1
13708	PCB142			41411-61-4	N.D.	49.9	1
13708	PCB143			68194-15-0	N.D.	99.8	1
13708	PCB144			68194-14-9	N.D.	49.9	1
13708	PCB145			74472-40-5	N.D.	49.9	1
13708	PCB146			51908-16-8	N.D.	49.9	1
13708	PCB147+149			n.a.	N.D.	99.8	1
13708	PCB148			74472-41-6	N.D.	49.9	1
13708	PCB15			2050-68-2	N.D.	49.9	1
13708	PCB150			68194-08-1	N.D.	49.9	1
13708	PCB152			68194-09-2	N.D.	49.9	1
13708	PCB153+168			n.a.	N.D.	99.8	1
13708	PCB154			60145-22-4	N.D.	99.8	1
13708 13708	PCB155			33979-03-2	N.D. N.D.	49.9 99.8	1 1
13708	PCB156+157 PCB158			n.a. 74472-42-7	N.D.	49.9	1
13708	PCB158			39635-35-3	N.D.	49.9	1
13708	PCB16			38444-78-9	N.D.	20.0	1
13708	PCB160			41411-62-5	N.D.	200	1
13708	PCB161			74472-43-8	N.D.	49.9	1
13708	PCB162			39635-34-2	N.D.	49.9	1
13708	PCB164			74472-45-0	N.D.	49.9	1
13708	PCB165			74472-46-1	N.D.	49.9	1
13708	PCB167			52663-72-6	N.D.	49.9	_ 1
13708	PCB169			32774-16-6	N.D.	49.9	1
13708	PCB17			37680-66-3	N.D.	20.0	1
13708	PCB170			35065-30-6	N.D.	49.9	1
13708	PCB171+173			n.a.	N.D.	99.8	1
13708	PCB172			52663-74-8	N.D.	49.9	1
13708	PCB174			38411-25-5	N.D.	49.9	1
13708	PCB175			40186-70-7	N.D.	49.9	1
13708	PCB176			52663-65-7	N.D.	49.9	1
13708	PCB177			52663-70-4	N.D.	49.9	1
13708	PCB178			52663-67-9	N.D.	49.9	1
13708	PCB179			52663-64-6	N.D.	49.9	1
13708	PCB18+30			n.a.	N.D.	49.9	1
13708	PCB180+193			n.a.	N.D.	99.8	1
13708	PCB181			74472-47-2	N.D.	49.9	1
13708	PCB182			60145-23-5	N.D.	49.9	1
13708	PCB183+185			n.a.	N.D.	99.8	1
13708	PCB184			74472-48-3	N.D.	49.9	1
13708	PCB186			74472-49-4	N.D.	49.9	1
13708	PCB187			52663-68-0	N.D.	49.9	1
13708	PCB188			74487-85-7	N.D.	49.9	1
13708	PCB189			39635-31-9	N.D.	49.9	1
13708	PCB19			38444-73-4	N.D.	20.0	1



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Sample Description: NB3101FB Composite Water Sample ORG

SQT and Porewater Sampling and Analysis

LL Group # 1582903 Account # 12798

LL Sample # WW 7996824

Project Name: SQT and Porewater Sampling and Analysis

Collected: 08/06/2015 12:30 by JH Tierra Solutions, Inc.

Floor 10

Submitted: 08/06/2015 18:30 Two Tower Center Boulevard East Brunswick NJ 08816 Reported: 11/11/2015 05:13

NB310 SDG#: NB350-02FB

CAT No.	Analysis Name			CAS Number	Result	MRL	Dilution Factor
PCB C	ongeners	EPA	1668A	PCB	pg/l	pg/l	
		Con	geners				
13708	PCB190			41411-64-7	N.D.	49.9	1
13708	PCB191			74472-50-7	N.D.	49.9	1
13708	PCB192			74472-51-8	N.D.	49.9	1
13708	PCB194			35694-08-7	N.D.	49.9	1
13708	PCB195			52663-78-2	N.D.	49.9	1
13708	PCB196			42740-50-1	N.D.	49.9	1
13708	PCB197+200			n.a.	N.D.	99.8	1
13708	PCB198+199			n.a.	N.D.	99.8	1
13708	PCB2			2051-61-8	N.D.	20.0	1
13708	PCB20+28			n.a.	N.D.	49.9	1
13708	PCB201			40186-71-8	N.D.	49.9	1
13708	PCB202			2136-99-4	N.D.	99.8	1
13708	PCB203			52663-76-0	N.D.	49.9	1
13708	PCB204			74472-52-9	N.D.	49.9	1
13708	PCB205			74472-53-0	N.D.	49.9 49.9	1
13708 13708	PCB206 PCB207			40186-72-9 52663-79-3	N.D. N.D.	49.9	1
13708	PCB207 PCB208			52663-77-1	N.D.	49.9	1
13708	PCB209			2051-24-3	N.D.	49.9	1
13708	PCB21+33			n.a.	N.D.	49.9	1
13708	PCB22			38444-85-8	N.D.	20.0	1
13708	PCB23			55720-44-0	N.D.	20.0	1
13708	PCB24			55702-45-9	N.D.	20.0	1
13708	PCB25			55712-37-3	N.D.	20.0	1
13708	PCB26+29			n.a.	N.D.	49.9	1
13708	PCB27			38444-76-7	N.D.	20.0	1
13708	PCB3			2051-62-9	N.D.	49.9	1
13708	PCB31			16606-02-3	N.D.	49.9	1
13708	PCB32			38444-77-8	N.D.	20.0	1
13708	PCB34			37680-68-5	N.D.	20.0	1
13708	PCB35			37680-69-6	N.D.	20.0	1
13708	PCB36			38444-87-0	N.D.	20.0	1
13708	PCB37			38444-90-5	N.D.	20.0	1
13708	PCB38			53555-66-1	N.D.	20.0	1
13708	PCB39			38444-88-1	N.D.	20.0	1
13708	PCB4			13029-08-8	N.D.	49.9	1
13708	PCB40+71			n.a.	N.D.	99.8	1
13708	PCB41			52663-59-9	N.D.	99.8	1
13708	PCB42			36559-22-5	N.D.	49.9	1
13708 13708	PCB43			70362-46-8	N.D.	49.9 99.8	
13708	PCB44+47+65 PCB45			n.a. 70362-45-7	N.D. N.D.	49.9	1
13708	PCB46			41464-47-5	N.D.	20.0	1
13708	PCB48			70362-47-9	N.D.	49.9	1
13708	PCB49+69			n.a.	N.D.	99.8	1
13708	PCB5			16605-91-7	N.D.	20.0	1
13708	PCB50+53			n.a.	N.D.	99.8	1
13708	PCB51			68194-04-7	N.D.	49.9	1
13708	PCB52			35693-99-3	N.D.	49.9	1
13708	PCB54			15968-05-5	N.D.	49.9	1



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Sample Description: NB3101FB Composite Water Sample ORG

SQT and Porewater Sampling and Analysis

LL Sample # WW 7996824 LL Group # 1582903 Account # 12798

Project Name: SQT and Porewater Sampling and Analysis

Collected: 08/06/2015 12:30 by JH Tierra Solutions, Inc.

Floor 10

 Submitted:
 08/06/2015 18:30
 Two Tower Center Boulevard

 Reported:
 11/11/2015 05:13
 East Brunswick NJ 08816

NB310 SDG#: NB350-02FB

CAT	Analysis Name		CAS Number			Dilution
No.	Analysis Name		CAS NUMBER	Result	MRL	Factor
PCB C	ongeners I	EPA 1668A	PCB	pg/l	pg/l	
	(Congeners				
13708	PCB55	_	74338-24-2	N.D.	49.9	1
13708	PCB56		41464-43-1	N.D.	49.9	1
13708	PCB57		70424-67-8	N.D.	49.9	1
13708	PCB58		41464-49-7	N.D.	49.9	1
13708	PCB59+62+75		n.a.	N.D.	99.8	1
13708	PCB6		25569-80-6	N.D.	20.0	1
13708	PCB60		33025-41-1	N.D.	49.9	1
13708	PCB61+70+74+76		n.a.	N.D.	200	1
13708	PCB63		74472-34-7	N.D.	49.9	1
13708	PCB64		52663-58-8	N.D.	49.9	1
13708	PCB66		32598-10-0	N.D.	49.9	1
13708	PCB67		73575-53-8	N.D.	49.9	1
13708	PCB68		73575-52-7	N.D.	49.9	1
13708	PCB7		33284-50-3	N.D.	20.0	1
13708	PCB72		41464-42-0	N.D.	49.9	1
13708	PCB73		74338-23-1	N.D.	49.9	1
13708	PCB77		32598-13-3	N.D.	49.9	1
13708	PCB78		70362-49-1	N.D.	49.9	1
13708	PCB79		41464-48-6	N.D.	49.9	1
13708	PCB8		34883-43-7	N.D.	49.9	1
13708	PCB80		33284-52-5	N.D.	49.9	1
13708	PCB81		70362-50-4	N.D.	49.9	1
13708	PCB82		52663-62-4	N.D.	49.9	1
13708	PCB83		60145-20-2	N.D.	99.8	1
13708	PCB84		52663-60-2	N.D.	20.0	1
13708	PCB85+116+117		n.a.	N.D.	99.8	1
13708	PCB86+87+97+109+119+1	.25	n.a.	N.D.	200	1
13708	PCB88		55215-17-3	N.D.	49.9	1
13708	PCB89		73575-57-2	N.D.	49.9	1
13708	PCB9		34883-39-1	N.D.	20.0	1
13708	PCB90+101+113		n.a.	N.D.	200	1
13708	PCB91		68194-05-8	N.D.	49.9	1
13708	PCB92		52663-61-3	N.D.	49.9	1
13708	PCB93+100		n.a.	N.D.	200	1
13708	PCB94		73575-55-0	N.D.	49.9	1
13708	PCB95		38379-99-6	N.D.	200	1
13708	PCB96		73575-54-9	N.D.	49.9	1
13708	PCB98+102		n.a.	N.D.	200	1
13708	PCB99		38380-01-7	N.D.	99.8	1
mb o	aummetien DODa menemte					

The summation PCBs reported cannot be resolved under the chromatographic conditions used for sample analysis. The concentration(s) reported is the combined total of the PCBs and would be the maximum possible concentration for any individual PCB of interest.

Labeled Compounds	%Rec	Windows
13C12-2378-TCDD	75	25 - 164
13C12-12378-PeCDD	80	25 - 181
13C12-123478-HxCDD	85	32 - 141
13C12-123678-HxCDD	85	28 - 130
13C12-123789-HxCDD	77	28 - 130



2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 •717-656-2300 Fax:717-656-2681 • www.lancasterlabs.com

Sample Description: NB3101FB Composite Water Sample ORG

SQT and Porewater Sampling and Analysis

LL Sample # WW 7996824 LL Group # 1582903 Account # 12798

Dilution

Factor

Project Name: SQT and Porewater Sampling and Analysis

Collected: 08/06/2015 12:30 by JH Tierra Solutions, Inc.

Floor 10

MRL

 Submitted:
 08/06/2015 18:30
 Two Tower Center Boulevard

 Reported:
 11/11/2015 05:13
 East Brunswick NJ 08816

Result

NB310 SDG#: NB350-02FB

CAT No. Anal	ysis Name			CAS Number
Ishalad C	ompounda	%Rec	Windo	ws
Labeled Co	_	77		
13C12-12346	78-нрсии	64		
13C12-OCDD	TICDE:		17 -	
13C12-2378-		85	24 -	
13C12-12378		88	24 -	
13C12-23478		86		
13C12-12347		92	26 -	
13C12-12367		95	26 -	
13C12-23467 13C12-12378		93	28 -	
		114	29 -	
13C12-12346	-	88	28 -	
13C12-12347	89-нрсиг	83	26 -	
13C12-OCDF		69	17 -	
13C12-PCB1		46	15 -	
13C12-PCB3		45	15 -	
13C12-PCB4		48	25 -	
13C12-PCB15		48	25 -	
13C12-PCB19		49	25 -	
13C12-PCB28		53	30 -	
13C12-PCB37		50	25 -	
13C12-PCB54		60	25 -	
13C12-PCB77		57	25 -	
13C12-PCB81		56	25 -	
13C12-PCB10		57	25 -	
13C12-PCB10		64	25 -	
13C12-PCB11		65	30 -	
13C12-PCB11		65	25 -	
13C12-PCB11		63	25 -	
13C12-PCB12		62	25 -	
13C12-PCB12		64	25 -	
13C12-PCB15		64	25 -	
13C12-PCB16		69	25 -	
13C12-PCB16		68	25 -	
13C12-PCB17		73	30 -	
13C12-PCB18		63	25 -	
13C12-PCB18		70	25 -	
13C12-PCB20		67	25 -	
13C12-PCB20		79	25 -	
13C12-PCB20		74		
13C12-PCB20		71	25 -	
13C12-PCB20		72	25 -	
13C12-PCB15	6+157	69	25 -	
13C12-PCB8		62	25 -	
13C12-PCB32		77	25 -	
13C12-PCB31		62	25 -	
13C12-PCB47		63	25 -	
13C12-PCB95		99	25 -	
13C12-PCB70		74	25 -	
13C12-PCB60		78	25 -	150



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Sample Description: NB3101FB Composite Water Sample ORG

SQT and Porewater Sampling and Analysis

LL Sample # WW 7996824 LL Group # 1582903 Account # 12798

Project Name: SQT and Porewater Sampling and Analysis

Collected: 08/06/2015 12:30 by JH Tierra Solutions, Inc.

Floor 10

 Submitted:
 08/06/2015 18:30
 Two Tower Center Boulevard

 Reported:
 11/11/2015 05:13
 East Brunswick NJ 08816

NB310 SDG#: NB350-02FB

	CAS Number	Result	MRL	Dilution Factor
%Rec	Windows			
74	25 - 150			
77	25 - 150			
91	25 - 150			
77	25 - 150			
87	25 - 150			
	74 77 91 77	%Rec Windows 74 25 - 150 77 25 - 150 91 25 - 150 77 25 - 150	%Rec Windows 74 25 - 150 77 25 - 150 91 25 - 150 77 25 - 150	*Rec Windows 74

Dioxins/Furans Data Qualifiers:

- B Detected in Method Blank
- U Undetected

13C12-PCB162

13C12-PCB180

J Estimated concentration between Estimated Detection Limit and Minimum Level

25 - 150

25 - 150

- E Exceeds calibration range
- C Confirmed quantitation on secondary GC column
- Q EMPC Estimated Maximum Possible Concentration

94

- F Interference is present
- S Saturation of detection signal

Analytical Data

Client: Field & Technical Services LLC Job Number: 200-29185-1

Sdg Number: NB350

Client Sample ID: NB3101FB

Lab Sample ID: 200-29185-1 Date Sampled: 08/06/2015 1230

Client Matrix: Water Date Received: 08/07/2015 1010

Organotins/GC Organotins (GC/FPD)

Analysis Method: Organotins/GC Analysis Batch: 200-92704 Instrument ID: CH2860.i
Prep Method: 3510C Prep Batch: 200-92576 Initial Weight/Volume: 1030 mL

Prep Method: 3510C Prep Batch: 200-92576 Initial Weight/Volume: 1030 m

Dilution: 1.0 Final Weight/Volume: 1 mL

Analysis Date: 08/13/2015 1707 Injection Volume: 3 uL

Prep Date: 08/11/2015 1147 PRIMARY

Prep Date: 08/11/2015 1147 Result Type: PRIMARY

Analyte Result (ug/L) Qualifier RL RL

Tetrabutyltin 0.049 U 0.049 0.049 Tributyltin 0.044 U 0.044 0.044 Dibutyltin U * 0.038 0.038 0.038 0.60 Monobutyltin 0.60 U * cn 0.60

Surrogate %Rec Qualifier Acceptance Limits

Tripentyltin 40 15 - 150

Sample ID:	NB3101FB						EPA Meth	od 1699
Client Data		Sample Data		Laboratory Dat	a			
Name:	Tierra Solutions, Inc.	Matrix:	Aqueous	Lab Sample:	1500705-01	Date Received:	07-Aug-2015	9:08
Project:	Newark Bay Blank Sampling-SQT	Sample Size:	0.972 L	QC Batch:	B5H0052	Date Extracted:	10-Aug-2015	9:10
Date Collected:	06-Aug-2015 12:30			Date Analyzed	: 12-Aug-15 01:28 Colui	nn: ZB-50 Analys	t: ANP	
Analyte	Conc. (pg/L)	DL EMPC	Qu	alifiers La	beled Standard	%R	LCL-UCL	Qualifiers

Analyte Conc	. (pg/L)	DL	EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
Hexachlorobenzene	7.19			J, B	IS	13C6-Hexachlorobenzene	70.1	5 - 120	
alpha-BHC	ND		1.59		IS	13C6-alpha-BHC	75.9	32 - 130	
Lindane (gamma-BHC)	ND		5.81		IS	13C6-Lindane (gamma-BHC)	82.8	11 - 120	
beta-BHC	ND	1.00			IS	13C6-beta-BHC	83.7	32 - 130	
delta-BHC	ND	0.749			IS	13C6-delta-BHC	84.8	36 - 137	
Heptachlor	ND	0.699			IS	13C10-Heptachlor	73.5	5 - 120	
Aldrin	ND		2.06		IS	13C12-Aldrin	79.5	5 - 120	
Oxychlordane	ND	1.65			IS	13C10-Oxychlordane	82.3	23 - 135	
cis-Heptachlor Epoxide	ND	1.21			IS	13C10-cis-Heptachlor Epoxide	80.6	27 - 137	
trans-Heptachlor Epoxide	ND	5.24			IS	13C10-trans-Chlordane (gamma)	82.7	21 - 132	
trans-Chlordane (gamma)	ND	1.53			IS	13C10-trans-Nonachlor	75.1	14 - 136	
trans-Nonachlor	ND	1.44			IS	13C9-Endosulfan I (alpha)	83.3	15 - 148	
cis-Chlordane (alpha)	ND	1.41			IS	13C12-2,4'-DDE	89.4	47 - 160	
Endosulfan I (alpha)	ND		11.7		IS	13C12-4,4'-DDE	76.6	47 - 160	
2,4'-DDE	ND	1.04			IS	13C12-Dieldrin	77.3	40 - 151	
4,4'-DDE	ND	1.58			IS	13C12-Endrin	73.6	35 - 155	
Dieldrin	5.46			J	IS	13C10-cis-Nonachlor	69.2	36 - 139	
Endrin	ND	1.40			IS	13C9-Endosulfan II (beta)	73.7	5 - 122	
cis-Nonachlor	ND	1.72			IS	13C12-2,4'-DDD	81.1	5 - 199	
Endosulfan II (beta)	ND	5.76			IS	13C12-2,4'-DDT	72.3	5 - 199	
2,4'-DDD	ND	1.58			IS	13C12-4,4'-DDD	72.8	5 - 120	
2,4'-DDT	ND	3.04			IS	13C12-4,4'-DDT	63.2	5 - 120	
4,4'-DDD	ND	1.88			IS	13C9-Endosulfan Sulfate	67.7	15 - 148	
4,4'-DDT	ND		6.58		IS	13C12-Methoxychlor	47.4	5 - 120	
Endosulfan Sulfate	ND	2.00			IS	13C10-Mirex	39.2	5 - 120	
4,4'-Methoxychlor	ND	4.61			IS	13C12-Endrin Aldehyde	59.2	15 - 148	
Mirex	ND	1.11			IS	13C12-Endrin Ketone	52.8	15 - 148	
Endrin Aldehyde	ND		13.1						
Endrin Ketone	ND	3.93							

DL - Sample specifc estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL - Lower control limit - upper control limit

Project 1500705 Page 8 of 13

Appendix	С

roject Name: N	9-14-14	5	Weather:	Clear 7	ho
ampling Method:	ON/AR		Crew:	930, An	16 JEM
GRAB DATA Location ID:		136-1	Vessel Position Number:		
_atitude/Northing (r): (0811	33.8		Longitude/Easti	ng (X): 601817.9
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
l l	0845	7.3	(lt	y gras (1.10)	Chein, BENTHL
2	0848	1	1		BENTIFIC
3	0851				BENTITIC
4	0853				By Welch
5	0855	V	1		En Gallet
0	10015	·	-	1	9 5551-61
	-				
				*	
			1		
	1		_		
	-		-		
SAMPLE	DATA	Sample ID:			
analyses needed b	efore homogeni	zation (circle):	VOC TEPH	I-Purgeables	AVS/SEM Other:
Sediment type			Sediment odor		Comments: (i.e. redox potential
cobble	brown surface	e	none	H₂S	discontinuity, organic matter, wood debris, shell fragments, sheen,
gravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
sand (F M C)	brewn		moderate	other:	
(H)	gray		strong		
clay	black				
	210			*	-/
elinquished By	PJO		Company	ARCADIS	Date 9/14 Time 1600 11
				ARCADIS	a hal no

GRAB DATA		Location ID:		136-2			Vessel Position Number: 2		
titude/Northing (Y): 6811		37.9				Longitud		g(X): 601804.3	
Grab Sample Number	Grab Sample Number Grab Sample Time		om th	Penetration Depth (cm)		Acceptable grab (Y/N)		Comments:	
	0900	7.	0	-	4	,	1	5g bucket	
2	0902	1						1.1	
3	0904							V.	
A	0904								
5	090%	J	/	1	/	,	ý	Y	
					- 11				
					-				
			-	+	-	-			
SAMPLE	DATA	Sample	ID:						
alyses needed b	efore homogeniz	zation (cir	rcle):	VOC	TEPH	Purgeable	s	AVS/SEM Other:	
ediment type obble avel	Sediment color brown surface drab olive brown gray black			Sediment odor none H ₂ S slight petroleum		n	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)		
nd (F M C)				moderat	е	other:			
у				strong				Date 9/14/15 Time 1500	

Title: SQT and Porewater Sampling and Analysis Quality Assurance Project Plan Revision Number: 2 Revision Date: August 2015

COMPOSTA L. W. ID.		_ crew: P(O, AMB,)EM				
GRAB DATA Latitude/Northing (Y): /25		Location ID:	136-3			
Grab Sample	Grab Sample	1/30. / Bottom	Penetration	Acceptable	601112	
Number	Time	depth 6.9	Depth (cm)	grab (Y/N)	Sq bs cket	
2	0912	0.1	(6	7	Sq bucket	
3	0914					
1	0916					
5	0919	/				
-)	0-11-0	4	V	V	4	
	W					
	-					
SAMPLE	DATA	Sample ID:				
nalyses needed b	efore homogeniz	zation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:	
ediment type	Sediment col	lor	Sediment odor		Comments: (i.e. redox potential	
obble	brown surface		none	H ₂ S	discontinuity, organic matter, wood debris, shell fragments, sheen,	
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)	
and (F M C)	brown		moderate	other:		
ilt	gray		strong			
	black					
ay	000					
linquished By	(2)()			ARCADIS	Date 9/14/15 Time 1500	

Title: SQT and Porewater Sampling and Analysis Quality Assurance Project Plan Revision Number: 2

Revision Date: August 2015

SURFACE SEDIMENT COLLECTION FORM Project no.: Project Name Weather: Date: Crew: Sampling Method: GRAB DATA **Vessel Position Number:** Location ID: Longitude/Easting (X): Latitude/Northing (Y): Bottom Acceptable **Grab Sample Grab Sample** Penetration Depth (cm) Number Time depth grab (Y/N) Comments: 0920 2 3 4 5 SAMPLE DATA Sample ID: Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment color Sediment odor Comments: (i.e. redox potential Sediment type discontinuity, organic matter, wood cobble brown surface none H2S debris, shell fragments, sheen, fauna, field duplicate, etc.) gravel drab olive slight petroleum sand (F M C) moderate brown other: strong gray silt clay black ARCADIS Date 914 Time 1600 Relinquished By Accepted By_

Title: SQT and Porewater Sampling and Analysis Quality Assurance Project Plan Revision Number: 2 Revision Date: August 2015

GRAB DATA		Location ID: 136-5			Vessel Position Number: 5		
atitude/Northing (m: 6811	38.7		Longitude/Eastir	ng (X): 601771.2		
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:		
1	0930	6.9	6"	Y	5 gal - Burket		
2	0932				U		
3	0934			7			
4	0936						
5	0938	V	J	V	1		
SAMPLE	DATA	Sample ID:					
nalyses needed b	efore homogenia	zation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:		
ediment type bbble ravel and (F M C)	Sediment color brown surface drab olive brown gray black		Sediment odor none slight moderate	H₂S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)		
it ay			strong				

Title: SQT and Porewater Sampling and Analysis Quality Assurance Project Plan Revision Number: 2 Revision Date: August 2015

GRAB DATA		Location ID:	136-6	Vessel Position Number:			
atitude/Northing (n: 68113	7.4	12 4 4	Longitude/Eastir	ng (X): 60/829.0		
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:		
	0940	6.9	(011	Y	5g bucket		
2	0942						
3	1944	1			1		
4	0946						
9	1948	1/			1		
	0.10	V	V				
	1						
			-				
	-						
			T = 1				
SAMPLE	DATA	Sample ID:					
nalyses needed b			VOC TEPH	-Purgeables	AVS/SEM Other:		
ediment type	Sediment col		Sediment odor		Comments: (i.e. redox potential		
bble	brown surface		none	H₂S	discontinuity, organic matter, wood debris, shell fragments, sheen,		
ravel	drab olive brown gray		slight	petroleum	fauna, field duplicate, etc.)		
ind (F M C)			moderate	other:			
			strong				
t							

Project Name: N-6-3-A			Project no.:					
Date:	7	5	Weather: WINDY-CIGAR- 70 Crew: MOJAMB, JEM					
Sampling Method:	DONAR							
GRAB I	DATA	Location ID:	137-1	Vessel	sel Position Number:			
Latitude/Northing (947.2		Longitude/Eastir	ng (X): 600453.1			
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:			
t	1200	5.5	6"	Y	CHBIA-BONTHL-CHEV			
2	1202				BENTIME			
3	1204				Baythe			
4	1206				Bg bucket			
5	1208	V	V	J	5g lovelet			
					J			
	-							
					The state of the s			
		4 _ [
SAMPLE	DATA	Sample ID:						
Analyses needed b	efore homogeniz	zation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:			
Sediment type	Sediment col	or	Sediment odor		Comments: (i.e. redox potential			
cobble	brown surface drab olive		none	H ₂ S	discontinuity, organic matter, wood debris, shell fragments, sheen,			
gravel			stight	petroleum	fauna, field duplicate, etc.)			
sand (F) M C)	brown		moderate	other:				
EII	gray		strong					
clay	black			-				
Relinquished By	pm		Company	ARCADIS ARCADIS	Date 9/14 Time 4607 1500			
	4		sompany	Anthor	Date 9/14/15 Time 1600			
Accepted By	2,		Company	FIRCAUS	DateTimeTool)			

oject Name:	PONAR		Weather: WINDY-SUN-JO Crew: PJD, AMB, JEM					
GRAB DATA Location ID:			137-2	Vess	Position Number: Z			
Latitude/Northing (atitude/Northing (Y): 680933.3			Longitude/East	ing (X):	ng (X): 600434.2		
Grab Sample Number	Grab Sample Grab Sample Bottom Number Time depth		Penetration Depth (cm)	Acceptable grab (Y/N)		Comments:		
j	1210	69	60	1	50	bucket		
2	1212	1	1)			
3	1214				THE S			
4	1216				111111			
S	1219	V	1					
	100	Y	V	· ·	7			
					-			
			4	1				
				· · · · · · · · · · · · · · · · · · ·	-			
	-				_			
		11						
					77			
	1		-					
SAMPLE	2474	01-10-						
		Sample ID:	VOC TERM	A constitution				
Analyses needed be			V-1	-Purgeables	AVS/SE			
Sediment type	Sediment color brown surface drab olive		Sediment odor		discontinu	ts: (i.e. redox potential uity, organic matter, wood		
cobble			none	H₂S	debris, sh	ell fragments, sheen, d duplicate, etc.)		
gravel			slight	petroleum	Jania, III			
sand (F M C)	brown		moderate	other:				
silt	gray		strong					
	black							

GRAB DATA Latitude/Northing (Y): Grab Sample Number Ti 12 2 12 3 12 4 12 5 12 SAMPLE DATA	Location ID: (680939.0 Sample Bottom depth 20 U. 6 24 24 25	137.3		Jewin Number: 3 Ing (X): 600449.5 Comments: 5g by 44+
GRAB DATA Latitude/Northing (Y): Grab Sample Number Ti 12 2 12 3 12 4 12 5 12 SAMPLE DATA	Location ID: (680939-0 Sample Bottom depth 20 U. 6	Penetration Depth (cm)	Vessel Longitude/Eastin Acceptable	Position Number: 3
SAMPLE DATA	(680939.0 Sample Bottom depth 20 U. 6	Penetration Depth (cm)	Longitude/Eastin	ng (X): 600449.5
Grab Sample Number Ti 12	Sample Bottom depth 20 U. 6 21 L	Penetration Depth (cm)	Acceptable	Comments:
Number Ti 12 2 12 3 12 4 12 5 12 5 12 5 12 5 12 5 12 5 12 5 12 5 12 5 12 5 12 5 12 5 12 5 12 5 12 5 12 12	70 U. 6	Depth (cm)		Comments:
1 12 2 12 3 12 4 12 5 12 SAMPLE DATA	20 U. 6 22 24 26	100		
3 12 4 12 5 12 SAMPLE DATA	14 26			
SAMPLE DATA	26			
SAMPLE DATA	26			
SAMPLE DATA				
SAMPLE DATA				
219 1000 1000				
		-		
		10-		
analyses needed before hor	Sample ID:			
Analyses needed before homogenization (circle):		VOC TEPH	-Purgeables	AVS/SEM Other:
Sediment type Sedin	ment color	Sediment odor		Comments: (i.e. redox potential
cobble brown	n surface	none	H₂S	discontinuity, organic matter, wood debris, shell fragments, sheen,
gravel drab of	olive	slight	petroleum	fauna, field duplicate, etc.)
and (F M C) brown	m	moderate	other:	
gray		strong	2.20	
clay black				
ady States	K	1		Date 9/14/15 Time 1500

ampling Method:	PONITE	r	Crew: PJO, AMB, JEM				
		Location ID:	137-4	Vessel	Vessel Position Number:		
Latitude/Northing (Y): 68091		1283		Longitude/Eastir	ng (X): 600449.8		
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:		
1	1230	100	60	Y	Sq broket		
2	1232	Ĭ	TV.	1			
3	1234						
4	234						
<u><</u>	123%			1/	1		
	1000		4		-		
	-						
			2				
			3 1				
		7.					
SAMPLE DATA Sample ID:		Sample ID:					
Analyses needed before homogenization (circle):		VOC TEPH	Purgeables	AVS/SEM Other:			
ediment type	Sediment color		Sediment odor		Comments: (i.e. redox potential		
obble	brown surface drab olive		none	H₂S	discontinuity, organic matter, wood debris, shell fragments, sheen,		
ravel			slight	petroleum	fauna, field duplicate, etc.)		
and (F M C)	brown		moderate	other:	1 1 1		
lt -	gray		strong				
ay	black						

GRAB D	ATA	Location ID:	137-	Vesse	Position Number: 5		
		processo virtigio					
Grab Sample	Grab Sample	Bottom	Penetration	Acceptable			
Number	Time	depth (e.2	Depth (cm)	grab (Y/N)	Comments:		
1	1240	(9.0	(0)	7	5g bucket		
7	1242		1				
3	1244						
4	1244				1		
8	1248	V	V	V	A		
			1				
	-						
SAMPLE DATA Sample ID:							
Analyses needed before homogenization (circle):			-Purgeables	AVS/SEM Other:			
Sediment type	Sediment col		Sediment odor	V6.45	Comments: (i.e. redox potential discontinuity, organic matter, wood		
cobble	brown surface drab olive		none	H₂S	debris, shell fragments, sheen, fauna, field duplicate, etc.)		
gravel			slight	petroleum	issuia, neio dupilcate, etc.)		
sand (F M C)	brown		moderate	other:			
silt	gray		strong				
clay	black						

		Location ID: 138-1			Position Number: /
		674.6	170		19 (X): 599231.7
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1047	11.4	6"	У	Chim - BONTHIC
2	1049				BONTHIC
3	1051				Banguic
4	1003				En bulet
5	1055	1	1	1	Sq bucket
8					
SAMPLE	DATA	Sample ID:			
Analyses needed before homogenization (c		ation (circle):	VOC TEPH	I-Purgeables	AVS/SEM Other:
bediment type by bobble brown surface drab olive brown gray black		74	Sediment odor none slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)

GRAB DATA Latitude/Northing (Y): 47		Location ID: 138-2			Position Number: 2
		7662.2		Longitude/Eastir	ng (X): 599217.3
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
i	1100	11.3	(0)	4	59 bucket
2	1102		i		
3	1104				
4	jule				
5	1103	1	V	T	
					4
	2				
	4				
SAMPLE	DATA	Sample ID:			
Analyses needed before homogenization (ci		ration (circle):	VOC TEPH	l-Purgeables	AVS/SEM Other:
Sediment type cobble gravel sand (F M C)	brown surface drab olive		Sediment odor none slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
clay	black				

mpling Method:	PONAR		Crew:	Suny	-clear-chady	
GRAB I	DATA	Location ID:	138-3	Vessel	el Position Number: 3	
Latitude/Northing (Y):		9666.0	7	Longitude/Eastir	ng (X): 599205:9	
Grab Sample Grab Samp Number Time		Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)		
1	1110	(1.2	(p1)	4	Sy lovelet	
2	1112					
3	1114			(= 4		
4	116					
5	8111	V	V	V	V	
			1			
	1					
	1 - 1 - 1					

			/-			
	-	-				
SAMPLE	DATA	Sample ID:				
Analyses needed before homogenization (ci		ration (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:	
ediment type	brown surface		Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood	
obble			none	H₂S	debris, shell fragments, sheen, fauna, field duplicate, etc.)	
ravel	drab olive		slight	petroleum	lauria, neiu dupiicate, etc.)	
and (F)M C)	brown		moderate	other;		
U	gray		strong			
ay	black					
inquished By	DIN			ARRAMS	Date 9/4 Time 1606	

				PJO, AM		
GRAB	NAME OF THE OWNER OWNER OF THE OWNER		(20)		Position Number:	
Latitude/Northing (79669			19 (X): 599,94.1	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:	
	1120	11.1	6	1	5g brillet	
2	1122	1			1	
3	1124					
4	1124					
5	1128	V	1	V	V	
	1000					
	12					
			-			
SAMPLE	DATA	Sample ID:		<u>'</u>		
Analyses needed before homogenization (circle):		VOC TEPH	-Purgeables	AVS/SEM Other:		
Sediment type	Sediment color brown surface		Sediment odor none H ₂ S		Comments: (i.e. redox potential	
obble					discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	
ravel	drab olive		slight	petroleum	issuit, note depited to to.)	
and (FMC)	brown		moderate strong	other:		
ilt	gray		Strong			
lay					Date 9/4/15 Time 1500	

GRAB I	DATA	Location ID:	138-5	Vesse	Position Nun	nber: 5
Latitude/Northing (Y): 67		9674.		Longitude/Eastin	ng (X): 59	9186.6
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration	Acceptable grab (Y/N)		Comments:
	1130	11.2	Coll	Y	50	larget
2	1/32	1)
3	1134					
4	1136					
5	1138		1	1		V
	100	W.				
				-		
			1		115	
	1		1			
		-			+	
	-		-		+	
					4	
			56			
				1		
SAMPLE	DATA	Sample ID:				
Analyses needed before homogenizat		ration (circle):	VOC TEPH	-Purgeables	AVS/SEM	Other:
ediment type			Sediment odor		4-25	(i.e. redox potential
bble	brown surface drab olive		none H ₂ S		discontinuity	, organic matter, wood
avel			slight	petroleum	fauna, field o	fragments, sheen, fuplicate, etc.)
ind (F MC)	brown		moderate	other:	, , , , , , , , , , , , , , , , , , , ,	
5			strong	outer.		
۲	gray		Shorty			
ау	black					4 Time +600

GRAB DATA		Location ID: [38 - 6 Vess			sel Position Number:		
_atitude/Northing (Y): 670		7	Longitude/Eastir			
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:		
	1140	10.5	64	1	59 brillet		
r	1142	(1	1		
3	1144						
4	1146						
5	1148	V	V	V	V		
					1		
	-						
	-						
SAMPLE	DATA	Sample ID:			1		
Analyses needed before homogenization (circle):		VOC TEPH	I-Purgeables	AVS/SEM Other:			
ediment type Sediment color		Sediment odor		Comments: (i.e. redox potential			
cobble	brown surface drab olive		none H ₂ S		discontinuity, organic matter, wood debris, shell fragments, sheen,		
ravel			slight	petroleum	fauna, field duplicate, etc.)		
and (F M C)	brown		moderate	other:			
ilit	gray		strong				
lay	black						

ate:	PONAR		Weather: Crew:	PSD;	-SUM	AMB	
GRABI	DATA	Location ID:				el Position Number: 7	
Latitude/Northing (Y): 679 (069)		669.4			e/Easting ()	1): 599249.7	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Accep grab	table (Y/N)	Comments:	
	1(50	10-5	Gil	Y		5g bucket.	
			y ======				
				2			
SAMPLE	DATA	Sample ID:					
Analyses needed before homogenization (circle):		VOC TEPH	-Purgeables	3	AVS/SEM Other:		
Sediment type cobble	Sediment color brown surface drab olive brown gray		Sediment odor	H ₂ S	d	comments: (i.e. redox potential iscontinuity, organic matter, woo ebris, shell fragments, sheen, auna, field duplicate, etc.)	
gravel sand (PMC)			slight moderate strong	petroleum other:			
clay	black						
linquished By	PJO		Company	ARCAD ARCAD	715 Date	9/14 Time 4600	
cepted By	24		Company	ARCAD	15 _Date	9/14/15 Time 1500	

ampling Method:			Crew:	SUNUY PSD, AMB,	
GRAB DATA		Location ID:	139-1		Position Number: [39-]
		e Bottom Penetration			g(X): 597447.3
Grab Sample Number	Grab Sample Time	depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
	1218	10.7	(od	4	59 bruket
2	1220	1	1111		1
3	1222				
4	1224				
4	1226	V	1	V	V
SAMPLE			1803SED-	CHM139, N	JBU3SED OM A, B, C
Analyses needed b	efore homogeniz	ation (circle):		-Purgeables	AVS/SEM Other:
cobble gravel sand (P) M C)	brown surface		sediment odor none slight moderate strong	H₂S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)

ampling Method:			Crew:		
GRAB DATA		Location ID	: 139-2		ol Position Number: 2
		Bottom Penetration		Longitude/Easti Acceptable	ng (X): 597448.4
Grab Sample Number	Grab Sample Time	depth	Penetration Depth (cm)	grab (Y/N)	Comments:
	1228	10.3	Can	4	5g brutet
2	1230				
3	1232				4, 4, 1,
4	1234				
5	1236	1	1	1	¥
_					
					HT TO SERVICE
SAMPLE Analyses needed b	241.0314	Sample ID:	: VOC TEPH	I-Purgeables	AVS/SEM Other:
Sediment type cobble gravel sand (F) M C) clay	Sediment coll brown surface drab olive brown gray	or	Sediment odor Gorie slight moderate strong	H₂S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, stell fragments, sheen, fauna, field duplicate, etc.)

ate: ampling Method:	9-15-15 PONAR		Weather: Crew:	SUNM PO, AN	13. KBM
		U. Conte		-	
GRAB		Location ID:	139-3	11.761	Position Number: 3
Latitude/Northing	(Y): 6749 Grab Sample	8 . 9 Bottom	Penetration	Longitude/Easti	ng (X): 597448.7
Grab Sample Number	Time	depth	Depth (cm)	grab (Y/N)	Comments:
1	1238	10.4	(ou	4	Sig bucket
2	1240	Y			
3	1242			1	
4	1244				
7	1246	1/			V
	1110	-		-	1
	1				
	-				
	1				
		A	M.		
SAMPLE	DATA	Sample ID:	SH		
Analyses needed b			SACRAGE THE SEC	-Purgeables	AVS/SEM Other:
Sediment type	Sediment co	or	Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood
cobble	brown surface		none	H₂S	debris, shell fragments, sheen, fauna, field duplicate, etc.)
gravel	drab olive		slight	petroleum	rauria, fielo duplicate, etc.)
and (FM C)	(SCOWE)		moderate	other:	clams
silt	gray		strong		
clay	black				
	MA			Non-lie	calculate dant
elinquished By	KII		Company	Arcadis	Date 9/5/5 Time 1500

ate:ampling Method:	9-15-15 PONAR		Weather: Crew:	SUMY PD, AMB	JOM
GRAB	DATA	Location ID;	139-4	Vess	sel Position Number:
atitude/Northing (M: 6749	93.2		Longitude/Eas	ting (x): 597445.1
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	
\ \	1248	10.3	(0")	4	5g briket
1	1250	1	Ĭ		
3	1267				
Δ	1254				
5	1256	/	1		
9	1200		- V	4	
	-				
	-				
					1
	-				
	1				
			V = ,		
SAMPLE	DATA	Sample ID:	NA		
		7.7	F 487 5 347	Duranahlas	AVOIDEM OFF
nalyses needed b	7 7			-Purgeables	AVS/SEM Other:
Sediment type	Sediment col		Sediment odor		Comments: (i.e. redox potential discontinuity_organic matter, wood
cobble	brown surface		(enone)	H₂S	debris, shell fragments, sheen, fauna, field duplicate, etc.)
ravel	drab olive		slight	petroleum	realist hald populate, etc./
and (PM C)	Krown		moderate	other:	clan
ill	gray		strong		CL"
lay	black				
	030			Arcadis	Date 9/15/15 Time 1600

GRAB I	DATA	Location ID:	139-5	Vessel	Position Number: 5
_atitude/Northing (Y): 107	5002.0		Longitude/Eastin	18 (X): 597444.5
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1.	1258	10.0	6"	Y	Fig broket
2	(300				
3	1302				
A	1304				
4	1306	V	V	V	V
SAMPLE	DATA	Sample ID:	NA		
nalyses needed b		1.5.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	7.7. T. S. S. S. S.	-Purgeables	AVS/SEM Other:
ediment type obble ravel and (F) M C)	Sediment collabrown surface drab olive gray	or	Sediment odor slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)

Date: Sampling Method:	9-19-1	5					
sampling Method:	roject Name: N.B.S.A ate: 9-15-15 ampling Method: PONAR		Crew: PJD, AMB, EFJCM				
			_ Crew: _ PJD, AM P			SIR JUN	
GRAB	DATA	Location ID:	139-6		Vessel	Position Number: 6	
Latitude/Northing	(r): 6749	43.5		Longitud	le/Eastin	g(X): 597435.6	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)		ptable (Y/N)	Comments:	
1	1313	10.2	60	1	1	5g bucket.	
						1	
				+	-		
				-	_		
	- 1						
					-		
	+			-	-		
			^				
SAMPLE	DATA	Sample ID:	UA				
Analyses needed i	pefore homogenia	zation (circle):	VOC TEPH	l-Purgeable	es	AVS/SEM Other;	
Sediment type			Sediment odor			Comments: (i.e. redox potential	
cobble	brown surface		hone	H ₂ S		discontinuity, organic matter, wood debris, stiell fragments, sheen,	
gravel	drab olive		slight	petroleun	n	fauna, field duplicate, etc.)	
sand (F) M C)	brown		moderate	other:		Clans	
Silt	gray		strong			7.4	
clay	black						
	an			1-1	1	alula mal	
elinquished By	100		Company	Hac	47	Date 9/16/15 Time 150	
	-11		Company	ARCA	015	Date 9/15/15 Time 150	

Revision Date: August 2015

+ MOVED TO SUFT SEDIMENTS

oject Name: N.B	.S.A SQT/Po	rewater	Project no.:	B0009989.004			
nte:	9/29/10	í	Weather: Wer Cast				
ampling Method: Ponar			Crew:	PJD, AMB, JEN	И		
GRAB	DATA	Location ID:	140	Vesse	Position Number:		
atitude/Northing	(Y): 686	510.0		Longitude/Easti	ng (X): 599366-3		
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	. Comments:		
1	0748	4.5	84"	Y	Chem-benths		
2	0750				bennic		
3	0752				bentux,		
4	0794	1			5g bruket		
5	0796	V	V.	V	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
140-2		86498.3		599357.	3		
- 1	0758	4.7	4"	У	5g bruket		
1	0800				0		
3	0802	-,-		1- 1-1			
4	0804						
5	0800	V	V	Y	1 1 1		
140-3	0808	er.6	4"	7	5g broket		
1	0910	-			1		
-	0812	-					
	0314			-			
4	03/0	1,			1		
5/1/10	0919	V	V	2/1/10	A		
N) (0'	36503.	L	6)59	73626			
SAMPLE	DATA	Sample ID:	1613 500 CC	tem 140	VB13 SED COM, A,B,		
	efore homogeniz	A THE PARTY OF	>	Purgeable	AVS/SEM Other:		
diment type	Sediment cold	or	Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood		
oble	brown surface		none	H₂S	discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)		
avel	drab olive		slight	petroleum	listing, new aspirator, easy		
nd (F M/C)	gray		moderate	other:			
/	5.3						
ıy	black						

ate: ampling Method:f	9 29 Ponar			OVENCAS PJD, AMB, JEN	
GRAB D		Location ID:	140-4	Vesse	l Position Number:
atitude/Northing (Y	1: 626	514.9		Longitude/Eastin	ng (X): 599375.0
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	0820	49	4	4	59 broke +
2	0821				
3	0894				
4	0826				
5	0928		V	V	V
140-5	N)	68651	7.7 E)	599381	65
	0850	5.0	4	7	Sy wiket
1	1832		1		
3	0334				
4	0836				
5	14338	V,	V	V	
140-6	0840		36520.3	E) 59	9400.3
1	0942	5.6	Ц	Y	9400.3 Sy baket
2	0944				0
3	0846				
4	0843				
5	7	1	V	V	V
SAMPLE D	ATA	Sample ID:	J k		
nalyses needed bef			-	Purgealles	NS/SEM Other:
ediment type obble avel and (F M C)	Sediment colo brown surface drab olive brown gray	or .	Sediment odor none slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
nquished By PJI	black		Company _	Arcadis	Date 9(29(15 Time POF) Date 949/15 Time 1515

Project Name: N.B.S		rewater	Project no.:	B0009989.004	
Date:	9/29	15	Weather:	OVera	ast
ampling Method:	onar '		Crew:	PJD, AMB, JEN	И
CDARD	474	Location IO	10/	10	el Position Number:
GRAB D		Location IO	686527		
Latitude/Northing (Y Grab Sample	Grab Sample	Bottom	Penetration	Longitude/Easti Acceptable	ng (X): 599417.3
Number	Time	depth	Depth (cm)	grab (Y/N)	Comments:/
1	0950	5.5	4	4	59 briket
2	0852				01
3	0894				
4	0206				
5	UBTS				1
140-8	al)	68651	8.3 E)	599410	,4
1	900	5.3	4	V	5a bucket
7	902	5./			39000
2	904				
14		-			
5	908	V			1 1
149-9		G.2 7	6)60	9410.2	-
1401-1		9.3	1	140.2	5g broket
2	0910	7.0	7	7	50 prices
3	912				0
	914				
4	916	-	1,		
5	918	Y	V	V	V
SAMPLE D	ATA	Sample ID:	JA		
		100	1	Purgeables	AVS/SEM Other:
ediment type	before homogenization (circle): Sediment color		Sediment odor	orgeables	Comments: (i.e. redox potential
bble	brown surface drab olive		none	H₂S	discontinuity, organic matter, wood debris, shell fragments, sheen,
avel			slight	petroleum	fauna, field duplicate, etc.)
nd (F No C)	brown		moderate	other:	
5	gray		strong		
зу	black				
elinquished ByPJ[Company	Arcadis I	Date 9/29/15 Time 15/5

30 Q.1 32 34 36 38 36 36 36 36 36 46 46 46	Penetration Depth (cm) 4 2 E)54	Longitude/Easting Acceptable grab (Y/N)	Position Number: 10 g(X): 999403.9 Comments: Sy bullet
(086485. Sample Bottom depth 0 5-5 12 14 16 16 17 17 18 18 18 18 18 18 18 18	Penetration Depth (cm) 4 4 2 E)54	Longitude/Easting Acceptable grab (Y/N)	comments: 5y bullet 5y bullet
Sample Bottom depth 0 5-5 12 12 12 12 12 12 12 12 12 12 12 12 12	Depth (cm) 4 2 E)54 4	Acceptable grab (Y/N)	Sy bullet Sy bullet
me depth 0 5-5 12 14 14 14 15 16 16 17 17 17 17 18 18 18 18 18 18	Depth (cm) 4 2 E)54 4	Acceptable grab (Y/N)	Sy bullet Sy bullet
12 1 14 1 16 6 74 7 20 (e. 1) 22 34 1 36 1 36	4	4	
14 16 16 16 16 16 16 16 16 16 16	4	4	
34 36 34 36 36 36 36 36 36 36 36 36 36	4	4	
34 36 34 36 36 36 36 36 36 36 36 36 36	4	4	
) 686174.7 30 G. N 32 34 36 38 36 46(4	4	
30 Q.1 32 34 36 38 36 36 36 36 36 46 46 46	4	4	
34 34 36 38 36 36 36 36 36 46 46 46	4 () () () () () () () () () (4	
34 166 166 166 166 166 166 166 166 166 16	(5 E)		
)686461	(5 E)		
)686461	, 5 E)		J
)686461	,5 E)	V	V
/ / /	,5 E)	444 30	
1 62	/	599389.	
to 5.8	4	4	5 gholet
12 1		i	
14	400/1-1		
16			
F8 V	1	V	
Sample ID:	V M		
ogenization (circle):		Purgeables	AVS/SEM Other:
ent color surface ive	Sediment odor none slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
	Company	Arcadis _{Da}	ate 9/19/15 Time 190-1
	Sample ID: logenization (circle): ent color surface ive	Sample ID: Ogenization (circle): VOC TEPH- ent color surface ive Slight moderate strong	Sample ID: Ogenization (circle): VOC TEPH-Purgeables ent color surface ive Slight petroleum moderate other: strong Company Arcadis Da

GDA-SPIT Location for bioaccumulation SURFACE SEDIMENT COLLECTION FORM

	16-15		Weather:	PJO, AMB,	TOW
ampling Method:	PONAR		Crew:	1 Child Inch	Jen
GRAB	DATA	Location ID:	141-1	Vesse	Position Number:
Latitude/Northing	(M): 67090	49.3	1,1,	Longitude/Eastir	ng (X): 595954.3
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
	878	10.0	le"	Y	Chem-benful
7_	840		7		benthic
2	852				benthic.
4	834				59 broket
+	836	1	V	-	5g Wellet
					J
					-
	1500				
				-	
	1				
	1 4 4 4 7				
SAMPLE	DATA	Comple ID: N	PM SED-ALL	11111 × 1213CE	0-60M141A,B,C
		and designed the			
nalyses needed b				-Purgeables	AVS/SEM Other:
Sediment type	Sediment col		Sediment odor	H.C	Comments: (i.e. redox potential discontinuity, organic matter, wood
obble	brown surface		none	H ₂ S	debris, shell fragments, sheen, fauna, field duplicate, etc.)
ravel	drab olive		slight	petroleum ethor:	
and (F)M C)	brown		moderate	other:	
ilt	gray		Strong		
lay	Diack				0/ / /
	$(\mathcal{I}(1))$			Λ 1	Date 9/16/15 Time 1600

GRAB	DATA	Location ID:	141-2	Vessel	Position Number: 2
atitude/Northing (FILE		19 (X): 595947-7
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	838	Dio	64	4	Eg buclat
2	840	1			
3	342				
4	844				
5	946	V	V	V	V
			F = 3		
SAMPLE	DATA	Sample ID:	NA		
nalyses needed b	efore homogeniz	ation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
obble	Sediment colo brown surface drab olive		Sediment odor none slight	H₂S petroleum	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
	gray		moderate strong	other:	
alay	gray black		strong		d. I

GRABI	DATA	Location ID:	141-3	Vessel	Position Number: 3
.atitude/Northing ((Y): 6709	26.5		Longitude/Eastin	ng (X): 595937. 7
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
	348	0	60	Y	5 abrelet
2	850				
3	852				
4	854				
5	856	1			1
	1				
SAMPLE		Sample ID:	NA		
Analyses needed before homogenization (circle):				-Purgeables	AVS/SEM Other:
ediment type	Sediment color brown surface		Sediment odor	4.4	Comments: (i.e. redox potential discontinuity organic matter, wood
obble			none	H₂S petroleum	debris, shell fragments, sheen, fauna, field duplicate, etc.)
and (F M C)	drab olive		slight moderate	other:	
10	gray		strong	eathern.	
ay	black				,

ampling Method:	YONAR		Crew:	BO, AME	, Jan
GRABI	DATA	Location ID:	141-4	Vesse	Position Number:
atitude/Northing (Y): 6700	116.9		Longitude/Eastin	ng (X): 59 59 28 . 4
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
	853	10-1	64	4	Sq buckt
2	900	-1			
3	902		111111		
4	904				
5	906	V	V	J	V
7					
	1				
	-		_		
	1				
SAMPLE	DATA	Sample ID:	NA		
nalyses needed b	efore homogeniz	ation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
ediment type	Sediment color brown surface drab olive		Sediment odor		Comments: (i.e. redox potential discontinuity, organis matter, wood
obble			none	H₂S	debris, shell fragments, sheen, fauna, field duplicate, etc.)
ravel			slight	petroleum	lauria, riciu duplicate, etc.)
and (F)M C)	terown		moderate	other:	
P	gray		strong		
ay	DIACK		1		26.7
linquished By	00		0	Avendi	Date 9/16/15 Time 1600

roject raditio.	1.8.5 A		Project no.:BOOD 9989.0044					
ate: <u>9</u>	16-15		Crew: P10, AMB, JaM					
mpling Method:	POWAR		Crew:	171), MVI	5, 1901			
GRAB DATA		Location ID:	141-5	Vess	el Position Number: 5			
atitude/Northing (n: 470 90	8.52		Longitude/East	ing (X): 595917.45			
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:			
l	963	10.0	(e "	y	5g bycket			
2	910							
3	912							
4	914			2 4				
5	916	V	V	1	V			
SAMPLE nalyses needed b	100000	Sample ID:	VOC TEPH	l-Purgeables	AVS/SEM Other:			
ediment type	Sediment col		Sediment odor	-ruigeables	Comments: (i.e. redox potential			
obble	brown surface		none	H ₂ S	discontinuity, organic matter, wood debris shell fragments, sheen,			
avel	drab olive		slight	petroleum	fauna, field duplicate, etc.)			
and (P M C)	brown		moderate	other:				
R	gray		strong					
ay	black							
	OUF			ιΛ Ι.	9/1/1/15 1/1/2)			
inquished By	MA		Company	Arradis	Date			
cepted By	A		Company	ARCADIS	Date 9/16/15 Time 1600			

fauna, field duplicate, etc.)

SURFACE SEDIMENT COLLECTION FORM N.B.S.A B0009989.0044 Project Name: Project no.: Sman Date: Weather: ADIAMS, JEW Sampling Method: Crew: Vessel Position Number: 6 **GRAB DATA** Location ID: 1070950.0 Latitude/Northing (Y): Longitude/Easting (X): 595968.6 Grab Sample Bottom Penetration Acceptable **Grab Sample** Number depth grab (Y/N) Depth (cm) Time Comments: 211 0.1 2 9.20 3 4 5 NA SAMPLE DATA Sample ID: VOC Analyses needed before homogenization (circle): TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, brown surface none cobble H₂S

Relinquished By DID Company AVCALIS Date 9/16/15 Time 1600

Accepted By Company ARCALIS Date 9/16/15 Time 1600

petroleum

other:

slight

strong

moderate

drab olive

Grown

gray

black

gravel

silt

clay

sand (F/M C)

roject Name: N	B.S.A 1-16-15		Project no.:	B000998	1.0011
mpling Method:	PONAR		vveatner; Crew:	MA A AM	Tam
GRABI		Location ID:	1411	1	Position Number: 7
atitude/Northing (Y): (270964.8			111-1	Longitude/Eastin	
Grab Sample	Grab Sample	Bottom	Penetration	Acceptable	19(1) 2/2/4/10
Number	Time	depth	Depth (cm)	grab (Y/N)	Comments:
1	0928	[0.0	6	4	5g bucket
2	030				
3	0932			200	
4	0924				
5	0936	V	A	1	V
	1			1.0	
SAMPLE	DATA	Sample ID:	NA		
Analyses needed before homogenization (circle):			-Purgeables	AVS/SEM Other:	
ediment type	Sediment col	lor	Sediment odor		Comments: (i.e. redox potential
obble	brown surface		1	H ₂ S	discontinuity, organic matter, wood debris, shell fragments, sheen,
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
and (F) M C)			moderate	other:	
T)			strong		
ill					

GRAB I	ATA	Location ID:	141-8	Vessel	Position Number: 8	
_atitude/Northing (r): (0700	178.7		Longitude/Eastin	g(X): 595976.5	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:	
1	0938	10	(e	Y	5 g buyet	
2	940	1	1			
3	942					
4	944					
5	946	/	V	V	L	
SAMPLE	DATA	Sample ID:	NA			
Analyses needed b	efore homogeniz	ation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:	
Sediment type cobble gravel sand (F) M C) clay	brown surface drab olive		Sediment odor note H ₂ S slight petroleum moderate other: strong		Comments: (i.e. redox potential discontinuity, organic matter, woo debris, shell fragments, sheen, fauna, field duplicate, etc.)	

SURFACE SEDIMENT COLLECTION FORM BOD 09989.0044 Project no.: Project Name: Date: Sampling Method: **Vessel Position Number: GRAB DATA** Location ID: 70990.8 Latitude/Northing (Y): Longitude/Easting (X): Grab Sample Bottom Penetration Acceptable **Grab Sample** depth grab (Y/N) Number Time Depth (cm) Comments: 0948 bruket 0 1 4 SAMPLE DATA Sample ID: Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment color Sediment odor Comments: (i.e. redox potential Sediment type discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) brown surface none H2S cobble drab olive gravel slight petroleum brown sand (F M C) moderate other: gray strong 1 black Accadis Date 9/16/15 Time 1600 Relinquished By Accepted By_

Title: SQT and Porewater Sampling and Analysis
Quality Assurance Project Plan
Revision Number: 2 * Moved as per GPA, TLEMA

Revision Date: August 2015

roject Name: N.B.S.A SQT/Porewater ate: 9 24 5			Project no.: Weather:	auscar		
mpling Wethod:	Ponar		Crew:	PJD, AMB, JEN	Л	
GRAB DATA Location ID		Location ID:	: 142-1 v		el Position Number:	
atitude/Northing (Y): 10(19947. 4		17.4		Longitude/Easti	ng (X): 596463.2	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:	
1	0930	6.6	211	Y	dem- benfice	
2	0932			11	butnic	
3	0934				bouthu	
4	0936				Sa budget	
5	0938	V	V	V	5ª Will	
140-2	N) 6	69961.	3	E) 596	1487.5	
	10940	De5.3	2	Y		
2	11942		Q	N.		
3	0944		0	N		
4	could		1	Y		
5	०१५४	V	V	7		
142-3	N) 469	979.4	0) 59643	03	
	19950	10.7	2	Y	Su baket	
2	1902	-1	0	N	1	
3	0954		2	V		
4	0950		2	¥		
5	0954	V	2	4		
			18.40 (FA) (Marco Alou A	
SAMPLE DATA Sample ID:		NB03-560-64		M313 500 00 M MB		
	ed before homogenization (circle):			Purgeables	AVS/SEM Other:	
diment type	brown surface drab olive gray		Sediment odor	H₂S	Comments: (i.e. redox potential discontinuity, organic matter, wood	
ive			slight	petroleum	debris, shell fragments, sheen, fauna, field duplicate, etc.)	
nd (F M C)			moderate	other:		
			strong			
У	black					
	JD				Date 9/29/15 Time 17/5	

rte:	9/23/15		Weather:	Overcus		
mpling Method:	Ponar '		Crew:	PJD, AMB, JEN	1	
GRAB DATA		Location ID:	142-4	Vessel Position Number: 4		
atitude/Northing (Y	n: 6610	193.1		Longitude/Eastin	ng (X): 594480.5	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:	
1	0953	6.7	2"	Υ.	Fisulet	
2	1000		0	N	P	
3	1002		2"	9		
4	(004		E. T.			
5	1000	V	1	V	V	
142-5	N) (0	70015.		596490		
į	1008	6.3	2"	4	5g bole	
1	1010				0	
3	Wil					
4	1014					
5	10/16	V	V	V	V	
1426	1018	6.3	20	4		
1	1020				5gh	
1	1022				1 1	
3	1024					
4	1024	1				
5	1024		V	1	1	
					1	
SAMPLE D	ATA	Sample ID:	NA		4	
alyses needed bef	ore homogeniz	ation (circle):	VOC TEPH-	Purgeables	AVS/SEM Other:	
diment type	brown surface drab olive brown		Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood	
oble			none H ₂ S		discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	
vel Z				petroleum	lability, liela doplicate, etc.)	
nd (F M C)			moderate	other:		
	gray		Subily			
у	7,700				Date 9/29/15 Time 1700 Date 9/29/16 Time 0715	

ampling Method: _	Ponar		Crew:	PJD, AMB, JEN	
			142-4	Vesse	Position Number:
atitude/Northing	(r): 4700	48.5		Longitude/Easti	ng (X):591,493.4
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments: /
1	[030	6.8	2	Y	50 bruket
2	1032				11
3	1034				
4	1036				
5	1114	1	V	V	
	N) 47006	1.2	E) 5964	95.8	-
1	1040	7.0	7	Y	5a but
2	1042		1		81
3	1044	5 6			
4	1046				
5	1048	V		1	1
	1010		-		
	1				
	-				
SAMPLE	DATA	Sample ID:	MA		
	pefore homogeniz	50 Advis a 2 A		Purgeables	AVS/SEM Other:
diment type	Sediment cold		Sediment odor	ruigeables	Comments: (i.e. redox potential
bble	brown surface		none	H ₂ S	discontinuity, organic matter, wood debris, shell fragments, sheen,
avel			slight	petroleum	fauna, field duplicate, etc.)
nd (F M C)	brown		moderate	other:	
	gray		strong		
	black				

ate: ampling Method:	9/29/0 Ponar		Weather:SVA					
mping wedlod:				1				
GRAB	DATA	Location ID:	143 - 1	Vesse	Position Number:			
Latitude/Northing (Y):			Longitude/Easti	ng (X):			
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:			
1	1212	8.4	(0"	4	Chum-bentak			
2	1214				anthic			
3	1216				benthic			
4	1218				Sy birket			
5	1220	1		W.	Sh butet			
143-2	N)	668392	12 6) 59972.	2			
	1222	84	(si	Y	5a bucket			
2	1224							
3	1226							
4	1228	1						
5	1230	V	V.	V	4			
143-3	N)60	68396.6	0 E)59	9255.	8			
	1732	8.5	(u	Y	54 bulut			
2	1234				7			
3	1236							
u	1238							
5	1240	W.	V	V	V			
				(61 . 1 .				
SAMPLE		Sample ID:	1603-501)-06		1613-500-COM A, BC			
	before homogenization (circle):			Purgeables	AVS/SEM Other: Comments: (i.e. redox potential			
Sediment type obble	brown surface drab olive brown		Sediment odor none H₂S		discontinuity, organic matter, wood debris, shell fragments, sheen,			
ravel			slight	petroleum	fauna, field duplicate, etc.)			
and (F M C)			moderate	other:				
ilt	gray		strong					
ay	black		1 4					
	10			A	a119/10 1702			
linguished ByP.	JD		Company	Arcadis	Date 9/29/15 Time 1700			

9/29/15	or or other	Weather: SON				
Sampling Method: Ponar			JD, AMB, JEM	1		
B DATA	Location ID:	143-4	Vesse	I Position Number: 4		
(Y): 6684	to7.6		Longitude/Eastin	ng (X): 595243.1		
		Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:		
1242	8.3	(8)	Y	59 broket		
1244		127 = 27				
1246		1 - 1				
1248						
1250	J	V	V	1		
N) (e)	8414.9	E) 599	231.7			
1252	3.2	(O4	4	Sabralet		
1254				01		
1254	T - 1					
	100		1			
		V	4			
				the second second		
7 7						
	1					
			_			
E DATA	Sample ID:	111				
	1 4 7 7 7 1 1 1 7	VOC TEPHA	Purneables	AVS/SEM Other:		
		2.00	urgoundo	Comments: (i.e. redox potential		
		none	H₂S	discontinuity, organic matter, wood debris, shell fragments, sheen,		
drab olive		slight	petroleum	fauna, field duplicate, etc.)		
proves		moderate	other:			
gray		strong				
black						
o ID			rondic	abalit in-1		
JU		Company A	i cauls	Date IIII Time		
	Ponar B DATA G(Y): (2684) Grab Sample Time (242 (244 (244 (244 (244 (244 (254 (254 (254 (254 (258 (250) Brown surface drab olive brown gray	Ponar B DATA Location ID: G(Y): (6(8407. 6) Grab Sample Time depth (242 8-3) (244	Ponar Crew: F B DATA Location ID: 143 - 44 B (Y): (0(08407. G) Grab Sample Bottom depth Depth (cm) [242 8-3 124 124 124 124 124 124 124 124 124 124	Ponar Ponar Reather: Ponar Crew: PJD, AMB, JEN Crew: PJD, AMB, JEN Crew: PJD, AMB, JEN Crew: PJD, AMB, JEN Longitude/Eastin Acceptable grab (yrin) LULU 8-3 LULU LU		

Title: SQT and Porewater Sampling and Analysis

Quality Assurance Project Plan

* MOVED to WEST. AWAY PROM

Revision Number: 2 Revision Date: August 2015

EPA Split for

Project Name: VBSA			Project no.:	60009939.	-0044	
Date:	9-17-15		Weather:	80009939.0044 012795		
Sampling Method:	POWA	4	Crew:	DID, MB	jam	
GRAB DATA Location ID:			144-1	Vesse	Position Number:	
Latitude/Northing	Latitude/Northing (Y): (elele 946-56			Longitude/Eastir	ng (X): 592.909. 2	
Grab Sample	Grab Sample	Bottom	Penetration	Acceptable		
Number	Time 0730	depth 12-6	Depth (cm)	grab (Y/N)	Chem-bunthic	
2	0770	16.4	64	1		
2	17211				bentuic	
-3	0134				Dentac	
4	0736	1			51 houset	
5	0738	V	V	1	59 WUKET	
					J	
		1.5				
_						
	18					
SAMPLE	DATA	Sample ID: N	BUSSED-CH	M144, NB(338ED-COM144A, B,C	
Analyses needed b	efore homogeni		~	I-Purgeables	AVS/SEM Other:	
Sediment type	Sediment co		Sediment odor		Comments: (i.e. redox potential	
cobble brown surface		none	H₂S	discontinuity, organic matter, wood debris shell fragments sheen,		
gravel			slight	petroleym	fauna, field duplicate, etc.)	
sand (F M C)	brown	-	moderate	other:	Sheen	
silt	gray		strong	- round	5.1001	
clay	black					
Мау	2: 0			_	al al	
Relinquished By	PIV		Company	Arradis	Date 9/17/18 1400	
consideration by	1		Company			
and the state of t	111		0	ARCADIS.	9117/15 1400	

Project Name: N B S A Date: 9-17-15		10	Project no.: 9000889-0044 Weather: 004-004				
Date:	I LT	Weather: OL			D. Mus Jem		
Sampling Method:	pon	g. v	Crew:	VIUth	49 (Servi		
GRAB	ATA	Location ID:	144-2	Vesse	l Position Number: Z		
Latitude/Northing (r): 6669	93.6		Longitude/Eastir	ng (X): 592990:5		
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:		
	0740	12-3	6"	7	59 boclet		
2	0742						
3	0744						
4	0746						
5	0740		V	1	V		
SAMPLE	DATA	Sample ID:	M				
Sediment type cobble gravel sand (F M C)	brown surface drab olive and (F M C) brown gray		Sediment odor none slight moderate strong	H-Purgeables H ₂ S petroleum other:	AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sceen, fauna, field duplicate, etc.)		
clay Relinquished By Accepted By	O'M He		Company	Arcadis Arcadis	Date 9/17/15 Time 1400		

roject Name:	9-17-	15	Project no.: Weather:	150009989.	F
ampling Method:	Ponar		Crew;	PO A	4B, Jan
GRAB I	DATA	Location ID:	144.3	Vesse	Position Number: 3
Latitude/Northing (Y): 666	943.3		Longitude/Eastin	ng (X): 592986.3
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
	0750	12.3	6"	y	5g Judet
2	0752				
3	0754				
4	0756				
5	0750	4	1	1	4
SAMPLE Analyses needed b		Sample ID:	NA voc teph	-Purgeables	AVS/SEM Other:
Sediment type cobble gravel sand (F M C) silt	Sediment coll brown surface drab olive brown gray		Sediment odor none slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, stell fragments, steen, fauna, field duplicate, etc.)

GRAB DATA Location ID: (44 4 Vessel Position Number: 4 Latitude/Northing (Y): (66 6/32 - 3) Grab Sample Number Time Bottom depth Penetration Depth (cm) Penetration Grab Sample Briting (X): 592.984.8 Acceptable grab (YN) Comments: 594.684.8 Comments: 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	101001110111	17-15 aurap		Weather: Crew:	BOOO 99 B9	OM
Latitude/Northing (Y): U(124	Location ID:			
Grab Sample Number Time dopth (cm) Penetration Depth (cm) grab (Y/N) Comments: 1 0740 [2-4 0 4 4 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5				177-7		
SAMPLE DATA Sample ID: Sample Data Sample ID: VA Analyses needed before homogenization (circle): Sediment type cobble brown surface drab clive brown surface drab cli	Prince Production	Grab Sample	Bottom	Penetration	Acceptable	
SAMPLE DATA Sample ID: SAMPLE DATA Sample ID: VA Analyses needed before homogenization (circle): Sediment type cobble brown surface brown surface drab olive gravel Sand (F M C) Sediment odor none H ₂ S Getroleum moderate other: strong Sediment odor none H ₂ S Getroleum moderate other: Strong	Number	TALKA	depth	Depth (cm)	grab (Y/N)	
SAMPLE DATA Sample ID: VA Analyses needed before homogenization (circle): Sediment type Cobble brown surface brown surface drab olive gravel sand (F M C) Sediment odor none H ₂ S definent sype fauna, field duplicate, etc.)	1		169	Q.	7	og welet
SAMPLE DATA Sample ID: VA Analyses needed before homogenization (circle): VCC TEPH-Purgeables Sediment type Sodiment tolor brown surface orbble gravel drab olive brown surface drab olive brown surface for homogenization (circle): VCC Teph-Purgeables Sediment odor none H ₂ S ight petroleum moderate other: strong		0742				
SAMPLE DATA Sample ID: VA Analyses needed before homogenization (circle): VCC TEPH-Purgeables Sediment type Sediment toolor brown surface orbible brown surface drab olive brown brown surface moderate other: Strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, y debris, chell fragment), speep fauna, field duplicate, etc.)	3	0144				
SAMPLE DATA Sample ID: VA Analyses needed before homogenization (circle): VCC TEPH-Purgeables Sediment type Sediment tolor brown surface drab olive brown surface drab olive brown brown surface moderate other: strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, y debris, shell fragment), speep fauna, field duplicate, etc.)	4	0746		1		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface none H ₂ S dight petroleum fauna, field duplicate, etc.) Sediment odor Comments: (i.e. redox potenti discontinuity, organic matter, v debris, shell fragments, sheep fauna, field duplicate, etc.)	5		V	-	V	V
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive brown brown brown brown brown brown surface drab olive brown						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive brown brown brown brown brown brown surface drab olive brown						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor none H ₂ S discontinuity, organic matter, with deprine the perfoleum form of the performance form						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor none H ₂ S discontinuity, organic matter, with deprine the perfoleum form of the performance form						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor none H ₂ S discontinuity, organic matter, with deprine the proven surface of the petroleum moderate other: Sediment odor Comments: (i.e. redox potential discontinuity, organic matter, with debris, shell fragments, deep fauna, field duplicate, etc.)	_					
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor none H ₂ S discontinuity, organic matter, with deprine the perfoleum form of the performance form						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor none H ₂ S discontinuity, organic matter, with deprine the perfoleum form of the performance form						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor none H ₂ S discontinuity, organic matter, with deprine the perfoleum form of the performance form			1			
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor none H ₂ S discontinuity, organic matter, with deprine the perfoleum form of the performance form						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor none H ₂ S discontinuity, organic matter, with deprine the perfoleum form of the performance form				2		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive brown brown brown brown brown brown surface drab olive brown						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor none H ₂ S discontinuity, organic matter, with deprine the perfoleum form of the performance form						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor none H ₂ S discontinuity, organic matter, with deprine the perfoleum form of the performance form		1		2		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive brown brown brown brown brown brown surface drab olive brown				7		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor none H ₂ S discontinuity, organic matter, with deprine the perfoleum form of the performance form		0				
Sediment type Sediment color brown surface drab olive brown sand (F M C) Sediment odor none H ₂ S moderate other: strong Comments: (i.e. redox potentidiscontinuity, organic matter, videbris, shell fragments, sheep fauna, field duplicate, etc.)		11105		NA-		
brown surface none H ₂ S discontinuity, organic matter, we debris, shell fragments, sheep fauna, field duplicate, etc.) If the grave of the company of the	Analyses needed b	efore homogen	ization (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
brown surface none H ₂ S debris, shell fragments, sheep fauna, field duplicate, etc.) gravel brown moderate other: strong	Sediment type	100000000000000000000000000000000000000		Sediment odor		Comments: (i.e. redox potential discontinuity-organic matter, wood
sand (F M C) brown moderate other:	acaste)		e			debris, shell fragments, sheep
strong strong	No. of the second			_		rauria, rielo dopricate, etc.)
strong	sand (F M C)	The			other:	
elay 6lack /	etit	gray		strong		
Ciay	clay	6lack				
	Relinquished By			Company		Date 9/17/18 Time 1400

Project Name:	BSA		Project no.:	3006998	
ate:	1-17-15		Weather:	OUNC	
mpling Method:	DIMAR		Crew:	MOUNT	16 (JEN)
GRAB I	DATA	Location ID:	144-5	Vesse	Position Number: 5
atitude/Northing (r): lele le	924.0		Longitude/Easti	ng (X): 592 980.9
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
	0750	12.4	E.	Y	59 bulket
2	0752		1		11
3	0754				
4	5756				
-	0759	V	V	1	
	0170			V	
	-				
		-			
SAMPLE	DATA	Sample ID:	I.A.		
nalyses needed be	efore homogeniz		A STATE OF THE STA	-Purgeables	AVS/SEM Other:
ediment type	Sediment col		Sediment odor		Comments: (i.e. redox potential
obble	brown surface		none	H₂S	discontinuity, organic matter, wood debris, shell fragments sheep,
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
and (F M C)	brown		moderate	other:	
iii)	gray		strong	C1777	
lay	black				
×1		mn		Z	alm
linquished By		(11)	Company	Arcadis	Date 917 Same 1400
	ىلىد	+		Machael	611711
cepted By	21		Company	ARCANIS	Date 9/17/15 Time 1400

Project Name:	9-17-19			B0009999.	0044
Date: Sampling Method:	PONTER	0	Weather: Crew:	WH)	vast DiAMB Jem
	-				11-11
GRAB I		Location ID:	144-6		Position Number: 6
Latitude/Northing (911. Z Bottom		Longitude/Eastir	19 (X): 592975.9
Grab Sample Number	Grab Sample Time	depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
	0800	12.4	6"	Y	59 bulet
2	0802	1		1	3
3	0804				
4	0806	44//			
5	08080	V	V	V	V
	(
		-			
	+				
	-				
SAMPLE	DATA	Sample ID:	NA		
Analyses needed b		THE STATE OF THE S		-Purgeables	AVS/SEM Other:
Sediment type	Sediment col		Sediment odor	ruigoables	Comments: (i.e. redox potential
cobble	brown surface	7.	none	H₂S	discontinuity, organic matter, wood debris shell fragments sheep.
gravel	drab olive		Slight	petroleum	fauna, field duplicate, etc.)
sand (F M C)	brown		moderate	other:	
silt)	gray		strong		
clay	black				
Relinquished By	77	0	Company		Date 9/17/15 Time 1400

roject Name: Date:	9-17-15)	Project no.: Weather:	Owca	39.0044
sampling Method:	Mar		Crew:	PID, A	MB, Jem
GRAB	DATA	Location ID:	144-7	Vesse	l Position Number:
Latitude/Northing ((Y): (e6	6949.6	2	Longitude/Eastin	ng (X): 593 022.3
Grab Sample Number	Grab Sample	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	, Comments:
l	0%10	12-6	64	Y	5g bucket
2	0312				
3	0814				
4	0816			1 1 1	
5	0818	V	J	V	1
	1				
				- N	
		7 7 7			
			1		
SAMPLE	DATA	Comple ID:			
Analyses needed b		Sample ID:	VOC TEPH	-Purgeables	AVS/SEM Other:
Sediment type	Sediment co	lor	Sediment odor	-Purgeables H₂S	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen.
gravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
sand (F M C)	brown		moderate	other:	
silt	gray		strong		
clay	black			_	and the latest
elinquished By	MO		Company	Arcadis	Date 9/17/15 Time 1400
	1)		2000,000		2.30/10

roject Name: N.B. ate:	9/29/13	CWater	Project no.: Weather:	SUN 500	
ampling Method:	Ponar		Crew:	PJD, AMB, JEN	1
GRAB I	DATA	Location ID:	145-1	Vesse	Position Number:
atitude/Northing (Y): 665	166,1		Longitude/Easti	ng (X): 593447.9
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1104	8.3	6"	Y	benfux-chem
2	1106				bento -
3	1(7,8				sentic,
4	1110	1		1	sy booker
5	1112	V	. V .	V	U
149-2	N) (el	5473.3	6	1593633	
1	1114	8.5	6"	Y	To booket
7	1116				1
3	1118	-9			
4	1120	,	- /		1
5	1120	V	V	4	A
145-3	1 / //	2484.4	E) 593	121.5	6 1 1.6
	1124	8.7	len	4	5g buch
Z	1(26				/
2	1128				
4	1130	-	-1,	-	
5	1132	*	V		
SAMPLE		Tue 13/40 Am	813-500-6	Jen-145	- NBO3- SED CON A
alyses needed be diment type	Sediment cold	20-1-11	VOC TEPH-	Purgeables	AVS/SEM Other: Comments: (i.e. redox potential
oble	brown surface		none	H₂S	discontinuity, organic matter, wood debris, shell fragments, sheen,
ivel	drab olive	1	slight	petroleum	fauna, field duplicate, etc.)
nd (F NP C)	brown		moderate	other:	
7	gray		strong		
ý	black				
naviehod By PJ	D		0	Arcadis -	Date 9/29/15 Time 15/15
quished By PJ			Company A	ii oddio	DateTime

ampling Wethod:	Ponar		Crew:	PJD, AMB, JEN	16
GRAB I	DATA	Location ID:	149-4	Vesse	Position Number: 4
Latitude/Northing (Y): 6651	192,7		Longitude/Eastin	19 (X): 593603.5
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	, Comments:
1	1134	8.0	6"	Y	Grankt
2	1136				
3	1138				
4	1140				
5	1142		V.	1	V
145-5	N) 6	65500.	9 E)	593587	
1	1144	7.9	("	Y	5g broket
2	1146	1			
3	1148				
4	1190	10/1			
9	1152	V	V	V	V
145-6	N)66	5502,0		3607.6	
	1(54	6.8	6"	Yo	Sapullet
2	1156				()
3	1158				
4	1200				
5	1202	1	V	V	V
			e\t		
SAMPLE	DATA	Sample ID:	NA		
nalyses needed be	fore homogeniza	ation (circle):	VOC TEPH-	Purgeables	AVS/SEM Other:
ediment type obble ravel and (F M c)	Sediment cold brown surface drab olive		Sediment odor mone slight moderate	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
ay	gray		strong		
nquished ByPJ	ID.		Company	Arcadis	Date 909/15 Time 1515

rab Sample Time 1204	Location ID: 502 - 3 Bottom depth	Weather: Crew: 		M el Position Number: —1
rab Sample Time	502 · 3			el Position Number: —
rab Sample Time	502 · 3	171 141		ei Position Number.
rab Sample Time 1204	Bottom		Longitude/East	ing (X): E93/1/8 01
1204	depth	Penetration	Acceptable	//
	77	Depth (cm)	grab (Y/N)	Comments:
1110	7.7	0	1	Jan Wichel
206				
203	1		1	1
210	V	•	J	V
		4		
			/====	
- 1				
				7
				-
A	Sample ID:			
homogeniza	ation (circle):	VOC TEPH-	-Purgeables	AVS/SEM Other:
		Sediment odor		Comments: (i.e. redox potential
own surface		(none)	H₂S	discontinuity, organic matter, wood debris, shell fragments, sheen,
ab olive		slight		fauna, field duplicate, etc.)
		moderate	other:	
		strong		
ack				
				about in
		Company _	Arcadis	Date Time Time
				Date 9/29/15 Time 1515
		homogenization (circle): ediment color own surface ab olive own ay ack	homogenization (circle): VOC TEPH- ediment color own surface ab olive own ab olive own ab olive own ack Company	homogenization (circle): VOC TEPH-Purgeables ediment color own surface ab olive own own avy ack Company Arcadis

Location ID: Lo	Crew:		Position Number: g(X): 589826.1 comments: chum-benthic benthic benthic 59 Weret 59 Ducket
LOGUES. D Imple Bottom depth	Penetration Depth (cm)	Vessel Longitude/Easting Acceptable grab (Y/N)	comments: chem-benthic benthic benthic benthic
LOGUES. D Imple Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	comments: chem-benthic benthic benthic benthic
e Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	comments: chem-benthic benthic benthic 59 worket
e Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	comments: chem-benthic benthic benthic 59 worket
# M.O B B O N			benthic benthic 59 Worket
			benthic benthic 59 burket
8 0 12 V	V		benthic 59 Worket
2 V	V	V	59 WUKET
2 1	V	V	-11
The state of the s			
nt color urface (e	Sediment odor none slight moderate strong	Purgeables H ₂ S petroleum other:	AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
n	genization (circle): at color rface	genization (circle): VOC TEPH- at color rface slight moderate strong Company	genization (circle): VOC TEPH-Purgeables It color

Location ID: (100456) Sample Bottom depth 24 8 6 35	crew:	PJD, AMB, JEM Vessel Longitude/Eastin Acceptable grab (Y/N)	Position Number: 2
Location ID: (10 04 5 6 c b Sample Time depth 2 4 8 6 2 6 3 8	Penetration Depth (cm)	Vessel Longitude/Eastin	Position Number: 2 ng (X): 589824.3 Comments:
(100456) D Sample Bottom depth 24 8 6 24 35	Penetration Depth (cm)	Longitude/Eastin	ng (X): 539824.3 Comments:
Sample Bottom depth 24 8 6 26 1	Penetration Depth (cm)	Acceptable	Comments:
Sample Bottom depth 24 8 6 26 1	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
24 18.6 26 38 30	ix	Y	
26 1 38 30 32 V			
36 30 32 V			
30 30 32			
32 V			
Sample ID:	NIA		
omogenization (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
iment color	Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood
vn surface (none	H ₂ S	debris, shell fragments, sheen,
olive	slight	petroleum	fauna, field duplicate, etc.)
	moderate	other:	
	strong		
>			
ir	mogenization (circle): ment color a surface olive	mogenization (circle): VOC TEPH nent color surface plive slight moderate strong	mogenization (circle): VOC TEPH-Purgeables nent color surface none slight petroleum moderate strong

reject Name: N.B.S.A. SQT/Porewater atte: 9/21/15 sampling Method: Ponar GRAB DATA LatituderNorthing (Y): 0/60 4/62 - 2 Grab Sample Number Time depth depth depth (m) 1 1/34 18-0 (m) 2 1/36 3 1/38 4 1/40 5 1/42 Voc TEPH-Purgeables SAMPLE DATA Sample ID: Northing ID: N	21/15			C	
GRAB DATA Location ID: 44-3 Vessel Position Number: 3 Latitude/Northing (Y): 0/6 D 4-2 - 7 Grab Sample Number Grab Sample Number Time Gepth Penetration Depth (cm) Grab (V) Egy B/35-9 1 1/3 4 1/4 0	onar			- Ontil	
GRAB DATA Location ID: 44			Crew:	PJD, AMB, JEN	
Grab Sample Number Time depth Number Time depth Sample Time depth		Location ID:	146-3	Vesse	Position Number: 3
Grab Sample Number Time depth Number Time depth Sample Time depth	: 660	162.2		Longitude/Eastin	ng (X): 589.835.9
SAMPLE DATA Sample ID: VC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood obbble brown surface drab olive drab olive strong ANALYSISM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, sheer), fauna, field duplicate, etc.)	Grab Sample	Bottom depth			
2 1/3 6 3 1/3 8 4 1/4 0 5 1/4 2 SAMPLE DATA Sample ID: VOC TEPH-Purgeables Avs/sem Other: Codiment type obble brown surface frave drab ofive slight petroleum moderate other: Sadiment of C C Drown gray strong Avs/sem Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, sheen, fauna, field duplicate, etc.)	134	18,0	6	Y	5g broket
SAMPLE DATA Sample ID: SAMPLE DATA Sample ID: SAMPLE DATA Sample ID: VC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) Town and (F D C) Town gray strong	1136				
SAMPLE DATA Sample ID: SAMPLE DATA Sample ID: Sediment color Sediment type obble obble obble drab olive drab olive and (F D C) Trown gray strong Sample ID: A AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	1138				
SAMPLE DATA Sample ID: SAMPLE DATA Sample ID: SAMPLE DATA Sample ID: Sample ID: Sample ID: Sample ID: Sample ID: Town Sample ID:	1140			- 1	
ediment type Sediment color brown surface drab olive brown gray Sediment color brown surface drab olive Sediment color brown surface strong Sediment odor Sediment odor NOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)		V	V	1	V
AVS/SEM Other: Sediment type Sediment color brown surface drab olive brown gray Sediment color Sediment odor NOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) The purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)					
AVS/SEM Other: Comment type					
AVS/SEM Other: Sediment type brown surface drab olive drab (F O C) Sediment color brown surface drab olive Sediment odor slight moderate strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)					
AVS/SEM Other: Sediment type Sediment color brown surface drab olive brown gray Sediment color Sediment odor NOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) The purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)					
AVS/SEM Other: Sediment type Sediment color brown surface drab olive brown gray Sediment color Sediment odor NOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) Teph-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)					
rediment type Sediment color brown surface drab olive brown gray Sediment color brown surface drab olive Sediment color brown surface drab olive Sediment odor NOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) The purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)					
ediment type Sediment color brown surface drab olive brown gray Sediment color brown surface drab olive Sediment color brown surface drab olive Sediment odor NOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) Sediment odor Noc TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)				1-5	
rediment type Sediment color brown surface drab olive brown gray Sediment color brown surface drab olive Sediment color brown surface drab olive Sediment odor NOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) The purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)					
ediment type Sediment color brown surface drab olive brown gray Sediment color brown surface drab olive Sediment color brown surface strong Sediment odor Sediment odor NOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)					
rediment type Sediment color brown surface drab olive brown gray Sediment color brown surface drab olive Sediment color brown surface drab olive Sediment odor NOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) The purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)					
ediment type Sediment color brown surface drab olive brown gray Sediment color brown surface drab olive Sediment color brown surface strong Sediment odor Sediment odor NOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)					
rediment type Sediment color brown surface drab olive brown gray Sediment color brown surface drab olive Sediment color brown surface drab olive Sediment odor NOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) The purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)					
ediment type Sediment color brown surface drab olive brown gray Sediment color brown surface drab olive Sediment color brown surface drab olive Sediment odor NOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) Sediment odor Noc TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)			11.		
Sediment type brown surface drab olive brown moderate strong Sediment odor Drown Sediment odor none H ₂ S slight petroleum moderate other: strong Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	ATA	Sample ID:	NA		
brown surface avel drab olive drab olive brown moderate gray brown surface discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	ore homogeniz	ation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
and (F M C) brown gray signt petroleum moderate other: strong		or		H₂S	discontinuity, organic matter, wood debris, shell fragments, sheen,
gray strong	drab olive		slight	petroleum	fauna, field duplicate, etc.)
	brown		moderate	other:	
ay Clack			strong		
	(black)				
			Company		Date 9/21/15 Time 1536
inquished By PJE		ATA ore homogenize Sediment color brown surface drab olive brown gray black	Grab Sample Time Bottom depth 1/34 8 0 1/36 1 1/38 1 1/40 1 1/42 V ATA Sample ID: ore homogenization (circle): Sediment color brown surface drab olive orown gray Olack	Grab Sample Time depth Penetration Depth (cm) 134 8	Grab Sample Time depth Penetration Depth (cm) Grab (Y/N)

GRAB D	ATA	Location ID:	141-1	Voces	Position Number: 46-4
atitude/Northing ()		30.030.00000	1767		ng (X): 589848-4
Grab Sample Number	Grab Sample Time		Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1144	16.0	6"	Y	5g bucket
2	1146				1
3	1148				
4	150				
5	1162	V	V	V	V
SAMPLE I		Sample ID:	NA	Duegoables	AVC/CCM Ober
nalyses needed be ediment type	Sediment col		VOC TEPH- Sediment odor	Purgeables	AVS/SEM Other: Comments: (i.e. redox potential
aver	brown surface		none	H₂S petroleum	discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
fid (FM C)	Drown		moderate	other:	
) y	gray		strong		
nquished ByPJ	15		Company _		Date 9/21/15 Time 1330

roject Name: N.B.	9/21/15		Project no.: Weather:	Sunny	
ampling Method:	Ponar		Crew:	PJD, AMB, JE	M
GRABI	DATA	Location ID:	146-5	Vess	el Position Number: 5
Latitude/Northing (76.5		Longitude/East	ting (X): 589854.4
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1154	15-7	6	Y	5gbrulet
2	1156				
3	1158				
4	1206				
5	1202	1	1	V	V
		-			
	-		-		
	1				
	+				
		\			
SAMPLE		Sample ID:	NIA		170 St. 42 To See
nalyses needed b	THE REAL PROPERTY.			-Purgeables	AVS/SEM Other:
Sediment type	Sediment collabrown surface		Sediment odor	ис	Comments: (i.e. redox potential discontinuity, organic matter, wood
ravel	drab olive		none	H ₂ S petroleum	debris, shell fragments, sheen, fauna, field duplicate, etc.)
and (P M C)	brown		moderate	other:	
ilt	gray		strong		
lay	black		1 12		
	ID.			Associa	012,114 125
elinquished ByP	JD			ARCANIS	Date 9/21/15 Time 1700 /

roject Name: N.B ate:ampling Method:	9/21/15 Pohar		Weather:	SUNNY PJD, AMB, JEN	i .
GRAB	DATA	Location ID:	146-6		I Position Number:
Latitude/Northing	(Y): (p/p/2	447.0	116	Longitude/Eastin	ng (X): 589785,7
Grab Sample Number	Grab Sample Time		Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1204	13.8	6"	V	5g bucket
2	12010				100
-3-	1208				
4	17.10				(4)(0)
-	1212	1		1	1 600
SAMPLE Analyses needed b	January Maria	Sample ID:	VOC TEPH	Purgeables	AVS/SEM Other:
sediment type cobble coand (F M C) clay	brown surface drab olive brown gray		Sediment odor none slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
	DO		Company _	Arcadis r	Date 9/21/15 Time 1530

Revision Date: August 2015

& MUNDO WE OPF MOURCED BARGE.

roject Name: N.B.	S.A SQT/Po	rewater	Project no.:	B0009989.004	4	
ate:	7/21/15		Weather:	SWMY		
mpling Method:	Ponar		Crew:	PJD, AMB, JEM		
GRAB D	ATA	Location ID:	147-1	Vesse	Position Number:	
atitude/Northing (r): 657	470.2		Longitude/Eastin	ng (X): 588760.9	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:	
1	1000	11.1	6	Y	Chem-benthic	
2	1002		1		beature	
3	1004				Denthic	
4	1006				5g loveket	
5	1000				5g bruket 5g bruket	
	1010 8	N/I	4	V	J	
	0					
	-	-				
		>==-				
	-					
			A (7 A A)	WALL OF THE	1.4.55	
SAMPLE	DATA	Sample ID:	03 JOO CH	W147- N	BOS SED-COM-A,B,C	
nalyses needed be	fore homogeniz	ation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:	
ediment type	Sediment col	or	Sediment odor		Comments: (i.e. redox potential	
91400	brown surface	<	none) H ₂ S debr		discontinuity, organic matter, wood debris, shell fragments, sheen,	
rave	drab olive		slight	petroleum	fauna, field duplicate, etc.)	
and (F) M C)	brown		moderate	other:		
lt)	gray		strong			
lay	black					
					21 1	
elinquished By P.	JD		Company	Arcadis	Date 9/21/15 Time 700 13	
	u.			10-000	Date 9/21/15 Time 1530	
cepted By	1		Company	ARCADIS	Date 1/21/13 Time 1/30	

Project Name: N.B.	S.A SQT/Po	rewater	_ Project no.:	B000998	39.0044	P
ate:	9/21/15		Weather:	Sunn	V	
	Ponar		Crew:	PJD, AME	3/JEM	
GRAB D	DATA	Location ID:	147-2		Vessel	Position Number: 2
Latitude/Northing (r): 657	480.4		Longitude	e/Easting	(X): 588763.7
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Accep		Comments:
1	1230	13.0	le "	4		50 brunt
2	1232			1		
3	1234	-				
4	1236	- 5	11/			
5	1238	V	V	V		4
			1			
					_	
					_	
			1			
SAMPLE	DATA	Sample ID:	NA			
analyses needed be	efore homogeniz	ation (circle):	VOC TEPH	Purgeables		AVS/SEM Other:
			Sediment odor			Comments: (i.e. redox potential discontinuity, organic matter, wood
brown surface		none	H ₂ S		debris, shell fragments, sheen,	
ravel	drab olive		slight	petroleum fauna, field		fauna, field duplicate, etc.)
and (F)M C)	brown		moderate	other:		
silt	gray		strong			
alay	black					
D	ID.			Assadia		abilit Hank
enriquistieu by	JD		Company	Arcadis	D	ate 9/21/15 Time 1530
cepted By	311		C	ARCAD	15 -	9/21/15 - 1530

Project Name: N.B.S.A SQT/Porewater Date: 9/2//5 Sampling Method: Ponar			Project no.: B0009989.0044 Weather: SUNNY Crew: PJD, AMB, JEM				
ampling Method:'	onu		Crew:	1 00,7000, 000			
GRAB D	ATA	Location ID:	147.3	Vesse	l Position Number: 3		
Latitude/Northing (n: 65740	21.2		Longitude/Eastin	ng (X): 588757.4		
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:		
1	1240	13.0	611	Y	50 lardat		
2	1242				17)		
3	1744						
4	1246						
5	1248	V	V	V	1		
SAMPLE I		Sample ID: ation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:		
Sediment type Cobble Gravet Sand (F M C) Clay	brown surface drab olive brown gray	~	Sediment odor none slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)		
elinquished By Poccepted By	JD TH		Company	Arcadis AR CADIS	Date 9/21/15 Time 1786 5		

roject Name: N.B.	S.A SQT/Po	rewater	Project no.:		44
ate:	9/21/15	-	Weather:		
ampling Method:	Ponár		Crew:	PJD, AMB, JE	М
GRAB I	DATA	Location ID:	147-4	Vess	el Position Number:
Latitude/Northing (Y): (057	467.1		Longitude/East	ing (X): 598753.1
Grab Sample Number	Grab Sample Time		Penetration Depth (cm)	Acceptable grab (Y/N)	
1	1250	130 5000	(g)	4	50 bullet
2	1252				
3	1254				
4	1256	7			j j
5	1258	4	1	1	V
			-		+
	-				
	+				
377-7785			11.		
SAMPLE	DATA	Sample ID:	NH		
nalyses needed be	efore homogeniz	zation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
Sediment type	Sediment col	or	Sediment odor		Comments: (i.e. redox potential
obble	brown surface		none	H₂S	discontinuity, organic matter, wood debris, shell fragments, sheen,
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
and (F M C)	brown		moderate	other:	
	gray		strong		
lay	black		part of		
					01 1
elinquished By P	JD		Company	Arcadis	Date 9/21/15 Time 4700 /
inquisited by	Pie				
cepted By	Jtt		Company	ARCADIS	Date 9/21/15 Time 1530

1/21/15 nar TA Lo57- Grab Sample Time 1300 1302 1304 1306	Location ID:	crew: _	PJD, AMB, JEN Vesse Longitude/Eastir Acceptable grab (Y/N)	Position Number: 147-5
1300 302 304 306	Bottom depth	Penetration Depth (cm)	Vesse Longitude/Eastir	Position Number: 147-5 ng (X): 584714.9 Comments:
1057 Grab Sample Time 1300 1302 1304 1306	Bottom depth	Penetration Depth (cm)	Longitude/Eastin	Comments:
Grab Sample Time (300 (302 (304 (306	Bottom depth	Penetration Depth (cm)	Acceptable	Comments:
Grab Sample Time (300 (302 (304 (306	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1302 1304 [306	9.9		Y	5g bulat
1304			1	
1306				J
,				
,	11			
1000	V	V	V	V
				1
		1		
		1.574		
		1-11		
			-Purgeables	AVS/SEM Other:
nt type Sediment color		The second second	u.c	Comments: (i.e. redox potential discontinuity, organic matter, wood
				debris, shell fragments, sheen, fauna, field duplicate, etc.)
		moderate	other:	
gray		strong		
black				
		Company	Arcadis	Date 9/21/17 Time 1706
H				Date 9/21/15 Time 1406 1530
-	TA re homogeniz Sediment colo brown surface drab olive brown gray black	TA Sample ID: re homogenization (circle): Sediment color brown surface drab olive brown gray black	TA Sample ID: re homogenization (circle): VOC TEPH Sediment color brown surface drab olive brown gray black Company	TA Sample ID: Te homogenization (circle): Sediment color brown surface drab olive brown gray black Company Arcadis Machanic

1/21/15				
ATA	Location ID:	147-6	Vesse	Position Number: 147-6
n: 657	471.1		Longitude/Eastin	19 (X): 589717.5
Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1310	10-0	(ou	Ч	5a bouter
1312				
1314				
1316				
(318	V	V	V	V
DATA	Sample ID:	JI _{IN}		
fore homogeniz	THE RESERVE OF	1.	-Purgeables	AVS/SEM Other:
Sediment cold	or	Sediment odor none stignt moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
	OATA OSTA OSTA Grab Sample Time 1310 1314 1314 1319 1319 Sediment color brown surface drab olive brown gray	DATA Location ID: O: UST 471.1 Grab Sample Time depth 1310 10-0 1312 1314 (316 1319) Compared to the state of the sta	Meather: Crew: OATA Location ID: 47-6 Grab Sample Bottom Depth (cm) 310 0-0 0-0 317 314 318 318 DATA Sample ID: Sediment color brown surface drab olive brown gray gray Weather: Crew: DATA Sample ID: Weather: Crew: Weather: Crew:	Weather: SMM/ PJD, AMB, JEM OFFICIAL CONTROL

SURFACE SEDIMENT COLLECTION FORM USESTAUTION

roject Name: N.B	12115		Project no.: Weather:	B0009989.004 SUNM	
ampling Method: _	Ponar			PJD, AMB, JEN	1
	DATA	Location ID:	148-1	Vesse	Position Number:
Latitude/Northing	(Y): 657	954.0	110 1	Longitude/Easti	ng (X): 587450.7
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	0910	A.3	64	Ya	Chem-bentfic
2	0912				benthic
3	0914				benthic
4	0916				59 proket
5	0918		V	J	59 pricet
SAMPLE			13-JUD-CHAM- VOCS (TEPA	AB NB03 S	60 CAM, A, B, C AVS/SEM Other:
sediment type cobble gravel and M C)	brown surface drab olive brown gray	2	Sediment odor none slight moderate strong	H₂S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)

ampling Method:	, onal		Crew:	PJD, AMB,	VILIVI	
GRAB I	DATA	Location ID:	148.2	V	essel Position Number: 2	
Latitude/Northing (3		Easting (X): 587447.7	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Accepta grab (Y		
1	0920	14.1	64	Y	59 bruket	
2	0922	1		i i		
3	0924					
4	0926					
5	0928	1	1	1	V	
				1		
				1		
	+					
			111			
SAMPLE nalyses needed be		Sample ID: ation (circle):	VOC TEPH	l-Purgeables	AVS/SEM Other:	
ediment type	ent type Sediment color		Sediment odor	H₂S	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen,	
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)	
and (F)M C)	brown		moderate	other:		
1)	gray		strong			
ay	- Constant				Date 9/21/15 Time 1700	

ampling Method:			1.1.2.		
GRAB		Location ID:	148-3	Vesse	Position Number: 3
Latitude/Northing	-			Longitude/Eastir	ng (X): 587442-8
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	0930	14.5	64	Y	54 briket
2	0932				
3	0934				
4	0936				
5	0938	V	V	V	V
0.44001.5	200	6 - 1 B	NIA		
SAMPLE analyses needed b		Sample ID:	10	Purgeables	AVS/SEM Other:
Sediment type	Sediment col		Sediment odor		Comments: (i.e. redox potential
cobble	brown surface		none	H ₂ S	discontinuity, organic matter, wood debris, shell fragments, sheen,
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
and (F M C)	<pre>cprowd</pre>		moderate	other:	
ilt	gray		strong		
lay	black				

GRABI	DATA	Location ID:	148-4	Vesse	Position Number: 4
atitude/Northing (Y): 65%	3061-3		Longitude/Eastin	ng (X): 587438-5
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	6940	14.5	6"	Y	5g bucket
2	0942				
3	0944				
4	0946	1			
5	0948	V	V	V	V
	1				
				_	
	-				
	-				
SAMPLE	DATA	Sample ID: 1	lja		1
nalyses needed b	efore homogenia	zation (circle):		-Purgeables	AVS/SEM Other:
ediment type	Sediment co	lor	Sediment odor		Comments: (i.e. redox potential
obble	brown surface	e	none	H ₂ S	discontinuity, organic matter, wood debris, shell fragments, sheen, found disclinate at a high state of the s
avel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
ind (F) M C)	brown		moderate	other:	
)	gray		strong		
ay	black				

S.A SQT/Po	rewater	Project no.:	10 10 00 0				
Ponar		Crew:	PJD, AMB, JEN	М			
DATA	Location ID:	149-1	Vesse	el Position Number:			
Y): 6591	77.9		Longitude/Easti	ing (X): 583310.7			
Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:			
139013	2.3	6	4	Chim-benthic			
132				Genthic			
(134				bentuc.			
1136				Sy bribe +			
1138	J	J	V	Sylauket			
DATA	Sample ID:	903 (EN) OUTE	M 149 - UB	03 Stab Carl A, B, C			
efore homogeniz	ation (circle):	TOC) CHEPH	-Purgeables	AVS/SEM Other:			
	1	Sediment odor none slight moderate strong	H ₂ S petroleum other.	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)			
	Ponar PATA Y): 659(Grab Sample Time 1200 [3] 130 [3	Ponar DATA Location ID: Y): 659177.9 Grab Sample Bottom depth 1309130 2.3 131 134 139 139 DATA Sample ID: No proven surface drab olive brown gray	Ponar Crew: Ponar Crew: DATA Location ID: 49 - Y): 59177.9 Grab Sample Bottom Depth (cm) 30 13 15 2 3 134 132 134 138 131 131 138 131 131 DATA Sample ID: 103 101 Sediment color brown surface drab olive Slight moderate strong	Ponar Crew: PJD, AMB, JEI PATA Location ID: 149 - 1 Vessi State Sample Bottom Depth (cm) Acceptable grab (y/N) 13			

ate:		122/15	Weather:	DUCA PJD, AMB, JEM	
Sampling Method:	ronai		Crew:	FJD, AIVIB, JEIV	
GRAB D	ATA	Location ID:	149-2	Vesse	Position Number: 2
Latitude/Northing (v): 659	179.9		Longitude/Eastir	ng (X): 593299.9
Grab Sample Number	Grab Sample Time	depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1140	2.3	Cu	Y	5g builet
2	1142				
3	1144				
4	1146			11	
5	1148	V	V	J	V
	-				
		1.00			
			1		
					1
SAMPLE	DATA	Sample ID:	NA		
nalyses needed be	efore homogeni	zation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
Sediment type	Sediment co	lor	Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood
obble	brown surface		none	H ₂ S	debris, shell fragments, sheen, fauna, field duplicate, etc.)
rave	drab olive		slight	petroleum	istanta, nera aupiroate, etc.)
and (FMC)	prowd		moderate	other:	
	gray		strong		
lay	DIGUN				1

roject Name: N.B	S.A SQT/Po	rewater	Project no.:	Project no.: B0009989.0044					
roject Name: N.B.S.A SQT/Porewater ate:			Weather:	Weather: OVERCEST Crew: PJD, AMB, JEM					
Sampling Method:	Ponar		Crew:	PJD, AMB, JE	EM				
GRAB	DATA	Location ID:	149-3	Ves	ssel Position Number: 3				
Latitude/Northing (m: (05919	37.2		Longitude/Ea	sting (X): 5832924				
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptabl grab (Y/N					
1	1190	3.0	6"	4	Sibulet				
2	1152		1	1					
3	1164								
4	1196								
5	1150	V	V	V	V				
	4 =								
	1								
SAMPLE	DATA	Sample ID:	NIA						
nalyses needed b	4			-Purgeables	AVS/SEM Other:				
ediment type	Sediment col		Sediment odor	Fruigeables	Comments: (i.e. redox potential				
obble	brown surface		(Aone)	H ₂ S	discontinuity, organic matter, wood debris, shell fragments, sheen,				
rayel	drab olive	1	slight	petroleum	fauna, field duplicate, etc.)				
and (FM C)	brown		moderate	other:					
ilt	gray		strong						
ay	black		- 4/						
	JD			Arcadis	Date 9/22/15 Time 1500				
inquished ByP									

	7	Weather: Crew:	PJD, AMB, JE	M
	Location ID:	149-4	Vess	sel Position Number:
		1111		ting (X): 583298.7
Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	
1200	3.2	6	Y	54 bruket
1202				3
1204				
1206		12/12/		123
1208	1	J	V	J
	0	i d		
	10		Purmoahles	AVS/SEM Other:
Sediment cold	or E	Sediment odor none slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
	Ponar Po	DATA Location ID: (SG) 197. 6 Grab Sample Time depth 1200 3.2 1204 1206 1208 DATA Sample ID: Sediment color brown surface drab olive brown gray	DATA Sample ID: VOC TEPH Sediment color brown surface drab olive gray DATA Location ID: 49 - 4 Location ID: 49 - 4 Penetration Depth (cm) Sediment color Sediment odor Ponar Crew: PJD, AMB, JE DATA Location ID: L49-4 Vest Y): L59 197-6 Longitude/Eas Grab Sample Bottom Depth (cm) Grab (Y/N) IZ00 3-2 If 1 Vest IZ04 IZ04 IZ04 IZ06 DATA Sample ID: Voc TEPH-Purgeables Sediment color brown surface drab olive brown gray strong	

			Project no.:	B0009989.004					
Date:		2/15	Weather:						
Sampling Method: Ponar			Crew:	PJD, AMB, JEM					
GRAB D		Location ID:	149-5	Vessel	Position Number: 5				
Latitude/Northing (r): 6592	05.9		Longitude/Eastin	ng (X): 583306.6				
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)					
1	1210	3.5	100	4	5g Javelet				
2	1212				1				
3	1214								
4	126								
5	1218	J	V	V	V				
					1				
SAMPLE	DATA	Sample ID:	NA						
nalyses needed be	fore homogeniz	ation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:				
Sediment type	Sediment col	-	Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood				
obble			none	H₂S	debris, shell fragments, sheen, fauna, field duplicate, etc.)				
ravel	drab olive		slight	petroleum	rauna, neru dupircare, etc.)				
and (F(MC)	brown		moderate	other:					
	gray		strong						
clay	(black)				11.0				
elinquished ByP	JD		Company	Arcadis	Date 9/22/15 Time 1500				
quiorico by	7 112			Acrehani	die in				
cepted By	711		Company	ARCANIS .	Date_ 9/3.2/15_Time_ 1500				

	ne: N.B.S.A SQT/Porewater		Project no.;	1/0 00 0					
Date:	Ponar	1	Weather:	PJD, AMB, JEN					
ampling Method:			Crew:	1 00, 7 (10), 02.10	`				
GRAB D	DATA	Location ID:	149-6	Vesse	Position Number: 6				
Latitude/Northing (11: 6592			Longitude/Eastin	ng (X): 583323.4				
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:				
1	1220	4.0	6"	4	Sylamet				
2	1222								
3	1224								
4	1224								
5	ms	V	1	V	1				
	1								
	1								
	(A								
	1								
				1					
				1					
SAMPLE	DATA	Sample ID: \	11A						
inalyses needed be	5, 5, 7, 7, 1, 5, 1, 7		THE RESERVE AND ADDRESS.	-Purgeables	AVS/SEM Other:				
Sediment type cobble	Sediment color brown surface		Sediment odor	H₂S	Comments: (i.e. redox potential discontinuity, organic matter, wood				
gravel	drab olive	2 4 1	slight	petroleum	debris, shell fragments, sheen, fauna, field duplicate, etc.)				
sand (FM C)	(brown)		moderate	other:					
	gray		strong						
ilt)	black								

Date: Ponar Ponar			Weather: Crew:	PJD, AMB, JEM				
GRAB I	DATA	Location ID:	149-7	Ve	ssel Position Number:	1		
Latitude/Northing (Y): 659	161.4		Longitude/Ea	sting (X): 583302	-13		
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptab grab (Y/N	le Comm	nente:		
1	1230	3.6	6"	4	5g bucket			
2	1232	1		j-	0			
3	1234							
4	1236							
5	1238	V	V	V	J			
SAMPLE	DATA	Sample ID:	Jja					
Analyses needed be	efore homogeniz	ation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:			
Sediment type cobble gravel sand (FM Ø)	Sediment colo brown surface drab olive brown gray		slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redo discontinuity, organic debris, shell fragments fauna, field duplicate,	matter, wood s, sheen,		

1,20,00		A CONTRACTOR	1110 0	Tea	
GRAB		Location ID:	149-8		sel Position Number: 8
Latitude/Northing (Grab Sample	(Y): Grab Sample	Bottom	Penetration	Longitude/Eas Acceptable	
Number	Time	depth	Depth (cm)	grab (Y/N)	Comments:
1	1240	3.8	6"	Y	5g larket
2	1242		V		
3					
4					
5					
	+		1		
2			Ma		
SAMPLE		Seni Par de .	1	-Purgeables	AVS/SEM Other:
Sediment type	Sediment color brown surface		Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood
cobble			none	H₂S potroloum	debris, shell fragments, sheen, fauna, field duplicate, etc.)
gravel	drab olive		slight moderate	petroleum other:	
	gray		strong	ouler.	
ilt) lay	black		Sarong		

	qlal15 Ponar		Weather: Crew:	OVIV ČAS (PJD, AMB, JEI	M
GRAB I	DATA	Location ID:	150-1	Vess	el Position Number:
_atitude/Northing (Y): (059	348.3		Longitude/East	ing (X): 585552,9
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1042	12-1	6"	4	Chem-bentuce
2	1044	Tak IV			benthic benthic
3	1046	4.7			bennic.
4	1048				54 lacket
5	1020	V	V	V	5g broket
SAMPLE	DATA	Sample ID:	N30350	10 CLAM 150	NBUZ SON COM ABC
nalyses needed be	efore homogeniz	ration (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
sediment type sobble aravel and (F) M C)	Sediment col brown surface drab olive brown gray		none slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)

GRAB	DATA	Location ID:	150-2	Vece	el Position Number: 2
Latitude/Northing (55. B	150-		ting (X): 585631. A
Grab Sample	Grab Sample	Bottom	Penetration	Acceptable	
Number 1	Time	depth	Depth (cm)	grab (Y/N)	59 bruket
2	1054	10.4	(5	1	59 0000
3	1054				
4	1058				
5	1100	V		1	
5	11-0		V	v	
	-				
	1				
0.44015	2174	01-10	(1)		1
SAMPLE		Sample ID:	UA		
nalyses needed b				Purgeables	AVS/SEM Other:
Sediment type	Sediment color		Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood
cobble	100000000000000000000000000000000000000	brown surface		H₂S	debris, shell fragments, sheen, fauna, field duplicate, etc.)
ravel	drab olive		slight	petroleum	lauria, lield duplicate, etc.)
and (FM C)	brown		moderate	other:	
ilt	gray		strong		
lay	black				
	0				Date 9 22 15 Time 1900 19

roject Name: N.B.S.A SQT/Porewater ate: 9/22/15 ampling Method: Ponar				_ Project no		B00099		4		
				_ Weathe		PJD, AM				-
							1		27	4
GRAB I		Locatio		190-3	>	1		Position N		
Latitude/Northing (Grab Sample	Y): (259) Grab Sample	360. Botto		Penetrat	ion		de/Eastin	g(X): 56	55	42.3
Number	Time	dept	th	Depth (c	m)	gral	(Y/N)		-	omments:
1	1102	13	.1	6		,	<u> </u>	5	46	plet
2	1104			1					-	
3	1106								_	
4	1108		/						0	,
5	1110	V	/	V		0	/		V	
		7								
								1		
			-							
	-	-	-	_				+		
			-		_			-		
			-					-		
		0								
						-				
									_	
		-	-	-	-		-			
			-		_	-				
				1110						
SAMPLE	DATA	Sample	ID:	MA						
nalyses needed be	efore homogeniz	ation (cire	cle):	voc' 1	EPH	-Purgeable	s	AVS/SE	м о	ther:
ediment type	Sediment col	Sediment color brown surface		Sediment o	dor					redox potential anic matter, wood
obble	brown surface			none		H ₂ S		debris, she	ell fragi	ments, sheen,
avel	drab olive			slight		petroleun	n	fauna, field	duplic	cate, etc.)
and (F)M C)	brown		1	moderate		other:				
	gray		3	strong						

B0009989 0044

roject Name: N.B.	S.A SQT/Po	rewater	_ Project no.:	B0009989.004	14
ate:	1/22/19	5	Weather:	Werast	
mpling Method:	Ponar		_ Crew:	PJD, AMB, JEN	1
GRABI	DATA	Location ID:	150-4	Vesse	Position Number: 4
atitude/Northing ((Y): (05	9375.	-	Longitude/Easti	ng (X): 585549.0
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	11/2	13.0	64	Y	Sy brike f
2	1114				
3	1116				
4	1118				
5	1120	1	1	1	V
			_		
	-				
	1				
SAMPLE	DATA	Sample ID:	14		
		100		-Purgeables	AVS/SEM Other:
ediment type	Sediment color brown surface drab olive		Sediment odor	H₂S	Comments: (i.e. redox potential discontinuity, organic matter, wood
avel			slight	petroleum	debris, shell fragments, sheen, fauna, field duplicate, etc.)
nd (A) M C)			moderate	other:	
5	gray		strong		
ay	black				
				ATTENDED TO	alaste 120
inquished By P	JD		Company	Arcadis	Date 9/22/15 Time 1500
cepted By	#			ARCADIS	9/23/15 /50

	S.A SQT/P		Project no.:	B000998				
Date:	Ponar)	Weather: OUGT T					
Sampling Method:	Ollai			FJD, AIVID	, JEIVI			
GRAB D	ATA	Location ID:	150	-5	Vessel Position Number: 5			
Latitude/Northing (1: 659	387.9		Longitude	(Easting (X): 585555 4			
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Accep grab	table			
1	1122	12.4	G	4	5g bucket			
2	1124	12.4	6"	Y	5g butet			
-3	1126	1939	1117					
4								
5								
	1							
SAMPLE	DATA	Sample ID:	NA					
inalyses needed be	fore homogen	ization (circle):	VOC TEPH	l-Purgeables	AVS/SEM Other:			
Sediment type	Sediment co	olor	Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood			
cobble	brown surfac	e (none	H₂S	debris, shell fragments, sheen, fauna, field duplicate, etc.)			
gravel	drab olive		slight	petroleum	lauria, lielo duplicate, etc.)			
and (FM C)	Drown		moderate	other:				
silt	gray		strong					
clay	black							

Title: SQT and Porewater Sampling and Analysis Quality Assurance Project Plan Revision Number: 2 Revision Date: August 2015

Date: Sampling Method:	Ponar		Weather: Crew:	PJD, AME	Ca S- B, JEM		
GRAB I	DATA	Location ID:	151-1		Vessel	Position Number:	
Latitude/Northing (r): lele12	114.0		Longitud	e/Easting	g(X): 582476.3	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)		otable (Y/N)	Comments:	
1	1106	10.2	(a'll	4		chem	
2	1103	1				Benfuc	
3	1110					Benthic	
4	1112	1				Ben Mic.	
5	1114	W	V	1		5g bruket	
SAMPLE	DATA	Sample ID:	1803-566	-atan	-151	NB03SE0-WA 151 A	De
Analyses needed b	efore homogeniz	ration (circle):		-Purgeables		AVS/SEM Other:	
Sediment type cobble gravel sand (F M C) silt clay	Sediment col brown surface drab olive brown gray black	or	Sediment odor none slight moderate strong	H₂S petroleum other:		Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	
Relinquistied by	ND		Company	Arcadis ARCAN		Date 9/2/15 Time 07/5	

Project Name: N.B.	9-20-	rewater -1 5	Project no.: Weather:	OVU CUS+	
ampling Method:	Ponar		Crew:	PJD, AMB, JEM	
GRAB I	DATA	Location ID:	151-2	Vesse	Position Number: Z
Latitude/Northing (ri: lelel	07.4	· ·	Longitude/Eastin	ng (X): 582498.0
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1116	10.2	64	Y	5g bycket
2	1113		1		
3	1120				
4	1122				
5	1124	4	V	4	V
					1
					1
	-				
SAMPLE			NONE	5	N/O/OFN OF
Analyses needed be Sediment type	Sediment col		VOC TEPH Sediment odor	-Purgeables	AVS/SEM Other: Comments: (i.e. redox potential
cobble	brown surface		none H₂S		discontinuity, organic matter, wood debris, shell fragments, sheen,
gravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
and (F)M C)	prown		moderate	other:	
ilt	gray		strong		
clay	black				111
elinquished By P	JD		Company	Arcadis	Date 9 [20 [15 Time] 700
a wyar way s	Sh		Company	AD CADIS	Date 95/15 Time 07/5

	,			
	Location ID:			Position Number: 3
	-0-91Q22444C0 32	(7)		
Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable	Comments:
1126	10.3	6"	Y	59 bucket
1128				0
1130				
1134	V	V	1	V
DATA	Sample ID:	NJA		
efore homogeniz	ation (circle):		-Purgeables	AVS/SEM Other:
		Sediment odor none slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
	Ponar DATA (Y): Leli A Grab Sample Time 1128 1130 1132 1134 DATA Defore homogeniz Sediment col brown surface drab olive brown gray	DATA Location ID: (Y): LLLA03. (Grab Sample Time Depth	Ponar Crew: DATA	Ponar Crew: PJD, AMB, JEN DATA Location ID: G - 3 Vesse (Y): Let 2-3 . C Longitude/Eastin depth Penetration Depth (cm) grab (YN) 128

roject Name: N.B.	S.A SQT/Po	rewater	Project no.:	B0009989.004	4
rte:	9/20/11	5	Weather:	Our cas	+
mpling Method:	Ponar		Crew:	PJD, AMB, JEN	
GRAB D	ATA	Location ID:	151-4	Vesse	Position Number: 4
atitude/Northing ()	1: 4613	96.0		Longitude/Eastin	19 (X): 582459.7
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1136	104	Coll	Y	Tig bruket
2	1138]]
3	1140				
4	1142				
5	1144	V	V	V	V
		1			
		-			
SAMPLE	DATA	Sample ID:	NIA		
nalyses needed be	fore homogeniz	ation (circle):	VOC TEPH	Purgeables	AVS/SEM Other:
ediment type	Sediment col	or	Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood
bble	brown surface	9	none	H ₂ S	debris, shell fragments, sheen, fauna, field duplicate, etc.)
avel	drab olive		slight	petroleum	lauria, lielu duplicate, etc.)
md(PMC)	brown		moderate	other:	
t) _	gray		strong		
ay	DIACK		L		
inquished By PJ	D		Company	Arcadis	Date 9/21/15 Time 9/21/15 Time 07/15

Title: SQT and Porewater Sampling and Analysis Quality Assurance Project Plan Revision Number: 2 Revision Date: August 2015

Project Name: N.B	S.A SQT/Po	rewater	Project no.:	B0009989.004	
)ate:	9/20/1	5		overcas	
ampling Method:	Ponar		Crew:	PJD, AMB, JEN	
GRAB	DATA	Location ID:	151-5	Vesse	Position Number: 5
Latitude/Northing	(M): 661	284.6		Longitude/Eastin	ng (X): 582493.9
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1146	10.2	le	Y	59 brule -
2	1143				
3	1150				
4	1152		,	1, =	
5	1154	V	V	V	J
	_				
	+				
			į.		
SAMPLE	DATA	Sample ID:	NA		
nalyses needed b	Anna Name and A		VOC TEPH	-Purgeables	AVS/SEM Other:
Sediment type	Sediment col		Sediment odor	uigeables	Comments: (i.e. redox potential
cobble	brown surface		The state of the s	H₂S	discontinuity, organic matter, wood
	drab olive		none	petroleum	debris, shell fragments, sheen, fauna, field duplicate, etc.)
gravel			slight	other:	ALL AND
and (FM C)	prown		moderate	oner	
silt	gray		strong		
clay	black				
20.000	PJD		15/11/11	Arcadic	Date 9/21/15 Time 1708
elinquished ByP	UD		Company	Aicauls	Date Time 1700
ccepted By	3 ft		32 Care (3	AR CADIS	9/21/15 8715

Project Name: N.B.	S.A SQT/Po	rewater	Project no.:		1
ite:	9/20/1	5	Weather:	Werca.	st
mpling Method:	Ponar		Crew:	PJD, AMB, JEM	
GRAB D	ATA	Location ID:	151-6	Vesse	Position Number: 6
atitude/Northing (r): lelel	378.2	-	Longitude/Eastin	19 (X): 582470.0
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1156	104	60	Y	5a bucket
2	1158				
3	1200				
4	1202				1
5	1204	V	1	1	V
					+
	\				
			NIA		
SAMPLE		Sample ID:	- V		
nalyses needed be	Francisco Long C		VOC TEPH	-Purgeables	AVS/SEM Other;
ediment type	Sediment col		Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood
obble	brown surface		none	H ₂ S	debris, shell fragments, sheen, fauna, field duplicate, etc.)
ravel	drab olive		slight	petroleum	issuita, nota dapricato, etc.)
and (F)M C)	DIDWA		moderate	other:	
10	gray		strong		
ay	plack				1
Sanciahad B. P.	JD		Company	Arcadis	Date 9/20(15 Time 1700
linquished ByPu	7		Company		
epted By	JH		Company	ARGADIS ,	Date 9/21/15 Time 07/5

Title: SQT and Porewater Sampling and Analysis Quality Assurance Project Plan Revision Number: 2 Revision Date: August 2015

SURFACE SEDIMENT COLLECTION FORM

q" ponal

ampling Method:	Ponár		Crew:	PJD, AMB, JEM	
GRABI	DATA	Location ID:	152-	Vesse	l Position Number:
Latitude/Northing (Y): 6632	60.2		Longitude/Eastin	ng (X): 584444.4
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	0990	7.7	4"	Y'	Chem- bentina
2	0952	1			neatic
3	0954				benthic
4	0996				50 bruket
5	0959	V	V	J	501 Budlet
152-2	h)	663449	.3	E) 5844	14.1
	1000	8.0	4"	V	5g briket
ì	1002				7
3	1004	- 1			
3	1006				
5	8001	V	U,	V	
152-3	N)	663441.	2 E)	584499	9
1	1010	8.1	4	Y	is so butet
Z	1012				0
3	1014				
4	(016				
5	1013	V	V	V	V
SAMPLE	DATA .	Sample ID:	182 SCA 01	VA. 161	NIA A SEO MAA A A
nalyses needed be			603 SG() CH	Purgeables	NG03 SED COM - A (
ediment type	Sediment cold		Sediment odor	ruigeaus	Comments: (i.e. redox potential
obble	brown surface		none	H ₂ S	discontinuity, organic matter, wood debris, shell fragments, sheen,
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
ind (F M S)	brown		moderate	other:	
lt	gray		strong		
ay .	black				

ate:ampling Method:	9/29/19 Ponar		Weather: Crew:	PJD, AMB, JEN	
GRAB I		Location ID:	152-4	Vesse	l Position Number:
_atitude/Northing (Y): 6634	32.1	1,0	Longitude/Eastin	ng (X): 584463.2
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1020	83	4	4	5g bucket
2	1022		1		1
3	1024				
4	1026				
5	1023	V	V	V	V
152-5		3429.	4	E) 584	173.91
1	1030	8.7	4	Y.	5 buket
2	1032		1,		1
3	1034				2 1 6 3 5
4	1036				
~	(038)	V	V	V	V
152-10	N) 463	444.0	E)5841	165.1	
	1040	8.0	4	V	5g bruket
1	1042				1
2	1044				
4	1046				
5	1048	1	V	٧	1
SAMPLE	DATA	Sample ID:	VIR.		
alyses needed be	fore homogeniz	ation (circle):	VOC TEPH-	Purgeables	AVS/SEM Other:
ediment type bble avel nd (F M C)	brown surface drab olive brown gray		Sediment odor none slight moderate strong	H₂S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
ну	black				
nquished By PJ	ID		Company	Arcadis r	Date 9/20/15 Time 1700 15
7	-11			DOCONK	Date 9/29/15 Time 1515

SAMPLE DATA Sample ID: SAMPLE DATA Sample ID: Sampling Method: Ponar Crew: PJD, AMB, JEM GRAB DATA Location ID: L 5 2 - 7 Vessel Position Number: 7 Latitude/Northing (Y): L/L 34 5 4 . 3 Grab Sample Number Time Bottom depth Dopth (cm) Acceptable grab (Y/N) Comments: 1	Project Name: N.B.	9/29/1	S	Project no.: Weather:	6009989.004 60009989.004	
GRAB DATA Location ID: 192-7 Astitude/Northing (Y): L/L/2 3/45/6. 3 Grab Sample Number Time depth Depth (cm) 1 1050 199 4 4 (354) 5 1052 3 1 054 4 1 1000 8 0 4 The location ID: 192-7 SAMPLE DATA Sample ID: Depth (cm) Acceptable grab (X): 5-8-4443 M. Acceptable grab (X): 5-8-4444						
atitude/Northing (Y):		DATA	Lacation ID:	1520	Vessel	Position Number:
Grab Sample Number Time depth Penetration Acceptable grab (YN) Comments: 1 10 50						
1 10 50 1 9 1	Grab Sample	Grab Sample	Bottom	Penetration	Acceptable	
3 1094 4 (854 5 1058 192-8 N) G43459.5 E) 584448.9 1 100 B-0 4 Supported to the strong of the strong				4	4	
SAMPLE DATA Sample ID: sample Data Sample Data Sample ID: sam	2					1
SAMPLE DATA Sample ID: SAMPLE DATA Sample ID: Sediment color brown surface drap drive avel avel avel gray Sample ID: Sediment color 3	1094					
SAMPLE DATA Sample ID: SAMPLE DATA Sample ID: Religion to the color brown surface drab olive avel and (F) C) To gray Sample ID: Sediment door Sedime	4	1056				
SAMPLE DATA Sample ID: nalyses needed before homogenization (circle): dediment type bibble bibble bibble circle	5	1058	V	V	V	V
SAMPLE DATA Sample ID: nalyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) ty gray strong	152-8	N)	663459.	5 E)	584448.9	7
SAMPLE DATA Sample ID: nalyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) and (F) C) gray strong		1100	8.0	4	Y	39 preket
SAMPLE DATA Sample ID: malyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) and (F) C) gray Sample ID: AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	2	1102	1			J.
rediment type Sediment color brown surface drab olive strong Sediment odor Sediment odor Sediment odor Brown surface Sediment odor Sediment odor Brown surface Sediment odor B						
nalyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) and (F M C) gray strong						
rediment type Sediment color brown surface drab olive strong Sediment odor Sediment odor Sediment odor Brown surface Sediment odor Sediment odor Brown surface Sediment odor B						
rediment type Sediment color brown surface drab olive strong Sediment odor Sediment odor Sediment odor Brown surface Sediment odor Sediment odor Brown surface Sediment odor B						
nalyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) and (F M C) gray strong			11 = 11			
rediment type Sediment color brown surface drab olive strong Sediment odor Sediment odor Sediment odor Brown surface Sediment odor Sediment odor Brown surface Sediment odor B						
rediment type Sediment color brown surface drab olive strong Sediment odor Sediment odor Sediment odor Brown surface Sediment odor Sediment odor Brown surface Sediment odor B						
rediment type Sediment color brown surface drab olive strong Sediment odor Sediment odor Sediment odor Brown surface Sediment odor Sediment odor Brown surface Sediment odor B				7 7 7 7 7		
nalyses needed before homogenization (circle): VOC TEPH-Purgeables Sediment type Sediment color brown surface drab olive brown moderate strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)						
nalyses needed before homogenization (circle): VOC TEPH-Purgeables Sediment type Sediment color brown surface drab olive brown moderate strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)						
realyses needed before homogenization (circle): VOC TEPH-Purgeables Sediment type Sediment color brown surface avel drab olive moderate gray Sediment odor NOS SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)						
realyses needed before homogenization (circle): VOC TEPH-Purgeables Sediment type Sediment color brown surface avel drab olive moderate gray Sediment odor NOS SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)		7				
Sediment type bble brown surface drab olive brown gray Sediment odor Sediment odor brown surface slight petroleum moderate strong Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	SAMPLE	DATA	Sample ID:			
Sediment type bble brown surface drab olive moderate gray Sediment odor Sediment odor brown surface slight moderate strong Sediment odor Drown surface Sediment odor Brown	nalyses needed be	fore homogeniza	ation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
brown surface drab olive drab olive drab olive slight moderate other: gray brown surface slight petroleum moderate other: strong						Comments: (i.e. redox potential
and (F M C) rown moderate other: gray strong	obble	brown surface	\$	none	H₂S	debris, shell fragments, sheen,
gray strong	avel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
	and (F M C)	prove		moderate	other:	
ay black	シ	gray		strong		
	ay	black				
	epted By	+1+		0	ARCADIS D	ate 9/29/15 Time 1515

Title: SQT and Porewater Sampling and Analysis
Quality Assurance Project Plan
Revision Number: 2
Revision Date: August 2015

+ MOGO Location to SED. ALBA

ate:	9 23 1	,	Weather:)UN	
ampling Method:	onar		Crew:	PJD, AMB, JEM	
GRAB D	ATA	Location ID:	153-1	Vesse	Position Number:
Latitude/Northing (1: 6630	169.8		Longitude/Eastir	19 (X): 587690,4
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1000	10.4	(0"	Y	Chem-benthic
2	1002		ĺ		Deuthic
3	1004				penthic.
4	1006				5. Gal Wester
5	1093	V	1	1	1,0
SAMPLE I			BUB SEAD CH	EM 193, NO	003 500 00M A, B, C AVS/SEM) Other:
Sediment type cobble gravel cand (FM C)	Sediment cold brown surface drab olive brown gray black	or	Sediment odor none slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
clay	black			Arcadis t	Date 9/23/15 Time 1905/

ate:	9/23/1	5	Weather:	SUN	
ampling Method:	Ponar		Crew:	PJD, AMB, JEN	
GRAB	DATA	Location ID:	153-2	Vesse	el Position Number: Z
.atitude/Northing (M: 663	678.9		Longitude/Easti	ng(X): 587679.6
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1010	100	64	Y	54 bucket
2	1612				
3	1014				
4	1016	1		/	
5	[01,9	V	1 1	1	V
			A CLA-		
SAMPLE		Sample ID:	NA	200	and the same of th
nalyses needed b				-Purgeables	AVS/SEM Other:
ediment type	Sediment coll brown surface		Sediment odor	ше	Comments: (i.e. redox potential discontinuity, organic matter, wood
ravel	drab olive		none	H ₂ S petroleum	debris, shell fragments, sheen, fauna, field duplicate, etc.)
and (F)M C)	brown		moderate	other:	
it 5	gray		strong	×1000	
ay	black		A. C. C.		
					2/2/- 12 24
linguished By P	JD		Company	Arcadis	Date 9/23/15 Time 1530

Project Name: N.B.	9/23/15 Ponar		Weather: Crew:	SUV PJD, AMB, J	EM	
GRABI	DATA	Location ID:	153-3			3
Latitude/Northing (3690.	9		sting (X): 5376	
Grab Sample Number	Grab Sample Time		Penetration Depth (cm)	Acceptab grab (Y/I	le	nents:
1	1020	161	Gul	Y	5g broke	+
2	1022	1				
3	1024					
4	1026	Ide 5				
5	1028	V	V	1	J	
20.00			. 1 . 10		1	
SAMPLE		Sample ID:	NIP		AVOIDEM ON	
Analyses needed be Sediment type cobble gravel and (E.M. C)	Sediment cold brown surface drab olive brown gray	or	Sediment odor none slight moderate strong	Purgeables H ₂ S petroleum other:	Comments: (i.e. redo discontinuity, organic debris, shell fragment fauna, field duplicate,	ox potential matter, wood s, sheen,
lay P.	JD			Arcadis	9/23/15	1200-1
cepted By	JA.		Company Company	AR (AD)S	Date 9/23/15 Time	1530

roject Name: N.B	4123/15		Project no.: Weather:	SUN	
ampling Method:	Ponar		Crew:	PJD, AMB, JE	M
GRAB	DATA	Location ID:	153-4	Vess	sel Position Number: 4
Latitude/Northing	(Y): 663	702.9	122	Longitude/Eas	ting (X): 587659.6
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	
1	6030	11.0	6"	Y	5g bexet
2	1032				
3	1034				
4	1036			1	
5	1038	1	1	4	V
					1111
				-	
	-				
SAMPLE	DATA	Sample ID:	NIA		
nalyses needed be			VOC TEPH-	Purgeables	AVS/SEM Other:
sediment type	Sediment colo	or	Sediment odor	H₂S	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen,
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
and (FM C)	brown		moderate	other:	
ilt	gray		strong		
lay	black				
linguished D. P.	JD		Company	Arcadis	Date 9/23/15 Time 1530
linquished ByP	.41		Company		Date Time Time
cepted By	7 11		Company _	ARCADIS	Date 1/23/15 Time 1550

B0009989.0044

			Crew:		
GRAB		Location ID:	153-5		Position Number: 5
atitude/Northing (719.7		Longitude/Eastin	ng (X): 587658.
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1040	11.3	6	Y	5g brulet
2	1042				1
3	1044				
4	1046				
5	1048	V	V	1	V
					-
			====1		
	1				
			111		
SAMPLE nalyses needed be	200	And the second	VOC TEPH-	Purgeables	AVS/SEM Other:
diment type	Sediment cold		Sediment odor	uigeables	Comments: (i.e. redox potential
bble	brown surface		none	H ₂ S	discontinuity, organic matter, wood debris, shell fragments, sheen,
avel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
nd (5 M C)	brown		moderate	other:	
5	gray		strong		
iy .	black				
nquished ByP.	ID			A ali -	Date 9/23/15 Time 15 30

Project Name: N.B.	S.A SQT/Po	rewater	Project no.:	B0009989.00)44
Pate:	1/23/15		Weather:	SUN	
ampling Wethod:	Ponar		Crew:	PJD, AMB, JE	M
GRAB I	DATA	Location ID:	193-6	Vess	sel Position Number:
Latitude/Northing (r): 663	FO1.7		Longitude/East	ting (X): 587680.9
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1050	(1.5	6 is	Y	Sq bucket
2	1052				1
3	1054				
4	1056				
5	1058	V	V	1	V
					+
					+
SAMPLE	DATA	Sample ID:			
nalyses needed be	fore homogeniza	ation (circle):	VOC TEPH-	Purgeables	AVS/SEM Other:
ediment type	Sediment color brown surface		Sediment odor		Comments: (i.e. redox potential
obble			none	H₂S	discontinuity, organic matter, wood debris, shell fragments, sheen,
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
and (FM C)	(Drown)		moderate	other:	
	gray		strong		
lay	black				
dinguished By PJ	D			Arondin	9/23/15 12m 15
miliquished by	J.		Company _	Arcadis	Date 9/23/15 Time 1750 1530
cepted By	th.		0	ARCHINIS	note 9/23/15 1530

Grab Sample Time	depth	153-7	Longitude/Easti	ng (X): 587686-1
Grab Sample Time	Bottom depth			ng (X): 587686-1
Time	depth			The state of the s
	1117	Depth (cm)	Acceptable grab (Y/N)	Comments:
1150	11.3	6"	4	Sy bucket
1102	1			1
1104				
1106				
1108	V	V	V	V
та	Sample ID:	N/A		
		OC TEPH-	Purgeables	AVS/SEM Other:
Sediment col brown surface drab olive brown gray	or _	Sediment odor none slight moderate strong	H₂S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
	TA re homogeniz	TA Sample ID: re homogenization (circle): Sediment color brown surface drab olive brown gray	TA Sample ID: re homogenization (circle): OC TEPH- Sediment color brown surface drab olive brown gray strong	TA Sample ID: re homogenization (circle): VOC TEPH-Purgeables Sediment color brown surface drab olive brown gray TEPH-Purgeables Sediment odor none H ₂ S petroleum moderate other: strong

mpling Method:	Ponar		Crew:	PJD, AMB, JEM	1
GRAB D	DATA	Location ID:	193-8	Vesse	Position Number:
atitude/Northing (Y): 66366	0.7		Longitude/Eastin	ng (X): 587671.4
Grab Sample Number	Grab Sample Time		Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1110	10.6	Gu	y	Sa broket
2	1112				11
3	1114				
4	1116				
5	1118	V	V	V	1
	100				
	-				
	1				
SAMPLE	0474	Comple ID:	11/2		
A produce		Sample ID:	W/A	D	AV0/0514 OV
alyses needed be			The state of the state of	Purgeables	AVS/SEM Other:
diment type	Sediment co	(Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood
oble	brown surfac	e \	none	H₂S	debris, shell fragments, sheen, fauna, field duplicate, etc.)
ivel	drab olive		slight	petroleum	32.0000.0000.0000.000
MC)	prown		moderate	other:	
<u> </u>	gray		strong		
	black				

ate: 1/	23/15		Weather:	SUN	
	Ponar			PJD, AMB,	, JEM
GRAB D	ATA	Location ID:	153-9	1	Vessel Position Number:
_atitude/Northing ()	n: 10636	40.9		Longitude	Easting (X): 587664-6
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Accept grab (able Y/N) Comments:
1	1120	9.8	60	4	Sq buket
2	1122	1			
3	1124				
4	1126			11	
5	1128	V	V	V	V
		2.3			
		-			
			1		
SAMPLE	DATA	Sample ID:	NIA		
nalyses needed be	fore homogeniz	ation (circle):	1	-Purgeables	AVS/SEM Other:
ediment type	Sediment col		Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood
obble	brown surface		none)	H ₂ S	debris, shell fragments, sheen,
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
and (FMC)	brown		moderate	other:	
	gray		strong		
lay	black				
linguished By PJ	ID		C	Arcadis	Date 9/23/15 Time 1530
linquished ByPJ	11		Company	ARCADIS	Date_II I Ime_T

mpling Method:				JD, AMB, JEM	
GRAB I		Location ID:	(53-11		Position Number:
atitude/Northing (642.6		Longitude/Eastir	19 (X): 5876779
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1130	10.3	64	V	5g buket
2	1132		1		1
3	1(34				
4	1/36				
5	1138	¥	Ψ	V	V
			/F		
					¥
SAMPLE	DATA	Sample ID:	NA		
alyses needed be	efore homogeniz	ation (circle):	1	urgeables	AVS/SEM Other:
diment type	Sediment col		Sediment odor	H₂S	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen,
vel	drab olive	4		petroleum	fauna, field duplicate, etc.)
M C)	brown			other:	
7	gray		strong		
/	black				
quished ByP.	ID.			van din	Date 9/23/15 Time 1530

roject Name: N.B.	S.A SQT/Po	rewater	Project no.:	B0009989.0	0044	
ate: 9/	23/15		Weather:	SUN		
ampling Method:	Ponar			PJD, AMB, J	EM	
GRAB D		Location ID:	153-11	Ve	ssel Position Number:	11
Latitude/Northing ()	1): 6631	693.8	. , . , .	Longitude/Ea	sting (X): 587	683.1
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptab grab (Y/N	e	omments:
1	1140	10.5	64	Y	5g bruk	ut
2	142	1			1	
3	1144					
4	1146	1		1		
5	1143	V	V	V		
SAMPLE I		Sample ID:	VOC TEPH	-Purgeables	AVS/SEM Ot	her;
sediment type sobble and (F M C)	Sediment colo brown surface drab olive brown gray black	1	Sediment odor none slight moderate strong	H₂S petroleum other:	Comments: (i.e. r discontinuity, orga debris, shell fragm fauna, field duplica	nic matter, wood nents, sheen,
elinquished By PJ	ID		Company	Arcadis	Date 9/23/15	Time_1700_/5
cepted By	711			ARCAN'S	Pate 9/23/15.	1530

Title: SQT and Porewater Sampling and Analysis Quality Assurance Project Plan Revision Number: 2 Revision Date: August 2015

mpling Method:	0)(4)		Crew:	PJD, AMB, JEN	
GRAB D	DATA	Location ID:	153-10	2 Vesse	Position Number: 12
Latitude/Northing (1/1/11	708.4		Longitude/Easti	ng (X): 587684. [
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1150	11.2	6	4	Sq buket
2	1152	(
3	1154				
4	1156				
5	1158	1	V	+	V
	1-2				
			0		
			110-		
SAMPLE		Sample ID:	UM		
nalyses needed be	Total Control			Purgeables	AVS/SEM Other:
Sediment type cobble	Sediment color brown surface		Sediment odor	H₂S	Comments: (i.e. redox potential discontinuity, organic matter, wood
gravel	drab olive	<	slight	petroleum	debris, shell fragments, sheen, fauna, field duplicate, etc.)
and (EM C)	brown		moderate	other:	
1	gray		strong		
lay	black				
linguished By P.					Date 9/23/15 Time 1753

mpling Method:	onar		Crew:	PJD, AMB, J	JEM
GRAB D	DATA	Location ID:	153-17	> Ve	essel Position Number: [3
Latitude/Northing (n: 663	125.6		Longitude/Ea	asting (X): 587672-2
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptat grab (Y/	ole
1	1200	[]-1	611	Y	Sabuilet
2	1200	11.1	6"	9	D
3	I.	11.			
4					
5					
			V = 1		
			11		
SAMPLE	DATA	Sample ID:	JIA		
alyses needed be	fore homogeniza	ation (circle):		Purgeables	AVS/SEM Other:
ediment type	Sediment cold	or	Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood
bble avel	brown surface drab olive		slight	H₂S petroleum	debris, shell fragments, sheen, fauna, field duplicate, etc.)
nd (FM C)	brown		moderate	other:	
	gray		strong	Offici.	
ay	black		ou ong		
зу	1.000	_	l.		Date 9/23/15 Time 1200

Title: SQT and Porewater Sampling and Analysis Quality Assurance Project Plan Revision Number: 2 Revision Date: August 2015

SURFACE SEDIMENT COLLECTION FORM

* 91 PONTE

	1.S.A SQT/PO	rewater	Project no.:	SUN, WIN	
ate: ampling Method:	Ponar		Weather:	PJD, AMB, JEM	
ampling weakou					
GRAB	DATA	Location ID:	154-1		Position Number:
Latitude/Northing		44.5		Longitude/Eastir	ng (x): 585946+8
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1430	11.4	(o ^d	4	chem- benthic
2	1432		1		benthic
3	1444				benthic
4	1446				5g bucket
5	1448	1	V	V	5g bucket
SAMPLE Analyses needed b	1	Sample ID:	NB13-050-C	Ham-154	(AVS/SEM) Other:
Sediment type cobble gravel sand (F M C)	Sediment color brown surface drab olive brown gray	or	Sediment odor none slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)

Project Name: N.B.		rewater	Project no.:	B0009989.004	
VVV	1/20/15		Weather:		
ampling Method:	Ponar		Crew:	PJD, AMB, JEN	M U
GRAB D	DATA	Location ID:	154-2	Vesse	el Position Number: 2
Latitude/Northing ()	r): (163	153.3		Longitude/East	ing (X): 585929.0
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1450	11.7	61	Y	5g briset
2	1452				
3	1454				
4	1456				
5	1458	V	V	V	V
			F		4.11
		11			
SAMPLE	DATA	Sample ID:	NIA		
nalyses needed be	efore homogeniz	ation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
ediment type	Sediment coll brown surface		Sediment odor	H ₂ S	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen,
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
and (M C)	brown		moderate	other:	
	gray		strong		
lay	black				
	ID			Assadia	about 120
linquished By P.	JD		Company		Date Time RU
cepted By	H		Company	ARCHOIS	Date Time Time

Project Name: N.B Date:	9/20/19	orewater	Project no.: Weather:	5009989.004	VDY
Sampling Method:	Ponar		Crew: F	PJD, AMB, JEN	1
GRAB	DATA	Location ID:	154-3	Vesse	Position Number: 3
Latitude/Northing	(M): 66	3931.6		Longitude/Eastin	ng (X): 585933 · 3
Grab Sample Number	Grab Sample Time		Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1500	11.7	6"	Y	5g bruket
2	1502	1			
3	1504				
4	1506				
5	1508	V	V	V	V
SAMPLE		Sample ID:	NIA	Drive super	
Analyses needed be Sediment type cobble gravel sailt clay	Sediment co brown surface drab olive brown gray black	olor	Sediment odor none slight moderate strong	Purgeables H ₂ S petroleum other:	AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
	PJD		Company	Arcadis	Date 9/20/15 Time 1700
ccepted By	JH		Company	ARCANIS	Date 9/21/15 Time 1700 Date 9/21/15 Time 0715

Project Name: N.B.	2015	rewater	Project no.: Weather: Crew:	B0009989.004 SVN WIN O PJD, AMB, JEM	00/
GRAB I	DATA	Location ID:	154-4	Vessel	Position Number: /
Latitude/Northing (Y): 467	911,11	101	Longitude/Eastir	19 (X): 585939.01
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1510	11.7	6"	Y	5g bucket
2	1512				
3	1514			1 L	
4	1516		1		
5	1518	V	V	V	1
SAMPLE	DATA	Sample ID:	NIN		
ediment type obble ravel And (F M C)	Sediment collabrown surface drab olive brown gray	or	Sediment odor none slight moderate strong	-Purgeables H ₂ S petroleum other:	AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
clay	black JD		Company	Arcadis I	Date 9/21/15 Time 1700 Date 9/21/15 Time 0715

Title: SQT and Porewater Sampling and Analysis Quality Assurance Project Plan Revision Number: 2 Revision Date: August 2015

Sampling Method: Ponar			_ ,	Weather: ALL COST Crew: PJD, AMB, JEM					
GRAB DATA Location ID:		15	5-1		Vessel I	Position Number:			
atitude/Northing	M: UUS4	56:	7			Longitud	e/Easting	1(X): 586290	1.0
Grab Sample Number	Grab Sample Time	Botte	om		tration h (cm)	Accep	ptable (Y/N)	Commo	CAT .
1	1238	3	8	400	(900)	Y		chem	
2	1240	1			V			benthic	
3	12,42							benthic,	
4	1244				,		1	5g lacket	
5	1246	1		1	V			1	
							-14	12	
			-						
			-		-				
			-4		-		-		
				-			_		
	1						_		-
			\exists						
					- = 1				
SAMPLE	DATA	Sample		~				, NBOJSED	-6M155A
nalyses needed b			cle):	(voc)	_	Purgeables		AVS/SEM Other:	
ediment type	Sediment cold	or	1	Sedimer	nt odor	11.0		Comments: (i.e. redox discontinuity, organic m	atter, wood
obble avel	brown surface drab olive			none		H ₂ S petroleum	110	debris, shell fragments, sheen, fauna, field duplicate, etc.)	
ind (F M)C)	brown)			moderate	•	other:		Shells	
1	gray			strong		2.37			
ay .	black								

Project Name: N.B.		rewater	Project no.:	B0009989.004	
Pate:	9/20/15		Weather:		
ampling Method:	Ponar		Crew:	PJD, AMB, JEM	
GRABI	DATA	Location ID:	155-2	and the second s	Position Number: 2
Latitude/Northing (M: (ele5	444. 8		Longitude/Eastin	ng (X): 586305.1
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1240	3.5	(0) 4"	7	5g broket
2	1290			1	
3	1292				
4	1294				
5	1256	V	V	1	1
	1				
			-		
SAMPLE	DATA	Sample ID:	MIA		
	4		NOS TERM	Durandhlas	MYC/CEM Other
nalyses needed b	Sediment col		VOC TEPH Sediment odor	-Purgeables	AVS/SEM Other: Comments: (i.e. redox potential
obble	brown surface	22	none	H ₂ S	discontinuity, organic matter, wood debris, shell fragments, sheen,
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
and (F M C)	brown		moderate	other:	shills
ilt	gray		strong		21411
lay	black				
	JD		- Q	Arcadie	Date 9/2011 Time 1700
miquisited by	1		Company		Date 9/21/15 Time 170 Date 9/21/15 Time 07/5
cepted By	311		Company	ARCADIS	Date_ 9/21/15_Time_ 07/5

Project Name: N.B	9/20/1	<	Project no.: Weather:	Overcas	+
ampling Method:	Ponar		Crew:	PJD, AMB, JEN	М
GRAB	DATA	Location ID:	155-3	Vesse	el Position Number: 3
Latitude/Northing	(Y): 665	431.1		Longitude/Easti	ng (X): 586305.3
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1258	3.4	SiAYOT)	Y	59 brulet
2	1300				
3	1302				
4	1304				
5	1306	V	V	V	V
	1				
		T== 0	-11-		
SAMPLE	120000	Sample ID:	NA		
Analyses needed b				Purgeables	AVS/SEM Other:
Sediment type	Sediment col		Sediment odor	11 E	Comments: (i.e. redox potential discontinuity, organic matter, wood
cobble	brown surface		none	H₂S	debris, shell fragments, sheen, fauna, field duplicate, etc.)
gravel	drab olive		slight	petroleum other:	1 11
sand (F M C)			strong	outer-	Shells
illt	gray		Silving		
clay	Didon				alula a
elinquished ByF	JD		Company	Arcadis	Date 9/2/15 Time 1700 Date 9/2//5 Time 07/5
	11		Company	ARCANIS	221/2

Project Name: N.B.	S.A SQT/Po	rewater	Project no.:	B0009989.004	4
ate:	9/20/19	<u> </u>	Weather:	Olercas	
ampling Method:	Ponar		Crew:	PJD, AMB, JEM	
GRAB I	DATA	Location ID:	155-6	Vesse	Position Number:
Latitude/Northing (Y): 665	419.3		Longitude/Eastir	19 (X): 586309-3
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1308	3.2	(000 4	4	5g bucket
2	1310				1
3	1312				
4	1314				
5	1316	V	1	V	1
SAMPLE	DATA	Sample ID:	1/1		
nalyses needed be	efore homogenia	zation (circle):	VOC TEPH-	Purgeables	AVS/SEM Other:
Sediment type cobble grayel sand (F M) C)	Sediment co brown surface drab olive brown gray	lor	Sediment odor none slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
clay	black		1		abole to
elinquished By P.	JD		Company _	Arcadis	Date 9 100 15 Time 1700
cepted By	211		Company	ARCAICIS .	Date 1/15 Time 075

Project Name: N.B Date: Sampling Method:	4/20/1		Project no.: Weather: Crew:	0009989.004 01065- PJD, AMB, JEM	
GRAB DATA		Location ID:	155 5	Vesse	Position Number: 5
Latitude/Northing	(M): 665A	06.4	177	Longitude/Easti	ng (X): 586316.6
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1318	3.3	(BC4"	Y	5g breke
2	1320			1	3 1
3	1322				
4	1324				
5	1326		1	1	W
SAMPLE		Sample ID:	NA VOC TEPH	-Purgeables	AVS/SEM Other:
Analyses needed be Sediment type cobble gravel sand (F M C) silt clay	Sediment col brown surface drab olive brown gray	or	Sediment odor none slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
	24.		Company	Arcadis ARCANIS	Date 9/21/15 Time 170 D

Location ID: 665449 . 2 Deb Sample Bottom depth 328 3.3 331 334 336 V	15056		
Location ID: 645449 . 2 10 Sample Bottom depth 328 3.3 330 331	Penetration Depth (cm)	Vessel Longitude/Eastin Acceptable	Position Number: 6 g (X): 586314.4 Comments:
665449.2 b Sample Bottom depth 328 3.3 330	Penetration Depth (cm)	Longitude/Eastin	g (X): 586314.4 Comments:
328 3.3 331	Penetration Depth (cm)	Acceptable	Comments:
328 3.3 331	Penetration Depth (cm)	Acceptable	Comments:
330 331 334	41	¥ I	54 broket
331 334			
334	1 1 1		
		,	
	V	V	1
	1.14		
		Puraoables	AVS/SEM Other.
diment color wn surface b olive wn	Sediment odor oone slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
di w	on surface olive	ment color n surface olive slight moderate strong	ment color m surface olive slight moderate strong Sediment odor H ₂ S slight petroleum moderate strong

ampling Method:			Crew:	PJD, AMB, JEM	
GRAB DATA		Location ID:	15507	Vesse	Position Number:
_atitude/Northing	(Y): 1065	458-5	0	Longitude/Eastir	19 (X): 586334.1
Grab Sample Number	Grab Sample Time	Bottom	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1338	3.2	411	Y	Sy brucet
2	1340				
3	1342				
4	1344				
5	1346	V	1	V	1
			17		
SAMPLE	DATA	Sample ID:	NIA		
nalyses needed b		7	10	-Purgeables	AVS/SEM Other:
Sediment type	Sediment col	or	Sediment odor	H ₂ S	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen,
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
and (F M)C)	brown		moderate	other:	Shells
lt	gray		strong		
ay	DIACK				Date 9/20/15 Time 1200

	Ponar			B0009989.004 WYCUS F PJD, AMB, JEM	
GRAB DATA Location ID:			155-8	Vesse	Position Number: 8
Latitude/Northing (n: 665	467.2		Longitude/Eastin	ng (X): 5863433
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	13:48	3.2	4"	4	5g broket
2	1350				
3	1352				
4	1354				
5	V1356	1	V	14	V
USSELW2			1.0		
SAMPLE		Sample ID: N	/P	Duranahlan	AVE/SEM Other
Analyses needed be Sediment type cobble gravel sand (F-M, C) silt	Sediment collabrown surface drab olive brown gray	or	Sediment odor none slight moderate strong	-Purgeables H₂S petroleum other:	AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
Relinquished By P	JD		Company	Arcadis	Date 9/20/17ime 1700
Accepted By 5	tt		Company	ARCANIS	Date 9/1/15 Time 07/15

ite:	1/20/15 Poper		Weather:	٥٧٤ PJD, AMB, ،	IFM
mpling Method:	i oriai		Crew:	T JU, AIVIB,	JLIVI
GRABI	DATA	Location ID:	159-9		essel Position Number: 9
.atitude/Northing (Y): 6654	42:3		Longitude/E	asting (X): 586353.5
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptal grab (Y/	N) Comments:
1	1358	3.21	4"	4	5g broket
2	1460	1			
	1407				
Jl) 4	1404		1	1	
00 5	1406	\vee	V	V	
			-		
				-	
				-	
			-		
SAMPLE	DATA	Sample ID:	NIA		
Analyses needed b	efore homogeniz	ation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
Sediment type	Sediment cold	or	Sediment odor		Comments: (i.e. redox potential
cobble	brown surface		none	H ₂ S	discontinuity, organic matter, wood debris, shell fragments, sheen,
gravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
sand (F M C)	(brown)		moderate	other:	5 60 14
silt	gray		strong		012010
clay	black				
					ale 12
elinquished By_P	JD		Company	Arcadis	Date 9/21/15 Time 1700
	tt			112-1	01.11.

SURFACE SEDIMENT COLLECTION FORM

EPA split for

Project Name:	NBSA 1-17-15		Project no.: Weather:	0W aa	39.0044 It
ampling Method:	Ponal		Crew:	DIVI MAIN	Jen Jen
GRAB D	ATA	Location ID:	156-1	Vesse	el Position Number:
Latitude/Northing (r): 669	967.5		Longitude/East	ing (X): 593367.8
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
l	0930	36.0	le"	Y	Chem-benthic
2	0832	i			benthic
3	0834			1100	bentac
4	0834				Sa bucket.
5	0830	V	V	V	5g breith
SAMPLE	efore homogeni		-	-Purgeaples	BC3SEP-OMISOA, B
Sediment type cobble gravel sand (F M C)	Sediment co brown surface drab olive brown gray		slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
clay elinquished By	Mo		Company		Date 9/17/15 Time 1400
ccepted By	2#		Company	ARCANB	Date 9/17/15 Time 1400

GRAB D	ATA	Location ID:	156-2	Vesse	Position Number: 2	
_atitude/Northing ()	n: (069	982.6		Longitude/Eastin	ng (X): 593 Blo 8.4	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:	
	0840	36.0	6	У	59 bucket	
7-	0342					
3	0844					
4	0846					
+	0843	100		1		
		V	1		1	
			-			
			F			
					-	
	-					
SAMPLE	DATA	Sample ID:	NA			
nalyses needed be	efore homogeniz	ration (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:	
ediment type	Sediment color		Sediment odor		Comments: (i.e. redex potential discontinuity, organic matter, wood	
obble	brown surface		hone	H₂S	debris, shell fragments, sheen, fauna, field duplicate, etc.)	
ravel	drab olive		slight	petroleum		
and (F M C)	brown		moderate	other:		
ilt	gray		strong			
ay	black					

Project Name:	NBSA 2-17-15		Project no.:	BOOVERCAS	7.0044
Date: Sampling Method:	Ponar		Weather: Crew:	PIDIONES	Jem
GRAB I	DATA	Location ID:	156-	3 Vesse	l Position Number: 3
Latitude/Northing (Y): 66996	12.2		Longitude/Easti	ng (X): 593375.6
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
- (0850	36.0	64	4	5g bucket
ı	0852				1
3	0854				
4	0256				
5	035%	+	Ų.		V
	- = 1				
SAMPLE	DATA	Sample ID:	NA		
Analyses needed b	efore homogeniz	ation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
Sediment type cobble gravel sand (F M C)	Sediment coll brown surface drab olive brown gray		slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
Relinquished By	ps0		Company	Arradis	Date 9/17/15 Time 1400
Accepted By	J#		Company	ARCHI)15	Date_1/1///5_Time_14-00

GRAB DATA Location ID: 4 Vessel Position Number: 4 Latitude/Northing (Y): 6 9 4 5 7 Grab Sample Rab Sample Bottom Time depth Penetration Depth (em) Grab VIVI) Comments: 4 Comments: 5 9 3 9 0 9 Comments: 5 9 5 9 0 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	ampling Method:	Ponar		Crew:	Booggg Overcus PIDI dunk	4	
Analyses needed before homogenization (circle): Sediment type Sediment	GRAB			156-4			
Number Time depth Q-D 26.0 C 4 Q-D 3 Q-D						ng (X): 593990-9	
SAMPLE DATA Sample ID: Sample DATA Analyses needed before homogenization (circle): Sediment type Sediment type Sediment type Sobble brown surface brown surface drab olive sight gravel lay Sample ID: VOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity.corg/dic) malete, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)		Grab Sample Time	depth	Depth (cm)	Acceptable grab (Y/N)	Comments:	
SAMPLE DATA Sample ID: Sample DATA Sample ID: VC TEPH-Purgeables Sediment type Sediment toolor brown surface brown surface drab olive brown Gray Gray Storing Gray	1	0900	26.0	Gu	Y	5a brucet	
SAMPLE DATA Sample ID: SAMPLE DATA Sample ID: VOC TEPH-Purgeables Avs/sem Other: Sediment type Sobible brown surface brown surface drab olive grave drab olive gray strong Strong Avs/sem Other: Comments: (i.e. regious potential discontinuity.org folio matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	1						
SAMPLE DATA Sample ID: Analyses needed before homogenization (circle): Sediment type Sobbile brown surface brown surface drab olive grave drab olive gray strong Sample ID: Avs/SEM Other: Comments: (ie. ergox potential discontinuity:org Solic matér, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	3						
SAMPLE DATA Sample ID: Sample DATA Sample ID: VOC TEPH-Purgeables Sediment type Sediment tolor brown surface drab olive sand (F M C) Sample ID: VOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity.org.sqic.matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) Sediment door Gode H ₂ S Sight petroleum moderate other: strong	4					The same of the sa	
SAMPLE DATA Sample ID: Analyses needed before homogenization (circle): Sediment type Sediment type Sobble brown surface drab olive sand (F M C) Gray Gray Strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity.organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	5		1	V	V		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive brown moderate other: gray gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)							
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive brown moderate other: gray gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)							
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive brown moderate other: and (F M C) brown moderate other: gray gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity; organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)		-			-		
Avs/SEM Other: Sediment type Obble Obble ravel and (F M C) Gray Gray Sediment color Sediment odor Avs/SEM Other: Comments: (i.e. redox potential discontinuity; organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) Sediment odor Formation Sediment odor Formation Sediment odor Formation Formatio							
AVS/SEM Other: Sediment type							
Sediment type Sediment color Sediment odor Drown surface Sediment							
Sediment type Sediment color Sediment odor Drown surface Sediment							
Sediment type Sediment color Sediment odor Drown surface Sediment							
Avs/SEM Other: Sediment type Obble Obble ravel and (F M C) Gray Gray Sediment color Sediment odor Avs/SEM Other: Comments: (i.e. redox potential discontinuity; organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) Sediment odor Formation Sediment odor Formation Sediment odor Formation Formatio							
AVS/SEM Other: Sediment type	_	+					
Avs/SEM Other: Sediment type Obble Obble ravel and (F M C) Gray Gray Sediment color Sediment odor Avs/SEM Other: Comments: (i.e. redox potential discontinuity; organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) Sediment odor Formation Sediment odor Formation Sediment odor Formation Formatio							
Avs/SEM Other: Sediment type Obble Obble ravel and (F M C) Gray Gray Sediment color Sediment odor Avs/SEM Other: Comments: (i.e. redox potential discontinuity; organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) Sediment odor Formation Sediment odor Formation Sediment odor Formation Formatio							
Avs/SEM Other: Sediment type Obble Obble ravel and (F M C) Gray Gray Sediment color Sediment odor Avs/SEM Other: Comments: (i.e. redox potential discontinuity; organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) Sediment odor Formation Sediment odor Formation Sediment odor Formation Formatio							
Avs/SEM Other: Sediment type Obble Obble ravel and (F M C) Gray Gray Sediment color Sediment odor Avs/SEM Other: Comments: (i.e. redox potential discontinuity; organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) Sediment odor Formation Sediment odor Formation Sediment odor Formation Formatio							
Avs/SEM Other: Sediment type Obble Obble ravel and (F M C) Gray Gray Sediment color Sediment odor Avs/SEM Other: Comments: (i.e. redox potential discontinuity; organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) Sediment odor Formation Sediment odor Formation Sediment odor Formation Formatio		To the					
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type brown surface brown surface drab olive brown moderate other: and (F M C) brown moderate other: gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity; organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)							
Avs/SEM Other: Sediment type Obble Obble ravel and (F M C) Gray Gray Sediment color Sediment odor Avs/SEM Other: Comments: (i.e. redox potential discontinuity; organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) Sediment odor Formation Sediment odor Formation Sediment odor Formation Formatio							
Sediment type obble brown surface drab olive and (F M C) gray lay Sediment odor Sediment odor Figure H2S Figure H2S Fi	SAMPLE	DATA	Sample ID:	NA			
brown surface drab olive and (F M C) gray gray brown surface drab olive brown moderate strong discontinuity organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) discontinuity organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	nalyses needed b	efore homogeni	zation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:	
brown surface drab olive slight petroleum fauna, field duplicate, etc.) fravel and (F M C) brown moderate other: gray strong	Sediment type	Sediment co	lor	Sediment odor			
drab olive slight petroleum fauna, field duplicate, etc.) and (F M C) brown moderate other: gray strong	obble	brown surface	e	Rone	H₂S	debris, shell fragments, sheen,	
and (F M C) brown moderate other: gray strong	ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)	
gray strong		brown		moderate			
lay black	~	gray		strong			
51.0		black					
	-,	MA			A 112	alvalia a X	

GRAB	DATA	Location ID:	151,-5	Vessel	Position Number: 5
atitude/Northing	4	4 /	0	Longitude/Eastir	19 (X): 593906.9
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
i	0910	240	64	Y	5g bucket
1	0912				
3	0914				
4	0916				
5	09193	1	V	1	
	1/2-2-2				
	-	-			-
SAMPLI	EDATA	Sample ID:	NA		
nalyses needed	before homogeniz	zation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
ediment type	Sediment collabrown surface		Sediment odor	H₂S	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
ravel and (FMC)	brown		slight moderate	petroleum other:	
D	gray		strong		

roject Name:	NBSA	_	Project no.:	Overcast	9.0044	
te:	9-17-1 PONAR	5	Weather:	PID, AMB,	10 100	
npling Method:	POWAR		Crew:	FINIKINI	JOM	
GRAB D	ATA	Location ID:	156-6	Vesse	el Position Number:	
atitude/Northing (n: lele9	939.6		Longitude/East	ing (X): 593 8 42.3	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:	
1	0920	2/2	("	Y	59 buclet	
2	0922	1	Î			
3	12974					
4	0926					
6	0928	1	V	V	1	
	010%	•				
		-				
	10					
	7 - V				el le Si de la companya de la compan	
SAMPLE	DATA	Sample ID:	NA			
nalyses needed be		7		-Purgeables	AVS/SEM Other:	
ediment type	Sediment col		Sediment odor	-Fulgeables		
obble	brown surface		nene H ₂ S		Comments: (i.e. redox potential discontinuity, organic matter, wood	
avel	drab olive		slight	petroleum	debris, shell fragments, sheen, fauna, field duplicate, etc.)	
and (F M C)	brown		moderate	other:		
1	gray		strong	ouiei.		
<u>lr)</u>	black		Strong			
ay	United States			_	1	
linquished By	(NN)		Company	Arredis	Date 917/15 Time 1400	
iquiarieu by	.1		Company		Date 9/17/15 Time 1400	
epted By	211		Company	ARCADIS	Date 9/1///5 Time 1400	

iampling Method:	PUNAR		Crew:	MOLAMBI	jev
GRAB	DATA	Location ID:	156-7	Vesse	Position Number: 7
Latitude/Northing	(Y): 6699			Longitude/Eastir	ng (X): 593929.1
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
	6930	23.0	6"	4	5g broket
2	0932		1		
3	0934				
4	0934				
5	0939	V	V	V	1
SAMPLE Analyses needed b		Sample ID:	NA voc teph	-Purgeables	AVS/SEM Other:
Sediment type cobble gravel sand (F M C)	Sediment coll brown surface drab olive brown gray	or	Sediment odor (vone) slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity of ganic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)

ate:	9-16-15 PONAR		Project no.: Weather: Crew:	210 1160	
GRAB	DATA	Location ID:	157-1	Vesse	Position Number:
_atitude/Northing	Y): 6796	83.2		Longitude/Eastin	ng (X): 593864.8
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
\ \	1276	10,12	Ced	Y	Bhom-benthic
2	1233	1			Den Mc
3	1240				handrice.
4	1242				59 byclet
5	1244	N	./	1	54 billet
- 2	1643	1	V		ng avoice
SAMPLE		Sample ID:		-CHMIST,	NBUSSED-COM 157, A.E
nalyses needed b	100000000000000000000000000000000000000			l-Purgeables	AVS/SEM Other:
Sediment type	Sediment col		Sediment odor	11.0	Comments: (i.e. redox potential discontinuity, organic matter, wood
obble	brown surface	Y.	none	H₂S notroloum	debris, shell fragments, sheen, fauna, field duplicate, etc.)
and (F M C)	drab olive		slight	petroleum other:	
	gray		strong	Julion.	
lay	black				
	MA		-		alul um

GRAB DA atitude/Northing (Y) Grab Sample Number	1 44	Location ID:	Penetration Depth (cm)		Position Number: 2 ng (X): 5932129 Comments:
Grab Sample Number	Grab Sample Time (U46	Bottom depth	Depth (cm)	Acceptable grab (Y/N)	Comments:
Number	1746 1748	depth	Depth (cm)	grab (Y/N)	1 1 1 1
1 2 4	MA8	10.4	(o"	y	Burket
2246			7-1-		0-1-0
34	1290				
4	1292				
5	12016				
	1657	V	V	V	1
		7 7 1			
1					
SAMPLE DA	ATA	Sample ID:	AV		
alyses needed before	ore homogeniz	ation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
ediment type	Sediment col	or	Sediment odor		Comments: (i.e. redex potential discontinuity, essanic matter, wood
bble	brown surface		none	H₂S	debris shell fragments, sheen, fauna, field duplicate, etc.)
avel	drab olive		slight	petroleum	lauria, nela dupircate, etc.)
nd (F M C)	brown		moderate	other:	
	gray		strong		
ау	Μ Δ			7	Date 9/16/15 Time 1600

ampling Method:			Crew:			
GRAB	DATA	Location ID:	157.3		Position Number: 3	
_atitude/Northing	2111	09.9			ng (X): 5932764	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:	
	1256	10.1	(e ^u	4	5g brutch	
2	1258				- N 10-1	
3	1300					
4	1302					
4	1304	V	V		V	
SAMPLE	DATA	Sample ID:	NA			
	efore homogeniz		-	Purgeables	AVS/SEM Other:	
ediment type	Sediment col		Sediment odor	rorgoubles	Comments: (i.e. redox potential	
obble	brown surface		none H₂S		discontinuity, organic matter, wood debris, shell fragments, sheen,	
avel	drab olive		slight	petroleum	fauna, field duplicate, etc.)	
ind (FM C)	TOOWD		moderate	other:		
D	gray		strong			
зу	black					

Project Name:	N.B. S	i.A	Project no.:		99 0044	
Date:	9-16-1	S	Weather:	SUNNY	V-1.4	
Sampling Method:	PONT	n-	Crew:	10, AM	3, SAM	
GRAB	DATA	Location ID:	154-	4 Vesse	Position Number: 4	
Latitude/Northing ((Y): 67/	1720.2		Longitude/Easti	ng (X): 593284.3	
Grab Sample	Grab Sample	Bottom	Penetration	Acceptable	777	
Number	(306	depth 10.0	Depth (cm)	grab (Y/N)	54 bruet	
1-	1308	1	9	1	109 000101	
7.	1310					
14	13/2				+++	
7	-			1		
,	1314	V	W	V	*	
	-					
				-		
				1		
		1				
		1				
		5 1				
	1					
	+					
SAMPLE	DATA	Sample ID:				
Analyses needed b			VOC TEPH	I-Purgeables	AVS/SEM Other:	
Sediment type	Sediment co		Sediment odor	-Purgeables	Value of Start Car Avenue and Car	
cobble	brown surface		mone H ₂ S		Comments: (i.e. redox potential discontinuity, organic matter, wood	
gravel	drab olive		slight	petroleum	debris shell fragments, sheen, fauna, field duplicate, etc.)	
(Sand (E-M C)	prown		moderate	other:		
silt	gray		strong	1,167		
clay	black					
	ma				aludia 1/12	
Relinquished By	(11)		Company	Magas	Date 9/16/15 Time 1600	
	711			ARCADIS	9/16/15 1/00	
Accepted By			Company	711 - 1111)	DateTime	

r roject rearre.	9-16-16		Project no.:	Suny	89,0099
Date: Sampling Method:	Contra		Weather: Crew:	PJO, AN	IB, JEM
GRAB DA	TA	Location ID:	197-5	Vesse	l Position Number: 5
Latitude/Northing (Y)	: 624	651.5		Longitude/Eastin	ng (X): 593255.9
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
	1316	9.8	64	4	to a breket
2	1318				
3	1320				
4	1322				
5	132A	V	V	V	1
SAMPLE D	ATA	Sample ID:	NA		
Analyses needed before	ore homogeniz	ation (circle):	VOC TEPH	Purgeables	AVS/SEM Other:
Sediment type cobble	Sediment coll brown surface		Sediment odor	H₂S	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen,
gravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
sand (F M C)	brown		moderate	other:	
SIL	gray		strong		
clay	black				
Relinquished By	130		Company	Arcadis	Date 9/16/15 (600
Accepted By	itt		Company	ARCADIS	Date 9/16/15 Time 1600

roject Name: 7	16-15	NBSA	Project no.: Weather:	SMALL	39.0044
ampling Method:	Danas		Crew:	PSI ANGL	Say
				1-47-7	,
GRAB I	DATA	Location ID:		Vesse	Position Number: 6
atitude/Northing ((21)			Longitude/Eastin	ng (X): 593244.9
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
	1326	9.4	6"	A	5g bucket
2	1328	1		(
3	1300				
4	1370				
5	1224			*	
	1771	- 4	1	7	W
	-				
				1-	
	1				
	1				
			1		
	+		+	-	
	-				
	1				
			+		
SAMPLE	DATA	Cample ID:	0.0		
	316975	Sample ID:	NA		Total Control of the
nalyses needed b				H-Purgeables	AVS/SEM Other:
ediment type	Sediment col		Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood
obble	brown surface)	none	H ₂ S	debris, shell fragments, sheen, fauna, field duplicate, etc.)
ravel	drab olive		slight	petroleum	rauria, rielo dupricate, etc.)
and (F) M C)	brown		moderate	other:	
D	gray		strong		
ay	black				
	0			10 1-	Date_ 9/16/15 ime_ 1600
inquished By	1		Company	Arradis	Date 9/16/15 Time 1600

roject Name:	9-(6-1	5	Project no.: Weather:	C	
ampling Method:	Poner		Crew:	10. A 1/11	G Jam
GRAB	DATA	Location ID:	157-7	Vesse	Position Number: 1
atitude/Northing	(Y): (074	693.6		Longitude/Eastin	ng (X): 593 228.6
Grab Sample	Grab Sample	Bottom	Penetration	Acceptable	
Number	132(p	depth Q 7	Depth (cm)	grab (Y/N)	Comments:
2	1338	1.0	0	1	5y bucket
	101				
3	154.0	V	*		
	11.				1 1
			-		-
			A		
SAMPLE	EDATA	Sample ID:	NA		
nalyses needed	before homogeniz	ation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
Sediment type	Sediment coll brown surface		Sediment odor	W.C.	Comments: (i.e. redox potential discontinuity, organic matter, wood
gravel	drab olive		slight	H ₂ S petroleum	debris, shell fragments, sheen, fauna, field duplicate, etc.)
and (E M C)	corown		moderate	other:	
	gray		strong		
alay	black		+ 1 -		

MUNERO TO SED AS PEP EPA

Title: SQT and Porewater Sampling and Analysis
Quality Assurance Project Plan
Revision Number: 2
Revision Date: August 2015

roject Name: N.B.	9/24/15	prewater	Project no.: Weather:	B0009989.004	
	Ponar			JD, AMB, JEM	1
GRABI	DATA	Location ID:	193-1	Vesse	Position Number: 1 49,9
Latitude/Northing (Y): 47	5449-5	434.1	Longitude/Eastin	ng (X): 595946-4
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	6730	12.2	48"	Y	Chem. benforce
2	0732	1	1		benthic
3	V734			T.	burnic
4	0730				5y Noket
5	0738	1/		1	JJ
168-2		75423.9	6) 595	196.9	
1	0740	12.2	411	4	5g brilet
2	0792	1			1 Volte
3	0744				
4	0746				
+	0748		V	1	V
158-3	1	15432.7	(8)	196010.4	F
1	10750	11.6	4	4	5g larget
2	0712	(79,
3	0704	5-1			
4	0756				
5	07 18		V	1	1
SAMPLE	-			TB CHEWY	M503 560 Com Ag B
nalyses needed be				urgeables	AVS/SEM Other:
ediment type	Sediment col	1	Sediment odor	u.c	Comments: (i.e. redox potential discontinuity, organic matter, wood
obble avel	brown surface drab olive		none	H₂S petroleum	debris, shell fragments, sheen, fauna, field duplicate, etc.)
nd (FM C)	brown		moderate	other:	
	gray	1	strong	A. C.	Stells
ay	black		- V-12M		Or .

Accepted By

ARCADIS Date 9/24/15 Time 1210

GRAB I	DATA	Location ID:	158-4	Vesse	Position Number:
Latitude/Northing (Y): 67542	6.1	= =====	Longitude/Eastin	ng (X): 596024.9
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	0800	11.6	Hu	41	Sylvaket
2	0802	- (0
3	0804				
4	0806				
5	0808	V		V	J
158-5	N) (07	5420.5	() 596 t	536,9	
	0810	11-6	49	Y	5glarcket
7	0812				
3	0814				
4	0816				
5	0818	\checkmark		V	11.4
158-6	N)674	5418.9	E) 5960	18.4	99 bocket
	0920	11.4	44	10	1
2	0322	1	1	V	Y
3	0324	M)			
	,	1			
			.11.		
SAMPLE		T 4-1 0 0 0 0 0	NIA		
nalyses needed be				Purgeables	AVS/SEM Other:
ediment type	Sediment cold	or .	Sediment odor	H₂S	Comments: (i.e. redox potential discontinuity, organic matter, wood
ravel	drab olive		\smile	petroleum	debris, shell fragments, sheen, fauna, field duplicate, etc.)
and F M C)	brown		moderate	other:	< 015
5	gray		strong		John
iy	black				

GRAB I	DATA	Location ID:	159-1	Vesse	I Position Number:
Latitude/Northing (Y):			Longitude/Eastin	ng (X):
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Çomments:
1	0930	37.1	14	4	chem- Den thic
2	0932	1	1		benthic
3	0934				benth K.
4	0936				Sa mall
5_	1928	1	1	-	
159-2	N) (+	76933.	7 (E)	595930.	6
	0940	37.1	1	1	
2	0942				
3	0944				
4	1046		1/		
5	0949	V	V	V	W
159-3	W) (190	936.4	E)59	5909.7	The state of the state of
1	0950	35	64	4	59 bullt
2	1952				11
3	6954				
4	0956				
4	0958	V	1	V	
1	1000				
SAMPLE	DATA	Sample ID: N	BI3 CHON	1500 159	
nalyses needed be	fore homogeniza	ation (circle):	VOC TEPH	Purgeables	AVS/SEM Other:
ediment type	Sediment cold	or	Sediment odor	70.4	Comments: (i.e. redox potential discontinuity, organic matter, wood
bble	brown surface		none	H₂S natraloum	debris, shell fragments, sheen, fauna, field duplicate, etc.)
avel M C)	drab olive		slight	petroleum other:	3333503303503050
SMC	gray		strong	onion.	
y	black		V. 200. 20		
	1				Date 92415 Time 400 10

ampling Method:	Ponar		Crew:	PJD, AMB, JEI	М	
GRAB I	DATA	Location ID:	159-4	Vess	el Position N	umber: 4
Latitude/Northing (v): 6769	40.1		Longitude/East	ing (X): 5	958956
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)		Comments:
1	1000	32-6	6	Y	59	mount
2	1002				0	
3	1004					
4	(006					1
5	1008	V	W.	V		V
159-5	T N)	G7693		59587	3.1	
	1010	31.0	64	y	159	
_ Z	1012				10	
2	1014					
4	1016	1/			1	
5	1019	V	V	2	Y	
150-6	N/G			95924.1		
	1020	34.0	Ç"	У		
2	1022					
3	1024				11	
4_	1026				11	
-	1028	A	V	V	V	
			MA			
SAMPLE I		Sample ID:	VOOD PEPA	Purgeables	AVS/SE	M Other:
ediment type	Sediment colo	,	Sediment odor	H ₂ S	Comment discontinu debris, she	s: (i.e. redox potential ty, organic matter, wood ell fragments, sheen,
avel and (F M C)	drab olive		slight moderate	petroleum other:	fauna, field	duplicate, etc.)
ay	black		strong			
nquished ByPJ	D		Company _	Arcadis	Date 9	145 _{Time} 1210

GRABI	DATA	Location ID:	159-7	Vesse	Position Number:
atitude/Northing (v): 6769	06.7	1,1,	Longitude/Eastin	ng (X): 59592/16
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1030	36.8	69	V	59_
2	1032				0
3	1034				
4	1036				
5	1030	V	V	V	V
159-	B N)	67692	3.1 6)	595945	2
	1040	27.6	6	Y	59
1	1042				1
7	1044				
4	1046			1,	
4	(043	1. 844	- 1		V
159-9	N) le			5942.5	
	1050	37.0	64	7	I G
2	1052				10
7	1054				1
4_	1056				1
- 5	(059)	V	V	V	4
			16		
SAMPLE I		Sample ID:	VOC TEPH-I	Purgeables	AVS/SEM Other:
ediment type bble avel	Sediment cold brown surface drab olive	or	Sediment odor none slight	H ₂ S petroleum	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
nd (F M C)	gray black		moderate strong	other:	

FILLURAS TO SOPPORT SEOS

Project Name: N.B.	S.A SQT/Po	rewater	Project no.:	B00099	89.004	4 /
Date:	28/15		Weather:	New	cas	1
Sampling Method:	Ponar			PJD, AM		
GRAB I		Location ID: (17075)		2/1/0	Vessel	Position Number:
Latitude/Northing (75/12	Gro in	Longitud		19 (X): 595754.5
Grab Sample Number	Grab Sample Time		Penetration Depth (cm)	Accep	otable (Y/N)	Comments:
1	0800	4.2	40	y y		drem- ben the
2	0802	1,6				bentuk
3	0804					benfic,
4	0806					59 broket
5	0000	4	V	1		1/
160-2		73961.6	0	E)	595	741.2
	0810	3.9	4"	1	1	Sy bucket
ì	0812		1			1
3	0814					
4	0816				,	
5	0918	V	V	V		1
	0820					
160-3	N) (78968,		E) 5	957	30.9
	0320	3.8	4"	14.		5 glovelet
1	0922	1		1		01
3	0827					
4	0326					
5	0880	V	V	V		V
SAMPLE	DATA	Sample ID:	WB13 SEO (CHEM (L	0 1	1803 SEO CHM HIBIC
Analyses needed be	fore homogeniz		-5	-Purgeables		AVS/SEM Other:
Sediment type	Sediment cold		Sediment odor			Comments: (i.e. redox potential
cobble	brown surface		none	H ₂ S		discontinuity, organic matter, wood debris, shell fragments, sheen,
ravel	drab olive		slight	petroleum		fauna, field duplicate, etc.)
and (FM C)	brown		moderate	other:		nona. N/ 6
	gray		strong			Organics
lay)	black					
linquished ByPJ	D		Company	Arcadis		Date 9/28/1/ Time 1700
miquisticu by	1				_	Q/ag//c
ccepted By	J'		Company	ARCADI"	C	Date 9/29/15 Time 07/5

GRAB D	ATA	Location ID:	160-4	Vesse	el Position Number: 4
_atitude/Northing (Y	1: 473	947.5	cy l	Longitude/Easti	ng (X): 5957(5.8
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	0830	4.0	411	Y	Su large+
2	0832				7
3	0834				
4	0836		1		
5	0938	V	W .	V	
160-5	N)	62898	217 €	5957031	1
1	0460	3.9	44	Y	Sy bucket
2	0342		1		0 1
3	0844				
4	0 346				
5	0346	V	-	+ Y	-
			-77		
SAMPLE D	ATA	Sample ID:	NA		
alyses needed bef	fore homogeniza	ation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
diment type	Sediment cold	r	Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood
bble	brown surface	4	none	H₂S	debris, shell fragments, sheen, fauna, field duplicate, etc.)
avel	drab olive		slight	petroleum	rauna, field duplicate, etc.)
nd (FM C)	brown	4	moderate	other:	Organic 5
≥ .	gray	111	strong		
y)	black				

ampling Method:	PONAR		Weather: Crew:	010 AMB	JEM	
GRAB D	ATA	Location ID:	101-1	Vessel Position Number:		
Latitude/Northing ()	n: 6808	311-5		Longitude/Eastin	g(X): 596869-9	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:	
1	0912	6.5	6"	Y	Chem-BENTHIL	
2	0914	1	7		BENTHIL	
7	0916				BENTHIL	
4	09.18				59 bucket	
5	0920	1		V	59 bucket	
			E 1			
	1					
	-					
SAMPLE	DATA	Sample ID:	202(CO -014)	MILL, NROS	ICED COMMININ PC	
			6	1		
nalyses needed be	74 77 7 7 7 7		V. 71	-Purgeables	Other:	
ediment type	Sediment co		Sediment odor	11.0	Comments: (i.e. redox potential discontinuity, organic matter, wood	
obble	brown surfac	е	none	H₂S	debris, shell fragments, sheen, fauna, field duplicate, etc.)	
avel	drab olive		slight	petroleum	plastic bags	
and (F MC)	brown		moderate	other:	1	
D	gray		strong			
	black					

mpling Method:		1	1/1 7	1-9/1	al Decilion Number 7
GRAB D		Location ID:	161.2		el Position Number: 2
atitude/Northing () Grab Sample	Grab Sample	0814. 4 Bottom	Penetration	Longitude/East Acceptable	100-1
Number	Time	depth	Depth (cm)	grab (Y/N)	Comments:
l	0922	6.8	6"	4	by build t
2	0924		T.		
3	0926				
A	0978	-	1		11 - 13
-	0930		1/	1	1
	1010	-	V		4
	-				
			-		
	+				
					\$
					8.
SAMPLE	DATA	Sample ID:	NA		20
nalyses needed be	efore homogeniz	ration (circle):		-Purgeables	AVS/SEM Other:
ediment type	Sediment col		Sediment odor		Comments: (i.e. redox potential
obble	brown surface		none	H ₂ S	discontinuity, organic matter, wood debris, shell fragments, sheen,
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
and (F M C)	brown		moderate	other:	plastic bags
10	gray		strong	-17779101	7 1000 1000 3
	black				
lay	2 2			0.	Date 9/15/15 Time 1500

on in			11 . 1	PSO, AMB	Position Number: 3
GRAB I		Location ID:	161-3	Longitude/Eastir	
_atitude/Northing (Grab Sample	Grab Sample	Bottom	Penetration	Acceptable	
Number	Time	depth	Depth (cm)	grab (Y/N)	Comments:
1	0932	6.7	le	1	5g byclek
2	0959				
3	0970				
4	0778	0	1	1	1
5	0940	Ol.	V	V	
	1000				
SAMPLE	DATA	Sample ID:			
nalyses needed b		Take Property	VOC TEPH	Duranahlas	AVS/SEM Other:
Sediment type	Sediment col		Sediment odor	-Purgeables	Comments: (i.e. redox potential
obble	brown surface			H ₂ S	discontinuity, organic matter wood debris, shell fragments, sheen,
ravel	drab olive		pone slight	petroleum	fauna, field duplicate, etc.)
and (F MC)	brown		moderate	other:	plastic bags
	gray		strong		1
lay	black				
	120			A 1-1	Date 9/15/15 Time 450

ampling Method:	PONAR		Crew:	OSD, AMB	() GIV
GRAB I	DATA	Location ID:	161-4	Vessel	Position Number: 4
Latitude/Northing (Longitude/Eastin	19 (X): 696879.9
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
	0942	6.0	625	Y	5g briket
7	0944			1	
3	0946				
4	0948				
5	0950	1	V	V	4
				-	
					111
	/				
SAMPLE	DATA	Sample ID:	JA		
Analyses needed b	efore homogeniz	ation (circle):	VOC TEPH	l-Purgeables	AVS/SEM Other:
Sediment type	Sediment col	or	Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood
cobble	brown surface		hone H ₂ S		debris, shell fragments, sheen, fauna, field duplicate, etc.)
gravel	drab olive		slight	petroleum	
sand (F M G)	browa		moderate	other:	plastic
Silt	gray		strong		
clay	black				

Date:	POWAR		Weather:	OTD. AMB	, JEM	
sampling Method:	NI ISSUE		Crew:	177	1	
GRAB		Location ID:	161-5	22.22	I Position Number: 5	
Latitude/Northing		30840.2		Longitude/Eastin	ng (X): 596892.0	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:	
	0952	6	6	A	5g brilet	
1	0954					
3	0956					
4	0958					
5	1,000	1		1		
N .	1,000	-	-	-	-	
	-			-		
	-	-				
				1		
SAMPLE	DATA	Sample ID:	NA			
Analyses needed l	before homogeni	zation (circle):	VOC TEPH	I-Purgeables	AVS/SEM Other:	
Sediment type	Sediment co	lor	Sediment odor		Comments: (i.e. redox potential	
cobble	brown surface	е	Sone	H ₂ S	discontinuity organic matter, wood debris, shell fragments, sheen,	
gravel	drab olive		slight petroleum		fauna, field duplicate, etc.)	
sand (F ME)	brown		moderate	other:	alasti;	
				Julei.	plasti	
SHE .	gray		strong			
clay	black					
	120			Accorded	Date 9/15/15 Time 150	
elinquished By	191)		Company	M. CNG17	Date // / Drime +0000	

ampling Method:	FOV INT	-	Crew:	PO AMB	1381-1	
GRAB	DATA	Location ID:	161-6		sel Position Number: 6	
Latitude/Northing (Y): 680	848.8		Longitude/Eas	ting (X): 596905.1	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:	
· ·	1002	6.0	611	Y	5g bycket	
2	1004				1	
3	1006					
4	1008			1		
9	1010	V	V	1	V	
					100	
	17.					
SAMPLE	DATA	Sample ID:	A)/\			
analyses needed b			VOC TEPH	I-Purgeables	AVS/SEM Other:	
Sediment type	Sediment col		Sediment odor H ₂ S slight petroleum		Comments: (i.e. redox potential	
cobble	brown surface				discontinuity aganic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	
ravel	drab olive					
and (F MC)	MOWD		moderate	other:	plasti	
	gray		strong		7.	
ay	black					

	9-15-15 PONTE		Weather:	SUNNY	4B, 1CM	
ampling Method:	PONTE		Crew:	POUN	1201	
GRAB I	DATA	Location ID:	141-7	Vessel	Position Number:	
Latitude/Northing (000			Longitude/Eastin	g(X): 596876.1	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:	
	1012	6-1	100	Y	5a bucket	
7	1014		l i		1	
3	Oile					
4	1018		1			
5	1020	V	1	J	V	
				-		
					100	
SAMPLE	DATA	Sample ID:	NA			
Analyses needed b	efore homogeniz	ration (circle):	VOC TEPH	I-Purgeables	AVS/SEM Other:	
Sediment type	Sediment col	or	Sediment odor		Comments: (i.e. redox potential	
cobble	brown surface		utone H₂S		discontinuity organic matter, wood debris, shell fragments, sheen,	
gravel	drab olive		slight petroleum		fauna, field duplicate, etc.)	
sand (F_MC)	brown		moderate	other:	plastic bys	
III.	gray		strong			
clay	black					

Latitude/Northing (Y): L80813.2 Grab Sample Number Time depth Penetration Depth (cm) Acceptable grab (Y/N) Commoderate other: Sample Data L024 L		
SAMPLE DATA Sample Doble brown surface drab olive sand (F MC): Latitude/Northing (Y): L80813.2 Longitude/Easting (X): S9(888) Penetration Depth (cm) Depth (cm) Depth (cm) Penetration Depth (yin) Sq bxck t Commit Acceptable grab (Y/N) Sq bxck t Commit Commit Acceptable grab (Y/N) Sq bxck t Commit Commit Commit Grab (Ic. radox discontinuit), againtendent grab (Ic.	61-8	
Grab Sample Number Time depth Grab Sample 4		
SAMPLE DATA Sample ID: Sample Data Avs/SEM Other: Comments: (Le gaday discontinuity organice debris, shell fragments fauna, field duplicate, elements of the comments of		
SAMPLE DATA Sample ID: Sample Data Sediment type Sodiment type Sobble		
SAMPLE DATA Sample ID: Sample ID: VOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox discontinuity, organiter) debris, shell fragments fauna, field duplicate, expand (F M/C) Sediment (F M/C) Sediment odor Sediment odo		
SAMPLE DATA Sample ID: Analyses needed before homogenization (circle): Sediment type Sediment color brown surface drab olive silight petroleum moderate other: Avs/SEM Other: Comments: (i.e. redox discontinuity, organicm debris, shell fragments fauna, field duplicate, e		
SAMPLE DATA Sample ID: Analyses needed before homogenization (circle): Sediment type Sediment type Sobble brown surface drab olive slight moderate other: Avs/SEM Other: Comments: (i.e. redox discontinuity, organicm debris, shell fragments fauna, field duplicate, e		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor Comments: (i.e. redox discontinuity, organicm debris, shell fragments fauna, field duplicate, exand (F M C) Frown moderate other:		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface brown surface drab olive slight petroleum and (F M C) brown moderate other: AVS/SEM Other: Comments: (i.e. redox discontinuity, organicm debris, shell fragments fauna, field duplicate, etc.)		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor brown surface brown surface drab olive slight petroleum moderate other: ANS/SEM Other: Comments: (i.e. redox discontinuity, organicm debris, shell fragments fauna, field duplicate, etc.)		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface brown surface drab olive slight petroleum and (F M C) brown moderate other: AVS/SEM Other: Comments: (i.e. redox discontinuity, organicm debris, shell fragments fauna, field duplicate, etc.)		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor brown surface brown surface drab olive slight petroleum moderate other: ANS/SEM Other: Comments: (i.e. redox discontinuity, organicm debris, shell fragments fauna, field duplicate, etc.)		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor brown surface brown surface drab olive slight petroleum moderate other: ANS/SEM Other: Comments: (i.e. redox discontinuity, organicm debris, shell fragments fauna, field duplicate, etc.)		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor brown surface brown surface drab olive slight petroleum moderate other: ANS/SEM Other: Comments: (i.e. redox discontinuity, organicm debris, shell fragments fauna, field duplicate, etc.)		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor brown surface brown surface drab olive slight petroleum moderate other: ANS/SEM Other: Comments: (i.e. redox discontinuity, organicm debris, shell fragments fauna, field duplicate, etc.)		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor brown surface brown surface drab olive slight petroleum moderate other: ANS/SEM Other: Comments: (i.e. redox discontinuity, organicm debris, shell fragments fauna, field duplicate, etc.)		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor brown surface brown surface drab olive slight petroleum moderate other: AVS/SEM Other: Comments: (i.e. redox discontinuity, organicm debris, shell fragments fauna, field duplicate, expressed of the color of the col		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor brown surface brown surface drab olive slight petroleum moderate other: AVS/SEM Other: Comments: (i.e. redox discontinuity, organicm debris, shell fragments fauna, field duplicate, expressed of the color of the col		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor brown surface brown surface drab olive slight petroleum moderate other: ANS/SEM Other: Comments: (i.e. redox discontinuity, organicm debris, shell fragments fauna, field duplicate, etc.)		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color Sediment odor brown surface brown surface drab olive slight petroleum moderate other: ANS/SEM Other: Comments: (i.e. redox discontinuity, organicm debris, shell fragments fauna, field duplicate, etc.)		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface brown surface drab olive slight petroleum and (F M C) brown moderate other: AVS/SEM Other: Comments: (i.e. redox discontinuity, organich debris, shell fragments fauna, field duplicate, etc.)		
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface brown surface drab olive slight petroleum and (F M C) brown moderate other: AVS/SEM Other: Comments: (i.e. redox discontinuity, organicm debris, shell fragments fauna, field duplicate, etc.)		
Sediment type sobble sobble stravel and (F M C) Sediment color brown surface drab olive Sediment odor soble sobl		
brown surface travel discontinuity, organicm debris, shell fragments fauna, field duplicate, expand (F M C) trown moderate other:	x potential	
gravel drab olive slight petroleum fauna, field duplicate, e particular moderate other:	discontinuity, organic matter, wood debris, shell fragments, sheen,	
sand (FMC) brown moderate other: plash (fauna, field duplicate, etc.)	
gray	bags	
black black		

ampling Method:	PONAR		Crew:	439 KM	B, JEM
GRAB I	DATA	Location ID:	161-9	Vessel	Position Number:
Latitude/Northing (3/1.9		Longitude/Eastin	19 (X): 59 (901.7
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
	1032	60	(e'i	Y	5g butlet
2	1034			ſ	
3	1036				
4	1038				
5	1040	₩	4	V	
	ine				
4					
,					
SAMPLE	DATA	Sample ID:	NH		
Analyses needed b	efore homogeniz	zation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
Sediment type	Sediment col	or	Sediment odor Tone H ₂ S slight petroleum		Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
cobble	brown surface	1			
gravel	drab olive				
sand (F M)C)	drown)		moderate strong	other:	Prosing
SID SID	gray		Suong		
clay	- County			A 1	Date 9/15/15 Time 1500

ampling Method:	PONAR		Crew:	(30)	10044 AMB, JEM
GRAB I	DATA	Location ID:	161-10	Ves	ssel Position Number: 10
Latitude/Northing (v): 6808	11.9		Longitude/Eas	sting (X): 596 914.6
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptabl grab (Y/N	
	1042	60	6"	4	59 broket
2	[044			===	
J	1646				
4	1048				
5	1050	J	V	V	V
		1			
		12			
SAMPLE		Sample ID:	NH		
Analyses needed be			32 2	-Purgeables	AVS/SEM Other:
Sediment type cobble	Sediment col		Sediment odor	H₂S	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
gravel	drab olive		slight	petroleum	
sand (F M) C)	brown		moderate	other:	plastic
Th.	gray		strong		7
SID					

ampling Method:	Ponar		Crew:	PJD, AMB, JEI	W
GRAB D	DATA	Location ID:	162-1	Vess	el Position Number:
Latitude/Northing (n: 681	950.4		Longitude/East	ing (X): 598446.8
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	0748	11.3	1011	Y	Chem-benthic
2	0750		l i		benthic
3	0752				benthic.
4	0754				Sy bucket
5	0756	V	V	V	5d bucket
SAMPLE I	A ///		1303-500-Cate	M 162, VB(OSUM-A,B,C AVS/SEN Other:
obble ravel and (b M C)	Sediment col brown surface drab olive brown gray	or	Sediment odor none slight moderate strong	H₂S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)

GRAB DATA Location ID: /6 2 - 2 Vessel Position Number: Z Longitude/Northing (Y): 0 8 9 0 3 9 Grab Sample Time depth Time depth Depth (cm) 1 0758 12.3 (6" V Figure 14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ampling Method:				PJD, AMB, JEM		
Additional content type of the first of the	GRAB	DATA	Location ID:	162-2	Vesse	Position Number: 2	
Number Time depth Depth (cm) grab (V/N) Comments: 1 0758 77.3 (Latitude/Northing	(r): 681	-		Longitude/Eastir	19 (X): 598 449', 1	
SAMPLE DATA Sample ID: The purposables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organizematier, wood debris, shelf fraginizematier, wood factor of the strong strong The purpose of the purpose of the strong					Acceptable grab (Y/N)	Comments:	
SAMPLE DATA Sample ID: The purposables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organizematier, wood debris, shelf fraginizematier, wood factor of the strong strong The purpose of the purpose of the strong	1	0758	12.3	1 4	V	5gbreket	
SAMPLE DATA Sample ID: sample DATA Sample ID: malyses needed before homogenization (circle): VDC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, faund, field duplicate, etc.) To gray strong	2	0.800					
SAMPLE DATA Sample ID: SAMPLE DATA Sample ID: VOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) To gray Strong Sample ID: VOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	3	0802	1975-41	1-1			
SAMPLE DATA Sample ID: which is a strong s	4	0804					
malyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type brown surface brown surface drab olive brown br	5	0306	V	V	V	V	
malyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive Slight petroleum moderate other: TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)							
nalyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive Slight petroleum moderate other: TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)		1					
rallyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive slight petroleum moderate other: TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)							
nalyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive Slight petroleum moderate other: TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)							
malyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive Slight petroleum moderate other: TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)							
malyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive Slight petroleum moderate other: TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)							
nalyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive Slight petroleum moderate other: Sediment odor Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)							
malyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive Slight petroleum moderate other: TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)							
malyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive Slight petroleum moderate other: TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)							
malyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive Slight petroleum moderate other: TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)							
malyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive Slight petroleum moderate other: TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)							
malyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive Slight petroleum moderate other: TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)							
Sediment type brown surface drab olive brown moderate strong Sediment odor brown surface brown surface brown surface slight moderate strong Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)						The classical states	
bble brown surface drab olive brown surface slight petroleum moderate other: gray strong discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)					Purgeables		
drab olive slight petroleum fauna, field duplicate, etc.) moderate other: strong	and the second		or			discontinuity, organic matter, wood	
ind (F)M C) moderate other: gray strong							
gray strong				1000			
		gray		strong			
		(black)					

Project Name: N.B.	S.A SQT/PO 9-21-15	rewater	_ Project no.:	0009989.004	4		
Sampling Method: Ponar			Crew: PJD, AMB, JEM				
GRAB D		Location ID:	162-3	Vesse	Position Number: 2		
Latitude/Northing (n: 681	978.1		Longitude/Eastir	ng (X): 598452.6		
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:		
1	0808	22.4	6"	4	5g buket		
2	0810						
3	0812		LI III				
4	0814						
5	0816	V	J	V	V		
SAMPLE I		Sample ID:	NA VOC TEPH-	Purgeables	AVS/SEM Other:		
ediment type obble ravel and F M C) (It	Sediment color brown surface drab olive brown gray black		slight petroleum moderate other:		Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)		
elinquished By PJ			Company _	Arcadis [Date 9/21/15 Time 1530		

ampling Method:	Ponar		Crew:	PJD, AMB, JEN	Л	
GRAB	DATA	Location ID:	162-4	Vesse	el Position Number: 4	
Latitude/Northing	(Y): 68	1987.2		Longitude/Easti	ng (X): 598455.9	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:	
1	0919	23.1	6"	4	5g breket	
2	0280					
3	0922					
4	0424	1				
5	0826	V	1	V	Ψ	
	AH = 3					
			11.			
SAMPLE	DATA	Sample ID:	MA			
nalyses needed b	efore homogeniz	ation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:	
sediment type	Sediment color brown surface		Sediment odor none H ₂ S		Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	
obble						
ravel	drab olive		slight	petroleum	identa, noto dapnoate, etc./	
and (F M C)	brown		moderate	other:		
ilt.	gray		strong			
lay	Diack				Date 9/21/15 Time 1530	

	.S.A SQT/Po		Project no.:	B0009989.004	-		
rte:	9-21-	15	Weather: OVWILES + Crew: PJD, AMB, JEM				
mpling Method: _	Ponar		Crew:	PJD, AMB, JEN			
GRAB	DATA	Location ID:	162-5	Vesse	Position Number: 5		
atitude/Northing	(M): 6919	194.4		Longitude/Eastin	19 (X): 59 B443.5		
Grab Sample Number	Grab Sample Time	depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:		
1	0828	22.2	601	711	5g bruket		
2	0930	22.2	6"	4	5g bruket		
3				,	3		
4	NE E		4				
5			1				
				, -			
C AMPL F	DATA	Committee In.	JIA				
SAMPLE	efore homogenia	Sample ID:	1	-Purgeables	AVS/SEM Other:		
ediment type	Sediment co	lor	Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood		
obble ravel	drab olive		none H ₂ S slight petroleum		debris, shell fragments, sheen, fauna, field duplicate, etc.)		
and (FM C)	brown		moderate	other:			
15	gray		strong				
1	black						

ate: ampling Method:	9/22/15 Ponar		Weather: Crew:	Weather: OVECUST Crew: PJD, AMB, JEM				
GRABI	Location ID:			Vessel Position Number:				
_atitude/Northing (163-1					
Grab Sample	Grab Sample	146.9 Bottom	Penetration	Accept	Easting (X): 605994469			
Number	Time	depth	Depth (cm)	grab (Y/N) Comments:			
1	0824	31.6	0"	Y	Chem-benthic			
2	0820				penthic			
3	0328				benthic.			
4	0330				59 WCKET			
5	0832	7	J	V	1			
SAMPLE	DATA	Sample ID:	1603 SED CHI	U-163-	NBUS SUPLCOM ABIC			
nalyses needed be	fore homogeniz	ation (circle):	VOC FEPH	-Purgeables	AVS/SEM Other:			
ediment type obble ravel and (F M C)	brown surface drab olive brown gray black		none slight moderate strong	H₂S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)			
linguished By P.	JD		Company	Arcadis	Date 9/22/15 Time 1700 100			
ccepted By 5	++		Company _	ARGADIS	Date 9/22/19 Time 1005			

GRAB DATA Location ID:			Crew:	PJD, AMB, JEN	
			163-2		el Position Number: 2
Latitude/Northing (1-100	3452.1	165 6	Longitude/Eastin	
Grab Sample Number	Grab Sample Time	Bottom	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	0934	31.6	(cm)	Y	5g brelet
2	0836		1		1
3	0938				
4	0840	1,			
5	0342	1	-		4
	1				
				-	
	-				
	-				
	-				1
SAMPLE	DATA	Sample ID:	NA	l.	1
alyses needed be				-Purgeables	AVS/SEM Other:
ediment type	Sediment co		Sediment odor	- G	Comments: (i.e. redox potential
obble	brown surface	7	gone	H ₂ S	discontinuity, organic matter, wood debris, shell fragments, sheen,
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
and (F M C)	brown		moderate	other:	challa
_	gray		strong	70.00	51411
	olack)		S, Ong		
lay	BAGON				
P.	JD		Constitution of the Consti	Arcadis	9/22/15 - 400 %
linquished ByP.	100		Company	, a oddio	DateTimeTIME

Project Name: N.B.S.A SQT/Porewater Onto: 912215			Project no.:	Bill Carl					
Descri			Weather:	PJD, AMB, JEN					
Sampling Method:	ronai			PJD, AIVID, JEIV					
GRAB I	DATA	Location ID:	163-3	4.02.00	l Position Number: 3				
Latitude/Northing (Y): (0834	135.5		Longitude/Eastin	ng (X): 598462.5				
Grab Sample Number	Grab Sample Time	depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:				
1	1844	31.6	U	4	54 briket				
2	0846								
3	0949								
4	0900								
5	0992	V	V	V	V				
			7						
	-								
SAMPLE	DATA	Sample ID:	NIA						
Analyses needed b				-Purgeables	AVS/SEM Other:				
Sediment type	Sediment col		Sediment odor	-r urgeables	Comments: (i.e. redox potential				
cobble	brown surface		none	H₂S	discontinuity, organic matter, wood debris, shell fragments, sheen,				
gravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)				
sand (EM C)	brown		moderate	other:					
silt	gray		strong						
clay	black								
			1		about 94 9/				
telinquished By P	JD		Company	Arcadis	Date 9/22/15 Time 400 190				
4	11-			ARCADIS	Pate 9/22/15 Time 1805				
ccepted By3	7		Company	Mr. M. M.	DateTime				

	A SQT/Po	rewater	Project no.:	B000998	
D	9/22/15		Weather:		cast
ampling Method: P	onar		Crew:	PJD, AMB	3, JEM
GRAB DATA Location ID:			163-4		Vessel Position Number: 4
atitude/Northing (Y	: 693	446.4		Longitude	Easting (X): 598463.7
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Accep grab	table (Y/N) Comments:
1	0954	30.5	6"	Y	5g Welet
2	0256) [
3	0358				
4	0900	AL-			1
5	0902	V	V	V	V
			· ·		
SAMPLE D	ATA	Sample ID:	A		
nalyses needed bef	ore homogeniz	ation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
ediment type	Sediment color brown surface		Sediment odor	H ₂ S	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen,
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
and (FMC)	brown		moderate	other:	
D	gray		strong		
lay	black				311-7/

ate:	9/22/1)	Weather:	DVVCa	FM
ampling Method:	-Onai		Crew:	PJD, AMB, J	EIVI
GRAB D	ATA	Location ID:	163-5	Ves	ssel Position Number: 5
Latitude/Northing (n: 6936	146.4		Longitude/Ea	isting (X): 598475.9
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptab grab (Y/N	le Comments:
1	0904	29.8	100	У	Sylvaluet
2	0900				1-1
3	6000				
4	1910				
5	0912	V	1	V	V
SAMPLE	DATA	Sample ID:	U/A		
Analyses needed be			977	-Purgeables	AVS/SEM Other:
Sediment type cobble gravel	Sediment collaborown surface drab olive		Sediment odor none slight	H₂S petroleum	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
and (F)M C)	gray		moderate strong	other:	
elinquished By P.	JD		Company	Arcadis	Date 9/22/15 Time 1008

ate:ampling Method:	9/22/10 Ponar		Weather:	OVERCUS	
	DATA	1,		-	
GRAB Latitude/Northing		Location ID:	163-6		ng (X): 598436 1
Grab Sample	Grab Sample	Bottom	Penetration	Acceptable	
Number 1	Time	29.3	Depth (cm)	grab (Y/N)	Comments:
	0914	1	9	7	5g builet
2	0916				
3	0918				
4	-	1		1	
5	ogn	V	V	4	V
	+		-		+
SAMPLE	DATA	Sample ID:	VA		
nalyses needed b	72770	1		Purgeables	AVS/SEM Other:
ediment type	Sediment co		Sediment odor	, digodoloo	Comments: (i.e. redox potential
obble	brown surface		gone	H ₂ S	discontinuity, organic matter, wood debris, shell fragments, sheen,
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
and (F M C)	brown		moderate	other:	
it)	gray		strong		
lay	black				
	un.				0/2/15 1200
inquished ByF	DO		Company _	Arcadis	Date 9/22/15 Time 1805

Project Name: N.B	9/22/1		Project no.:	Wireas	
Desay			Weather:	PJD, AMB, JEN	
Sampling Method:	Tollar		Crew:	FUD, AIVID, ULIV	
GRAB	DATA	Location ID:	163-7	Vesse	Position Number: 7
Latitude/Northing		3462.4		Longitude/Easti	ng (X): 598488.8
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	0924	29.1	(pu	Y	59 braket
2	0926	1	1		11
3	0928				
4	0930				
5	0932	V	A	V	V
	1				
	+				
	-				
SAMPLE	DATA	Sample ID:	TIA		
Analyses needed b		1	411	-Purgeables	AVS/SEM Other:
Sediment type	Sediment co		Sediment odor	- September 1	Comments: (i.e. redox potential
cobble	brown surfac		none	H₂S	discontinuity, organic matter, wood debris, shell fragments, sheen,
gravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
sand (F M C)	brown		moderate	other:	
silt)	gray		strong		
clay	black		40.00		
					74
elinquished ByP	JD		Company	Arcadis	Date 9/22/15 Time 1805
	-11-			Ancanie	a. u. d. r
ccepted By	Jr		Company	ARCANIS	Date_1/22/15_Time_ (000

ampling Method:	Ponar		Crew:	PJD, AMB, JEM	P	
GRAB	DATA	Location ID:	163 (20)	8 Vessel	Position Number:	
Latitude/Northing (M: 6934	36.2		Longitude/Eastin	ng (X): 598479. 8	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:	
1	0934	29.0	10	4	59 bribet	
2	0936		Ĭ			
3	0938					
4	0940		- 1			
5	0942	V	1	V	J	
				1		
			-0			
SAMPLE analyses needed b		Sample ID:	VOC TEPH	-Purgeables	AVS/SEM Other:	
Sediment type sobble	Sediment colo	or	Sediment odor	H ₂ S	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen,	
gravel	drab olive		slight moderate	petroleum other:	fauna, field duplicate, etc.)	
ille) lay	gray		strong			
inquished By P	JD		Company	Arcadie	Date 9/21/15 Time 140 16	

roject Name: N.B.	S.A SQT/Po	rewater	Project no.:	B0009989.	1			
ate:	12215		Weather:	OVE	reast			
sampling Method: Ponar			Crew: _	Crew: PJD, AMB, JEM				
GRAB DATA Location ID:			: 163.9	Ve	essel Position Number: 9			
_atitude/Northing (\	n: 683	3420.0	10	Longitude/E	asting (X): 598475.7			
Grab Sample Number	Grab Sample Time		Penetration Depth (cm)	Acceptat grab (Y/	ole N) Comments:			
1	0944	24.0	6	V	5g bydet			
2	0946	1						
3	0943							
4	0950							
5	0967	V	V	V	J			
	-							
	1		11.1					
		-						
			(4)					
SAMPLE	DATA	Sample ID:	NA					
nalyses needed be	fore homogeniz	ation (circle	: VOC TEP	H-Purgeables	AVS/SEM Other:			
ediment type	Sediment col	or	Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood			
obble	brown surface		none	H ₂ S	debris, shell fragments, sheen, fauna, field duplicate, etc.)			
ravel	drab olive		slight	petroleum	() ()			
and (f) M C)	brown		moderate	other:	Sulls			
D.	gray		strong					
lay	black				- F			
disquished By P.	ID		2.7.47	Arcadie	9/22/15 - 12/11			
linquished ByPJ	- IV		Company	Arcadis	Date Time 700 7			
cepted By	245		Company	, ARCADIS	Date_ 9/22/15 Time_ 1805			

GRABI	DATA	Location ID:	164-1	Vessel	Position Number:
Latitude/Northing (Y): (,81	1883.	9	Longitude/Eastin	ng (X): 6003584
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	
1	[000]	6.4	(04)	Y	NS/SEM, VOC'S, % Mastur
2	1020	6-4	1	Y	1,70.0.
3	1025	6.4		4	BENTHIC By bucket Ba bucket
4	1030	6.4		У	5y bucket
5	1033	6.4	V	Ý	39 bucket
	The state of				9
					1
			(0.50.25	0.04340	
SAMPLE	DATA	Sample ID:	1803-56	0 CHM - 11	64 0 Stocom-164A
Analyses needed b	efore homogenia	zation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
Sediment type	Sediment co	lor	Sediment odor		Comments; (i.e. redox potential discontinuity, organic matter, wood
cobble	brown surface		none	H ₂ S	debris, shell fragments, sheen,
gravel	drab olive		slight	petroleum	fauna, field duplicate, etc.) Arganics (shells)
sand (F M C)	brown		moderate	other:	Organico (Trans)
silt	gray		strong		
clay	black				

roject Name: N = 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10	PONAR		Weather:	DVEREUR DIO, AMB	JEM
GRAB	DATA	Location ID:	164-2	Vesse	Position Number: 2
Latitude/Northing	M: 6810	380.8		Longitude/Eastin	19 (X): 600338-6
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1035	5.8	le"	Y	5g licket
2	1037		1		
3	1039				
4	1041				
5	1043	V		V	V
			-	-	
	1				
			1		
	1				+
SAMPLE	DATA	Sample ID:			
Analyses needed b	efore homogeni	zation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
Sediment type	Sediment co	lor	Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood
cobble	brown surface		none	H₂S	debris, shell fragments, sheen, fauna, field duplicate, etc.)
gravel	drab olive		slight	petroleum	lauria, nelo dupilicate, etc.)
sand (F M C)	brown		moderate	other:	
silt	gray		strong		
clay	black				
	PIX)	140.000	ARCAMS	9/13 /61
elinquished By	100		Company	ARCADIS ARCADIS	Date 1/19 Time 100

Date:	7-13-15 Donne		Project no.: Weather: Crew:	PSD, AMB,	JEM
GRAB	DATA	Location ID:	144-3		Position Number: 7
Latitude/Northing	m: (6810	872.9	191	Longitude/Easti	ng (X): 600323.0
Grab Sample	Grab Sample	Bottom	Penetration	Acceptable	
Number	1053	depth	Depth (cm)	grab (Y/N)	Comments:
1	10 4	58	64	7	5g broket
- 1	1055		1		
5	1047	4			
4	1059				1,17
5	1101	1	V	V	V
			-		
				1	
		-			
	+				
			,		
			7		
1000000					
SAMPLE	DATA	Sample ID:			
Analyses needed b	efore homogenia	zation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
Sediment type	Sediment co	lor	Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood
cobble	brown surface)	none	H ₂ S	debris, shell fragments, sheen,
gravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
sand (F M C)	brown		moderate	other:	
silt	gray		strong		
clay	black				
elinquished By	PJD		Company	ARCADIS	Date 9/13 Time /600
				ARCADI	

	5.A SAT		Weather:	OVERLO	AST To	
ampling Method:	ChARE		vveatner: Crew:	PIO.M	BIJEM	
GRAB D	ATA	Location ID:	1104-4	Vesse	I Position Number:	
atitude/Northing ()	1 10		101	Longitude/Eastin		
Grab Sample	Grab Sample	Bottom	Penetration	Acceptable	300 900 1	
Number	Time	depth	Depth (cm)	grab (Y/N)	Comments:	
1	1106	4.3	Ceon	7	5g bruket	
2	1103					
3	1110					
4	1112					
5	1114	V	V	V	V	
	111.1			-	- V	
	-					
	1 = 0					
					1	
SAMPLE	DATA	Sample ID:				
nalyses needed be	1		VOC TEPH	-Purgeables	AVS/SEM Other:	
Sediment type	Sediment co		Sediment odor		Comments: (i.e. redox potential	
			3.5.	11.6	discontinuity, organic matter, wood	
obble	brown surface	1	none	H₂S	debris, shell fragments, sheen, fauna, field duplicate, etc.)	
ravel	drab olive		slight	petroleum	rauria, neid duplicate, etc.)	
and (F M C)	brown		moderate	other:		
ilt	gray		strong			
	black					
clay	Diddi.					
No. of the contract of	20			10,0005	0/13 /100	
linquished By	100		Company	MICHIE	Date 9/13 Time 1600 Date 9/14/18 Time 0735	
	-111			K. 2	Service State	

ate:	B.S.A 507 9-13-10		Weather: Crew:	11/11/11/11/11	st, 705	
GRAB		Location ID:	ile 4-5	1 411	l Position Number: 5	
Latitude/Northing	m: (08/09	83.4	14)		ng (X): 600336.0	
Grab Sample	Grab Sample		Penetration	Acceptable	1900990	
Number	Time	depth	Depth (cm)	grab (Y/N)	Comments:	
1	1/16	4.2	(od	4	5g broket	
2	1118					
3	1120					
4	1122	-15-0				
5	1124	1	V	1	1	
	110	-	-			
	1					
	1					
	+					
	4					
SAMPLE	DATA	Sample ID:				
Analyses needed b	efore homogen	ization (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:	
Sediment type	Sediment color		Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood	
cobble	brown surfac	е	none	H ₂ S	debris, shell fragments, sheen, fauna, field duplicate, etc.)	
gravel	drab olive		slight	petroleum		
sand (F M C)	brown		moderate	other:		
silt	gray		strong			
clay	black					
elinquished By	600		Company	ARCADIS	Date 9/13 Time 1600	

Project Name: N.B.S.	A SQT WELL	GUATGOL	Project no.:		
	-13-15		Weather:	overa	st 70
Sampling Method:	PONAR		Crew:	150,AMB	, Jem
GRAB I	DATA	Location ID:	164-6	Vesse	el Position Number:
Latitude/Northing (r): 68686	3.7		Longitude/Easti	ng (X): 600337.5
Grab Sample Number	Grab Sample Time		Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
	1126	4.2	(24	Y	5g broket
2	1128		1		0
3	1130				
4	1132				1
9	1134	1	1	V	V
					1 7
0.440.5	0.74	Committee ID			
SAMPLE		Sample ID:	WOO TEDU	(D. Sand Hard	AVO/OFM OV
Analyses needed b	Sediment col		VOC TEPH	-Purgeables	AVS/SEM Other: Comments: (i.e. redox potential
cobble	brown surface		none	H₂S	discontinuity, organic matter, wood
gravel	drab olive		slight	petroleum	debris, shell fragments, sheen, fauna, field duplicate, etc.)
sand (F M C)	brown		moderate	other:	
silt	gray		strong		
clay	black				
	01	0		10/41)/C	9/12 /11
Relinquished By	, ~,		Company	MACHOD	Date 9/13 Time 1600 Date 9/14/15 Time 0730
Accepted By	5#		Company	AKCADIS	Date 9/14/15 Time 0730

ate: O	PONAL		Weather: Crew:	MO AN			
GRABI	DATA	Location ID:	164-7	Ves	sel Position Number: 7		
atitude/Northing (Y): 686	847.3		Longitude/Eas	sting (X): 600337.3		
Grab Sample	Grab Sample Time		Penetration	Acceptable			
Number	1134	4.0	Depth (cm)	grab (Y/N	5g bucket		
2		1	47		39 0001-01		
7	1138						
4	11/10						
7	1142	/	1				
5	1144	V		V	4		
	1000		T				
			V				
SAMPLE	DATA	Sample ID:					
nalyses needed b	efore homogeni	zation (circle):	VOC TEPH	I-Purgeables	AVS/SEM Other:		
ediment type	Sediment co		Sediment odor		Comments: (i.e. redox potential		
obble	brown surface		none	H ₂ S	discontinuity, organic matter, wood debris, shell fragments, sheen,		
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)		
and (F M C)	brown		moderate	other:			
	gray		strong	30,011			
ilt	black		Strong				
ay	Diack						

GRAB DATA Latitude/Northing (Y): Grab Sample Number Sample Number Sample Number Sample Number Number Sample Number Numb		SUSTRA POPULAR		Weather: Crew:	000 mun	Tan	
Latitude/Northing (Y): (2003) 16 Grab Sample Time Bettom Time Penetration Depth (cm) Penetration Acceptable Comments: (1.6.003) Penetration Penetration Penetration Penetration Penetration Acceptable Penetration Penetration Penetration Acceptable Comments: (1.6.003) Penetration Penetration Penetration Penetration Acceptable Penetration Pene	ampling Method:	1, 21, 22, 24, 24, 24, 24, 24, 24, 24, 24, 24	Lacrier ID.		Vocas	Besition Number	
Grab Sample Number Time depth Depth Comments: Ille		-	100000000000000000000000000000000000000	164-8			
Number Time depth Depth (cm) grab (V/N) Comments:	a could be about the second			Denotration		ng (x): (606359.5	
SAMPLE DATA Sample ID: Sample ED: Analyses needed before homogenization (circle): VOC TEPH-Purgeables Sediment type Sediment color brown surface drab olive brown surface drab olive slight petroleum moderate other: Sitt gray strong SAMPLE DATA Sample ID: AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, sheen, fauna, field duplicate, etc.)			depth			Comments:	
SAMPLE DATA Sample ID: Sample Data Sample Data Sample ID: Sample Data Sample ID: Sample ID: Sample ID: Sample ID: Sediment type Sobile Sobi		1146	3.9	(14	Y	5g brillet	
SAMPLE DATA Sample ID: Sample Data AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) sample Data Sample Data Sample Data AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) sample Data Sample Data Sample Data Sample Data Sample Data Sample Data AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	2	1148	(1		0	
SAMPLE DATA Sample ID: Sample Data Sample ID: Analyses needed before homogenization (circle): VOC TEPH-Purgeables Sediment type Sediment color brown surface brown surface drab olive brown surface drab olive slight petroleum moderate other: sitt gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	3						
SAMPLE DATA Sample ID: Analyses needed before homogenization (circle): VOC TEPH-Purgeables Sediment type Sediment type Sobble brown surface brown surface drab olive silt gray Sample ID: AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	4						
SAMPLE DATA Sample ID: Analyses needed before homogenization (circle): VOC TEPH-Purgeables Sediment type Sobble brown surface none H ₂ S slight petroleum moderate other: silt gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, woor debris, shell fragments, sheen, fauna, field duplicate, etc.)	5		1/	1			
Analyses needed before homogenization (circle): VOC TEPH-Purgeables Sediment type Sediment color brown surface gravel drab olive sand (F M C) brown gray Sediment odor none H ₂ S slight petroleum moderate other: strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)							
malyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) and (F M C) brown moderate other: It gray strong							
AVS/SEM Other: Sediment type Obble Obble Fravel India (F M C) Sediment color Sediment odor India (Sight I							
AVS/SEM Other: Sediment type Obble Obble Fravel India (F M C) Sediment color Sediment odor India (Sight I							
Available seeded before homogenization (circle): VOC TEPH-Purgeables Sediment type Obble brown surface none H2S Firatel drab olive slight petroleum and (F M C) brown moderate other: Over TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)							
AVS/SEM Other: Sediment type Obble Obble Fravel India (F M C) Sediment color Sediment odor India (Sight I							
AVS/SEM Other: Sediment type Obble Oravel And (F M C) Sediment odor Gray Sediment odor None Male of the color Sediment odor None Male odor							
Available seeded before homogenization (circle): VOC TEPH-Purgeables Sediment type Obble brown surface none H2S Firatel drab olive slight petroleum and (F M C) brown moderate other: Over TEPH-Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)							
Analyses needed before homogenization (circle): VOC TEPH-Purgeables Sediment type Sediment color brown surface drab olive sight sand (F M C) brown surface solve							
Sediment type obble obble obble oravel and (F M C) Sediment color brown surface drab olive obside sit Sediment odor none H ₂ S slight petroleum other: strong Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	SAMPLE	DATA	Sample ID:				
brown surface none H ₂ S discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) and (F M C) brown moderate other: gray strong	nalyses needed be	efore homogeni	zation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:	
brown surface none H ₂ S debris, shell fragments, sheen, fauna, field duplicate, etc.) sand (F M C) brown moderate other: silt gray strong	Sediment type	Sediment co	lor	Sediment odor		Comments: (i.e. redox potential	
and (F M C) brown moderate other: gray strong	obble	brown surface	9	none	H ₂ S	debris, shell fragments, sheen,	
ilt gray strong	ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)	
	and (F M C)	brown		moderate	other:		
lay black	ilt	gray		strong			
	lay	black					
	elinquished By	n		Company	1	DateTime_600	

ate: 9(1)	MAR		Weather: Crew:	PJD JEM	AMS	
GRAB D	ATA	Location ID:	164-9	Vesse	Position Number:	
_atitude/Northing ()	n: 68681	7.6		Longitude/Easti	ng (X): (000340.2	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:	
1	1156	3.7	64	Y	5g bruiet	
2	1168	1			181	
3	1200					
4	1202					
5	1204	1	1/	1	1	
0	Tiwa		Ψ	_ v	N .	
		1-				
SAMPLE	DATA	Sample ID:				
analyses needed be	9.11.19	A 1940 F S 19 5 5 5 5	VOC TEPH	I-Purgeables	AVS/SEM Other:	
7-77	Sediment co		Sediment odor	i-r digeables	Comments: (i.e. redox potential	
Sediment type cobble	brown surface		none	H₂S	discontinuity, organic matter, wood	
gravel	drab olive		slight	petroleum	debris, shell fragments, sheen, fauna, field duplicate, etc.)	
and (F M C)	brown		moderate	other:		
	gray		strong	Julian		
silt	black					
clay	000		-	10.00 W	al - t	
elinquished By	(00)		Company	ARCADIS ARCADIS	Date 9/13 Time 600	
quio iou by	-		Company		,,,,,,	

-13-15	avimor	Project no.: Weather: Crew:	Orlast Oslimb, 3	The SEM
ATA	Location ID:	165-1	Vessel	Position Number:
n: 683	3452.1		Longitude/Eastin	ig (X): 600951.6
	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1252	6.0	6"	1	Chem-Benthic
1254				BENTHIC
1256				BONTHIL
1268	En Ele			52 Willet
1300	V	V	1	5g bullet
		VOC. TEPH	-Purgeables	AVS/SEM Other:
Sediment col	or	Sediment odor none slight moderate strong	H₂S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
	ATA (i): 683 Grab Sample Time 1252 1254 1258 1300 DATA Infore homogeniz Sediment coll brown surface drab olive brown gray	ATA Location ID: (1): 6834572. / Grab Sample Bottom depth (2572 6-6) (2574 (2576 (2578 (2	ATA Location ID: Lu5-1 O: Lg 3452. / Grab Sample Bottom Depth (cm) LU57 Lo-D LU54 LU56 LU56 LU56 LU56 LU56 LU57 Sediment color brown surface drab olive or gray Crew:	ATA Location ID: U5-1 Vessel O: 6834572. / Longitude/Eastin Grab Sample Bottom Penetration Depth (cm) Grab (Y/N) U572 6.0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

oject Name: NBS		7	Project no.: Weather:	Overcast	700
mpling Method:	POWAR			PSD, AMB,	79//
GRABI	DATA	Location ID:	165-2	Vesse	l Position Number: 2
atitude/Northing (Y): (1834	63.9			ng (X): 600949.5
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1302	5,4	6"	Y	5g bucket
2	1304		1		
3	1306	140 115			
4	1308				
5	1310	1	V	V	1
SAMPLE		Sample ID:	VOC TEPH	-Purgeables	AVS/SEM Other:
obble ravel and (F M C)	Sediment col brown surface drab olive brown gray black		Sediment odor none slight moderate strong	H₂S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
linquished By	An		Company	ARCADIS ARCADIS	Date 9//3 Time 1600

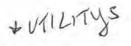
roject Name: N 651	1-13-15 Pavare		Project no.: Weather: Crew:	Overcas PSD, JEM	AMB
GRABI	DATA	Location ID:	165-3	Vesse	el Position Number: 3
Latitude/Northing ((Y): 6834	ما عاما		Longitude/Easti	ing (x): 600439, 8
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	, Comments:
	1312	4.4	6"	Y	5g beket
2	1214	1			
3	1316				
4	1318				
5	1320	V	V	V	V
					-
CAMPUS		P			
SAMPLE		Sample ID:	VOC TEPH	-Purgeables	AVS/SEM Other:
Sediment type cobble gravel sand (F M C)	Sediment collaborown surface drab olive brown gray	or	Sediment odor rone slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
elinquished By	1910		Company	ARCADIS	Pate 9/13 Time //001
ccepted By	111		Company	ARCADIS ARCADIS	Date 9/13 Time 1600 Date 9/14/15 Time 0730

roject Name: NSS ate: ampling Method:	1-13-15 POWAR		Project no.: Weather: Crew:	NO MADO	- 70°
GRAB	DATA	Location ID:	te83480.0		Position Number: 4
atitude/Northing	m: 48348	00		Longitude/Eastin	g(X): 600939,1
Grab Sample	Grab Sample Time		Penetration	Acceptable	Comments:
Number	1422	42	Depth (cm)	grab (Y/N)	59 breket
7		7.7	Q	1	39 NACICE!
0	1324	1			
3	1326				
4	1426			1	
5	1330	V	V	V	V
	1				
	-				
				3 -3 -	
		3			
	1				
	4		-		
SAMPLE	DATA	Sample ID:			
nalyses needed b	pefore homogeni	zation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
Sediment type	Sediment co	lor	Sediment odor	7777	Comments: (i.e. redox potential
obble	brown surface	e	none	H ₂ S	discontinuity, organic matter, wood debris, shell fragments, sheen,
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
and (F MC)	(brown)		moderate	other:	
	gray		strong	307-17	
	black		3		
clay	Didox				1
Manufahad Dir	00		Company	ARCADIS	Date 9/13 Time /600
linquished By	10.7		Company		DateTime/@00
cepted By	71		Company	ARCADIS	Date 7/14/15 Time 0730

Project Name: N & A Date: Sampling Method:	9-13-15 DWAR		Project no.: Weather: Crew:	PJD, AN	57 70°
GRAB I	DATA	Location ID:	165-5	Vesse	l Position Number: 5
Latitude/Northing (n: 683482	.6	E.Z.A.	Longitude/Eastin	ng (X): CeOU928,9
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
	1332	4.2	6"	Y	5g bucket
2	1334				J
3	1336			1	
-4	1430				
-	1440		1		
,	1110	A	,	-	
	1				
	1				
SAMPLE	DATA	Sample ID:			
Analyses needed b			VOC TEPH	-Purgeables	AVS/SEM Other:
Sediment type	Sediment co		Sediment odor	. uigoubloo	Comments: (i.e. redox potential
cobble	brown surface		none	H₂S	discontinuity, organic matter, wood debris, shell fragments, sheen,
gravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
sand (F M C)	brown		moderate	other:	
silt	gray		strong		
clay	black				
Relinquished By	PD0		Company	ARCADIS	Date 9/3 Time 600
Accepted By	THE		Company	ARCADIS	Date 9/14/15 Time 0730

GRAB	DATA	Location ID:	11-11-1	Vassal	Position Number:	
titude/Northing (995.6	Ilele-1	Longitude/Eastin		
Grab Sample Number	Grab Sample Time		Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:	
\ \	1220	4.5	(o'	yrab (1/N)	Cited	
2	1222	1	1		5g bucket	
3	1774				39 10-1-01	
4	1226					
5	1228	1		J		
	1000	V	1	- 1	Υ	
			-			
	+					
SAMPLE		Sample ID:			ALLEY ALEXANDER	
	efore homogeni			Purgeables	AVS/SEM Other:	
diment type	Sediment co		Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood	
bble	brown surface	9 (nóne	H₂S	debris, shell fragments, sheen, fauna, field duplicate, etc.)	
ivel	drab olive		slight	petroleum	lauria, noid dupitoate, etc.)	
nd (F M C)	brown		moderate	other:		
>	gray		strong			
у	black					
nquished By	010			ARCADIS .	Date 9/14/15 Time 1600	

Project Name: NBS/ Date:	4 SOT/160264 1-13-15	MICH	Project no.: Weather:	Overeus+	70°	
Sampling Method:	PUNAR		Crew:	MO AMB,	IEM	
GRAB	DATA	Location ID:	166-2	Vessel Position Number: 7_		
Latitude/Northing	(Y): 68460	2,2	104 0	Longitude/Eastin	ng (X): (001792.9	
Grab Sample Number	Grab Sample Time		Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:	
Ĺ	1230	3.4	6"	4	59 brilet	
2	1232	3.4	(0"	4	5g byclet	
	Va. Tak					
	3					
SAMPLE	DATA	Sample ID:				
Analyses needed b	efore homogenia	zation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:	
Sediment type cobble gravel	Sediment co brown surface drab olive		Sediment odor none slight	H₂S petroleum	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	
sand (F M C)	gray		moderate	other:		
clay	black				01	
Relinquished By	(7)()	Company	ARCADIS	Date 9/13 Time 1600	
Accepted By	711		Company	ARCADIS	Date 9/14/15 Time 0730	



GRABI	DATA	Location ID:	167-1		Vessel	Position Number:
atitude/Northing (359.4	10 -1	Longitud		
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Accep	ptable (Y/N)	Comments:
	1007	5.5	6"	N		59 bucket
2	1069					
2	1011					
4	1013	- 1				
5	1015	V	1	I		
SAMPLE	DATA	Sample ID:				
Analyses needed b	efore homogeniz	ation (circle):	VOC TEPH	I-Purgeables	s	AVS/SEM Other:
Sediment type cobble gravel sand (F M C) silt	brown surface drab olive brown gray black		Sediment odor none slight moderate strong	H₂S petroleum other:	1	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)

roject Name:\ ate:	9-14-1	5	Project no.: Weather:	70-C	lear	
ampling Method:	DONAR		Crew:	PJO/100	BIJEN	
GRAB D	DATA	Location ID:	167-2	Vesse	Position Number: 2	
atitude/Northing (n: 6778			Longitude/Eastir	ng (X): 600228.3	
Grab Sample Number	Grab Sample Time	e Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:	
1	1617	4.4	6"	4	59 builet	
2	1019					
3	1021					
4	1023					
5	1025	1		V	V	
	1					
		-				
		-				
	1					
					4	
SAMPLE		Sample ID:	131-3 - 2.10h	V. 17 17 17 1	2.52.27 2.22	
nalyses needed be			VOC TEPH-Purgeables		AVS/SEM Other:	
sediment type	Sediment co		Sediment odor	u e	Comments: (i.e. redox potential discontinuity, organic matter, wood	
obble ravel	brown surface drab olive		none H₂S slight petroleum		debris, shell fragments, sheen, fauna, field duplicate, etc.)	
and (F M C)	brown		slight moderate	other:		
it	gray		strong	Sure!!		
lay	black					
	0- 0			A	21.1	
elinquished By	100		Company	ARCADIS ARCADIS	Date 9/14 Time #6.00	
	. 11			1021016	9/19/16 16.00	
cepted By	211		Company	MKELINI	DateTimeTool	

GRAB	DATA	Location ID: 167-3 V			Position Number: 3
atitude/Northing	(Y): 677	870.U		Longitude/Eastir	ng (X): (400208.5
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
	4070100	7 4.7	6"	4	54 bullet
2	1029				
3	1031				
4	1033			100	
5	1035		V	1	V
SAMPLE	DATA	Sample ID:			
	efore homogeniz		VOC TEPH	-Purgeables	AVS/SEM Other:
ediment type bibble ravel and (F M C)	Sediment col brown surface drab olive brown gray black	or	Sediment odor none slight moderate strong	H₂S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)

Sampling Method:	HONAR		Crew:	MO, A		1
GRAB D		Location ID:	[001		el Position Number:	
Latitude/Northing () Grab Sample	Grab Sample	574.7 Bottom	Penetration	Longitude/East		-
Number	Time	depth	Depth (cm)	grab (Y/N)	Comments:	-
	1054	7.3	Coll	Y	5g broket	
2	1054					
3	1058					
4	1100					
5	1102	V	1	V	V	
SAMPLE Analyses needed be			BUSSEN-C VOC) MEPH	HAHAD, N	BO3SED DUP-01, MS,	Ms
Sediment type cobble gravel sand (F M C)	Sediment col brown surface drab olive brown gray	or	Sediment odor none slight moderate strong	H₂S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	

GRABI	DATA	Location ID:	168-2	Vesse	Position Number: 2	
Latitude/Northing (r): 677	97.1	1.0	Longitude/Easti	ng (X): 599921.0	
Grab Sample Number	Grab Sample Time	Bottom depth	Bottom Penetration depth Depth (cm)		Comments:	
1	1104	7.5	10"	grab (Y/N)	59 broket	
2	106	1	Ĭ	1		
3	1108	120				
_ A	1116					
MAS	1112	1		-	DNV	
	1				* **	
				5	+	
	+					
	+					
	-					
	1 7 . 7					
				1		
			777			
					1	
SAMPLE	DATA	Sample ID:	NA			
Analyses needed b	efore homogen		Telephone and the second	-Purgeables	AVS/SEM Other:	
Sediment type	Sediment co		Sediment odor		Comments: (i.e. redox potential	
cobble	brown surfac	e	none H ₂ S		discontinuity, organic matter, wood debris, shell fragments, sheen,	
gravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)	
sand (F M C)	brown		moderate other:			
Silf	gray		strong			
clay	black					

GRAB I	DATA	Location ID:	169-1	Vessel	B ₁ JFM Position Number: (
Latitude/Northing (Y): 6755	62.0		Longitude/Eastin	g(X): 599382·3
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	130	7.4'	100	Y	Chem,
2	1132		1		Sy bucket
3	1134				
4	1136			1-1,-1	
5	1138	V	V	1	1
SAMPLE Analyses needed b		A CONTRACTOR OF THE PERSON OF	NBO3SED VOD TERM	CHM169 Purgeables	AVS/SEM Other:
Sediment type cobble gravel sand (F M C) silt clay	Sediment coll brown surface drab olive brown gray black	D1	none slight moderate strong	H₂S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)

GRAB I	DATA	Location ID:	169-2	Vesse	Position Number: 2
Latitude/Northing (Y): (0-	15557.6	2	Longitude/Easti	ng (X): 599368. 0
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
	1140	6.4	(0	Y	59 bucket
2	1142	1			
3	1144				
Á	1146				
5	148	V	1	V	V
SAMPLE	DATA	Sample ID:	NA		
nalyses needed be	efore homogeniz	ation (circle):	VOC TEP	H-Purgeables	AVS/SEM Other:
Sediment type cobble gravel sand (PM C)	Sediment col brown surface drab olive	~	Sediment odor	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
(I)	gray		strong		

ampling Method:	Polan			Crew: DO, AMB, JOM				
GRABI		Location ID:	169-3	Vess	sel Position Number: 3			
Latitude/Northing (Longitude/Eas				
Grab Sample Number	Grab Sample Time	Bottom	Penetration Depth (cm)	Acceptable grab (Y/N)				
1	1150	4.8	Y	4	5gbucket			
v	1152				1			
3	1154							
4	1156		3-0	1. "				
5	1200	V	1	1				

			-					
					4 17			
SAMPLE	DATA	Sample ID:	1000					
Analyses needed b			VOC TEPH	-Purgeables	AVS/SEM Other:			
Sediment type	Sediment col		Sediment odor	- urguabics	Comments: (i.e. redox potential			
cobble	brown surface		none	H₂S	discontinuity, organic matter, wood debris, shell fragments, sheen,			
gravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)			
sand (F) M C)	prowp		moderate	other:	The state of the s			
	gray		strong					
clay	black		101.00					
ulay	10012				Date 9/15/15 Time 1500			

Grab Sample Number Grab Sample Bottom depth Depth (cm) Grab (Y/N) Gomments: 1	ampling Method:	PONAR		Crew:	P30/4W	16,80 JEM
Grab Sample Number Grab Sample Grab Samp	GRAB				Vesse	Position Number: 4
Number Time depth Depth (cm) grab (Y/N) Comments:	Contraction of the Contraction o					ng (X): 599339,9
SAMPLE DATA Sample ID: Sample Data Sample ID: Sediment type Cobbie brown surface brown surface drab olive sight gray strong Sediment color brown surface drab olive strong		Grab Sample Time				Comments:
SAMPLE DATA Sample ID: Sample D: Sample D: Sediment type Sobile Sobi	1	1202	7.0		4	59 broket
SAMPLE DATA Sample ID: Sample ID: VCC TEPH-Purgeables Avs/SEM Other: Sediment type Sediment type Sobile brown surface brown surface drab olive gravel drab olive gravel drab olive gray Sample ID: VCC TEPH-Purgeables Avs/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	2	1204	1	1		7.5
SAMPLE DATA Sample ID: Analyses needed before homogenization (circle): Sediment type Sobbile brown surface brown surface drab olive gravy Sample ID: VCC TEPH-Purgeables AVS/SEM Other: Comments; (i.e. redox potential discontinuity organic matter, wood descontinuity organic matter, wood desc	3	1206				
SAMPLE DATA Sample ID: Analyses needed before homogenization (circle): VOC TEPH-Purgeables Sediment type Sediment type Sobile brown surface drab olive drab olive gravel drab olive gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	4			I I		
SAMPLE DATA Sample ID: Analyses needed before homogenization (circle): VOC TEPH-Purgeables Sediment type Sediment type Sobble brown surface drab olive gravel gray gray Sample ID: AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	5		V			
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive slight petroleum moderate other: gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	,	100				
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface brown surface drab olive slight petroleum moderate other: gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive slight petroleum moderate other: gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)			-			
Avs/SEM Other: Sediment type Sediment color brown surface drab olive and (F M C) Sediment color gray Sediment odor brown surface strong Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive slight petroleum moderate other: gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)		-				
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive slight petroleum moderate other: gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive slight petroleum moderate other: gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive slight petroleum moderate other: gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface brown surface drab olive slight petroleum moderate other: gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)			1			
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface brown surface drab olive slight petroleum moderate other: gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive slight petroleum moderate other: gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface brown surface drab olive slight petroleum moderate other: gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface brown surface drab olive slight petroleum moderate other: gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive slight petroleum moderate other: gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface drab olive slight petroleum moderate other: gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)						
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface brown surface drab olive slight petroleum moderate other: gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)			-			
Analyses needed before homogenization (circle): VOC TEPH-Purgeables AVS/SEM Other: Sediment type Sediment color brown surface brown surface drab olive slight petroleum moderate other: gray strong AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	SAMPLE	DATA	Sample ID:	NA		
Sediment type sobble brown surface drab olive and (F M C) gray Sediment odor brown surface slight moderate strong Sediment odor H ₂ S slight petroleum moderate other: gray Sediment odor H ₂ S slight petroleum moderate other:					-Purgeables	AVS/SEM Other:
brown surface brown surface drab olive slight petroleum moderate other: gray strong discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)					, angeles	The state of the s
gravel drab olive slight petroleum fauna, field duplicate, etc.) sand (F M C) brown moderate other: gray strong	cobble	0.0000000000000000000000000000000000000		1.25	H₂S	discontinuity, organic matter, wood
gray strong				-		fauna, field duplicate, etc.)
gray strong		brown				
				strong		
		black				

GRAB D	DATA	Location ID:	11,9-5	Vessel	Position Number: 5
atitude/Northing (n: 675	559.7	. (2		ng (X): 599318 &
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
	1215	7.0	(0"	X	5q bulket
			1		
SAMPLE	DATA	Sample ID:	NA		
nalyses needed be	efore homogeniz	ration (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
sediment type obble ravel	Sediment collabrown surface drab olive		Sediment odor	H₂S petroleum	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
and (EM C)	gray black		moderate strong	other:	
ay	200			Acadis	alithe 1.

	16.5.A		Project no.:	Carre	39.0044
-	7-16-15		Weather:	SURRY GO, AMB,	201
mpling Method:	PONAR		Crew:	DO, KMB,	Jam
GRAB D	DATA	Location ID:	170-1	Vesse	Position Number:
atitude/Northing (r): (260	343.9		Longitude/Eastin	ng (X): 5954949
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
Number	1026	93	/ o	y y	Chem
2	1028	1	1		To broket
3	1030		7 A		1
Δ	1032				
-	(034	1/		1	1 //
	1031	-	-	-	4
		-			
	· ·				
	+				
SAMPLE	DATA	Sample ID:	VB03 SEO-(OFIMH	
nalyses needed be	efore homogeniz	WINDS OF	_	-Purgeables	, AVS/SEM Other:
ediment type	Sediment col		Sediment odor		Comments; (i.e. redox potential
obble	brown surface		none	H₂S	discontinuity, organic matter, wood debris, shell fragments, sheen,
avel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
and (F M C)	brown		moderate	other:	
	gray		strong		
ay	black		100		
- A	010			^	alul 1
inquished By	11-		Company	Dradis	Date 9/16/15 Time 1600
					1

Title: SQT and Porewater Sampling and Analysis Quality Assurance Project Plan Revision Number: 2 Revision Date: August 2015

GRAB	DATA	Location ID:	170-2	Vesse	l Position Number: 2
Latitude/Northing ((Y): 669	356-A		Longitude/Eastin	ng (X): 595482.1
Grab Sample Number	Grab Sample	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1036	9-6	(a)	V	5g bucket
1	1036	1	1		1
2	1040				
4	1042				
MZ	1044	1	-		
7	1041	Y	-		
	-				
	+		(
			4		
	l juli li				
SAMPLE	DATA	Sample ID:	NA		
Analyses needed b	efore homogeni	zation (circle):	VOC TEPH	f-Purgeables	AVS/SEM Other:
Sediment type	Sediment co	lor	Sediment odor		Comments: (i.e. redox potential
cobble	brown surface drab olive		none	H₂S	discontinuity, organic matter, wood debris, shell fragments, sheen,
gravel			slight	petroleum	fauna, field duplicate, etc.)
sand (PMC)	brown		moderate	other:	
silt	gray		strong		
clay	black				

Title: SQT and Porewater Sampling and Analysis Quality Assurance Project Plan Revision Number: 2 Revision Date: August 2015

Project Name:	N.B.S.A		Project no.:		89.0044
Date:	9-17-15		Weather:	SUM	To the
Sampling Method:	SUMP		Crew:	MD ans	Jem
GRAB I	DATA	Location ID:	171-1	Ves	sel Position Number:
Latitude/Northing (Y): 668L	155.4		Longitude/Eas	sting (X): 595314.8
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments,
	1055	8	(g:1	Y	Chem bentair 5g has
2	1057	ĺ			Kompane Sahirit
3	1059	100			benshie
4	1011		214		Eg broket
5	1103	V	V	V	hg broket
		-			
			1 1		
			YEL 1		
SAMPLE	DATA	Sample ID;	NB03SED	-CHMI	7
Analyses needed b	efore homogeniz	ation (circle):	1	-Purgeables	AVS/SEM Other:
Sediment type	Sediment col	or	Sediment odor		Comments: (i.e. redox potential
cobble	brown surface		(none)	H ₂ S	discontinuity, organic matter, wood debris, shell fragments, sheen,
gravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
(sand (F M C)	brown		moderate	other:	
sill	gray		strong		
clay	black				
Relinquished By	600		Company	Arradis	
Accepted By	211		Company	ARCADIS	Date 9/17/15 Time 1400

GRABI	DATA	Location ID:	171-2	Vessel	Position Number: Z
atitude/Northing (m: ale 8	3452,0		Longitude/Eastin	ng (X): 595303.8
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	105	8	(or	y	Sqlarclet
1	(107				
3	1109				
4	(()(*				
5	1113	1	1/		
			V		1
	1 1				
	1		-		
SAMPLE	DATA	Sample ID:	NA		
nalyses needed b	efore homogeniz	ation (circle):	VOC TEPH	-Purgeables	AVS/SEM Other:
ediment type	Sediment col	or	Sediment odor		Comments: (i.e. redox potential
obble	brown surface		none	H₂S	discontinuity, organic matter, wood debris, shell fragments, sheen,
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
and (F M C)	brown		moderate	other:	
lt	gray		strong		
ay	black				

roject Name: N.B.	S.A SQT/Po	rewater	Project no.:	5UN	4
	7/23/15		Weather:		1
ampling Method:	Ponal		Crew:	PJD, AMB, JEM	
GRABI	Actual Control of the	Location ID:	121-1	Vesse	Position Number:)
Latitude/Northing (12.2			ng (X): 592124,2
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1400	7.2	6"	Y	chem-59 bullet
2	1402				
3	1404				
4	1406				
5	1403	V	V	V	V
172-2	N)66L	196.6	E) 592	158.7	
1	1410	7.3	"Tu"	4	5a bucket
2	1412	-1-			0
3	1414				
4	1416		1/		
5	1418	V			6
		1			
SAMPLE	DATA	Sample ID:	1803-500	-arem 172	- 1
nalyses needed be	efore homogeniz	ation (circle):	VOC (EPH	-Purgeables	AVS/SEM Other:
ediment type	Sediment col	or	Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood
obble	brown surface		none	H ₂ S	debris, shell fragments, sheen,
avel	drab olive		slight	petroleum	fauna, field duplicate, etc.)
ind (F M C)	brown		moderate	other:	
t	gray		strong		+
ay	black		-		
inquished By P.	JD		Company	Arcadis	Date 9/23/15 Time 1530
	711-			ARCADIS	V 200

roject Name: N.B.	S.A SQT/PO	rewater		Project no.: 80009989,0044 Weather:					
ate:				Crew: PJD, AMB, JEM					
GRAB D	-	Location ID:	173-1	Vesse	Position Number:				
Latitude/Northing ()	n: 662	2611.9		Longitude/Easti	ng (X): 591195,7				
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:				
1	1320	8.0	6"	4	Chem- Sq backet				
2	1322								
3	1324		1-4						
4	1326	1							
5	1328	V	V	V	V				
173-2	- N)	4626	9.9 €)591213					
	1330	8.0	Y	Y	5g belet				
2	1332								
3	1334								
4	1956				1				
5	1338	V	•	V	1				
173-3	N) 660	-641,5	E) 591	232.0					
	1340	80	To "	4	59 brickt				
2	1342	1	U	-					
			.0.7 CcA	11011					
SAMPLE (1803-500 TEPH	CITEM (7 Purgeables	AVS/SEM> Other:				
ediment type obble avel ind (F M C)	Sediment color brown surface drab olive brown gray	or	Sediment odor none slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)				
ay	black				alanke in a				
inquished By PJ	JD .		Company	Arcadis	Date 9/23/15 Time 1530				
epted By	AC		Company	ARCADIS	Date 9/23/15 Time 1530				

roject Name: N.B.	S.A SQT/Po	rewater	Project no.:	B0009989.004	14
ate:	9/20/15		Weather:	- 1 .	104
mpling Method:	Ponar			PJD, AMB, JEN	И
GRAB D		Location ID:	174-1	Vesse	el Position Number:
atitude/Northing (65.3	1.01		ng (X): 590653.4
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1402	15.0	6	4	Chem, 5a bucket
2	1404		1		
3	1486				
4	1403				
5	1416	V	V	V	V
SAMPLE I	efore homogeniz	ation (circle):		CHEM - [] 4	AVS/SED Other:
ediment type obble ravel and (F M C)	brown surface drab olive gray		Sediment odor none slight moderate strong	H ₂ S petroleum other:	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)
linquished ByP	JD		Company	Arcadis	Date 7/21/15 Time 7715
epted By	7.11		Company	ARCAINS	Date 7/21/18 Time 7715

Title: SQT and Porewater Sampling and Analysis Quality Assurance Project Plan Revision Number: 2 Revision Date: August 2015

SURFACE SEDIMENT COLLECTION FORM

B0009989 0044

	S.A SQT/PO	rewater	Project no.:	B0009989.004	
ate: ampling Method:	77		Weather:	SUN WIND PJD, AMB, JEN	1
mping weaks					
GRAB [ATA	Location ID:	174-2		I Position Number: Z
atitude/Northing (691862		Longitude/Eastin	ng (X): 590657·1
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1412	15.0	6"	1	5g bucket
2	1414	15-0	100	Y	V
3					
4					
5					
					-
	1				
	1				
SAMPLE	DATA	Sample ID:	NA		
nalyses needed be	fore homogeniz	ation (circle):	VOC TEPH-	-Purgeables	AVS/SEM Other:
ediment type	Sediment cold		Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood
obble	brown surface		none	H₂S	debris, shell fragments, sheen, fauna, field duplicate, etc.)
ravel	drab olive		slight	petroleum	lauria, noid supriodic, etc.,
and (F)M C) (brown		moderate	other:	
lt)	gray		strong		
ay	Diack				

roject Name: N.B.	S.A SQT/Po	rewater	_ Project no.: _	B0009989.004	4			
ate:	9/21/15		Weather: SUNNY , WINDY					
ampling Method:	Ponar		Crew:	PJD, AMB, JEN				
GRAB DATA Location			175-1	Vesse	Vessel Position Number:			
Latitude/Northing ()	1: 658	3097.1		Longitude/Eastir	ng (X): 590890- D			
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:			
1	1330	10-2	(0)	4	Chem-5q broket			
2	1332		1		5g briket			
3	1334							
4	1334							
5	1338	V	A	V	V			
		1						
	1							
	(A							
SAMPLE	DATA	Sample ID: N	B03-560-0	HGM-175				
nalyses needed be	fore homogeniz	1 m.		-Purgeables	AVS/SEM Other:			
ediment type	Sediment colo		Sediment odor	H₂S	Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen,			
ravel	drab olive		slight	petroleum	fauna, field duplicate, etc.)			
and (5 M C)	brown		moderate	other:	Shells			
II.	gray		strong					
ay	black							
slinguished By PJ	ID.			Arcadic	9/21/15 1700/5			
elinquished ByPJ			Company _	A	Date 9/21/15 Time +730/5			
cepted By	th		Company	ARCADIS ,	Date 9/21/15 Time 1530			

roject Name: N.B.	9/21/15		Project no.: Weather:	D/A / PJD, AMB	1,001	ndy	
ampling Method:	Ponar		Crew:	PJD, AMB	JEM	0	
GRAB I	DATA	Location ID:	×(03)			ition Number: 2	
.atitude/Northing (v): 658 (90.6	0, 111	Longitude			
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Accept grab (Y/N)	Comments:	
1	1340	9.8	6"	Y	11	5g bullet	
2	1342					3	
3	1344	14					
4	1346					1	
5	1348	1	V	V		V	
	+						
	+						
							_
					-		
					-		
	+						
_	1						
SAMPLE	DATA	Sample ID:	NIA				
nalyses needed b				-Purgeables	-	AVS/SEM Other:	
ediment type	Sediment col		Sediment odor		Co	mments: (i.e. redox potentia	al
obble	brown surface	(none	H ₂ S	del	continuity, organic matter, w bris, shell fragments, sheen,	ood
ravel	drab olive		slight	petroleum		na, field duplicate, etc.)	
and (F) M C)	brown		moderate	other:		Shells	
lt	gray		strong				
ay	black						
P	JD		0	Arcadis	6-6	9/21/15 Time 15	0
inquished ByP			Company	, il oddio	Date_	time	_

B0009989.0044

roject Name: N.B	a 211		Project no.:	B0009989.	windy
ate:	Ponar	>	Weather:	PJD, AMB,	IFM
ampling Method:	1 01101				
GRAB	DATA	Location ID:	175.3	V	essel Position Number: 3
Latitude/Northing (Longitude/E	
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Accepta grab (Y	(N) Comments:
1	1350	9.6	(p"	4	5g brulet
2					
3					
4					
5					
	1		-		
	-				
	-				
			100		
SAMPLE	Shirt Lawrence Co.	Sample ID:	NA		Table 1
nalyses needed b			Date of the Tree of the	-Purgeables	AVS/SEM Other:
Sediment type	Sediment col		Sediment odor		Comments: (i.e. redox potential discontinuity, organic matter, wood
cobble	brown surface drab olive		none	H ₂ S	debris, shell fragments, sheen, fauna, field duplicate, etc.)
and (F M C)	brown		slight moderate	petroleum other:	25 35 75 55 55 55 55 55 55
	gray		strong	other.	
ilt day	black		344.3		
	10.00		I.		Alula is
elinquished ByP	JD		Company	Arcadis	Date 1/21115 Time 1700
-/4	11.			Arcadis ARCANIS	Date 9/21/15 Time 1530
ccepted By	517		Company	11/2/10/10	Date_ VOUT Time_ TO TO

Title: SQT and Porewater Sampling and Analysis
Quality Assurance Project Plan
Revision Number. 2
Revision Date: August 2015

* Movon AREA AS PER Simile

mpling Method:	1 Orial		Crew:	PJD, AMB, JEN	,
GRAB	DATA	Location ID:	176	Vesse	el Position Number:
Latitude/Northing (99.3		Longitude/Easti	ng (X): 584944.7
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments:
1	1205	6.8	60	Y	Chem - By burlet
2	1207				
3	1209		1		
4	1211		17	1	
5	1213	V	V	V	V
1-	16-2	1/)/	59960.	0 €)5	919112
17	1215	71	(0"	7	84966.2 5g bucket
	10.43	+-1	0	1	39 buch
					42
	1				
	+				
SAMPLE	DATA	Sample ID: A	1603 500	CHAMIT	
nalyses needed b	efore homogeniz	ation (circle):	-	-Purgeables	AVS/SEM Other:
ediment type	Sediment col		Sediment odor		Comments: (i.e. redox potential
obble	brown surface		none	H ₂ S	discontinuity, organic matter, wood debris, shell fragments, sheen,
ravel	drab olive	1	slight	petroleum	fauna, field duplicate, etc.)
and (FM C)	brown		moderate	other:	
	gray		strong	200	
_	black				
ay					

Title: SQT and Porewater Sampling and Analysis Quality Assurance Project Plan Revision Number: 2 Revision Date: August 2015

Project Name: N.B. Date:	9/23/15	rewater	Project no.: Weather,	B00099			
1.7	Ponar		the state of the s	PJD, AMI			
GRAB I	DATA	Location ID:	177-1		Vessel I	Position Number:	
Latitude/Northing (Y): 6600	71.4	1	Longitud	tude/Easting (X): 5787-77.0		
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acce	ptable (Y/N)	Comments:	
1	0900	31.8	NO DO	W. (R	OCK)	
2							
3							
4							
5							
177.2	0905	287	No Per	n FR:	CK	1 H166001009 E)578776	
177-3	0908	20.	No Pe	n (Poch	N6600609 €)578776 N660103.3 €) 548	
					Curry.)) 1	
	- 4						
	1						
SAMPLE	DATA	Sample ID:					
Analyses needed be	efore homogeniz	ation (circle): (VOC TEPH	Purgeables)	AVS/SEM Other:	
Sediment type	Sediment col	or	Sediment odor			Comments: (i.e. redox potential discontinuity, organic matter, wood	
cobble	brown surface	none H ₂ S		H ₂ S		debris, shell fragments, sheen,	
gravel	drab olive		slight	petroleum		fauna, field duplicate, etc.)	
sand (F M C)	brown		moderate	other:			
silt	gray		strong				
clay	black						
telinquished By Pu	JD		Company	Arcadis	De	9/25/15 Time 1700-153	
V. 6. A. P.	-		Company	LA SUCIO		O	
Accepted By	7th		Company _	ARGAID	15_DE	ate 9/25/15 Time 1700-153	

* MUED AS PER EPA 9" ponar

Title: SQT and Porewater Sampling and Analysis Quality Assurance Project Plan Revision Number: 2

Revision Date: August 2015

Project Name: N.B	7/29	1/5	Project no.;	Sur/			
ate: ampling Method:	Ponar	1. ,	Weather:	Crew: PJD, AMB, JEM			
mpling Method:	7.57191		Crew:				
GRAB	DATA	Location ID:	177-1	Vess	el Position Number:		
atitude/Northing				Longitude/East	ing (X):		
Grab Sample Number	Grab Sample Time	Bottom depth	Penetration Depth (cm)	Acceptable grab (Y/N)	Comments;		
1	1310	4.7	6	Y	chem- 5g brite		
2	1312		Ĭ				
3	1314						
4	1316						
5	1318	V	1				
	1		-				
					+		
					+		
			1				
		1					
SAMPLE	DATA	Sample ID:					
	efore homogeniz		VOC TEPH	Purgeables	AVS/SEM) Other:		
ediment type	Sediment cold		Sediment odor	, digodolog	Comments: (i.e. redox potential		
bble	brown surface		none H ₂ S		discontinuity, organic matter, wood debris, shell fragments, sheen,		
avel	drab olive	(slight	petroleum	fauna, field duplicate, etc.)		
nd (FM C)	brown		moderate other:		Dona C		
0	gray		strong		aganics		
ay	black				*		
					Ola I Z I - 2		
inquished By P	JD		Company _	Arcadis	Date 9/29/15 Time 1515		
	حالت				GLIGHE ICIE		
epted By	711		Company 2	ARCADIS	Date_9/29/15_Time1515_		

SAMPLE DATA Sample Data Sample Time Bottom depth Penetration Depth (cm) Penetration Penetration Depth (cm) Penetration Penet	GRAB D	ΔΤΔ	Location ID:	H0-1	Vesse	I Position Number:
Grab Sample Number Grab Sample Bottom depth Penetration Depth (cm) grab (YN) Comments:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	37.05	Location ID: 178-		Tables Separation (1997)	
2 1250 3 1252 4 1254 5 1256 7 7 7 7 7 7 7 7 7	Grab Sample	Grab Sample		Depth (cm)	Acceptable	
2 1250 3 1252 4 1254 5 1256 7 7 7 7 7 7 7 7 7	1	1248	8.0	6"	V	59 buttet-drem
SAMPLE DATA Sample ID:	2	1250				1
SAMPLE DATA Sample ID: NBU3 SERCHEM - 178 Analyses needed before homogenization (circle): Sediment type Sediment type Sobile brown surface drab olive gravel drab olive gray STORM SERVICEM - 178 Sediment door Sediment door Sobile brown surface drab olive sight gray STORM SERVICEM - 178 Analyses needed before homogenization (circle): Sediment door	3	1292		11 11 11 11		
SAMPLE DATA Sample ID: NG03 SMCKEM - [78] Analyses needed before homogenization (circle): Sediment type Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) Signay Gray Sample ID: NG03 SMCKEM - [78] TEH-Purgeables Sediment type Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) SAMPLE DATA Sample ID: NG03 SMCKEM - [78] Sediment type Sediment type Sediment type Sediment dor Tone H ₂ S Silight petroleum moderate other: SAMPLE DATA Sample ID: NG03 SMCKEM - [78] Sediment color brown surface france france france france SAMPLE DATA Sample ID: NG03 SMCKEM - [78] Sediment color Sediment type Sediment type Something the first type of the color brown surface france france france SAMPLE DATA Sample ID: NG03 SMCKEM - [78] Sediment color Sediment type S	4	1254				
SAMPLE DATA Sample ID: \(\sqrt{303} \) SAMPLE DATA Sample ID: \(\sqrt{303} \) SAMPLE DATA Sample ID: \(\sqrt{303} \) SECTION OF TEXT Purgeables Analyses needed before homogenization (circle): \(\sqrt{600} \) Sediment type Sediment type Sediment color brown surface drab olive Sample ID: \(\sqrt{303} \) TEXT Purgeables AVS/SEM Other: Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) Shell's Shell's Shell's	5	1256	V	V	V	V
SAMPLE DATA Sample ID: \(\)	178-7	2 N)((E) 59	0163.4	
SAMPLE DATA Sample ID: \(\)\(\)\(\)\(\)\(\)\(\)\(\)\(8.3	6	V	5g bruket
SAMPLE DATA Sample ID: \(\)	2					
SAMPLE DATA Sample ID: \(\lambda \) \(\la	3	1306				
SAMPLE DATA Sample ID: \(\lambda \) \(\la	9	1304		1		1
Analyses needed before homogenization (circle): Sediment type Sediment color Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) Sediment type Sediment color Bruh-Purgeables Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) Sediment type Sediment color Bruh-Purgeables Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)	5	1306	V	V	V	V
Analyses needed before homogenization (circle): Sediment type Sediment color Sediment odor Sediment odor Sediment odor brown surface drab olive Silt Sediment odor Sediment odor Sediment odor Sediment odor Figure 1 Sediment odor Sediment odor Sediment odor Figure 2 Sediment odor Sediment odor Figure 3 Sediment odor Figure 3 Sediment odor Figure 4 Sediment odor Sediment odor Sediment odor Figure 4 Sediment odor Sediment						
Analyses needed before homogenization (circle): Sediment type Sediment color Sediment odor Sobble brown surface drab olive Sediment odor Sediment odor Figure 1 Sediment odor Sediment odor Figure 2 Sediment odor Figure 3 Sediment odor Figure 4 Sediment odor Figure 5 Sediment odor Figure 4 Sediment odor Figure 5 Sediment odor Figure 4 Sediment od						
Sediment type cobble brown surface drab olive sand F M C) silt Sediment odor Sediment odor brown surface brown surface drab olive sand F M C) silt Sediment odor None H ₂ S slight petroleum moderate other: strong Comments: (i.e. redox potential discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.)						
brown surface none H ₂ S discontinuity, organic matter, wood debris, shell fragments, sheen, fauna, field duplicate, etc.) gravel moderate other: gray strong		La con Ce			Purgeables	
gravel drab olive slight petroleum fauna, field duplicate, etc.) sand M C) brown moderate other: gray strong	The Control of the Co				H-S	discontinuity, organic matter, wood
sand (F M C) brown moderate other; SCe//S						fauna, field duplicate, etc.)
gray strong						5/21/6
A Land		gray		strong		300112
	clay (black				

Appendix	D

Location ID: 136 Date Collected: 9/14/15 Date Processed: 9/15/15

Benthic Invertebrate Sample NB03SED-COM136A



Benthic Invertebrate Sample NB03SED-COM136C



Benthic Invertebrate Sample NB03SED-COM136B



Post-Mixing Sediment Sample



Location ID: 137

Date Collected: 9/14/15 Date Processed: 9/15/15

Benthic Invertebrate Sample NB03SED-COM137A



NB03SED-COM137B

Benthic Invertebrate Sample



Benthic Invertebrate Sample NB03SED-COM137C



Post-Mixing Sediment Sample



Location ID: 138 Date Collected: 9/14/15 Date Processed: 9/15/15

Benthic Invertebrate Sample NB03SED-COM138A



Benthic Invertebrate Sample NB03SED-COM138B



Benthic Invertebrate Sample NB03SED-COM138C



Post-Mixing Sediment Sample



Location ID: 139 Date Collected: 9/15/15 Date Processed: 9/16/15

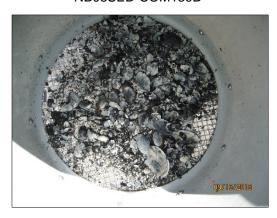
Benthic Invertebrate Sample NB03SED-COM139A



Benthic Invertebrate Sample NB03SED-COM139C



Benthic Invertebrate Sample NB03SED-COM139B



Post-Mixing Sediment Sample



Location ID: 140 Date Collected: 9/29/15 Date Processed: 9/30/15

Benthic Invertebrate Sample NB03SED-COM140A



Benthic Invertebrate Sample NB03SED-COM140C



Benthic Invertebrate Sample NB03SED-COM140B



Post-Mixing Sediment Sample



Location ID: 141 Date Collected: 9/16/15 Date Processed: 9/17/15

Benthic Invertebrate Sample NB03SED-COM141A



Benthic Invertebrate Sample NB03SED-COM141B



Benthic Invertebrate Sample NB03SED-COM141C



Post-Mixing Sediment Sample



Location ID: 142 Date Collected: 9/28/15 Date Processed: 9/29/15

Benthic Invertebrate Sample NB03SED-COM142A



Benthic Invertebrate Sample NB03SED-COM142C



Benthic Invertebrate Sample NB03SED-COM142B



Post-Mixing Sediment Sample



Location ID: 143 Date Collected: 9/29/15 Date Processed: 9/30/15

Benthic Invertebrate Sample NB03SED-COM143A



Benthic Invertebrate Sample NB03SED-COM143C



Benthic Invertebrate Sample NB03SED-COM143B

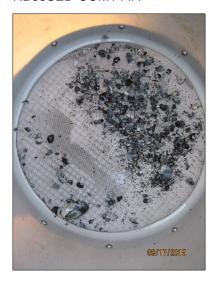


Post-Mixing Sediment Sample



Location ID: 144 Date Collected: 9/17/15 Date Processed: 9/18/15

Benthic Invertebrate Sample NB03SED-COM144A



Benthic Invertebrate Sample NB03SED-COM144B



Benthic Invertebrate Sample NB03SED-COM144C



Post-Mixing Sediment Sample



Location ID: 145 Date Collected: 9/29/15 Date Processed: 9/30/15

Benthic Invertebrate Sample NB03SED-COM145A



Benthic Invertebrate Sample NB03SED-COM145C



Benthic Invertebrate Sample NB03SED-COM145B

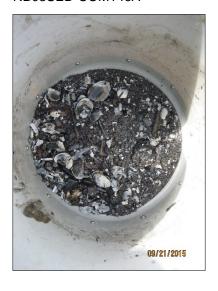


Post-Mixing Sediment Sample



Location ID: 146 Date Collected: 9/21/15 Date Processed: 9/22/15

Benthic Invertebrate Sample NB03SED-COM146A



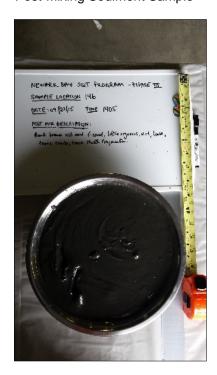
Benthic Invertebrate Sample NB03SED-COM146B



Benthic Invertebrate Sample NB03SED-COM146C



Post-Mixing Sediment Sample



Location ID: 147 Date Collected: 9/21/15 Date Processed: 9/22/15

Benthic Invertebrate Sample NB03SED-COM147A



Benthic Invertebrate Sample NB03SED-COM147C



Benthic Invertebrate Sample NB03SED-COM147B



Post-Mixing Sediment Sample



Location ID: 148 Date Collected: 9/21/15 Date Processed: 9/22/15

Benthic Invertebrate Sample NB03SED-COM148A



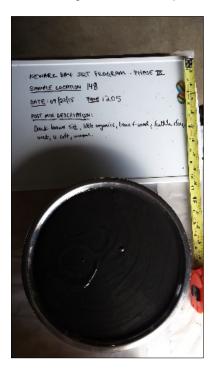
Benthic Invertebrate Sample #3 NB03SED-COM148C



Benthic Invertebrate Sample NB03SED-COM148B



Post-Mixing Sediment Sample



Location ID: 149 Date Collected: 9/22/15 Date Processed: 9/23/15

Benthic Invertebrate Sample NB03SED-COM149A



Benthic Invertebrate Sample NB03SED-COM149B

No photo available for sample NB03SED-COM149B, photo was accidentally not taken

Benthic Invertebrate Sample NB03SED-COM149C



Post-Mixing Sediment Sample



Location ID: 150 Date Collected: 9/22/15 Date Processed: 9/23/15

Benthic Invertebrate Sample NB03SED-COM150A



Benthic Invertebrate Sample NB03SED-COM150C



Benthic Invertebrate Sample NB03SED-COM150B



Post-Mixing Sediment Sample



Location ID: 151 Date Collected: 9/20/15 Date Processed: 9/21/15

Benthic Invertebrate Sample NB03SED-COM151A



NB03SED-COM151B

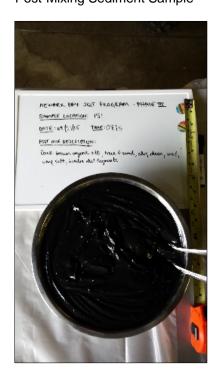
Benthic Invertebrate Sample



Benthic Invertebrate Sample NB03SED-COM151C



Post-Mixing Sediment Sample



Location ID: 152 Date Collected: 9/29/15 Date Processed: 9/30/15

Benthic Invertebrate Sample NB03SED-COM152A



Benthic Invertebrate Sample NB03SED-COM152C



Benthic Invertebrate Sample NB03SED-COM152B



Post-Mixing Sediment Sample



Location ID: 153 Date Collected: 9/23/15 Date Processed: 9/24/15

Benthic Invertebrate Sample NB03SED-COM153A



Benthic Invertebrate Sample NB03SED-COM153B



Benthic Invertebrate Sample NB03SED-COM153C



Post-Mixing Sediment Sample



Location ID: 154 Date Collected: 9/20/15 Date Processed: 9/21/15

Benthic Invertebrate Sample NB03SED-COM154A



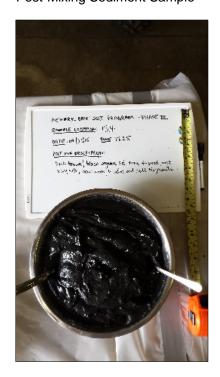
Benthic Invertebrate Sample NB03SED-COM154C



Benthic Invertebrate Sample NB03SED-COM154B



Post-Mixing Sediment Sample



Location ID: 155 Date Collected: 9/20/15 Date Processed: 9/21/15

Benthic Invertebrate Sample NB03SED-COM155A



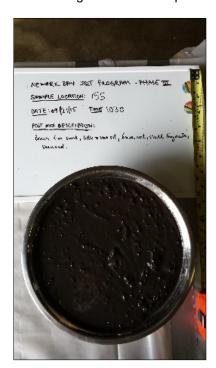
Benthic Invertebrate Sample NB03SED-COM155C



Benthic Invertebrate Sample NB03SED-COM155B



Post-Mixing Sediment Sample



Location ID: 156 Date Collected: 9/17/15 Date Processed: 9/18/15

Benthic Invertebrate Sample NB03SED-COM156A



Benthic Invertebrate Sample NB03SED-COM156C



Benthic Invertebrate Sample NB03SED-COM156B



Post-Mixing Sediment Sample



Location ID: 157 Date Collected: 9/16/15 Date Processed: 9/17/15

Benthic Invertebrate Sample NB03SED-COM157A



Benthic Invertebrate Sample NB03SED-COM157C



Benthic Invertebrate Sample NB03SED-COM157B



Post-Mixing Sediment Sample



Location ID: 158 Date Collected: 9/24/15 Date Processed: 9/25/15

Benthic Invertebrate Sample NB03SED-COM158A



Benthic Invertebrate Sample NB03SED-COM158B



Benthic Invertebrate Sample NB03SED-COM158C



Post-Mixing Sediment Sample



Location ID: 159 Date Collected: 9/24/15 Date Processed: 9/25/15

Benthic Invertebrate Sample NB03SED-COM159A



Benthic Invertebrate Sample NB03SED-COM159B



Benthic Invertebrate Sample NB03SED-COM159C



Post-Mixing Sediment Sample



Location ID: 160 Date Collected: 9/28/15 Date Processed: 9/29/15

Benthic Invertebrate Sample NB03SED-COM160A



Benthic Invertebrate Sample NB03SED-COM160C



Benthic Invertebrate Sample NB03SED-COM160B



Post-Mixing Sediment Sample



Location ID: 161 Date Collected: 9/15/15 Date Processed: 9/16/15

Benthic Invertebrate Sample NB03SED-COM161A



Benthic Invertebrate Sample NB03SED-COM161C



Benthic Invertebrate Sample NB03SED-COM161B



Post-Mixing Sediment Sample



Location ID: 162 Date Collected: 9/21/15 Date Processed: 9/22/15

Benthic Invertebrate Sample NB03SED-COM162A



Benthic Invertebrate Sample NB03SED-COM162C



Benthic Invertebrate Sample NB03SED-COM162B



Post-Mixing Sediment Sample



Location ID: 163 Date Collected: 9/22/15 Date Processed: 9/23/15

Benthic Invertebrate Sample NB03SED-COM163A



Benthic Invertebrate Sample NB03SED-COM163C



Benthic Invertebrate Sample NB03SED-COM163B



Post-Mixing Sediment Sample



Location ID: 164 Date Collected: 9/13/15 Date Processed: 9/14/15

Benthic Invertebrate Sample NB03SED-COM164A



Benthic Invertebrate Sample NB03SED-COM164C



Benthic Invertebrate Sample NB03SED-COM164B



Post-Mixing Sediment Sample



Location ID: 165 Date Collected: 9/13/15 Date Processed: 9/14/15

Benthic Invertebrate Sample NB03SED-COM165A



Benthic Invertebrate Sample NB03SED-COM165C



Benthic Invertebrate Sample NB03SED-COM165B



Post-Mixing Sediment Sample



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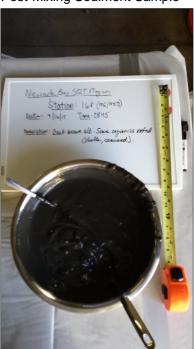
Location ID: 166 Date Collected: 9/13/15 Date Processed: 9/14/15



Date Collected: 9/14/15 Date Processed: 9/15/15



Date Collected: 9/15/15 Date Processed: 9/16/15



Date Collected: 9/15/15 Date Processed: 9/16/15



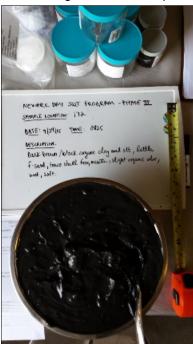
Date Collected: 9/16/15 Date Processed: 9/17/15



Date Collected: 9/17/15 Date Processed: 9/18/15



Date Collected: 9/23/15 Date Processed: 9/24/15



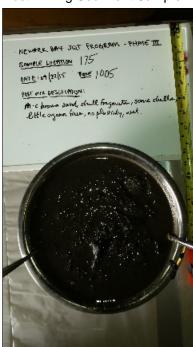
Date Collected: 9/23/15 Date Processed: 9/24/15



Date Collected: 9/20/15 Date Processed: 9/21/15



Date Collected: 9/21/15 Date Processed: 9/22/15



Date Collected: 9/23/15 Date Processed: 9/24/15



Date Collected: 9/29/15 Date Processed: 9/30/15



Date Collected: 9/23/15 Date Processed: 9/24/15



Appendix	Ε

Date: <u>09/</u>	<u>5/2015</u> Time	Sample Buckets Removed from Cooler: 1200
Location ID:	136	
Number of B	Buckets to Homogenize:4	
Pre-Mixing D	Description of Sediment:	k brown silt
Mixer:		
	er Used?(Y)/ N	
	e on: 1215	
	e off: 1220	
Hom	ogeneity Achieved? (Y) / N	0 111
Post	-Mixing Description of Sediment: _	Bark brown s. IT
Dhataaranh /	often mairie al	
	after mixing): ber: 3	3) 7233
		7,700
	<u>9/15/15</u>	
Time	1225	
Analyses (ch	eck analyses to be conducted):	
\times	Sediment Chemistry	Sample ID: NB03SED-CHM 134
×	Toxicity	Sample ID: NB03SED-POR 136
_×	Porewater	Sample ID: NB03SED-TOX 34
\angle	Bioaccumulation	Sample ID: NB03SED-BIO_136
		5.4
Notes (i.e., Pl	E samples, EPA split samples, field	d duplicate, MS/MSD, etc.): EPA split for
	<u>Chemistry: NBO35</u>	SED-CHMI36-LB with this location. See field book.
F	the samples associated	with this location. See field book.
Dorson Doss	posible for Completing Fam. T.	l'anne Hanach
reison Respo	onsible for Completing Form:	The state of the s

Title: SQT and Porewater Sampling and Analysis Quality Assurance Project Plan Revision Number: 2 Revision Date: August 2015

Date: 09/15/2015	Time Sample Buckets Removed from Cooler: 6945
Location ID: 137	
Number of Buckets to Homogenize	3
Pre-Mixing Description of Sediment	: Dark brown silt
Mixer Used?(\(\bar{Y}\) / N	
Time on: 0955	
Time off: 1000	
Homogeneity Achieved?	V N
Post-Mixing Description of S	Sediment: Dark brown silt
t det mixing bedeription et e	- Confidence - Con
Photograph (after mixing): Number:3 , IMC	723 729 7230
Number:	7_/22 0) / 221) 1 3 5
Date: 9/15/15	
Time:	
Analyses (check analyses to be cond	sucted):
Sediment Chemistry	Sample ID: NB03SED-CHM_/37
X Toxicity	Sample ID: NB03SED-POR_137
Porewater	Sample ID: NB03SED-TOX_137
Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.e., PE samples, EPA split sa	imples, field duplicate, MS/MSD, etc.):
Person Responsible for Completing F	Form: Julianne Hagarty
	U

Title: SQT and Porewater Sampling and Analysis Quality Assurance Project Plan Revision Number: 2 Revision Date: August 2015

Date: <u>09/15/2015</u> Time	e Sample Buckets Removed from Cooler: 0750
Location ID: 138	
Number of Buckets to Homogenize:	
Pre-Mixing Description of Sediment: Very	soft brown sitt
Mixer:	
Mixer Used? (v) / N	
Time on: <u>0 800</u>	
Time off: <u>0805</u>	
Homogeneity Achieved? 🕥/ N	
Post-Mixing Description of Sediment:	very loose brown silt
Photograph (after mixing):	
Number: 20150915_083319, _	_083325, _083330, _ 083334, <u>_</u> 083336
Date: 9/15/15	,
Time: 0833	
Analyses (check analyses to be conducted):	
	120
Sediment Chemistry	Sample ID: NB03SED-CHM_138_
Toxicity	Sample ID: NB03SED-POR_/3%
Porewater	Sample ID: NB03SED-TOX_/38
Bioaccumulation	Sample ID: NB03SED-BIO /38
Notes (i.e., PE samples, EPA split samples, fie	eld duplicate, MS/MSD, etc.):
	7.8° 11 k
Person Responsible for Completing Form:	ulianne Hagarty

Date: _		Sample Buckets Removed from Cooler:O / 45
Location	on ID:!39	
Numbe	er of Buckets to Homogenize:3	
Pre-Mi	xing Description of Sediment:	K brown/black arganic sitt, +. roots,
	net, v. so	ft.
(maile		
Mixer:	M: 10 FR 11	
	Mixer Used? (Y) / N	
	Time on: <u>0755</u>	
	Time off: 0800	
	Homogeneity Achieved? (V)/ N	
	Post-Mixing Description of Sediment:	medium brown silt
Photog	raph (after mixing):	
	Number: 20150916_081340, -0	081348, -08353
	Date: 9/16/15	
	Time: 0813	
Analyse	es (check analyses to be conducted):	
	Sediment Chemistry	Sample ID: NB03SED-CHM_/3 9
	× Toxicity	Sample ID: NB03SED-POR_/39
	✓ Porewater	Sample ID: NB03SED-TOX_139
	Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.	.e., PE samples, EPA split samples, fie	ld duplicate, MS/MSD, etc.):
		dina Hand
Person I	Responsible for Completing Form: J_{ℓ}	Mant hazary

Date: <u>09/30/</u>	'2015 Ti	me Sample Buckets Removed from Cooler:
Location ID:	140	
Number of Buck	kets to Homogenize:3	<u> </u>
Pre-Mixing Desired	goasses	ck brown f-sand, little silt, frace shall
Time on Time off Homoge Post-Mix		it: dark brown f-sond, little silt, trace organics
Photograph (afte Number: Date: Time:	er mixina):	_060468, _060415, _080422
Analyses (check	analyses to be conducted):	
X Tox	diment Chemistry xicity rewater accumulation	Sample ID: NB03SED-CHM_140 Sample ID: NB03SED-POR_TOX_140 Sample ID: NB03SED-FOX_POR_140 Sample ID: NB03SED-BIO
Notes (i.e., PE sa	amples, EPA split samples, f	field duplicate, MS/MSD, etc.):
		*)
erson Responsit	ble for Completing Form:	Whank Hagarty

Date: 09/17/20	015 Time	e Sample Buckets Removed from Cooler: <u>U / b カ</u>
Location ID:	144 J+9/17/15 141	
Number of Bucke	ets to Homogenize:6_	(3+3 in 2 batches)
Pre-Mixing Descr	ription of Sediment:dar	K brown organics: It, trace f. sand,
	organic odor, a	net, v. soft OL
	U .	
Mixer:		
Mixer Use	ed?(Y) N	
Time on:	<u>0906</u> ;0835	
Time off:	0811; 0840	
Homogen	neity Achieved? 🕅 / N	
Post-Mixi	ng Description of Sediment:	dark brown, organic silt, tracef. sand, or, net, v. soft, OL
	organic od	or, net v. soft, OL
	d	
Photograph (after	mixing):	244616
Number:	2015011/2007/00/20	084515, _084521, _084530, _090047, _090059, _090059, _09010
Date:	1/17/15	
Timo: 2	9/17/15 erth 0900	
rime <u>></u> ~	<u> </u>	
Analyses (check a	analyses to be conducted):	
X Sedi	iment Chemistry	Sample ID: NB03SED-CHM_141
X Toxi	The parties and the state of t	Sample ID: NB03SED-POR 141
× Pore	- -	Sample ID: NB03SED-TOX_/4/
	ccumulation	Sample ID: NB03SED-BIO 191
Bloa	CCumulation	Sample ID. 140030ED-DIO_1771
Notes (i.e. PE san	nnles FPA snlit samples fie	eld duplicate, MS/MSD, etc.): EPA Spl.+ for
Biod	ccumulation: NB03	SED-B10141-LB.
Person Responsib	le for Completing Form:	Ulanne Hagarty.

Date: 09/29/2015	Time Sample Buckets Removed from Cooler:
Location ID: 142	
Number of Buckets to Homogenize:	3
Pre-Mixing Description of Sediment:	lark brown Found; little sittend clay trave,
Shell Fragments F-roots	uet, loose

Mixer: Mixer Used? (V) / N	
Time on: 10:09	
Time off: 10:14	
Homogeneity Achieved? (1)	N
Post-Mixing Description of Sec	liment: dark brown; f. sand; little sitt and clay
1. He organics is	diment: dark brown; f. sand; little sill and clay; well fragments, f. mots; wet, 1005e
Photograph (after mixing):	200.00
Number: 3 2015	10929-101908;-101916;-101922
Date: 1/24/15	
Time:	
Analyses (check analyses to be conduc	cted):
X	Sample ID: NB03SED-CHM 142
Sediment Chemistry	Cample ID. 1100001D CITIVI
Toxicity	Sample ID: NB03SED-PORTOX/42
Porewater	Sample ID: NB03SED-TOX POR 192
Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.e., PE samples, EPA split sam	ples, field duplicate, MS/MSD, etc.):
Person Responsible for Completing For	m: Julianne Hagarty

Date: 09/39/2015	Time Sample Buckets Removed from Cooler:
Location ID: 143	
Number of Buckets to Homogenize:	_ 3
	don't brown silf some slittle fished little engance
Mixer:	
Mixer Used?(Y)/ N	
Time on: 1047	
Time off: 1052	
Homogeneity Achieved?	/ N
Post-Mixing Description of S	ediment: darly brown, silt, some found, little organion
truce shell fragments	s, wet, v-soft, organic odor
Photograph (after mixing):	
Number: 4:2015	0930-105611,-105821,-105857,-105834
Date: 9/30/15	
Time:	
Analyses (check analyses to be cond	lucted):
Sediment Chemistry	Sample ID: NB03SED-CHM_143
Toxicity	Sample ID: NB03SED-POR TOX 143
Porewater	Sample ID: NB03SED-TOX POR 143
Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.e., PE samples, EPA split sar	mples, field duplicate, MS/MSD, etc.):
Person Responsible for Completing F	orm: Julianne Hogarty

Date: 09/14/2015	Time Sample Buckets Removed from Cooler:
Location ID: 144	
Number of Buckets to Homogenize	e: Little clay mold 24 0814
Pre-Mixing Description of Sedimer	t: brown chark brown organic Silt, trace f-sound, tamenganic or
bralves, snals, we	t, v. soft OL
The second secon	
Mixer Used?(Y) / N	
Time on: 0815	
Time off: 0800	
Homogeneity Achieved?	D/ N
Post-Mixing Description of	Sediment: dark brown black organic sith, little clay, moderate organic
odon birdues snulf	net, v. soft OL
Dhotograph (after mining).	
Photograph (after mixing):	0918_082916,_082924,_082932
21 1=	110_000110,2002121) = 52132
Date:	
Time: <u>0830</u>	
Analyses (check analyses to be co	nducted):
Sadiment Chemistry	Sample ID: NB03SED-CHM/44
X Tovicity	Sample ID: NB03SED-POR 144
Sediment Chemistry X Toxicity Porewater	Sample ID: NB03SED-TOX_144
Bioaccumulation	Sample ID: NB03SED-BIO
bloaccumulation	Sample ID. ND035ED-DIO
Notes (i.e., PE samples, EPA split s	samples, field duplicate, MS/MSD, etc.): EPA SPIH collected
for to,	cieity: NBO3SED-TOX144-LB
Person Responsible for Completing	Form: Julianne Hagarty
The second secon	John John Jan Jan Jan Jan Jan Jan Jan Jan Jan Ja

Date: 09/30/2015 T	ime Sample Buckets Removed from Cooler:
Location ID: 145	
Number of Buckets to Homogenize: 3	
	ark brown silt, some f-sand, trace shell
fragainty, trace organics;	
Mixer:	
Mixer Used? ✓ / N	
Time on: 09:14	
Time off: <u>09:19</u>	16
Homogeneity Achieved?(Y)/ N	7L 9/30/15
Post-Mixing Description of Sedime	nt: dark brown sill, and Esand, Frace shell
	vict just, visoth organic odan
Photograph (after mixing): Number: 3:20150930-	091357 09240 4. 092410
/ •	0 (2337, 20 (200 1) = 12110
Date: <u>9/30/15</u>	
Time: 0824	
Analyses (check analyses to be conducted)	(I
Sediment Chemistry	Sample ID: NB03SED-CHM_145
<u>✓</u> Toxicity	Sample ID: NB03SED-POR_TOX 145
✓ Porewater	Sample ID: NB03SED-TOX POR I VS
Bioaccumulation	Sample ID:_NB03SED-BIO
Notes (i.e., PE samples, EPA split samples,	field duplicate, MS/MSD, etc.):
	T) - 10))
Person Responsible for Completing Form:	Julianne Hagarty

Title: SQT and Porewater Sampling and Analysis Quality Assurance Project Plan Revision Number: 2 Revision Date: August 2015

(A) 64	,226
Date: 09月2/2015	Time Sample Buckets Removed from Cooler:
Location ID: 46	
Number of Buckets to Homogenize:	4
Pre-Mixing Description of Sediment:	dark boun, f-m sand and silt, little organics,
wet voose, snails, fran	shall fragments
Mixer:	
Mixer Used? Y / N	y .
Time on:	
Time off: 1359	
Homogeneity Achieved?	/ N
Post-Mixing Description of S	ediment: dark brown silt and f. sund, little organish
webloore, frace s	rails, trace shell tragments
Photograph (after mixing):	0922-140406,-140412,-140418
	0122-113
Date: 9/22/15	
Time:	
Analyses (check analyses to be con	ducted):
V	Sample ID: NB03SED-CHM
Sediment Chemistry	Sample ID: NB03SED-POR TOX 146
Toxicity	Sample ID: NB035ED-TOKPOR 144
Porewater	Sample ID: NB03SED-TOXPOR 146
Bioaccumulation	Sample ID: NB03SED-BIO_146
Notes (i.e., PE samples, EPA split s	amples, field duplicate, MS/MSD, etc.):
Person Responsible for Completing	Form: Julianne Hagarty

Date:09/ 22 /2015 Time	Sample Buckets Removed from Cooler:	
Location ID: 14/		
Number of Buckets to Homogenize: 6	(2 batches of 3 buckets)	
Pre-Mixing Description of Sediment:	rown to black silk little organic silk, trace f-grave	
true found, wet, v. soft		
Mixer:		
Mixer Used? (Y)/ N		
Time on: 7:43; 8:07		
Time off: 7:48 ; 8:12		
Homogeneity Achieved? (N		
Post-Mixing Description of Sediment:	lark brown organic silk little > trace fra ravel.	
trace from sand wet vesoft	Jark brown organic silk little > trace figravel,	
Photograph (after mixing):		
Number: 4: 26150922_68030	4,080313,-680320, -080325	
Date: 9/22/15		
Time:		
Analyses (check analyses to be conducted):		
/		
Sediment Chemistry	Sample ID: NB03SED-CHM 147	
Toxicity	Sample ID: NB03SED-POR-10X 147	
Porewater	Sample ID: NB03SED-TOX_POR 147	
Bioaccumulation	Sample ID: NB03SED-BIO_/47	
Notes (i.e., PE samples, EPA split samples, fiel	d duplicate, MS/MSD, etc.): Field duplicates	
	A for sediment chemistry aporewater.	
Both labeled as NBO3SEDDUP-04.		
MS/MSO collected for sediment chemistry		
Person Responsible for Completing Form: Julianne Hagarty		

Title: SQT and Porewater Sampling and Analysis Quality Assurance Project Plan Revision Number: 2 Revision Date: August 2015

Date:	Time Sample Buckets Removed from Cooler: 1145 3 dork brown silt, trace (sand, fine clay, little enganics, che fragments?
Mixer: Mixer Used? / N Time on: 1:56 Time off: 1:01 Homogeneity Achieved? Post-Mixing Description of S	
Photograph (after mixing): Number:	722-120904,-120913,-120920,-120927,-120946
Analyses (check analyses to be conducted):	
Sediment Chemistry Toxicity Porewater Bioaccumulation	Sample ID: NB03SED-CHM_14-8 Sample ID: NB03SED-POR_TOX 14-8 Sample ID: NB03SED=TOX_POR_14-8 Sample ID: NB03SED-BIO
Notes (i.e., PE samples, EPA split samples, field duplicate, MS/MSD, etc.):	
Person Responsible for Completing	Form: Julianne Hagarty

2.	Time Sample Buckets Removed from Cooler 0805
Date: 09/23/2015	Time Sample Buckets Removed from Cooler:
Location ID:149	(5.11 b. kets)
Number of Buckets to Homogenize: _	9 (abatches: 5+4 buckets)
Pre-Mixing Description of Sediment:	dente brown organise silt, frace fis and,
wet, soft , true forcets, trace	shell fragments
Miyor	
Mixer Used? V / N	
Time on: 0818, 0859	
Time off: 0823 6904	
Homogeneity Achieved?(Y)	/ N
Post-Mixing Description of S	ediment: dark brown organic silk, little & some found
wet v soft, true for	eats, truce shell tragments, organic odor
Photograph (after mixing):	
	723_091044,_091051,_091057,_091102
Date: 9/23/15	, , , , , , , , , , , , , , , , , , , ,
Time:	
Analyses (check analyses to be con	ducted):
Sediment Chemistry	Sample ID: NB03SED-CHM_149
< Toxicity	Sample ID: NB03SED-POR TOX 149
Porewater	Sample ID: NB03SED-TOX_POR_149
Bioaccumulation	Sample ID: NB03SED-BIO 149
Diodocumulation	
Notes (i.e., PE samples, EPA split sa	amples, field duplicate, MS/MSD, etc.): M5/MSD and
1 . Late 1 AIRMACA	Field duplicate collected for Bioaccumulation!
Labeled NBO3SED	-B10149M5,NB035EO-B10149M5D,
Person Responsible for Completing	= 11-002 11 - d,
. C. Com i toopenensie for Completing	

	Time Semale Buskets Removed from Cooler 1245
Date: 09/23/2015	Time Sample Buckets Removed from Cooler:
Location ID:	
Number of Buckets to Homogenize: _	3
Pre-Mixing Description of Sediment:	durk brown silt and clay, little organist, trace f. sand
wet, vis oft, trace firoots	
Billing	8
Mixer Used? Y / N	
Time on: [250]	
Time off: 1255	
Homogeneity Achieved? Y	/ N
Post-Mixing Description of S	ediment: dart from 5.7th little organics, true & sand
wet, vioft trace	
Photograph (after mixing):	2014
Number: 3:20160	723-125918,-125926, 125932
Date: 9/22/10	
Time: 1360	
Analyses (check analyses to be con-	ducted):
✓ Sediment Chemistry	Sample ID: NB03SED-CHM 60
✓ Toxicity	Sample ID: NB03SED-POR TOX 50
Porewater	Sample ID: NB03SED-FOX_POR 150
Bioaccumulation	Sample ID: NB03SED-BIO
Bloaccumulation	Cample 10. 11. 11. 11. 11. 11. 11. 11. 11. 11.
Notes (i.e., PE samples, EPA split sa	amples, field duplicate, MS/MSD, etc.):
	·
	Till and How the
Person Responsible for Completing I	Form: Julianne Hagarty

Date:	Sample Buckets Removed from Cooler:
Location ID:151	
Number of Buckets to Homogenize:	
	to black silt, little organics, trace f-sand,
bivalue shells, odor, sheep, we	1, v.50ft
<u> </u>	
Mixer: Mixer Used? Y/ N	•
Time on: 805	
Time off: 8 10 10 10 10 10 10 10 10 10 10 10 10 10	
1.70.1 1.50 P 1.50.00 MONE SI 10.10	lask to the Court of the Court
	dark brown organy silt, trace Fesand, odor, sheen
wet, v. soft, bivalue shell fragm	eat(
Photograph (after mixing):	
Number: 3 , 20150921-08	2121, -062124, -062140
Date: 9/21/15	
Time:	
Analyses (check analyses to be conducted):	
Sediment Chemistry	Sample ID: NB035E0-CHM 15 1
_ × Toxicity	Sample ID: NB035ED-TOX 15 1
Porewater	Sample ID: NB 035E0- POR 151
Bioaccumulation	Sample ID:
Notes (i.e., PE samples, EPA split samples, fiel Collected for Toxicity	d duplicate, MS/MSD, etc.): Field duplicate NB035ENDUP-02.
Person Responsible for Completing Form:	Wianne Hagarty

Date:09/30/2015	Time Sample Buckets Removed from Cooler: 1235, 1305
Location ID: 152	
Number of Buckets to Homogeni	ze: 7(4+3)
Pre-Mixing Description of Sedime	ent: dant brown found and silt, frace eigenfor,
Mixer Used? (Y) / N	
Time on: 12.45; 1311	
Time off: 12:50; 1316	
Homogeneity Achieved?	
	of Sediment: dark brown f. sand and silf trace organics
	its, bralies, vilose, wet
,	
Photograph (after mixing):	55930_131746, _131827, _131834, _131840, _131846, _131855, _13185
1	-501562 Sharely and 1
Date: 9 36 15	
Time:	
Analyses (check analyses to be co	onducted):
Sediment Chemistry	Sample ID: NB03SED-CHM 152
Toxicity	Sample ID: NB03SED-POR TOX 152
Porewater	Sample ID: NB03SED-TOX_POR 152
Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.e. DE service EDA VIII	M5/Mc D = Dugl to
Notes (I.e., PE samples, EPA split	samples, field duplicate, MS/MSD, etc.): MS/MSD + Duplicate
Pupliat	e 10: NBO35EDOUP-06
•	
Person Responsible for Completing	a Form: Tulianne Hagarty

Date: <u>09/24/2015</u>	Time Sample Buckets Removed from Cooler:
Location ID: 153	
Number of Buckets to Homogenize:	7 (2 batches: 4+3)
Pre-Mixing Description of Sediment	fragments, and woody debris, fronts
Mixer: Mixer Used? 1 N	
Time on: 0944; 1004	
Time off: 5949, 1009	
Homogeneity Achieved? (Y), N
	sediment: dark brown organic silt and clay, little fis and
wet useft I care	shells fragments, wordy debrir, forsots
7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	The state of the s
Photograph (after mixing):	101/07 101/13 101/17
Number: 4:20150	924-101601,-101607,-101613,-101617
Date: 9/24/17	
Time:/6\)	
Time	
Analyses (check analyses to be cond	ducted):
Sediment Chemistry	Sample ID: NB03SED-CHM153
Toxicity	Sample ID: NB03SED-POR, TOX I53
Porewater	Sample ID: NB03SED-TOX-PORIS3
Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.e., PE samples, EPA split sa	imples, field duplicate, MS/MSD, etc.): MS/MSD collected
for porewater:	NBO3SED-PORIB3MS and NBO3SED-PORIS3MSD.
EPA Split sample	collected for porewater: NB03SED-PORIB3-LB.
Person Responsible for Completing F	Form: Julianne Hagarty

Date: 9/21/15	Time Sample Buckets Removed from Cooler:
Location ID: 154	
Number of Buckets to Homogenize:	4
Pre-Mixing Description of Sediment: 6	ack brown organic silt trace f. sand,
wet, viseft, freets, bivalve &	nd other shall fragments
Mixer Used?(Y) / N	
Time on: <u>[2: [3</u>	
Time off: 1218	
Homogeneity Achieved?(Y)/ N	
Post-Mixing Description of Sedin	nent: dark brown / black organic silt, trace found
	5, b. valve and shell fragments
Dhata and Committee	
Photograph (after mixing): Number: 3: 20150921 –	122907,-122917,-122923
Number. 7. 2015	
Date: 9/21/15	
Time:	8
Analyses (check analyses to be conducte	ed):
Sediment Chemistry	Sample ID: NB035ED-CHM 154
	Sample ID: NB03 SED-T0X 154
Porewater	Sample ID: NB035ED-POR154
Bioaccumulation	Sample ID:
Notes (i.e., PE samples, EPA split sample	es, field duplicate, MS/MSD, etc.): EPA 3 plit for chemistry:
	NBO3SED-CHM154-LB
F. Clar duplica	te for toxicity: NBO3SEDDUP-03
Person Responsible for Completing Form	: Julianne Hogarty

Date: 9/21/15	Fime Sample Buckets Removed from Cooler:
Location ID: 155	
Number of Buckets to Homogenize:	<u>+</u>
Pre-Mixing Description of Sediment: Med	dium brown f-mesand, little silt,
loose, wet, shell fragments, s	caweed
Mixer: Mixer Used? (Y) / N	
Time on: 10:21	
Time off: 10:25	
Homogeneity Achieved? (Y) / N	t ()
1	ent: brown f-m. sand, little to some silt, loose
wet, shell fragments, sea	weed
Photograph (after mixing):	
Number: 3:26150921-1	03340, _103353,_103359
Date:	
Time:	
Analyses (check analyses to be conducted	d):
Sediment Chemistry	Sample ID: NB03SE0-CHM1S5
Sediment Chemistry	Sample ID: NB035E0-T0X 155
Porewater	
Porewater Porewater	Sample ID: NBO3SER-PORISS
Bioaccumulation	Sample ID:
Notes (i.e. DE secoles EDA sulit secoles	EPA Salit collected
Factoricity', NBO	s, field duplicate, MS/MSD, etc.): <u>EPA Spl.+ collected</u> 35ED-TOX155-LB.
, 100	
Person Responsible for Completing Form:	Julianne Hagarty

Juliano Jeanneil	19/16/16
Date:	Sample Buckets Removed from Cooler:
Number of Buckets to Homogenize:	
Pre-Mixing Description of Sediment:	to dork brownigit, little to some organics
wet yest no odor OL	
Mixer: Mixer Used? Y N	
Time on: 1011	
Time off: 1016	
Homogeneity Achieved? (Y) N	
	dork brown organic sit trace clay trace Escand
wehr, soft no don (,
AA	
Photograph (after mixing): M. Thompson	(10/ 10-/112
Number: 3:20150918_1025	706, 702417, <u>-</u> 102419
Date:	
Time: 1024	
Analyses (check analyses to be conducted):	
Sediment Chemistry	Sample ID: NB03SED-CHM_156
Toxicity	Sample ID: NB03SED-POR-TOX 156 34 9/18/19
× Porewater	Sample ID: NB03SED-TOX POR 156 5th 9/18/15
Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.e., PE samples, EPA split samples, field	duplicate, MS/MSD, etc.): EPA Split samples
collected for toxicity M	3035ED-TOXIS6-LB.
Also collect one Teflon-1	
	OR156-2B.
Person Responsible for Completing Form:	lane Horry

Date: 9117/15	Time Sample Buckets Removed from Cooler:
Location ID:57	
Number of Buckets to Homogenize:	4
Pre-Mixing Description of Sediment:	black Abrown / dark brown organic silt wet, V-58
mild organic odon	J
· · · · · · · · · · · · · · · · · · ·	
Mixer:	
Mixer Used? Y / N	
Time on: 104%	
Time off: <u>1045</u>	
Homogeneity Achieved? (Y)	
Post-Mixing Description of Se	ediment: dart blown #H.organt silt wel v.soft
maled argunt odor	
DI	
Photograph (after mixing):	1917 INF230 106229 INFA
	1917-105330,-105338,-105346
Date: 9/17/5	
Time:	
Analyses (check analyses to be condi	ucted):
Sediment Chemistry	Sample ID: NBO35ED-CHM157
∠ Toxicity	Sample ID: N603 5E0-TOX157
Porewater	Sample ID: NBO35ED-POR157
Bioaccumulation	Sample ID:
Notes (i.e., PE samples, EPA split san	mples, field duplicate, MS/MSD, etc.): EPA 5plit for ED-TOXI57-LB
	
Person Responsible for Completing Fo	orm: Julianne Hagarty

Date: <u>09/25/2015</u>	Time Sample Buckets Removed from Cooler:
Location ID: 15 6	
None beautiful to the term	3
Pre-Mixing Description of Sediment:	rn 4- 22 a/25/15 rn 4- 55 sand, little & some silt; trace shell
fragments, bivalves, wet,	loose
#####	
Mixer:	
Mixer Used? (タ) / N Time on: <u>094</u> ろ	
VE 10 10 10 10 10 10 10 10 10 10 10 10 10	
Time off: <u>0948</u>	H.
Homogeneity Achieved? (ヤ) / 1	
	iment: dark brown , f. sand , some silt; trace shell
tragments, bivalves, fire	ots; wet, V-loose
Photograph (after mixing):	
Number: 4:20/50925	5_095310,-095317,-095320,-095327
10/2-1-	
Date: 10/75/15	
Time: <u>0953</u>	
Analyses (check analyses to be conduc	ted):
	ND000DD 0VI (16 9
Sediment Chemistry	Sample ID: NB03SED-CHM_15%
Toxicity	Sample ID: NB03SED-POR YOX 158
Porewater	Sample ID: NB03SED-TOX_Por-159
Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.e., PE samples, EPA split samp	oles, field duplicate, MS/MSD, etc.):
Person Responsible for Completing For	m: Julianne Hagarty

Date:09/25/2015	Time Sample Buckets Removed from Cooler:
Location ID: 159	
Number of Buckets to Homogenize:	4
Pre-Mixing Description of Sediment: _	dark brown organic day and silt, little Esand,
itrace f-m. roots, bivalves, shel	1 Fragments
Mixer: Mixer Used? (Y) / N	
Time on: 5812	
Time off:	
Homogeneity Achieved? Y /	N
Post-Mixing Description of Sec	diment: durk brown organic clay and silt little & some
f-sand; trace frm. roots	siment: durk brown organic clay and silt little & some, biralves, shell fragments; wet, v. soft, organic odor
Photograph (after mixing):	
Number: 3:295096	25-082344, -082404, -082410.
/ 1	
Date: 9/25/15	
Time: <u>0525</u>	
Analyses (check analyses to be conduc	cted):
Sediment Chemistry	Sample ID: NB03SED-CHM 15へ
Toxicity	Sample ID: NB03SED-POR_TOX/59
Porewater	Sample ID: NB03SED-TOX_POR 159
Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.e., PE samples, EPA split sam	ples, field duplicate, MS/MSD, etc.): <u>EPA split Sample</u> collected for poverwater:
	collected for povewater:
9	NBO35ED-POR159-LB
	The Honge
Person Responsible for Completing For	m: Julianne Hagarty

Surface Sediment Sample Processing Form Date: 09/X1/2015 Time Sample Buckets Removed from Cooler: Location ID: ___160 Number of Buckets to Homogenize: Pre-Mixing Description of Sediment: Sunds little clay - trace frosts, bivulves, gastropods, shell fragments, grasses Mixer: Mixer Used? (Y)/ N Time on: 8,26 Time off: 8:31 Homogeneity Achieved?(Y) / N Post-Mixing Description of Sediment: durk brown/block organic sit underlay.

1: He fisand: trave firosts, bivalves, gastropods, shell fragments, grasses, wet, 5044 Photograph (after mixing): 20150929-084303; - 084311; - 084319 Number: Time: Analyses (check analyses to be conducted): Sample ID: NB03SED-CHM 160 Sediment Chemistry Sample ID: NB03SED-POR-TOX 160 Sample ID: NB03SED-TOX-POR 160 Sample ID: NB03SED-BIO 160 Bioaccumulation

Notes (i.e., PE samples, EPA split samples, field duplicate, MS/MSD, etc.): _

Person Responsible for Completing Form:_

Date:09/16/2015	Time Sample Buckets Removed from Cooler: 1030
Location ID: 16	
Number of Buckets to Homogenize:	7
Pre-Mixing Description of Sediment:	lark brown/black silt, trace f. sand, roots,
net, v. soft	
Mixer:	
Mixer Used? N	
Time on: 1047; 1114	
Time off: 1052; /// 9	
Homogeneity Achieved? (**) / N	>1/App.
Post-Mixing Description of Sedir	ment: dark brown/black, silt, f. roots, wet,
	v, soft
Photograph (after mixing):	
Number: <u>20150916_1</u> 10721,	_110727,_110734
Date: 9/16/15	
Time 1107 (somple	time listed in photo: 1055)
Time: 110 / Samping	Time (1 steet in proto, 1033)
Analyses (check analyses to be conducted	ed):
X Sediment Chemistry	Sample ID: NB03SED-CHM_IS
X Toxicity	Sample ID: NB03SED-POR_161
<u></u> ✓ Porewater	Sample ID: NB03SED-TOX_16/
→ Bioaccumulation	Sample ID: NB03SED-BIO /6/
Dioaccumulation	Sample ID: NB033ED-BIO_101
Notes (i.e., PE samples, EPA split sample	es, field duplicate, MS/MSD, etc.): EPA splits for: 035E0-810161-LB (in refrigerator)
Toxicity: NBO3SED	-TOXIGI-LB (in walk-in refrigerator) 46/17 (1791)
Chemistry NBO35Et	-CHM161-LB (n (reezer) Note ARCADIS collected classes
Person Responsible for Completing Form	: Julianne Hagarty split
	V /

Date: 09/スン/2015	Time Sample Buckets Removed from Cooler:
Location ID:162	160
Number of Buckets to Homogenize: _	3
Pre-Mixing Description of Sediment:	
wet, v. soft, f. roots, shell f	tagments
Bairon	
Mixer Used? Y / N	
Time on: 10:19	4 1
Time off: 10:24	
Homogeneity Achieved? Y	/ N
Post-Mixing Description of S	ediment: dark brown silt little argume silt,
trace frand wet	1.50ft, f. roots, Shell fragments
Photograph (after mixing):	1-2014 12500 12509
	122-103441,-103502,-103509
Date: 9/12/15	
Time: /635	
Analyses (check analyses to be con	ducted):
2/ 20 15	Sample ID: NB03SED-CHM_162
<u></u> Sediment Chemistry ✓	Sample ID: NB03SED-POR TOX 162
<u>✓</u> Toxicity	Sample ID: NB033ED-DAT 102
> Porewater	Sample ID: NB03SED_TOX_POR 162
Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.e., PE samples, EPA split \$	amples, field duplicate, MS/MSD, etc.):
Person Responsible for Completing	Form: Julianue Hagarty
1 Clash Responsible for Completing	

	Sould Barrand from Cooler 1045
Date: 09/~3/2015	Time Sample Buckets Removed from Cooler:
Location ID:163	
Number of Buckets to Homogenize:	5
Pre-Mixing Description of Sediment:	dark brown argume silt and day, little f. sand,
wet soft, true shell Fragan	ents, truce roots, woody degetation
Mixer:	
Mixer Used? (Y)/ N	
Time on: 1058	
Time off: 1103	*
Homogeneity Achieved?(Y)	/ N
Post Mixing Description of S	ediment: durk brown silt, little organics, little f-sund
Post-Mixing Description of 3	of for the forter of many very taken
Med Vasor Frace 30	sell fragments, trace forosts, and words vegetation
Photograph (after mixing):	
	0923_111005, -111015, -111027
Date: 9/23/15	
Time:/_/	
Analyses (check analyses to be con	ducted):
	NEGOCED CHAILS
X Sediment Chemistry	Sample ID: NB03SED-CHM 163
Toxicity	Sample ID: NB03SED-POR-TOX163
X_ Porewater	Sample ID: NB03SED-TOX_PORI63
Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.e., PE samples, EPA split s	amples, field duplicate, MS/MSD, etc.): EPA splitsamples
Cor. Jean mem Cr	CINGILY BUSINESS CITY OF STATE
Porewater:	NBO35ED-POR 163-LB
Person Responsible for Completing	Form: Julianne Hagarty
Person Responsible for Completing	Form: Julianne Hagarty

Date:09/14/2015	Time Sample Buckets Removed from Cooler:
Location ID: 164	
Number of Buckets to Homogenize:	
Pre-Mixing Description of Sediment:	black/brown silt, very soft
Mixer: Mixer Used? (V)/ N	
~	
Time on: <u>0915</u>	
Time off: 0920	
Homogeneity Achieved? 🕥/ N	0
Post-Mixing Description of Sedin	nent: Brown silt, very soft.
District 1 (ft)	
Photograph (after mixing):	
Number: <u>1377</u>	
Date: 9/14/15	
Time: 0937	
Analyses (check analyses to be conducted	ed):
Sediment Chemistry	Sample ID: NB03SED-CHM_/64
_ × Toxicity	Sample ID: NB03SED-POR_164
<u></u> ✓ Porewater	Sample ID: NB03SED-TOX_/64
Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.e., PE samples, EPA split sample	es, field duplicate, MS/MSD, etc.):
Damen Describer C. C. Lillian	July and Hannack
rerson Responsible for Completing Form	: Julianne Hagarty

Date: 09/14/2015	Time Sample Buckets Removed from Cooler: 1145
Location ID: 165	
Number of Buckets to Homogenize:	3
Pre-Mixing Description of Sediment:	tark brown very soft silt
(· · · · · · · · · · · · · · · · · · ·
Mixer: Mixer Used? (V)/ N	
Time on: 1200	
Time off: 1205	
Homogeneity Achieved? V/N	0) 11
Post-Mixing Description of Sedir	ment: dark brown very soft sitt

Photograph (after mixing): Number: 3: IMG-0763,	0784 0785
	2010 1)20
Date: 9/14/15	·
Time: 1159	
Analyses (check analyses to be conduct	ed):
-	
Sediment Chemistry	Sample ID: NB03SED-CHM_K5_
Toxicity	Sample ID: NB03SED-POR 165
Porewater	Sample ID: NB03SED-TOX 165
Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.e., PE samples, EPA split sampl	les, field duplicate, MS/MSD, etc.):
Person Responsible for Completing Form	1: Julianne Hagarty

Date: _	09/1 ⁴ /2015 Tim	e Sample Buckets Removed from Cooler:
Location	on ID:	
Numbe	er of Buckets to Homogenize:	01 11
Pre-Mi	xing Description of Sediment:	un very softs: It
Mixer:	M5	
	Mixer Used? Y (N)	
	Time on: 1150 reflects	stirring time-stimed by hand stallelle
	Time off: 12.00	v
	Homogeneity Achieved? (Y)/ N	0
	Post-Mixing Description of Sediment:	Brown very soft silt
	5 To 100 1 Commonweal	
Photog	raph (after mixing):	7221
	Number: 3: 1MG_7219, -7220	1-1221
	Date: 9/14/15	
	Time: 1200	
	Time	· · · · · · · · · · · · · · · · · · ·
Analyse	es (check analyses to be conducted):	
	Sediment Chemistry	Sample ID: NB03SED-CHM_166
	Toxicity	Sample ID: NB03SED-POR
	Porewater	Sample ID: NB03SED-TOX
	Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.	e., PE samples, EPA split samples, fie	eld duplicate, MS/MSD, etc.):
	_	AA: 1 (1)
Person F	Responsible for Completing Form:	Michael Thompson

Date: <u>09/15/2015</u>	Time Sample Buckets Removed from Cooler:
Location ID: 167	
Number of Buckets to Homogenize:	1 1
Pre-Mixing Description of Sediment:	Brown Sand + 5.17
No.	
Mixer:	
Mixer Used? Y (N)	1 6
Time on: 0795	lects stirring time-stirred by hand JH 9/18/15
Time off: <u>0'60</u> 0	V
Homogeneity Achieved? (Y)	N D - 1
Post-Mixing Description of Se	ediment: Brown Sand 45, H
Photograph (after mixing):	- 7016 7217
Number: 3: 1MG_723	17, - 1800) - 1000
Date: 9/15/15	
Time: 0815 JH 9/18	115
Time: &	\$00
Analyses (check analyses to be cond	ucted):
Sediment Chemistry	Sample ID: NB03SED-CHM_167
Toxicity	Sample ID: NB03SED-POR
Porewater	Sample ID: NB03SED-TOX
Bioaccumulation	Sample ID: NB03SED-BIO
	Cumple 18
Notes (i.e., PE samples, EPA split sar	mples, field duplicate, MS/MSD, etc.):
Person Responsible for Completing Fe	orm: Michael Thompson

Number of Buckets to Homogenize:	Date:	09/16/2015	Time Sample Buckets Removed from Cooler: 0945	
Number of Buckets to Homogenize: Pre-Mixing Description of Sediment:			Time dample backets Nemoved from Gooler.	
Mixer Used? Y N Time on: Time off: Homogeneity Achieved? N Post-Mixing Description of Sediment:dark brown 5.H, 50me organics (skells, 5enved) Photograph (after mixing): Number:3 :20150916 090354,090400,090405 Date:9/16/15 Time:0904 Analyses (check analyses to be conducted): X Sediment Chemistry	Numb	er of Buckets to Homogenize:		
Mixer Used? Y N Time on: Time off: Homogeneity Achieved? N Post-Mixing Description of Sediment:dark brown 5.H, 50me organics (skells, 5enved) Photograph (after mixing): Number:3 :20150916 090354,090400,090405 Date:9/16/15 Time:0904 Analyses (check analyses to be conducted): X Sediment Chemistry				
Time off: Homogeneity Achieved? N Post-Mixing Description of Sediment:	Mixer:	Mixer Used? Y (N)		
Homogeneity Achieved? N Post-Mixing Description of Sediment:dark brown 5.H, Some organics (shells, served) Photograph (after mixing): Number:3 · 20150916 - 090354, -090400, -090405 Date:9/16/15 Time:0904 Analyses (check analyses to be conducted):		Time on:		
Photograph (after mixing): Number: 3: 20150916-090354, -090405, -090405 Date: 9/16/15 Time: 0904 Analyses (check analyses to be conducted): X Sediment Chemistry Sample ID: NB03SED-CHM 168 — Toxicity Sample ID: NB03SED-POR — Porewater Sample ID: NB03SED-TOX — Bioaccumulation Sample ID: NB03SED-BIO NOtes (i.e., PE samples, EPA split samples, field duplicate, MS/MSD, etc.): MS/MSD and NB03SED000P 01 Collected				
Number: 3: 20150916-090354, -090400, -090405 Date: 9/16/15 Time: 0904 Analyses (check analyses to be conducted): Sediment Chemistry Sample ID: NB03SED-CHM 168 Toxicity Sample ID: NB03SED-POR Porewater Sample ID: NB03SED-TOX Bioaccumulation Sample ID: NB03SED-BIO Notes (i.e., PE samples, EPA split samples, field duplicate, MS/MSD, etc.): MS/MSD and NB03SEDDUP OI Collected				a
Sediment Chemistry Sample ID: NB03SED-CHM_168 Toxicity Sample ID: NB03SED-POR Porewater Sample ID: NB03SED-TOX Bioaccumulation Sample ID: NB03SED-BIO NB03SED-BIO NB03SED-BIO NB03SED-BIO	Photog	Number: 3: 20150916- Date: 9/16/15	090354, -090400, -090405	
Toxicity	Analys	es (check analyses to be conduc	red):	
Porewater Sample ID: NB03SED-TOX Bioaccumulation Sample ID: NB03SED-BIO NB03SED-BIO NB03SED-BIO NB03SED-BIO NB03SED-BIO		Sediment Chemistry	Sample ID: NB03SED-CHM_168	
Bioaccumulation Sample ID: NB03SED-BIO Notes (i.e., PE samples, EPA split samples, field duplicate, MS/MSD, etc.): MS/MSD and NB03SEDDUP-01 collected		Toxicity	Sample ID: NB03SED-POR	
Notes (i.e., PE samples, EPA split samples, field duplicate, MS/MSD, etc.): MS/MSD and NBO35EDDUP-01 collected		Porewater	Sample ID: NB03SED-TOX	
NBO35EDDUP-01 collected		Bioaccumulation	Sample ID: NB03SED-BIO	
Person Responsible for Completing Form: Michael Thompson	Notes (i.e., PE samples, EPA split samp	les, field duplicate, MS/MSD, etc.): MS/MSD and DUP 01 collected	
ORDON NGODONORIO DE DOMINICIONAL EL	Person	Responsible for Completing For	. Michael Thompson	

Date: <u>09/]b/20</u>	Time	Sample Buck	cets Removed from Cooler: _	1245
Location ID:	189			
Number of Buckets	s to Homogenize:		7.7	
Pre-Mixing Descrip	otion of Sediment: Brown	1 softs	5.H	

	d? Y (N)			
Time on: _				
Time off: _)			
	eity Achieved? 🗘 / N			
Post-Mixin	g Description of Sediment: _	Brown 5	ilt, some organics (see	aneed) and
	***	A. M	few roots.	
Photograph (after r				
Number:	9/16/15 6 JH 9/18/15 150916-180141, -130150,			
Date: <u>구</u> 0	150916-180141, -130150,	-130156		
Time:	301			
Analyses (check an	nalyses to be conducted):			
∑ Sedin	nent Chemistry	Sample ID:	NB03SED-CHM <u>169</u>	
Toxic	ity		NB03SED-POR	
Porev	vater ***	Sample ID:	NB03SED-TOX	
Bioac	cumulation	Sample ID:_	NB03SED-BIO	
Notes (i.e., PE sam	ples, EPA split samples, field	d duplicate, M	/IS/MSD, etc.): FAS p	olit collected
			9-LB. ARCADIS CO	
Sample (f	illed sample jars)	at reques	tof EPA representative	eonsite.
Person Responsible	e for Completing Form:	Micha	iel Thompson	

Date: 09/ 17 /2015	Time Sample Buckets Removed from Cooler: 0745
Location ID: 170	
Number of Buckets to Homogen	
Pre-Mixing Description of Sedim	ent: Dark brown 58/7
Mixer Used? Y / N	
	1757
Time on: <i>O</i>	9403
Homogeneity Achieved?	
	of Sediment: Nark-brown silt, some organics (seaned
Photograph (after mixing):	
Number: <u>20158917</u>	080529, -080539, -080545
Date: 9/17/15	
Time: 0805	
Analyses (check analyses to be o	conducted):
Sediment Chemistr	y Sample ID: NB03SED-CHM_170
Toxicity	Sample ID: NB03SED-POR
Porewater	Sample ID: NB03SED-TOX
Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.e., PE samples, EPA spli	t samples, field duplicate, MS/MSD, etc.):
	1 1 2
Person Responsible for Completing	ng Form: Michael Thompson

Date: 09/18/2015 Time	Sample Buckets Removed from Cooler:
Location ID: REPOSSED CHM 171	171
Number of Buckets to Homogenize:	1
Pre-Mixing Description of Sediment: Nak by	our settlelay, medin paskerty, some
small virils and shell fragments	reiganies noted (maneed, to), nots).
Mixer:	
Mixer Used? Y (N)	
Time on: <u>9/ 0</u>	
Time off: (420)	
Homogeneity Achieved?	
Post-Mixing Description of Sediment:	Jank brown organic silt uf some layer
grown sedwith, save of	Mark brown organic sit uf some layer
Photograph (after mixing):	
Number: 3:2015 0916_ 0°	12225, _092234,_092240
Date: 09/18/15	
Time: <u>0922</u>	
Analyses (check analyses to be conducted):	
Sediment Chemistry	Sample ID: NB03SED-CHM
Toxicity	Sample ID: NB03SED-POR-TOX
Porewater	Sample ID: NB03SED TOX POR / 51 18 2015
Bioaccumulation	Sample ID: NB03SED_BIO
Notes (i.e., PE samples, EPA split samples, fie	ld duplicate, MS/MSD, etc.):
Person Responsible for Completing Form:	1. Thempson holl

Date: <u>09/24/2015</u>	Time Sample Buckets Removed from Cooler: 0 /2 50
Location ID: 172	
Number of Buckets to Homo	genize:
Pre-Mixing Description of Se	ediment: durh brown organic clay and silt, little frand,
wet, soft, frace sh	ell fragments, slight organic odor
Mixer Used? Y / N	
Production and and the second	-
Time on: }	0801-0010
Homogeneity Achiev	
	tion of Sediment: dark brown/black organic clay and silt, little
f. sand trace s	hell fragments, slight organiz odor, wet, soft
	<i>y</i> ,
Photograph (after mixing):	20150924-082104,-082111,-082118
Number: 3	301501272062101,20 6211,20 62110
Date: 9/24/13	
Time: 0820	
Analyses (check analyses to	be conducted):
Sediment Cher	mistry Sample ID: NB03SED-CHM_177
Toxicity	Sample ID: NB03SED-POR
Porewater	Sample ID: NB03SED-TOX
Bioaccumulatio	AVD - A AVD - D - A
Notes (i.e., PE samples, EPA	split samples, field duplicate, MS/MSD, etc.):
Person Responsible for Comp	pleting Form: Michael Thampson

Date: 09/a 4/2015	Time Sample Buckets Removed from Cooler:/(υ δ
Location ID:/7 3	
Number of Buckets to Homogenize:	<u>l</u>
Pre-Mixing Description of Sediment:	Dank bonun to black organic sett, same
organics such as nots, v	and bonn to black organic soft, some
	0 7 7
Mixer:	
Mixer Used? Y /(N)	
Time on:	
Time off: }	- 1/24
Homogeneity Achieved?(Y)/	N
Post-Mixing Description of Sec	diment: Dant brown sitt, some agains voots and
small weks, v. soft	, vet, no oder.
,	
Photograph (after mixing):	4-113011, -113016, -113024
	17-11 3011) -113016, 2113021
Date: 9/24/15	
Time:	
Analyses (check analyses to be conduc	cted):
Sediment Chemistry	Sample ID: NB03SED-CHM_(73
Toxicity	Sample ID: NB03SED-POR
Porewater	Sample ID: NB03SED-TOX
Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.e., PE samples, EPA split sam	ples, field duplicate, MS/MSD, etc.): <i>ENA SULT CHM</i> : NB 03 5E0- CHM173- LB.
	7
Person Responsible for Completing For	m: M-Uhz

Date: 921/17	Time Sample Buckets Removed from Cooler:
Location ID: 174	
Number of Buckets to Homogenize:	
Pre-Mixing Description of Sediment:	Duk brown organic sitt, soft w/ some cohesism,
Mixer: Mixer Used? Y N	
Time on: 7 0855	8-0908
Time off:	y N
Post-Mixing Description of Se	ediment: Day byznun with Coverance silt), very soft, wet
	5.
Photograph (after mixing):	
Number: 3; 201509	21_091350, _091358, _091408
Date: $\frac{9}{24} \frac{15}{15}$ Time: $\frac{9}{24} \frac{15}{24}$	H15
Time:	
Analyses (check analyses to be cond	ucted):
Sediment Chemistry	Sample ID: NA03SCD - CHM 174
Toxicity	Sample ID:
Porewater	Sample ID:
Bioaccumulation	Sample ID:
Notes (i.e., PE samples, EPA split sa	mples, field duplicate, MS/MSD, etc.):
Person Responsible for Completing F	form: Michael Thompson

Date: 09/12/2015	Time Sample Buckets Removed from Cooler:
Location ID:	
Number of Buckets to Homogenize:	
Pre-Mixing Description of Sediment:	M-c sand, shell fragments, few in tact bivolve
shells, no plasticity, des	re, wet.
Mixer:	
Mixer Used? Y (N)	
Time on: 2 0950	-1 DOT
Time off:	
Homogeneity Achieved? 🕅	y N
Post-Mixing Description of S	ediment: M-c brown sand, shell trusmith, some
shells no plastic	ediment: <u>M-c brown sand, shell fragment, some</u>
Photograph (after mixing):	22-075026, 20150922-100819, -100827,-100847
Number:	12 110026, 20150122 100 011, -100 021, -100 011
Date: 9/22/15	7.5
Time: / 00 \	
Analyses (check analyses to be con	ducted):
Sediment Chemistry	Sample ID: NB03SED-CHM_/75
Toxicity	Sample ID: NB03SED-POR
Porewater	Sample ID: NB03SED-TOX
Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.e., PE samples, EPA split \$	amples, field duplicate, MS/MSD, etc.):
Person Responsible for Completing	Form: //
	L/

Pre-Mixing Description of Sediment:d	22 424/15 lark brown and black, arganit silf and clay, littless efroots, trace shell fragments
Mixer: Mixer Used? Y / N	
Time on:)	aq:17
Time on: 76:09-	
Homogeneity Achieved? N	
Post-Mixing Description of Sedim	ment: dark brown and black, organic siltand clay
trace f. sand, trace f. noot	s, trace shell fragments, wet, soft
Photograph (after mixing):	
	4-082648, -082701, -082707
Date: 9/24/15	
Time:	
Analyses (check analyses to be conducted	ed):
Sediment Chemistry	Sample ID: NB03SED-CHM_176
Toxicity	Sample ID: NB03SED-POR
Porewater	Sample ID: NB03SED-TOX
Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.e. DE complex EDA enlit comple	on field durilinate \$400/840D att.)
Notes (i.e., PE samples, EPA split sample	es, field duplicate, MS/MSD, etc.):

Date: 09/30/2015 T	ime Sample Buckets Removed from Cooler:
Location ID:	
Number of Buckets to Homogenize:	
Pre-Mixing Description of Sediment: Dank	C brown organic silt and day trace roots
4. soft, wet.	3
Mixer: Mixer Used? Y / (N)	
•	
Time on:) 1435 → (0	1995
, _	
Homogeneity Achieved? ON	
Post-Mixing Description of Sedimer	nt: Dank brown organic sit and clay, some
tisand, same roots,	race fronts, v. Soft, wet.
Photograph (after mixing):	_143729,-14 4 637,-144644,-144654
Number: 4 20150930	_14372-61-1037, =11-2017
Date: 9/36/15	
Time: 1995	A.
Analyses (check analyses to be conducted)	
Sediment Chemistry	Sample ID: NB03SED-CHM (77
Toxicity	Sample ID: NB03SED-POR
Porewater	Sample ID: NB03SED-TOX
Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.e., PE samples, EPA split samples,	field duplicate, MS/MSD, etc.):
	1
	\bigcap
Person Responsible for Completing Form:	6-11/

Date: 09/24/2015	Time Sample Buckets Removed from Cooler:
Location ID: 17 8	
Number of Buckets to Homogenize:	<u> </u>
Pre-Mixing Description of Sediment:	lart brown / black 5:1t and clay, little f-sand,
wet, soft, milivalves, trace f.	hart brown / black silt and clay, little f-sand, nots and debris, organic odor
Mixer:	
Mixer Used? Y / N	
Time on:	- PRENS
Homogeneity Achieved? (V) N	
Post-Mixing Description of Sedin	ment: dark brown/ black organic silf and clay
little f. sand, wet, soft,	race Proots and woody debois, truce bivalves
-	
Photograph (after mixing):	14-081519, -081526, -081532, -081540
	(12 0 1131 1, 2001340, 20004, 20010 10
Date: 9/24/15	
Time: 0815	
Analyses (check analyses to be conduct	ed):
Sediment Chemistry	Sample ID: NB03SED-CHM178
Toxicity	Sample ID: NB03SED-POR
Porewater	Sample ID: NB03SED-TOX
Bioaccumulation	Sample ID: NB03SED-BIO
Notes (i.e., PE samples, EPA split sampl	es, field duplicate, MS/MSD, etc.):
Person Responsible for Completing Form	: Michael Thompson