Water Quality Monitoring Summary Report
2014 Remedial Dredging Season

Environmental Monitoring, Sampling, and Analysis
New Bedford Harbor Superfund Site
New Bedford, Massachusetts

Contract No. W912WJ-12-D-0004

DRAFT FINAL

Prepared for
U.S. Army Corps of Engineers
New England District
696 Virginia Road
Concord, Massachusetts 01742-2751

Prepared by
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Norwell, Massachusetts 02061

April 2015

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New England District

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Abbreviations and Acronyms

CSO	combined sewer overflow
DMU	Dredge Management Unit
DO	dissolved oxygen
EPA	U.S. Environmental Protection Agency
FSP	Field Sampling Plan
GC/ECD	gas chromatography/electron capture detector
IS	internal standards
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
m/s	meter per second
mg/L	milligrams per liter
MS	matrix spike
MSD	matrix spike duplicate
NBRO	New Bedford Resident Office
NOAA	National Oceanic and Atmospheric Administration
NS&T	National Status and Trends
NTU	nephelometric turbidity units
PCB	polychlorinated biphenyl
ppm	part per million
QAPP	Quality Assurance Project Plan
QC	quality control
R/V	Research Vessel
SIS	surrogate internal standards
TSS	total suspended solids
USACE NAE	U.S. Army Corps of Engineers New England District
WHG	Woods Hole Group
YSI	Yellow Springs Instrument

Executive Summary

In 2014, remediation activities at the New Bedford Harbor Superfund Site included hydraulic dredging to remove polychlorinated biphenyl (PCB)-contaminated sediment in dredge areas O, L, P, R, and S. Water quality monitoring was performed during remediation activities to limit the extent of water quality impacts resulting from dredging operations. Monitoring data were collected and provided to the U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency (EPA), and dredging contractors so that operational adjustments could be made as needed to limit the dispersal of suspended sediments and their associated contaminants, and to limit the extent of biological impacts to the water column. A secondary objective was to ensure that anadromous fish and wildlife were able to successfully navigate through or around dredging operations on their natural migratory paths in the Acushnet River. This report presents key findings from the water quality monitoring performed during the 2014 remediation activities.

Remedial dredging was performed from April 18 through October 10, 2014, resulting in the removal of approximately 77,300 cubic yards of contaminated sediment. Adaptive in situ monitoring was performed over the entire dredge season to monitor water quality and track sediment plumes in real time. Boat-based monitoring was performed over three consecutive days during the first week of dredging, and preplanned water quality samples were collected for laboratory analysis to verify the protectiveness of the project-based turbidity criterion. Following the first week of dredging, boat-based monitoring was performed once weekly on random days until the end of the dredge season. Observational monitoring conducted during boat-based monitoring days included anecdotal fish and wildlife observations, and observations of non-targeted parameters such as oil sheens. In addition, fixed-mooring telemetry units were deployed throughout the harbor to collect continuous, in situ water quality data that provided detailed information when boat-based monitoring was not performed and when dredging was inactive.

The 2014 turbidity criterion was defined as 100 nephelometric turbidity units (NTU) above background measured at any point along the *300-foot* compliance transects from the northern or southern work area boundary. A 75 NTU warning level was also established so that potential criterion exceedances and water quality impacts could be avoided through operational changes. Background turbidity readings measured at the reference stations located 1,000 feet up-current of the dredging area were generally low (frequently <5 NTU), and ranged from less than 1 to about 15 NTU over the course of the 2014 season depending on environmental conditions. Excluding spurious readings, turbidity peaks at the northern and southern compliance locations exceeded the 75 NTU only one time and never exceeded the project criterion of 100 NTU. The highest turbidity readings were observed during the boat-based monitoring less than 100 feet from the dredge and debris removal activities. These values generally did not persist beyond a few minutes, and turbidity dropped off rapidly with increasing distance from the dredge operations. Turbidity plumes associated with debris removal and active dredging tended to be more prominent during an ebb or slack tide. Turbidity plumes tended to dissipate in a southerly direction from the dredge area. Turbidity plumes to the north were observed less frequently, most likely due to continual southerly freshwater flow from the Acushnet River across all tides. When observed, turbidity plumes were contained by the absorbent booms. The short-term, pulsed nature of the suspended sediment plumes was also observed in the continuous in situ data record.

Throughout the dredge season, large numbers of small- and medium-sized fish were often observed throughout the harbor, and there appeared to be no restriction of movement through and past the dredge areas. A variety of waterfowl including gulls, swans, cormorants, egrets, terns, osprey, and other wading birds were observed living and feeding in the estuary surrounding all active dredge areas. Cormorants were observed in large groups in late summer sitting on the dredge pipeline. The species most frequently present were cormorants, gulls and terns. Ospreys were regularly observed diving and feeding on fish in spring and early summer. Bald eagles were also observed circling the upper harbor on a few occasions.

Discrete, preplanned water samples were collected at the reference and compliance stations over three consecutive days during the first week of dredging to verify the protectiveness of the project-specific turbidity criterion. Water samples were analyzed for turbidity, total suspended solids (TSS) content and

PCBs (total and dissolved fractions). Turbidity concentrations in the discrete water samples were low and fairly uniform, ranging from 1.90 NTU to 4.98 NTU. Lab-based turbidity values in the discrete water samples were also generally comparable to the in situ readings measured in the field during boat-based monitoring and sampling. TSS concentrations were more variable, ranging from 5.2 milligrams per liter (mg/L) to 20.3 mg/L. Total PCB concentrations (defined as the sum of the detected 18 congeners) were low (<0.5 micrograms per liter [µg/L] in the total fraction and <0.05 µg/L in the dissolved fraction), and were approximately one order of magnitude lower in the dissolved fraction (filtered) compared to the total (unfiltered) samples.

Potential impacts to the water column from dredging activities were assessed by evaluating the relationships between TSS and turbidity, and TSS or turbidity and PCB (total and dissolved). Trends in the 2014 water sample data were similar to trends observed in previous years. For example, there was a positive and significant correlation between turbidity and TSS, indicating that in situ turbidity measurements are a reliable indicator of suspended sediment concentrations. Total PCB in the total fraction (unfiltered water samples) was positively correlated with turbidity (in situ) and TSS, indicating that PCBs in the unfiltered water samples increase with increasing turbidity and TSS. This is consistent with the hydrophobic nature of PCBs, which tend to adsorb to suspended particles and organic matter and are relatively insoluble. By contrast, total PCB in the dissolved fraction (filtered water samples) did not correlate with turbidity (in situ or lab-based) or TSS, and remained low regardless of the turbidity or TSS levels. This is important because dissolved PCBs are thought to be the fraction that causes direct toxicity to marine organisms and may be subjected to long range transport. Overall, these trends, together with the boat-based and fixed-point continuous data continue to indicate that in situ turbidity is a good early indicator of potential water column impacts from dredging, and that the project-specific turbidity criterion continues to be ecologically protective, allowing remediation efforts to progress.

Chapter 1 . Introduction

1.1 SITE DESCRIPTION

The New Bedford Harbor Superfund Site (site), located in Bristol County, Massachusetts, extends from the shallow northern reaches of the Acushnet River estuary south through the commercial harbors of New Bedford and Fairhaven and into 17,000 adjacent acres of Buzzards Bay (Figure 1-1). New Bedford is currently home port to a large offshore fishing fleet and is a densely populated manufacturing and commercial center. By comparison, the eastern shore of New Bedford Harbor (Town of Fairhaven) is predominantly residential, light commercial or salt marsh. The Acushnet River's 16.5 square mile drainage basin discharges to New Bedford Harbor in the northern reaches of the site, contributing relatively minor volumes of fresh water to the tidally influenced harbor. Numerous storm drains, combined sewer overflows (CSOs), industrial discharges, as well as smaller brooks and creeks also discharge directly to the site. The upper and lower harbors are believed to be areas of net groundwater discharge. The estuary can be characterized as a shallow, well-mixed system.

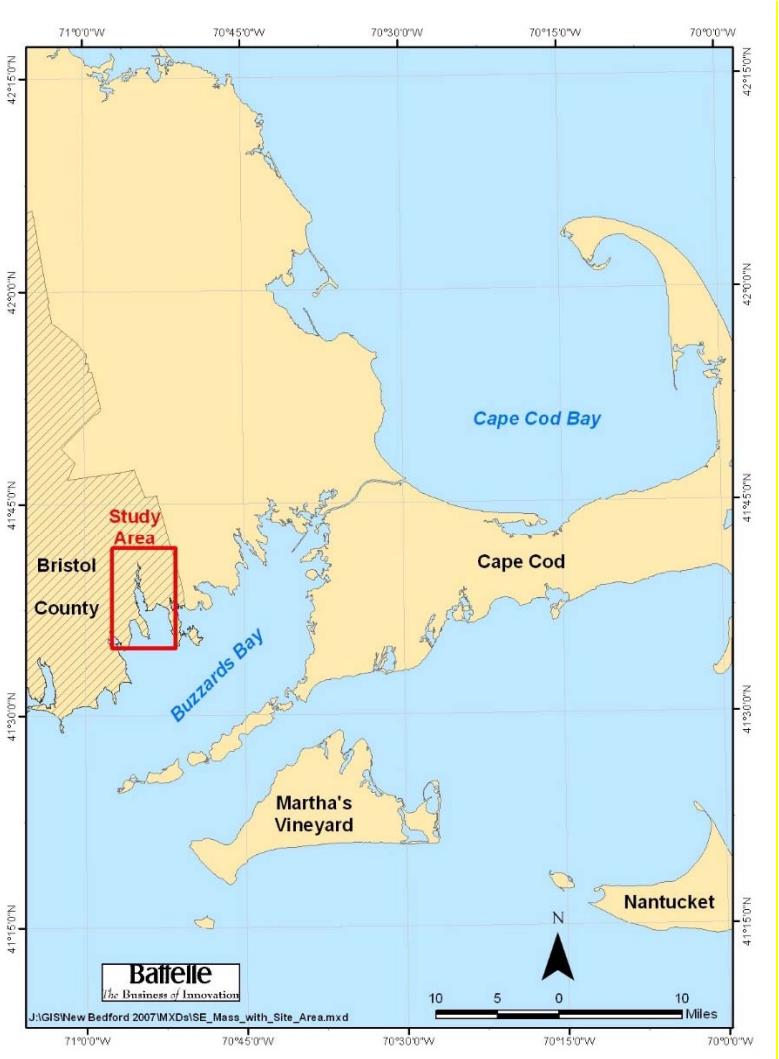

Figure 1-1. Location of the Site in Southeastern Massachusetts

Industrial and urban development surrounding the harbor has resulted in sediments becoming contaminated with high concentrations of many pollutants, notably polychlorinated biphenyls (PCBs) and heavy metals. PCB concentration gradients within harbor sediments generally decrease from north to south. The source of the PCB contamination has been attributed to two electrical capacitor manufacturing facilities that operated between the 1940s and 1970s. One facility, Aerovox Corporation, is located near the northern boundary of the site, and the other, Cornell-Dubilier Electronics, Inc., is located just south of the New Bedford Harbor hurricane barrier. The two facilities are known to have discharged PCB-laden wastes either directly into the harbor or indirectly via discharges to the City's sewerage system. Based on human health and ecological concerns, the United States Environmental Protection Agency (EPA) added New Bedford Harbor to the National Priorities List in 1983 as a designated Superfund Site. Through an Interagency Agreement between the EPA and the United States Army Corps of Engineers, New England District (USACE NAE), the USACE is responsible for carrying out the design and implementation of remedial measures at the site.

The site has been divided into three geographic areas: the upper, lower and outer harbors, consistent with geographic features, basin morphology and gradients of contamination (Figure 1-2). The site is also defined by three state-sanctioned fishing closure areas extending approximately 6.8 miles north to south and encompassing approximately 18,000 acres in total. The upper harbor comprises approximately 187 acres, with current sediment PCB levels ranging from below detection to over 1,000 parts per million (ppm). Prior to the removal of the most contaminated hot spot sediments in 1994 and 1995 as part of EPA's first cleanup phase, sediment PCB levels were reported higher than 100,000 ppm in the upper harbor. The boundary between the upper and lower harbor is the Coggeshall Street Bridge; at this point the harbor is constricted to a width of approximately 100 feet. The lower harbor comprises approximately 750 acres, with current sediment PCB levels ranging from below detection to over 100 ppm. The boundary between the lower and outer harbor is the 150-foot wide opening of the New Bedford hurricane barrier. The hurricane barrier was constructed in the mid-1960s. Sediment PCB levels in the outer harbor are generally low, with only localized areas of PCBs in the 50 to 100 ppm range near the Cornell-Dubilier plant and the New Bedford sewage treatment plant's outfall pipes. The southern extent of the outer harbor is a line mapped from Rock Point (the southern tip of West Island in Fairhaven), southwesterly to Negro Ledge, and then southwesterly to Mishaum Point in Dartmouth.

The remedial action at the site addresses the removal of approximately 900,000 cubic yards of PCB-contaminated sediment. In the upper harbor, where the highest concentrations of PCBs are found, the remediation involves focused hydraulic dredging of contaminated sediment, pipeline transport of dredged material, dewatering and off-site disposal. The site is divided into a series of Dredge Management Units (DMUs) based primarily on contamination levels and bathymetry. Each year, specific dredge areas are established based on DMU boundaries, removal volumes, and dredging operation logistics. In 2014, remediation activities at the site included dredging and/or debris removal in Areas O, L, P, R and S[1] (Figure 1-3). Hydraulic dredging removed approximately 77,000 cubic yards of contaminated sediment from the upper harbor in 2014 (Jacobs, 2015).

[1] Area S was added after the dredge season was extended. Sheet pile was installed at Area S in late July, 2014 and dredging commenced in late August, 2014.

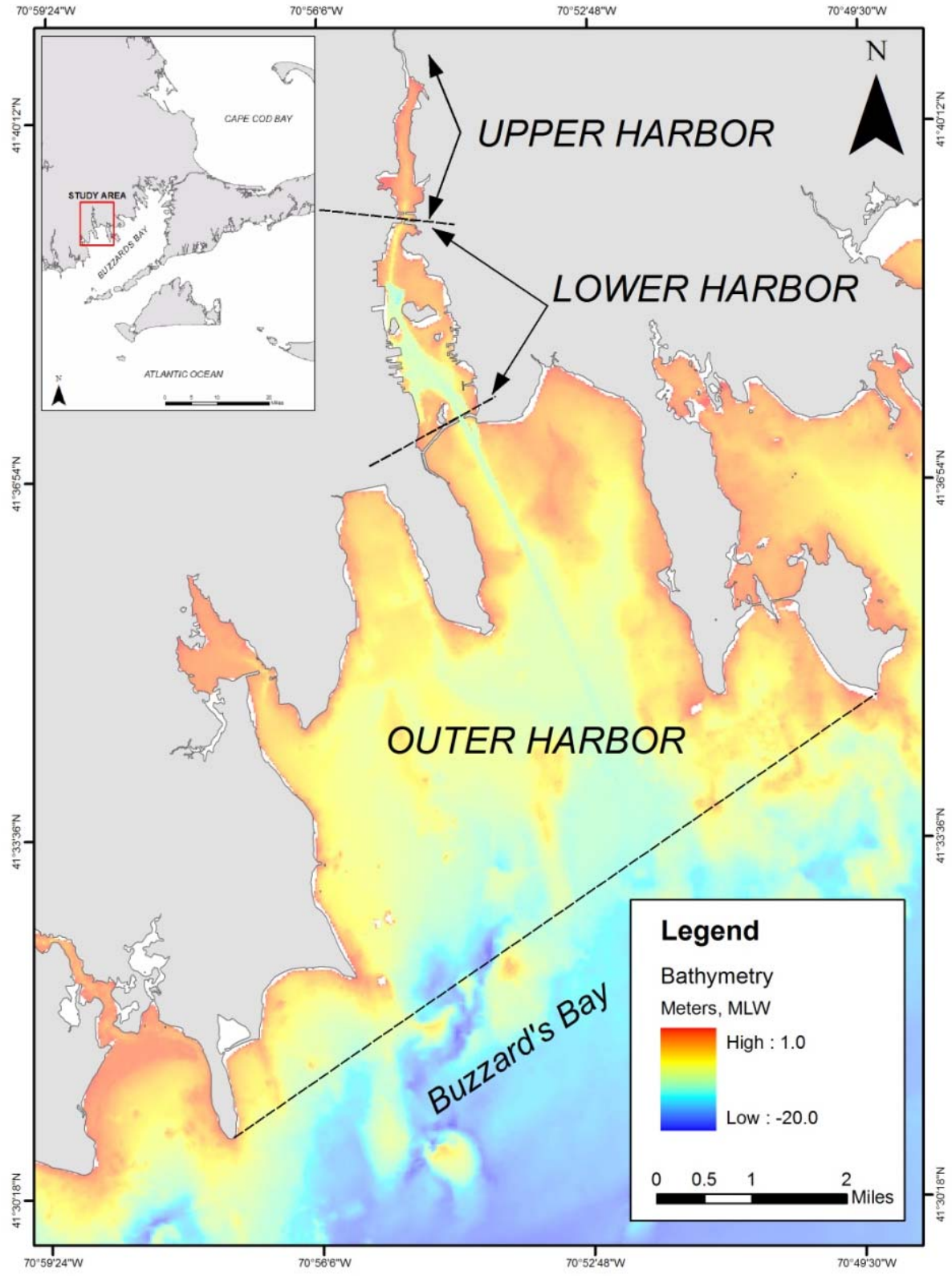

Figure 1-2. Overview of New Bedford Harbor Superfund Site

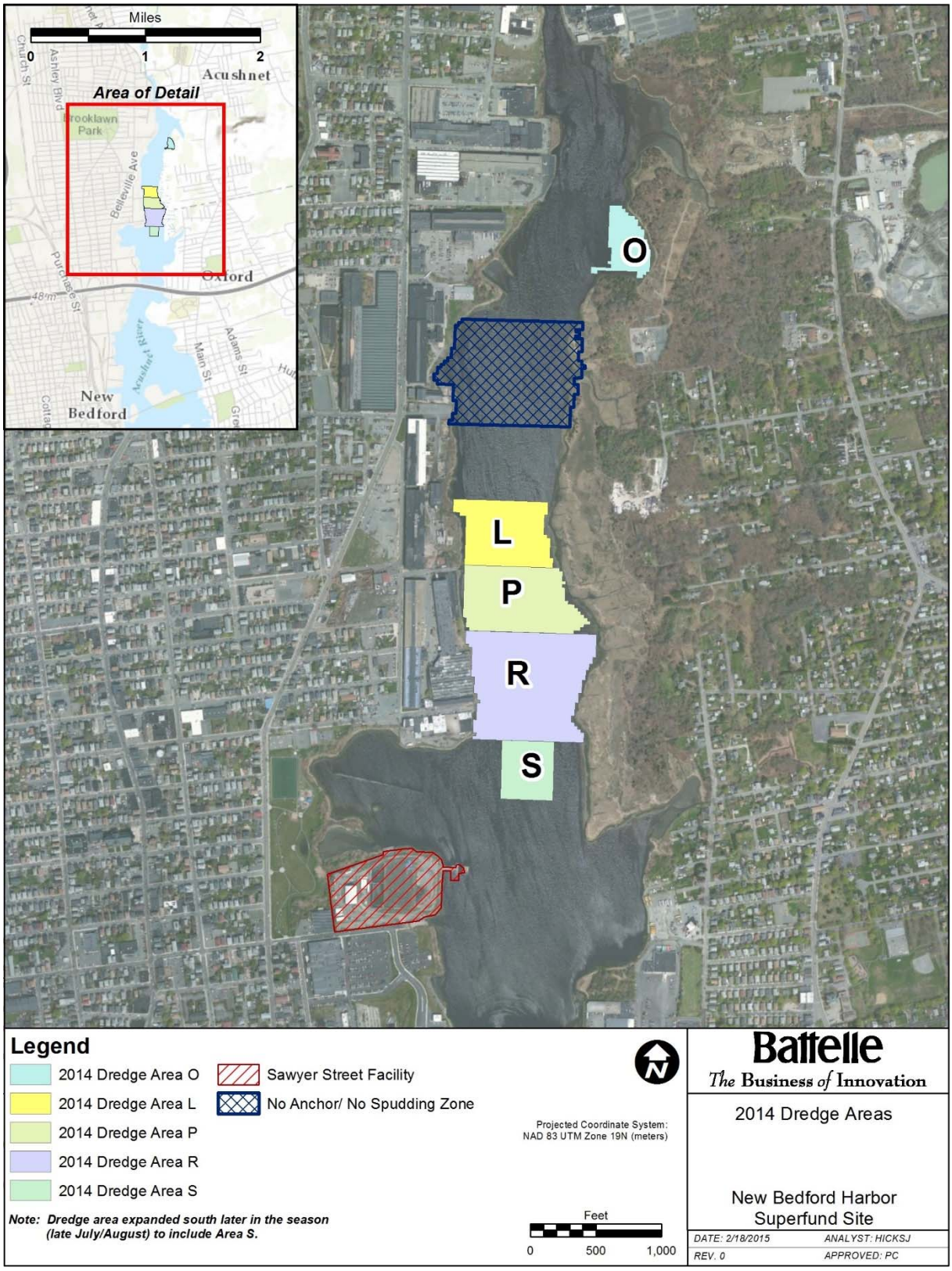

Figure 1-3. 2014 Dredge Areas

1.2 PROJECT OBJECTIVES

The resuspension of sediments during dredging and dredging-related activities can result in transport of contaminated sediment away from the dredge area. Additionally, contaminated sediments suspended in the water column present a concern for potential toxicity to aquatic organisms in the harbor. The primary objective of the 2014 water quality monitoring effort was to limit the extent of water quality impacts resulting from dredging operations. Monitoring data were collected and provided to the USACE, EPA, and dredging operators so that operational adjustments could be made as needed to limit the dispersal of suspended sediments and their associated contaminants, and limit the extent of biological impacts to the water column. A secondary objective was to ensure that anadromous fish were able to successfully navigate through or around dredging operations on their natural migratory paths in the Acushnet River.

The overall water quality monitoring approach for New Bedford Harbor utilizes an adaptive, criteria-based sampling strategy to monitor project-related water quality impacts. In situ (i.e., field-based) turbidity measurements are collected at established compliance transects and compared to a project-specific turbidity criterion. In the event of an exceedance, a decision sequence is used to determine whether corrective actions and collection of water samples for chemical and toxicological testing are required. Fish and wildlife observations are also recorded as part of the monitoring program.

Chapter 2 . Methods

This section describes the water quality monitoring program performed at the site in 2014 and the methods used to collect water quality data and assess potential dredging-related water quality impacts. These methods are described in detail in the approved project Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP) (Battelle, 2014a and 2014b).

2.1 2014 FIELD MONITORING AND SAMPLING APPROACH

The water quality monitoring and sampling approach for the 2014 dredge season employed a variety of methods to characterize sediment resuspension and transport, and its potential impact on water quality. Boat-based monitoring was performed at up-current reference stations to establish background conditions, and along transects at defined distances down-current of dredging operations to assess potential water quality impacts (Figure 2-1) (Section 2.1.1). The boat-based monitoring data were supplemented with data from fixed-point instrument stations that recorded a near-continuous time series of water quality parameters over the course of the dredging season (Section 2.1.2). In situ turbidity monitoring results were compared to the project-specific turbidity criterion, which is defined as 100 nephelometric turbidity units (NTU) above background measured at any point along the *300-foot* compliance transects from the northern or southern work area boundary. For example, if background turbidity of the harbor water during a flood tide is quantified as 10 NTU, then the exceedance criterion would be 110 NTU until the tide turned (Section 2.1.1.2 describes how background turbidity is established). A turbidity value of 75 NTU (above background) was used as a trigger to provide an advance warning for potential exceedances of the 100 NTU criterion.

As in previous years, a tiered approach was used to assess dredging-related water quality impacts. The monitoring program was designed to be flexible to accommodate changing field (e.g., tide level, rain event) and operational (e.g., location of dredging operations) conditions. The three levels of monitoring are defined as follows:

- Level I represents the highest level of monitoring and includes boat-based monitoring and collection of water samples for chemical analysis and/or toxicity testing at all compliance transects and reference stations during a flood and ebb tide.
- Level II represents a lower level of monitoring intensity compared to Level I, and is performed to identify any project-related water quality impacts, as warranted or required by the USACE. For example, this could include sampling/testing at a station immediately adjacent to the dredging operation or other locations as identified by the USACE and the appropriate reference station(s).
- Level III represents routine, boat-based monitoring performed during dredging activities to evaluate in situ turbidity readings against the project-specific criteria (i.e., project turbidity criterion of 100 NTU and warning level of 75 NTU). The collection of discrete water samples for laboratory testing is contingent upon a threshold exceedance of the project-specific turbidity criterion at the compliance transect, or visual observations of sheens or sediment plumes emanating from the project dredge area.

The decision to collect discrete water samples for Level II and/or III monitoring follows the decision sequence in Figure 2-2. The decision regarding the testing program for the water samples follows the Analytical Protocol Decision Sequence shown in Figure 2-3.

In 2014, Level I monitoring (with no toxicity testing) was performed over three consecutive days during the first week of dredging to verify the protectiveness of project-specific turbidity criterion and track plume dispersion, suspended sediment levels, and contaminant transport down-current of the dredging operations. During the three days of Level I monitoring, preplanned water samples were collected for laboratory testing at the reference station (one ebb, one flood) and compliance transect (one ebb, one flood) stations as described in Section 2.1.3.

Following the Level I daily monitoring at the start of the season, Level III monitoring was performed once weekly on random days for the remainder of the 2014 dredge season. Discrete water samples were not required or collected during the Level III monitoring because no sustained turbidity exceedances were observed at the compliance transects during this period. Visual observations of wildlife and sediment plumes resulting from dredging operations were performed as part of the Level II monitoring.

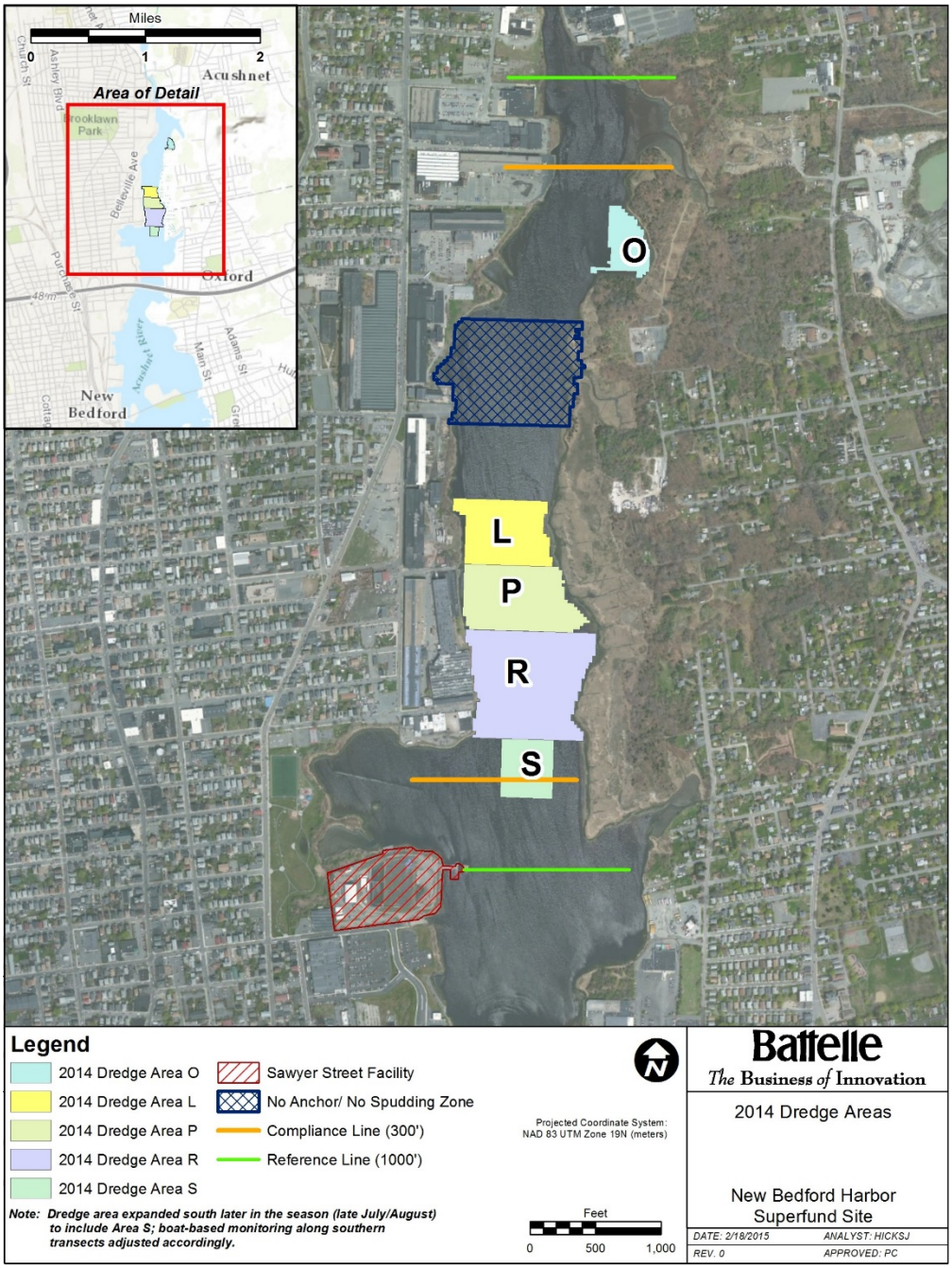

Figure 2-1. Overview of the 2014 Dredge Areas and Compliance and Reference Transects

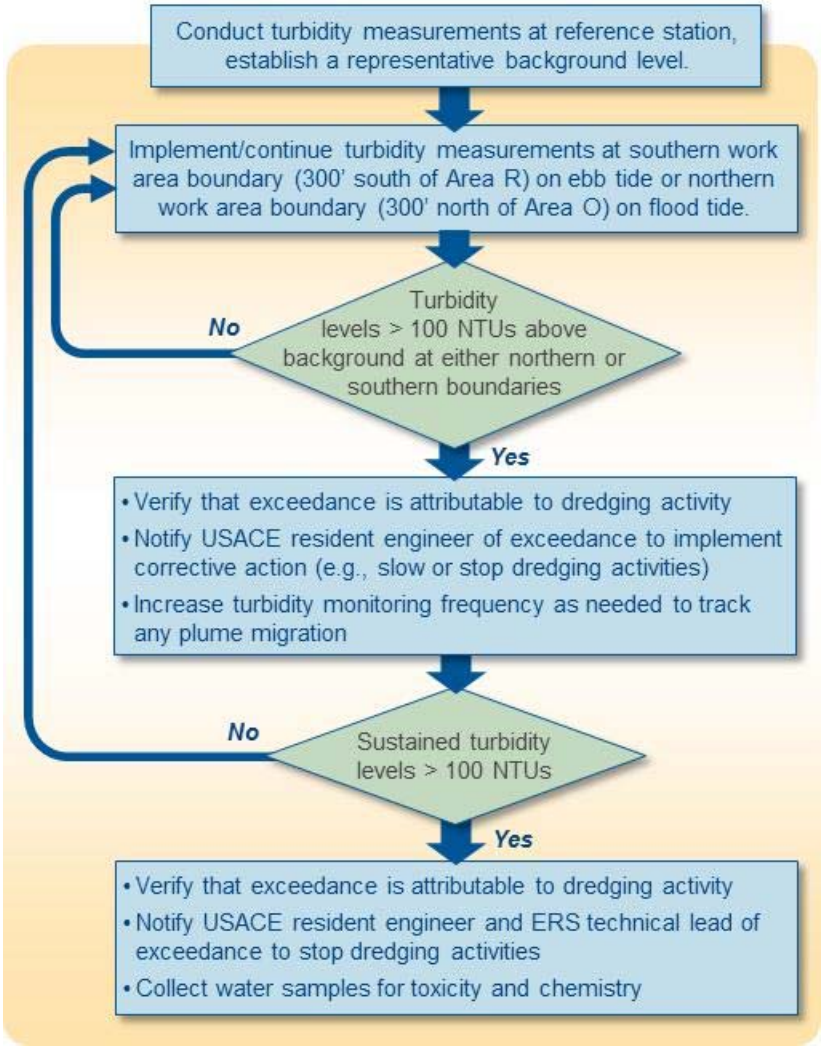

Figure 2-2. Water Quality Monitoring Sequence

(Source: USACE March 2014 Statement of Work)

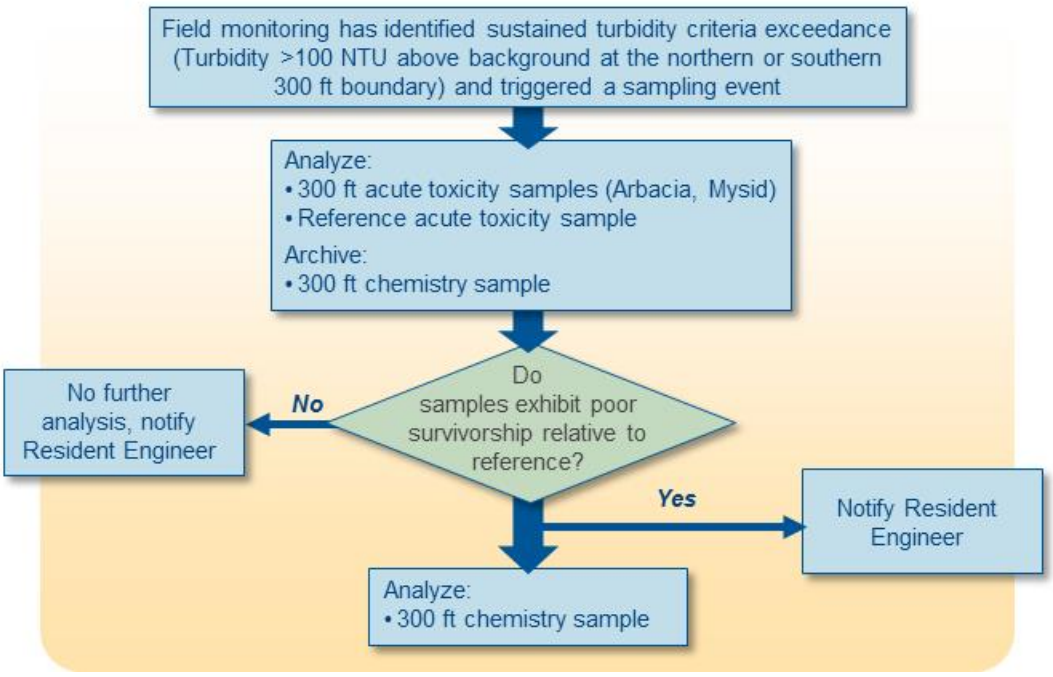

Figure 2-3. Analytical Protocol Decision Sequence

(Source: USACE March 2014 Statement of Work)

2.1.1 BOAT-BASED MONITORING

Boat-based water quality monitoring was performed aboard the Research Vessel (R/V) *Gale Force,* a 20-foot pontoon boat that provided access to all areas of the harbor during most tides. As noted above, Level I monitoring was performed over three consecutive days during the first week of dredging and Level III monitoring was performed once per week (on random days) during the remainder of the 2014 dredge season.

2.1.1.1 IN SITU DATA COLLECTION

Water depth, sensor depth, temperature, salinity, turbidity, and dissolved oxygen (DO) data were collected during each monitoring day. Water depth was measured with a lead-line or stadia rod and sensor depth, temperature, salinity, optical turbidity and optical DO were measured using a Yellow Springs Instrument (YSI) EXO2 data sonde. A handheld YSI EXO display was used to read parameters from the sonde during observation transects. The sonde was lowered slowly into the water and allowed to equilibrate at approximately 1-foot intervals through the water column with care taken to avoid placing the instruments on the sediment bottom. As the sensors were lowered, the sampling personnel observed the turbidity readings and identified the depth of the highest turbidity values. After the full "downcast" was completed, the sensors were pulled back up through the water column ("upcast") and held at the location of highest turbidity. Data were recorded on field log sheets and summarized in a daily report at the end of each boat-based monitoring day.

The monitoring approach included the collection of multiple turbidity readings along transects perpendicular or in some cases parallel to the dredge operation depending on wind and tidal conditions. To initially find the plume centroid, the YSI was deployed over the side of the boat, in close proximity to the surface, and then the boat was driven or allowed to drift through areas where a plume may be present. Once a plume was located, turbidity profiles were taken down-current of the dredge operation to track plume depth and dispersion. Based on these data, the center of the plume was identified. The center of the plume served as the focal point for further turbidity and other water quality data acquisition

as required for comparison to reference data. Turbidity highs and lows from transect data were noted on the field log sheets to show relative plume intensity. Monitoring was also performed downstream of any activity observed to generate a noticeable plume, such as support vessel and push boat movements. A graphic summary of plume location and intensity, including turbidity ranges, was generated on the field log sheets.

2.1.1.2 MONITORING STATIONS

Water quality measurements were collected at a variety of locations to determine: 1) the background water quality conditions on a given day, 2) the potential for turbidity plumes and identification of high turbidity events caused by dredging operations, and 3) the compliance of the remediation process with turbidity criteria. The locations are described below and shown in Figure 2-1.

- **Reference.** At the start of each monitoring day, the field team traveled to the northern or southern reference station to establish background water quality conditions for the harbor, depending on the tide. The reference stations were marked with buoys (Figure 2-4). The reference stations were located outside the influence of any localized turbidity sources (e.g., CSO or storm water outfalls), and were representative of the water flowing through the dredge area. The reference stations were located 1,000 feet up-current of the 2014 dredging operations area, which was defined as 1,000 feet north of Area O on an ebb tide and 1,000 feet south of Area R on a flood tide (or 1,000 feet south of Area S later in the season when the dredge area was expanded south to include Area S; the southern reference buoy was moved on August 21, 2014 to stay far enough south once dredging commenced in Area S).

  In situ readings were collected as described in Section 2.1.1.1. Reference stations were revisited to obtain new turbidity readings if site conditions changed during the day, for example, after changes in tidal flow, dredge operations, or weather conditions such as rain events, which can dramatically alter ambient water quality conditions.

- **Active Dredge Zone.** Following the collection of in situ measurements at the reference station, the field team traveled to the down-current edge of the 2014 dredging operations area. The dredging operations area encompassed all of the 2014 dredge areas and was bounded to the north by Area O and to the south by Area R (later in the season, the dredge area was extended further south to include Area S). Downcast in situ readings were collected as close as possible to the dredge and/or debris removal rig (as safety allowed) to identify the turbidity maximum; in situ measurements were collected at the turbidity maximum during the upcast.

- **Compliance Transect**. From the active dredge zone, the field team traveled to the compliance transects located 300 feet up- and down-current from the dredging operations. The compliance transects were located 300 feet north of Area O on a flood tide and 300 feet south of Area R on an ebb tide (or 300 feet south of Area S later in the season when the dredge area was expanded south to include Area S; the south compliance buoy was moved south on July 29, 2014 so as not to interfere with sheet pile installation around Area S). During boat-based monitoring, the field team traveled from shore to shore along these compliance transects while collecting in situ readings. Real-time data feedback and visual observations were used to identify any suspended sediment plumes in the area. High and low turbidity readings were recorded along the transect to characterize the relative intensity and spatial dimensions of a turbidity plume. If a substantial turbidity plume was identified, subsequent readings were collected to identify fluctuations in the plume intensity and potential exceedances of the compliance threshold. In the event of a sustained threshold exceedance, the field team would notify the USACE New Bedford Resident Office (NBRO) Project Engineer.

2.1.1.3 FISH AND WILDLIFE OBSERVATIONS

Information pertaining to fish passage and behavior included visual observations recorded by field staff during boat-based monitoring performed on three consecutive days at the start of the dredge season and once weekly (on random days) thereafter until the end of the dredge season.

2.1.2 FIXED-POINT CONTINUOUS MONITORING

The continuously-recording water quality sensors provided additional information that complemented the adaptive, boat-based monitoring described above. Continuous readings provided water quality data for periods when boat-based monitoring was not performed, as well as during inactive dredge periods (nights and weekends). Fixed station water quality moorings were strategically positioned throughout the harbor to provide coverage on a 24-hour cycle. Moorings marked by buoys were deployed at four locations (Figure 2-4) designated by USACE and EPA as follows:

- **Northern reference** located 1,000 feet north of Area O
- **Northern compliance** located 300 feet north of Area O
- **Southern compliance** located 300 feet south of Area R
- **Southern reference** located 1,000 feet of Area R

The southern compliance and southern reference moorings were moved further south later in the dredge season after the dredge area was expanded further south to include Area S (southern reference mooring moved on August 21, 2014 and southern compliance mooring moved on July 29, 2014).

Moorings were deployed near the deeper portion of the channel where the majority of suspended sediment transport occurs, but not close enough to impede barge transit. The mooring buoys were held in place with 75 pound pyramid anchors and attached with a chain (Figure 2-5). The sensors remained approximately 1 meter below the water surface as the tide rose and fell.

Each mooring was equipped with YSI EXO2 water quality sondes with internal data logging capability. The instrument sensors collected near-continuous measurements of water temperature, salinity, DO (optical), and turbidity (optical). These sondes contained the most up-to-date water quality sensors developed by YSI and are able to automatically increase sampling frequency in the event that a user-defined threshold for turbidity or DO is exceeded (burst mode). The objective of the fixed-point instrument deployments was to continuously monitor water quality during active dredging as well as during non-dredging periods.

The sampling interval of the sonde was set to 15 minutes. All four stations were equipped with a remote monitoring telemetry system. A cellular IP modem connected to the sonde provided near real-time updates regarding turbidity and DO. The telemetry data allowed Battelle to monitor water quality during periods when boat-based monitoring was not active. If turbidity readings exceeded 75 NTU above background (warning level), Battelle was automatically notified via e-mail and would then report this information to the USACE NBRO Project Engineer. The same alert system was set up in the event of hypoxic conditions (i.e., defined as DO < 2 milligrams per liter [mg/L]).

Data retrieval and a weekly inspection of the units were included as part of the fixed-point water quality monitoring program. During the inspection, biofouling was removed from the buoy, sonde and sensors were cleaned with a soft-bristled brush, and the probes were inspected to ensure the wipers were working properly. Due to the heavy fouling that was observed early in the monitoring season, the field crew deemed it necessary to thoroughly clean all sensors carefully, mainly to remove barnacles, which settled and grew between the probes. The barnacles could potentially grow and push the probe housings against each other, which could have broken the sensors. The barnacle settlements were observed

throughout the entire monitoring season. Additionally, checks were conducted weekly to ensure that sensor readings were consistent with the in situ data collection sonde.

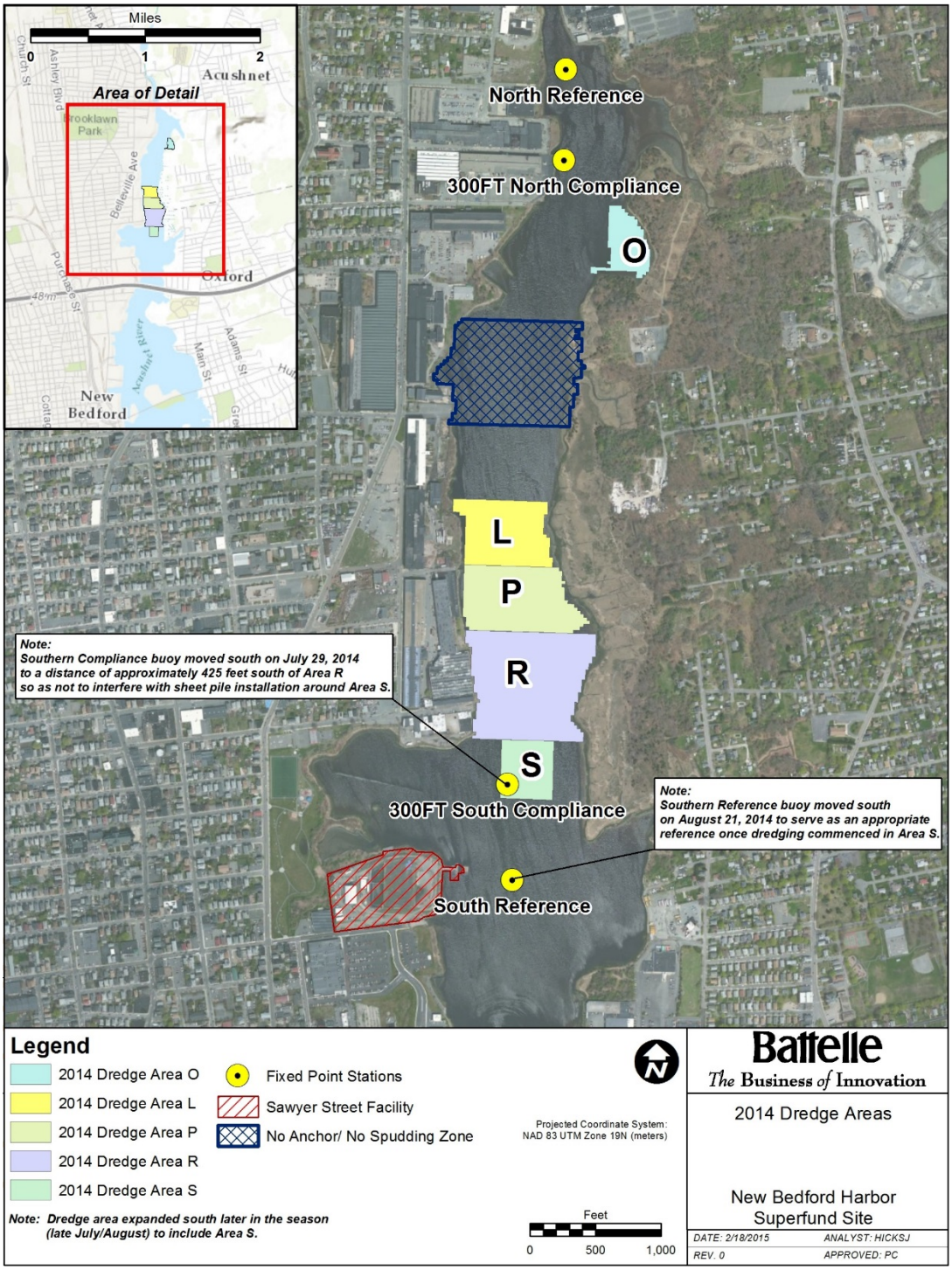

Figure 2-4. Location of Fixed Point Monitoring Stations

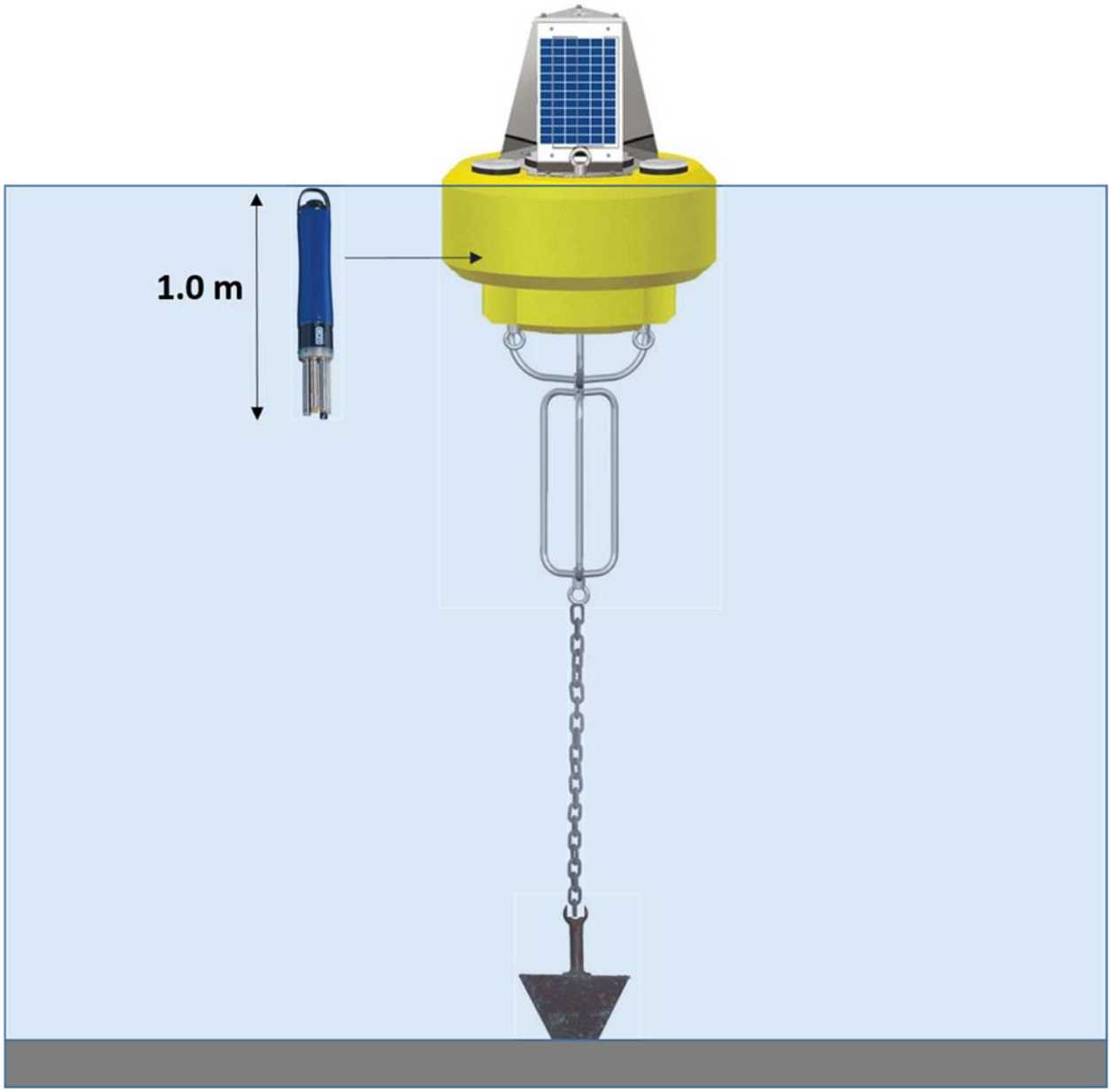

Figure 2-5. Fixed-Point Mooring Schematic

2.1.3 DISCRETE WATER SAMPLING

Preplanned water samples were collected on three consecutive days of Level I monitoring during the first week of dredging. On each of these days, one water sample was collected for analysis of total suspended solids (TSS), turbidity and PCBs (total and dissolved fractions) at the reference and compliance transect stations, during the flood and ebb tides. A total of 12 discrete water samples were collected (four samples per day, three Level I monitoring days). Additional water samples were also collected to satisfy field- and laboratory-based quality control (QC) requirements. Field-based QC included one equipment blank for PCB (total and dissolved fractions) analysis and one field duplicate sample for TSS, turbidity and PCB (total and dissolved fractions) analyses. Extra water was also collected for the preparation of laboratory matrix spike (MS) and matrix spike duplicate (MSD) QC samples for PCB (total and dissolved fractions) analysis.

Discrete water samples were collected using a 12-volt Teflon® diaphragm pump equipped with Tygon® tubing. Prior to collecting samples at each location, water was pumped continuously through the system for approximately 2 to 3 minutes to flush the equipment. This purging ensured that the system was cleared prior to actual sample collection to avoid potential site-to-site cross contamination. The YSI in situ sensor was placed in the water next to the tubing inlet during collection to ensure that the sensor measurements and the analytical results were representative of the same parcel of water.

Following purging, water from the pump outlet was collected directly into the appropriate sample containers for laboratory testing (Table 2-1). Following collection, samples were stored cold (on ice in coolers or in the field trailer refrigerator) until delivery to the participating laboratories (Table 2-1).

Table 2-1. Sample Collection Requirements and Participating Laboratories

Test Parameter	Sample Container Type	Number Containers per Sample	Preser-vation	Storage Condition	Holding Times	Analytical Lab
TSS	1-L plastic	1	Ice	4 ± 2 °C	7 days	Alpha Analytical 320 Forbes Blvd. Mansfield, MA 02767 508-844-4124
Turbidity	1-L plastic	1	Ice	4 ± 2 °C	48 hours	
PCB (whole water for filtration and dissolved analysis)	1-L amber glass bottle	2	Ice	4 ± 2 °C	7 days (extraction); 40 days (analysis)	Battelle 141 Longwater Dr Norwell, MA 02061 781-681-5400
PCB (whole water for total analysis)	1-L amber glass bottle	2	Ice	4 ± 2 °C	24 hours (filtration); 7 days (extraction); 40 days (analysis)	

Note:
The FSP (Battelle, 2014a) includes information for optional test parameters (total organic carbon, metals and toxicity) that were not required by USACE because the turbidity criterion was not exceeded.

2.2 LABORATORY TESTING

Laboratory testing was performed on preplanned Level I water samples collected during the first week of dredging. At the direction of USACE, the preplanned Level I samples were submitted for TSS, turbidity and PCB (total and dissolved fractions) analyses. Contingency-based samples (Level III) were not collected during the 2014 season because no threshold exceedances were observed during boat-based or fixed-point monitoring. Level II samples were not collected because they were not required by USACE.

A routine set of laboratory-based QC samples was prepared with the Level I water samples to monitor data quality in terms of accuracy and precision. Depending upon the analysis, QC samples included a procedural blank, laboratory control sample (LCS), laboratory control sample duplicate (LCSD), MS, MSD, and laboratory duplicate. Specific QC samples and the associated measurement quality objectives are discussed in the project QAPP (Battelle, 2014b).

2.2.1 TOTAL SUSPENDED SOLIDS AND TURBIDITY

TSS and turbidity analyses were performed by Alpha Analytical (TSS at the Mansfield, Massachusetts laboratory and turbidity at Westborough, Massachusetts laboratory). Water samples were analyzed for TSS following Standard Method 2540D. Briefly, a well-mixed sample was filtered through a weighed 0.45-µm membrane filter and the residual retained on the filter was dried to a constant weight. The increase in the weight on the filter represents the TSS. Results were reported on a milligram dry-weight basis per volume of water filtered (mg/L).

Water samples were analyzed for turbidity following EPA Method 180.1. This method is based on a comparison of the intensity of light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension under the same conditions. The higher the intensity of scattered light, the higher the turbidity. Formazin polymer was used as the reference turbidity standard suspension because it is more reproducible in its light-scattering properties than clay or turbid natural water. Sample results were reported in NTU.

For each batch of 20 or fewer samples, a laboratory method blank, LCS, and laboratory duplicate were processed and analyzed with the field samples for TSS and turbidity.

2.2.2 POLYCHLORINATED BIPHENYL

PCB analysis for the 18 National Oceanic and Atmospheric Administration (NOAA) National Status and Trends (NS&T) congeners was performed by Battelle (Norwell, Massachusetts laboratory), using both whole water (unfiltered) and dissolved (filtered) samples. Water samples designated for dissolved PCB analysis were vacuum-filtered through 0.45-µm pore size mixed cellulose ester filters (47-mm diameter) using two-piece fritted glass filter funnels. Before use, each filter assembly was rinsed by filtering approximately 100 milliliters (mL) of Milli-Q water under vacuum. Samples were filtered at the laboratory within 24 hours of sample collection.

Water samples (unfiltered and filtered) were extracted following modified EPA Method 3510C (Battelle SOP 5-200, *Water Extraction for Trace Level Semi-Volatile Organic Contaminant Analysis*). Approximately 1 liter of the water sample (whole water or filtered) was spiked with surrogate internal standards (SIS) and extracted three times with dichloromethane using separatory funnel techniques. The combined extract was dried over anhydrous sodium sulfate, concentrated, and cleaned using alumina cleanup columns and activated copper. The final extract was solvent exchanged into hexane, fortified with internal standards (IS), and submitted for PCB analysis.

PCB analysis was performed by gas chromatography/electron capture detector (GC/ECD) using dual column confirmation, following modified EPA Method 8082 (Battelle SOP 5-128, *Identification and Quantification of Polychlorinated Biphenyls (By Congener and Aroclor) and Chlorinated Pesticides by Gas Chromatography/Electron Capture Detection*). An initial calibration consisting of target analytes was

analyzed prior to sample analysis to demonstrate the linear range. Calibration verification was performed at the beginning and end of each 24-hour period in which samples were analyzed. Concentrations of target congeners were calculated versus IS using the average response factors generated from the initial calibration. Sample results are reported in micrograms per liter (µg/L) to three significant figures. The sum of the 18 NS&T congeners, referred to as "SUM 18 CONG", was calculated in the project database; a value of zero was used in the summation for non-detects.

For each batch of 20 or fewer samples, a laboratory method blank, LCS, LCSD, MS, and MSD were processed and analyzed with the field samples.

2.2.3 DATA VALIDATION

TSS, turbidity and PCB congener results for the Level I preplanned water samples received data validation at the Tier 1 Stage 1 (TSS and turbidity data) and Tier 1 Stage 2A (PCB data) levels using the following guidelines, as applicable to each method:

- EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013
- EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010

Chapter 3 . Results

This section summarizes results from the water quality monitoring program performed at the site to assess potential water quality impacts resulting from dredging operations during the 2014 remedial dredging season. Complete results are provided as appendices to this report.

3.1 DREDGING SUMMARY

Remedial dredging in the upper harbor area began on April 18, 2014 and was completed on October 10, 2014. Approximately 77,000 cubic yards of contaminated sediment was removed during the dredging season from Areas O, L, P, R and S. Three dredges were present on site and set up in different dredge areas to increase efficiency. Dredge crews were able to move between dredges to maintain productivity in the event that low tides prevented dredging in one area, equipment malfunctions were experienced, or the sediment type impacted processing efficiency. This approach meant that the dredging location was variable from day to day and even within one work day.

Once the dredge areas were determined, sheet piling was placed around the perimeter of each section, at approximately 50-foot spacing. A perimeter cable was installed around the sheet piles at approximately the high tide mark. Floating, absorbent oil booms were also placed along the perimeter to contain any surface oil slicks. The dredge crew separated the eastern and western halves of the river, and worked on one half of the river at a time. Because of this design, the water quality sampling crew could navigate around the dredge boundary to get to and from reference stations without having to open the absorbent booms or navigate under dredge wires. The 1,000 feet north reference station was inaccessible on one day of boat-based monitoring (August 4, 2014) because the pontoon boat could not get over the floating pipeline. In this case, the background readings were collected approximately 1,500 feet north of the dredging activity (in area R) rather than 1,000 feet north of Area O.

Dredging was performed using a Mud Cat™ hydraulic dredge equipped with a horizontal auger. The dredge was propelled by winching itself along a transverse cable which spanned the dredge area. As a pass was completed, support crews relocated the cable to position for the next pass. Dredged material was pumped through a pipeline to a booster pump, then to the desanding facility at Sawyer Street. Following desanding, the remaining fine material was pumped via a separate pipeline to the dewatering, treatment, and handling facility in the Lower Harbor. Separate debris removal operations were conducted before dredging of a particular area because hydraulic dredges cannot process large debris. Debris removal was accomplished by ‘raking’ the bottom with a barge-mounted excavator with two forked jaws that opened and closed. The two jaws scraped the bottom and closed into each other to capture the debris. Debris scows secured to the side of the debris removal platform stored the debris and were moved offsite as needed. Support boats were used throughout the operation to transport crews, maintain dredges, handle the pipeline, and move barges.

One deviation from the FSP was documented. When turbidity readings were greater than 75 NTU, the sondes were programmed to collect data more frequently (in burst mode) until the turbidity decreased below the trigger value. However, the burst mode on the YSI sondes did not work, and measurements were not collected at the increased intervals when the 75 NTU criterion was exceeded.

3.2 FIELD MONITORING SUMMARY

The 2014 field-based water quality monitoring results are summarized below. Complete results for the boat-based and fixed-point monitoring efforts are provided in Appendices A and B, respectively. Turbidity and DO monitoring results are summarized below.

3.2.1 BOAT-BASED MONITORING

Boat-based water quality monitoring was performed over a 26-week period, beginning on April 22, 2014 and ending on October 14, 2014. Level I monitoring was performed over three consecutive days during the first week of dredging (week of April 21, 2014) and Level III monitoring was performed once per week (on random days) throughout the remainder of the dredge season and during demobilization activities at the end of the season. Weekly summaries of the boat-based monitoring data and observations are provided in Appendix A.

3.2.1.1 TURBIDITY

At the start of each monitoring day, the field team transited to the up-current reference station to establish background turbidity conditions for that day. Turbidity readings were generally low (frequently <5 NTU), and ranged from less than 1 to about 15 NTU over the course of the season depending on environmental conditions (Appendix A).

The turbidity warning level (75 NTU) was never exceeded during boat-based monitoring. During dredging and debris removal operations, in situ turbidity readings in the active work zone ranged from near background levels to approximately 70 NTU. Turbidity readings were generally higher within 100 feet of the dredging operations, and then decreased with increasing distance from the dredging operations. The highest turbidity reading was recorded on July 24, 2014 during a flood tide about 40 feet from the dredge (see Week 14 water quality summary in Appendix A). Turbidity readings were also elevated on July 11, 2014 and two short-duration (<5 minutes), elevated turbidity plumes (peak readings of 45 NTU and 66 NTU) were observed at distances of approximately 200 to 300 feet south of the dredging operations (see Week 12 water quality summary in Appendix A). Oil sheens were observed on some monitoring days near the dredging operations but were contained by the absorbent booms. On June 10, 2014, an oil sheen observed in Area R was pushed north by the southerly winds past the oil boom (see Week 8 water quality summary in Appendix A). Debris removal had already stopped by that point. The USACE NBRO Project Engineer and Jacobs Engineering were contacted and an additional oil boom was deployed.

3.2.1.2 DISSOLVED OXYGEN

DO was monitored throughout the dredge season to identify potential dredge-related impacts and better understand the overall water quality conditions that might result in fish kills or other negative impacts. DO readings observed in the spring and fall were fairly uniform throughout the monitoring area and at all depths, typically ranging from 6 to 10 mg/L (see weekly water quality summaries provided in Appendix A). DO readings were more variable in the summer, ranging from 1.9 to 12 mg/L. Hypoxic conditions (<2 mg/L) were generally not observed, except in late July and August and were attributed to natural processes that create low DO in late summer (this is reported in the weekly summaries provided in Appendix A).

Low DO readings were also observed in the summer early in the morning on an ebb tide at the northern fixed point moorings (Section 3.2.2). These low DO readings are naturally occurring, and are the result of upstream plants respiring overnight and consuming the oxygen, and low DO water coming downstream on the ebb tide.

3.2.1.3 FISH AND WILDLIFE OBSERVATIONS

Throughout the dredge season large numbers of small- and medium-sized fish were often observed throughout the harbor, and there appeared to be no restriction of movement through and past the dredge areas. A total of two dead fish were observed during the boat-based monitoring during the 2014 dredge season: one 18-inch heavily-decomposed fish and one 6-inch fish (both were observed on June 17, 2014 near Area O). There was no obvious connection between these two fish to any project activities. No fish-kill events were observed during the 2014 dredge season (Appendix A).

A variety of waterfowl including gulls, swans, cormorants, egrets, terns and osprey were observed living and feeding in the estuary surrounding all active dredge areas. Cormorants were observed in large groups in late summer sitting on the dredge pipeline. The species most frequently present were cormorants, gulls and terns. Ospreys were regularly observed diving and feeding on fish in spring and early summer. Bald eagles were also observed circling the upper harbor on a few occasions.

3.2.2 FIXED-POINT CONTINUOUS MONITORING

Fixed-point water quality sensors were deployed on April 17, 2014 at the southern compliance and southern reference stations and on April 18, 2014 at the northern compliance and northern reference stations (Figure 2-4). The southern compliance and southern reference moorings were moved later in the dredge season when the dredge area was expanded further south to include Area S. The southern compliance mooring was moved south on July 29, 2014 to a distance of approximately 425 feet south of Area R so as not to interfere with sheet pile installation around Area S. The southern reference mooring was moved south on August 21, 2014 once dredging commenced in Area S. The moored sensors remained in service over the entire dredging season and end of season demobilization activities. They were recovered and taken out of service on October 20, 2014. Near-continuous water quality data were collected at the fixed-point stations throughout this period; plots showing weekly data for turbidity and DO relative to tidal height are provided in Appendix B (raw and processed sensor data files used to generate the plots depicting weekly data are provided electronically with Appendix B).

Dredging operations in 2014 frequently stopped and started due to mechanical or other issues, and the locations of activities that could potentially resuspend sediment were highly variable. As a result, the relationship between specific time periods in the continuous record and dredge activities could not always be ascertained. However, because dredging did not occur at night or on weekends, these time periods can be used to define 'inactivity' and daytime hours during weekdays can be used to define 'activity' with respect to the dredging operation. In this way, it is possible to distinguish dredging-related water quality characteristics from background conditions.

3.2.2.1 TURBIDITY

The continuous in situ turbidity data indicated that the project turbidity criterion of 100 NTU over background was not exceeded at the compliance stations at any time during the 2014 monitoring program due to dredging-related activities. The continuous data were similar to the boat-based monitoring data in that they did not reveal substantive (over 75 NTU) or sustained turbidity plumes (Appendix B). During dredging activities, dredge-related turbidity readings above 75 NTU were recorded only once at the southern compliance mooring on June 13, 2014 (80.2 NTU at 13:30 EDT, Appendix B). While turbidity readings were somewhat elevated in the preceding and subsequent samples[2], values reached the warning level for only a single reading. There was no unusual weather on this day that could explain the elevated readings. For example, weather conditions were average (during the day of June 13, 2014 air temperatures were between 16° C and 22° C, and average wind speeds were 8 to 12 meters per second [m/s] and no rain was reported) (Weather Underground, 2015; National Data Buoy Center, 2015). The USACE NBRO Project Engineer was notified so that operational decisions could be made to help prevent a turbidity exceedance; however, only a single reading of greater than 75 NTU was recorded before turbidity levels dropped back to less than 40 NTU.

Boat-based monitoring was not performed on June 13, 2014; therefore, there are no field reconnaissance data to better understand why the turbidity readings at the southern compliance mooring were elevated on this occasion. Even so, the elevated turbidity reading does not represent an exceedance of the project criterion, because it was less than 100 NTU over background. Additionally, this was a single isolated high

[2] June 13, 2014 readings from 300 foot compliance senor: 80 NTU at 13:30 EDT, proceeded by values of 8 to 30 NTU from 12:15 to 13:15, and then followed by readings of 8 to 31 NTU from 13:45 to 15:15.

point that was twice as high as any of the other readings observed in the previous or subsequent 2 hours. Sensor data from previous monitoring years suggest that a single high reading could be associated with a temporary blockage of the sensor, rather than indicative of a turbidity plume. Overall, the elevated turbidity reading (>75 NTU) recorded at the southern compliance mooring on June 13, 2014 may have been associated with a local phenomenon or possibly caused by a temporary blockage of the turbidity sensor.

The lack of substantive plumes (>75 NTU) observed in 2014 dredge season data from the moored sensors is consistent with the boat-based monitoring data. There were very few days during boat-based monitoring when sustained readings greater than 35 to 40 NTU were observed. Further, these readings of 35 to 40 NTU were typically observed only in very close proximity (<200 feet) to the dredge or debris removal operations. The continuous in situ turbidity data did reveal some evidence of weak turbidity plumes, which were sustained only under certain tidal conditions. Generally, if the dredge or debris removal barge was working during a flood tide in Area O, then the northern mooring data showed some peaks in turbidity.

Continuous in situ turbidity and tidal elevation data from a representative period during the monitoring season (Week 9) are shown in Figure 3-1. The turbidity data as plotted are not corrected for background. The background turbidity signal in the river is influenced by tidal conditions, stream flow, wind, and other factors. As a result, the background turbidity signal can fluctuate on scales from minutes to days. In general, the background turbidity signal at the reference stations was <5 NTU (Appendix A). A value of 25 NTU from the moored sensors represents a turbidity reading that is approximately 20 NTU above background.

Turbidity signals related to dredge activity were clearly observed in the continuous in situ data. These signals manifest as peaks in turbidity above background. The influences of tidal height and flow direction on sediment plume transport are also evident in these data. Figure 3-1 shows the turbidity record from all four moorings during Week 9 of dredging, including the following weekend. Nights and weekends are shaded on the figure to indicate periods of inactivity in the dredging operation. The following water quality characteristics were observed in the continuous record during this week of dredging. The letters below correspond to the letters shown in Figure 3-1.

A. On an incoming tide, current flow is predominately towards the north. As a result, any suspended sediment plumes related to dredging would be expected to be evident at the northern moorings and would not be expected at the southern moorings. This was observed to some extent where, during the rising tide, the northern turbidity was greater than the southern turbidity (labeled ‘A’ on Figure 3-1). The peaks observed on June 17, 2014 (approximately 25 NTU) provide the clearest example of this, as dredging operations were active in Area O.

B. During the outgoing tide, the effect is reversed such that the southern mooring registers a turbidity peak (labeled ‘B’ on Figure 3-1) while the turbidity measured at the northern mooring returns to background.

C. Weak turbidity peaks (labeled ‘C’ on Figure 3-1, <5 NTU) observed on days with no dredging activities (June 21-22, 2014) are indicative of background levels of turbidity.

D. Throughout the record, occasional spurious readings are evident (labeled ‘D’ on Figure 3-1, narrow peaks such as the >75 NTU readings on June 17, 2014). These readings occurred at night, and were not associated with dredging activities. In this instance the buoy was serviced the following day and a piece of macro algae was found to be causing the sensor blockage. The crew was notified of the greater than 75 NTU readings via text messages and e-mail alert system, but did not notify the USACE NBRO Project Engineer because of the time of day at which the readings occurred.

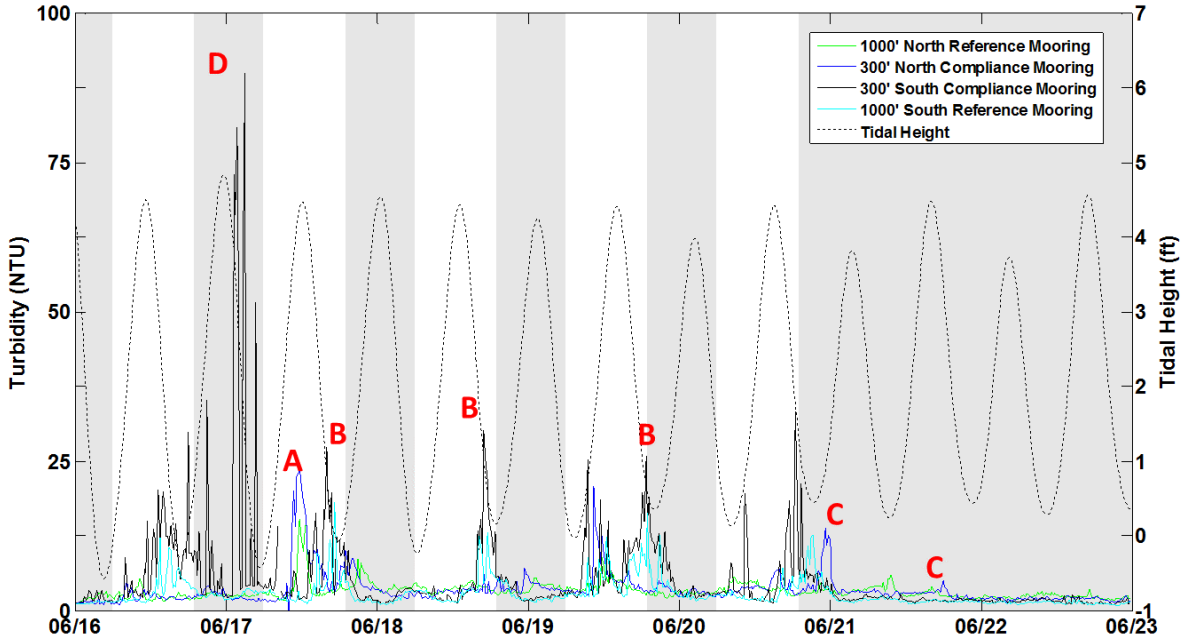

Figure 3-1. Example of Turbidity Signals Related to Dredging and Tidal Direction during Week 9 (June 16 through 23, 2014) of Dredging at the Site (shaded areas indicate nights and weekends, periods of inactivity in the dredging operations)

3.2.2.2 DISSOLVED OXYGEN

Continuous in situ DO data were collected at all four fixed-point moorings throughout the majority of the deployments (Appendix B). The DO values fluctuated substantially throughout the monitoring period, ranging from >20 mg/L to almost 0 mg/L. As with previous monitoring years, higher DO readings were typically observed in the late afternoon when phytoplankton productivity rates were highest. These diurnal fluctuations were most notably observed at the northern moorings during the week of June 2, 2014, when late afternoon readings exceeded 20 mg/L and then fell overnight, over the course of 12 hours, to approximately 9 mg/L (observed at 6:30 am). During the week of July 7, 2014, similar fluctuations were observed in the north compliance and reference moorings. At 18:15 on July 10, 2014, the northern compliance and northern reference moorings had late afternoon readings of 12.5 and 9.2 mg/L, respectively. These values decreased rapidly to less than 0.2 mg/L by 23:15. In general, the two southern moorings showed similar trends, but the fluctuations were not nearly as dramatic. In late September, the DO at all mooring locations became consistent and varied little throughout the course of the day. The field crew was notified when DO fell below 2 mg/L, but determined that this was associated with natural processes as described in Section 3.2.1.2 (DO conditions were reported in the weekly water quality summaries provided in Appendix A).

3.2.3 COLLECTION OF DISCRETE WATER SAMPLES

Preplanned water samples were collected on three consecutive days of Level I monitoring during the first week of dredging at the direction of USACE and EPA to verify the protectiveness of the project criterion during dredging activities. The Level I startup samples were collected for TSS, turbidity and PCBs (total and dissolved); optional samples for metals and total organic carbon testing were not required according to USACE.

Level II and/or III water samples were not collected (or required) because exceedances of the turbidity criterion did not occur at the compliance transects at any time during the 2014 dredge season.

3.3 LABORATORY TESTING OF DISCRETE WATER SAMPLES

Level I startup water samples were analyzed for TSS, turbidity and PCBs (total and dissolved fractions). Results are summarized in Table 3-1; complete test results are provided in Appendix C.

Table 3-1. Summary of PCB, TSS and Turbidity Results in Level I Water Samples Collected during Week 1 of 2014 Dredging Season

Station	Tide	Collection Date	Lab-based Measurements				In Situ
			SUM 18 NS&T Congeners[(a)]		TSS	Turbidity	Turbidity
			Total (µg/L)	Dissolved (µg/L)	(mg/L)	(NTU)	(NTU)
Reference, 1000-ft North	Ebb	22-Apr-14	0.343	0.0320	16.3	4.98	5.50
		23-Apr-14	0.321	0.0432	17.0	2.59	3.55
		24-Apr-14	0.234	0.0308	7.0	2.26	1.68
		Average	0.299	0.0353	13.4	3.28	3.58
		RSD	19%	19%	42%	45%	53%
Compliance, 300-ft North	Flood	22-Apr-14	0.305	0.0393	7.3	1.89	1.73
		23-Apr-14	0.235	0.0446	10.3	3.16	4.89
		24-Apr-14	0.391	0.0259	14.5	1.98	5.57
		Average	0.311	0.0366	10.7	2.34	4.06
		RSD	25%	26%	34%	30%	50%
Compliance, 300-ft South	Ebb	22-Apr-14	0.150	0.00986	5.2	1.85	0.80
		23-Apr-14	0.186	0.0370	10.5	4.04	4.75
		24-Apr-14	0.220	0.0158	6.8	2.36	1.82
		Average	0.185	0.0209	7.50	2.75	2.46
		RSD	19%	68%	36%	43%	83%
Reference, 1000-ft South	Flood	22-Apr-14	0.0648	0.00677	6.2	1.80	0.52
		23-Apr-14	0.319	0.0325	11.3	4.48	4.08
		24-Apr-14	0.417	0.0155	20.3	4.33	5.52
		Average	0.267	0.0182	12.6	3.54	3.37
		RSD	68%	72%	57%	43%	76%
Field-based QC							
Reference, 1000-ft North (replicate)	Ebb	23-Apr-14	0.390	0.0249	11.0	2.94	NA
Reference, 1000-ft North (equipment blank)			ND	ND	NA	NA	NA

Note:
Sum NS&T 18 congeners is the sum of the detected target 18 congeners; value of zero used for non-detects.
ND – not detected; NA – not applicable; µg/L – microgram s per liter; mg/L – milligrams per liter; NTU - Nephelometric Turbidity Units; RSD – relative standard deviation.

3.3.1 TOTAL SUSPENDED SOLIDS AND TURBIDITY

TSS concentrations in Level I startup water samples ranged from 5.2 mg/L to 20.3 mg/L during Week 1 of dredging activities (Table 3-1). The maximum TSS concentration was measured in water sampled from the southern reference station during a flood tide on April 24, 2014.

Turbidity values in Level I startup water samples were low and fairly uniform, ranging from 1.80 NTU to 4.98 NTU during Week 1 of dredging activities (Table 3-1). Lab-based turbidity values in discrete water samples were generally comparable to in situ readings measured in the field during boat-based monitoring, except at the northern compliance station sampled on April 24, 2014 (Table 3-1, Figure 3-2). For this sample, the in situ turbidity reading was nearly three times higher than the lab-based value; however, both the in situ and laboratory measurements were relatively low and well below the project-specific criterion.

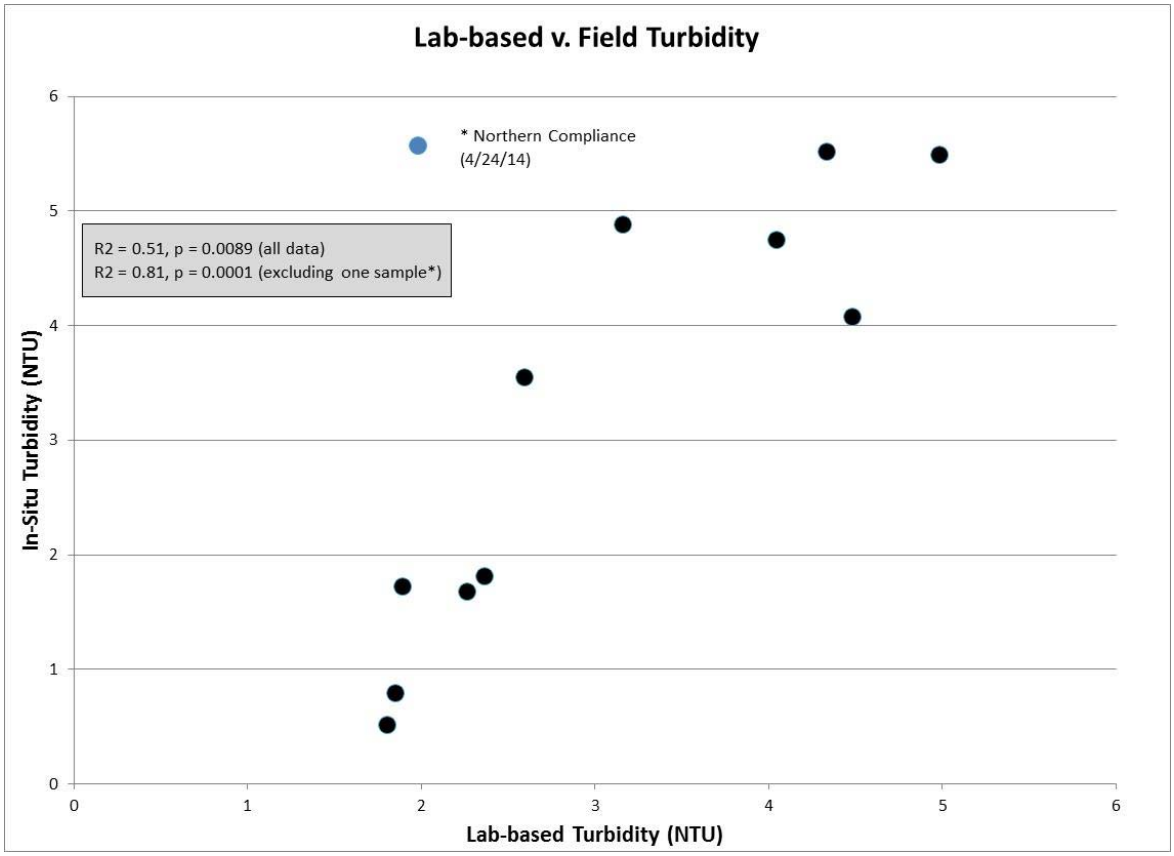

Figure 3-2. Correlation between Lab-based Turbidity and In Situ Turbidity in Discrete Water Sampled during Week 1 of Dredging

3.3.2 POLYCHLORINATED BIPHENYLS

PCB results are presented as total concentrations (i.e., sum 18 NS&T congeners) in Table 3-1; results for individual congeners are reported with the complete analytical data provided in Appendix C. Concentrations of the sum 18 NS&T congeners ranged from 0.0648 µg/L to 0.417 µg/L in the total (unfiltered) water samples and ranged from 0.00677 µg/L to 0.0446 µg/L in the dissolved phase samples (Table 3-1). PCB concentrations were approximately one order of magnitude lower in the dissolved phase samples compared to the total (unfiltered) samples.

PCB concentrations in the total fraction were fairly uniform within each sampling area, except at the southern reference where concentrations were more variable between the April 22 and April 23 and 24 samples (Table 3-1). PCB concentrations in the dissolved fraction were more uniform in the northern sampling areas compared to southern sampling areas (Table 3-1).

3.3.3 QUALITY CONTROL

The review of the laboratory QC data is documented in case or QA/QC narratives, which are provided with the sample data in Appendix C. In general, the quality of the data is acceptable and the analytical methods are in control. For example, target parameters were undetected in the method/procedural blanks, indicating that the methods were free of contamination. Recovery and precision results for the laboratory-based QC samples (i.e., LCS, LCSD, MS, MSD, and duplicates) were acceptable for all test parameters, indicating that the methods are in control.

Results from the field-based QC samples (equipment blank and field duplicate) indicate that the sampling and analytical methods were reproducible (TSS and PCB results were similar between the original and replicate samples; turbidity results were more variable but this could be an artifact of the low concentrations) and free of contamination (i.e., PCBs were undetected at levels above the sample reporting limit in the equipment blank).

Results from the Tier I validation of the TSS, turbidity and PCB congener data indicate that the data are useable. The data validation report is provided in Appendix D.

Chapter 4 . Discussion

The field monitoring program was designed to limit the extent of water quality impacts resulting from dredging operations by collecting monitoring data and using the results to implement operational adjustments as needed to limit the dispersal of resuspended sediments and minimize harm to biological components of the system. Several types of monitoring were performed to achieve that goal:

- Adaptive in situ monitoring (boat-based and fixed-point continuous) was used to track sediment plumes in real time. This design allowed for immediate feedback to the dredging operation so that potential issues could be addressed before ecological harm occurred. Fixed-point continuous monitoring provided detailed information during periods when boat-based sampling was not performed and when dredging was inactive.
- The collection and laboratory analysis of preplanned water samples provided data to verify the protectiveness of the project-specific turbidity criterion.
- Observational monitoring was conducted during all aspects of the program. This included anecdotal fish and wildlife observations, and observations of non-targeted parameters such as oil sheens.

Suspended sediment transport and impacts to the water column due to the 2014 dredging activities are discussed below.

4.1 SUSPENDED SEDIMENT TRANSPORT FROM DREDGING ACTIVITIES

The 2014 project turbidity criterion was 100 NTU above background at the down-current compliance transects. A 75 NTU warning level was also established so that potential criterion exceedances and water quality impacts could be avoided through operational changes. There were no exceedances of the project criterion during the 2014 dredge season.

During operations there were three general activities with potential to generate suspended sediment plumes: 1) dredging, 2) debris removal, and 3) support activities (i.e., vessel movements). All activities were monitored through a combination of adaptive boat-based sampling and full-time deployment of four moored sensor arrays. The highest turbidity readings were found during the boat-based monitoring less than 100 feet from the dredge and debris removal activities. At these distances, short-lived turbidity readings of 40 to 70 NTU were occasionally observed. These values generally did not persist beyond a few minutes, and turbidity dropped off rapidly with increasing distance from dredge operations. Turbidity plumes associated with both debris removal and active dredging tended to be more prominent during an ebb or slack tide. When observed, turbidity plumes tended to dissipate in a southerly direction from the dredge area. Turbidity plumes to the north were observed less frequently, most likely due to continual southerly freshwater flow from the Acushnet River across all tides. The short-term, pulsed nature of the suspended sediment plumes was also observed in the continuous in situ data record. Excluding spurious readings, turbidity peaks at the northern and southern compliance locations exceeded 75 NTU only one time and never exceeded the project criterion of 100 NTU.

4.2 IMPACTS TO THE WATER COLUMN

Potential impacts to the water column from dredging activities were assessed by evaluating the relationships between TSS and turbidity, and TSS or turbidity and PCB (total and dissolved). A positive correlation between turbidity and TSS indicates that in situ turbidity measurements are a reliable indicator of suspended sediment concentrations. Relationships between TSS or turbidity and PCB provide information about changes in total and dissolved PCB concentrations in the water column due to dredging activities. Dissolved PCBs are more bioavailable and likely to cause direct toxicity to marine organisms, and are more amenable to long range transport. The trends in the 2014 water sample data were also compared to trends observed in previous years because the 2014 data set was relatively small.

The correlation between TSS and turbidity in the 2014 Level I water samples was significant, but not strong (Figure 4-1, $R^2 = 0.37$, $p = 0.0351$), but improved when three possible outliers[3] were removed (Figure 4-1, $R^2 = 0.88$, $p = 0.0002$). The possible outliers are shown in Figure 4-1 (see light blue filled circles). The laboratory-based turbidity concentrations for these possible outliers appear to be biased low, especially compared to the in situ readings which correlate well with TSS (Figure 4-1, $R^2 = 0.67$, $p = 0.0011$).

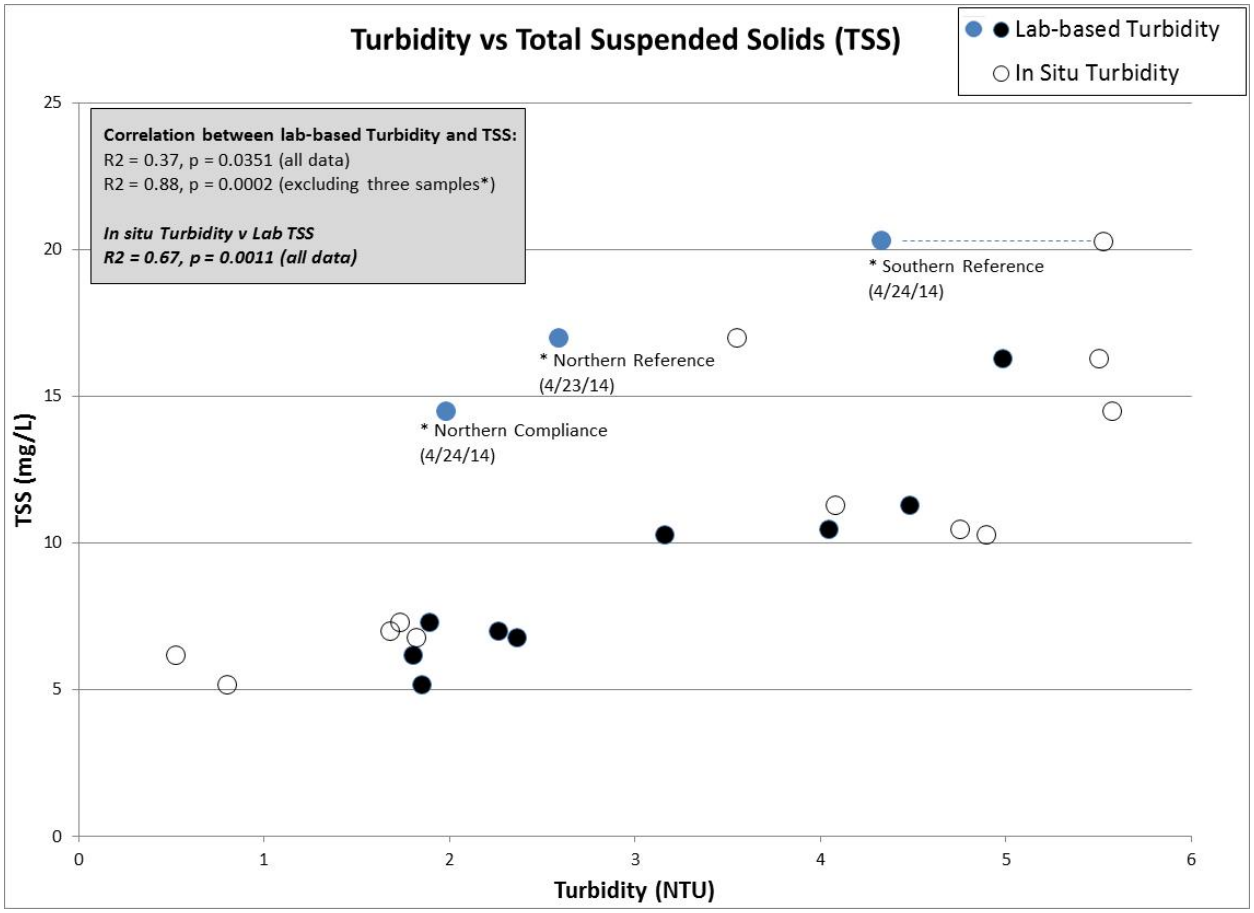

Figure 4-1. Correlation between Turbidity (Lab-based and In Situ) and TSS in Discrete Water Sampled during Week 1 of Dredging

[3] Possible outliers identified visually; outliers were not confirmed statistically.

Total PCB (i.e., sum of NS&T 18 congeners in unfiltered waters) correlates well with TSS in the Level I water samples (Figure 4-2, $R^2 = 0.64$, $p = 0.0017$), whereas total PCB in the dissolved (filtered) water samples does not (Figure 4-2, $R^2 = 0.065$, $p = 0.4231$). These trends are consistent with trends observed in previous monitoring years (Woods Hole Group [WHG], 2013; Battelle, 2009), and is consistent with the hydrophobic nature of PCBs, which tend to adsorb to suspended particles and organic matter and are relatively insoluble.

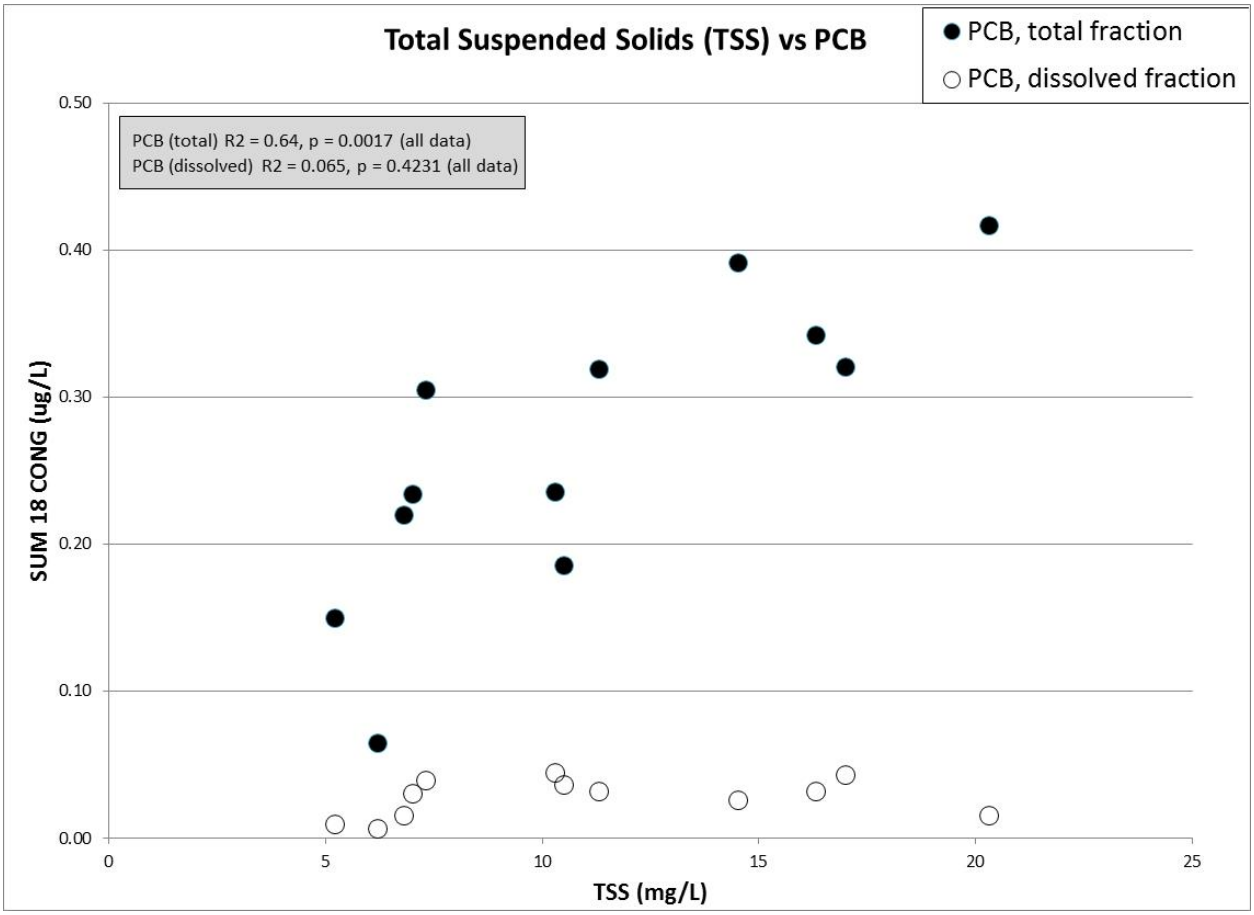

Figure 4-2. Correlation between TSS and PCB (Sum NS&T 18 Congeners) in Total and Dissolved Fractions, in Discrete Water Sampled during Week 1 of Dredging

Similar trends were observed with PCB and in situ turbidity, in that PCB in the unfiltered water samples increases with increasing turbidity (Figure 4-3 top, $R^2 = 0.52$, $p = 0.0078$) with no coincident increase in dissolved PCB (Figure 4-3, $R^2 = 0.20$, $p = 0.1464$). These trends were also observed with the laboratory-based turbidity data, but the correlation was not as strong (Figure 4-3 bottom), possibly because some of the laboratory-based turbidity results appeared to be biased low, as previously discussed. Overall, these findings continue to indicate that in situ turbidity is a good early indicator of potential water column impacts from dredging.

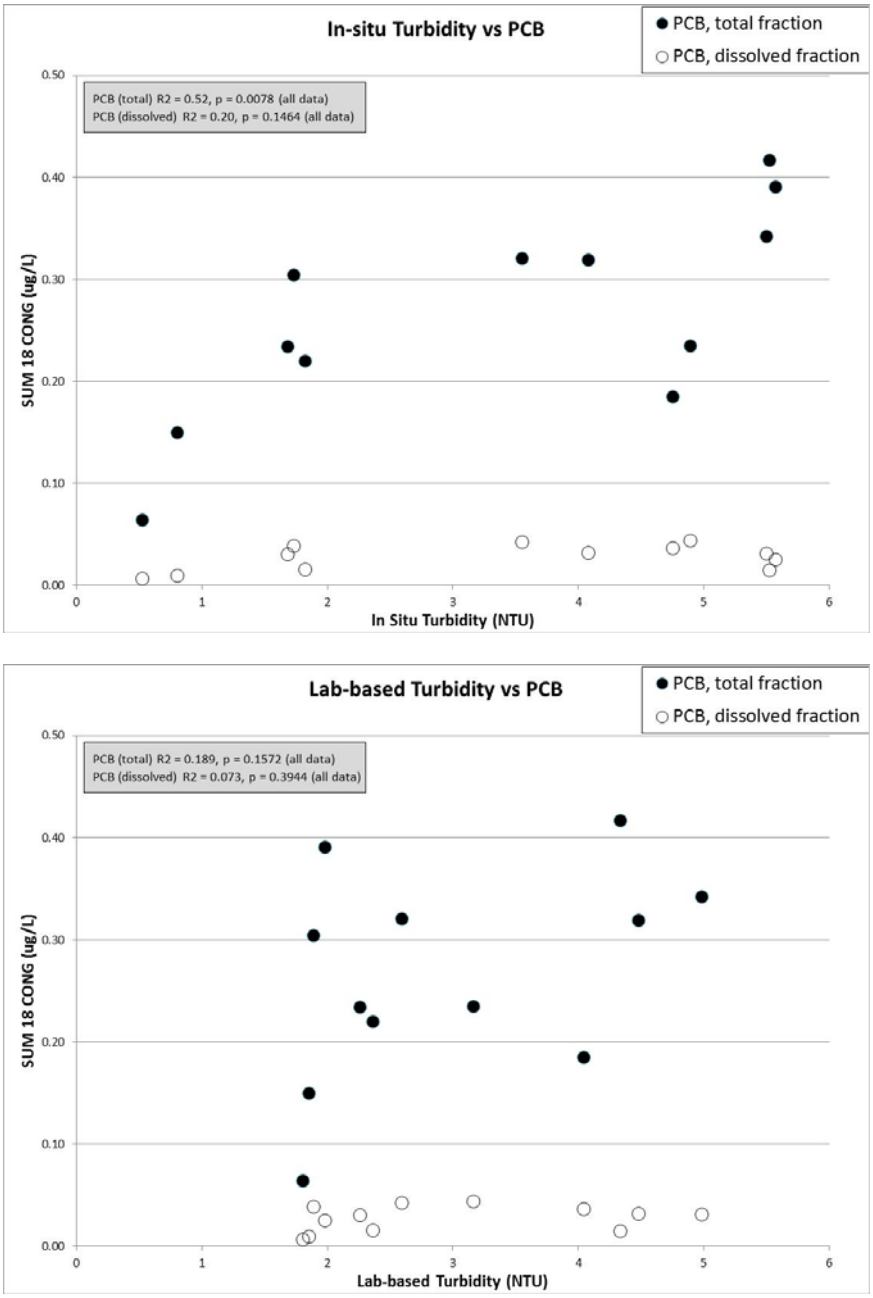

Figure 4-3. Correlation between In Situ Turbidity and PCB (Sum NS&T 18 Congeners) in Total and Dissolved Fractions (top) and between Lab-based Turbidity and PCB (Sum NS&T 18 Congeners) in Total and Dissolved Fractions (bottom) in Discrete Water Sampled during Week 1 of Dredging

Chapter 5 . Conclusions

In conclusion, turbidity plumes observed during the 2014 water quality monitoring program were generally limited to areas immediately adjacent (<200 feet) to dredging and debris removal. The majority of turbidity plumes were relatively short lived. While site water near the dredge area had higher in situ turbidity, levels decreased with increasing distance from the dredging activities and at no time during the 2014 dredge season was the turbidity criterion exceeded. More importantly, dissolved PCBs, which are thought to be the fraction that causes direct toxicity to marine organisms and is more amenable to long range transport, were only detected at low concentrations (sum of 18 congeners < 0.05 µg/L) at the compliance and reference stations regardless of the turbidity (in situ and laboratory-based) and TSS levels. Overall, the 2014 water quality monitoring data confirmed that the project criterion continues to be ecologically protective, allowing remediation efforts to progress.

Chapter 6 . References

Battelle, 2009. *Final Water Quality Monitoring Summary Report, 2008 Remedial Dredging, Environmental Monitoring, Sampling, and Analysis, New Bedford Harbor Superfund Site, New Bedford, MA*. Prepared under Contract DACW33-03-D-0004. Task Order #22 for the U.S. Army Corps of Engineers New England District, Concord, MA. June.

Battelle, 2014a. Draft *Final Water Quality Monitoring Field Sampling Plan, Environmental Monitoring, Sampling, and Analysis, New Bedford Harbor Superfund Site, New Bedford, Massachusetts*. Prepared under Contract W912WJ-12-D-0004 Task Order No 0010 for the U.S. Army Corps of Engineers New England District, Concord, MA. April.

Battelle, 2014b. *Final Quality Assurance Project Plan Addendum Revision 7.0, Environmental Monitoring, Sampling, and Analysis, New Bedford Harbor Superfund Site, New Bedford, Massachusetts*. Prepared under Contract W912WJ-12-D-0004 Task Order No 0010 for the U.S. Army Corps of Engineers New England District, Concord, MA. April.

Jacobs Engineering, 2015. Draft 2014 Data Summary Report. In Progress.

National Data Buoy Center, 2015. http://www.ndbc.noaa.gov

Weather Underground, 2015. http://www.wunderground.com/personal-weather-station/dashboard?ID=MD8150#history/s20140617/e20140617/mdaily.

WHG, 2013. *Final Water Quality Monitoring Summary Report, 2012 Remedial Dredging, New Bedford Harbor Superfund Site, OU #1*. Prepared under Contract W912WJ-09-D-0001-0010-07 for the U.S. Army Corps of Engineers New England District, Concord, MA. June.

Appendix A

Boat-based Water Quality Monitoring Weekly Summaries

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SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of April 21, 2014 (Week 1)
With additional information on mooring deployment week of April 14, 2014

All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. High and low tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

April 17, 2014:

- **Tidal stage:** High tide at 10:09 and 22:28 EDT; low tide at 03:29 and 15:32 EDT.
- **Dredge activity:** None
- **Monitoring activity**: None. Deployment of the two southernmost monitoring buoys.
- **Results summary:** Deployed two telemetry moorings and setup up telemetry communications

April 18, 2014:

- **Tidal stage:** High tide at 10:56 and 23:16 EDT; low tide at 04:12 and 16:17 EDT.
- **Dredge activity:** First day of dredging. Debris removal and dredging in Area R.
- **Monitoring activity**: None. Deployment of the two northernmost monitoring buoys.
- **Results summary:** Deployed two telemetry moorings and setup up telemetry communications

April 22, 2014:

- **Tidal stage:** High tide at 02:12 and 14:49 EDT; low tide at 07:53 and 20:21 EDT.
- **Dredge activity:** Debris removal and active dredging in Area R.
- **Monitoring activity**: Week 1, Day 1 of Level I monitoring. Monitored flood tide through high water. Collected prescribed Level I samples for flood tide. Monitored ebb tide. Collected prescribed Level I samples for ebb tide.
- **Fishery and Wildlife Observations:** Very minimal wildlife activity.
- **Results summary:** Readings collected at reference locations, values of 0.52 NTU to 5.50 NTU. The slightly elevated turbidity at the northern reference station appeared to be the result of the strong southerly winds that picked up in the afternoon which were stirring up the water column. Dissolved oxygen values throughout the survey area ranged from 10.80 mg/L to 12.85 mg/L, with fairly uniform values throughout the area and at all depths. Turbidity values at the compliance transects were low. The southern (ebb tide) station had turbidity of 0.80 NTU and the northern (flood) station had turbidity of 1.73 NTU. In addition to the compliance location monitoring and sampling, additional monitoring was conducted closer to the dredging activity. Turbidity values in this area ranged from ~10NTU to 35 NTU with the highest values recorded within ~100' of the dredging activities and values dropping to background at ~300'. No oil sheens observed.

April 23, 2014:

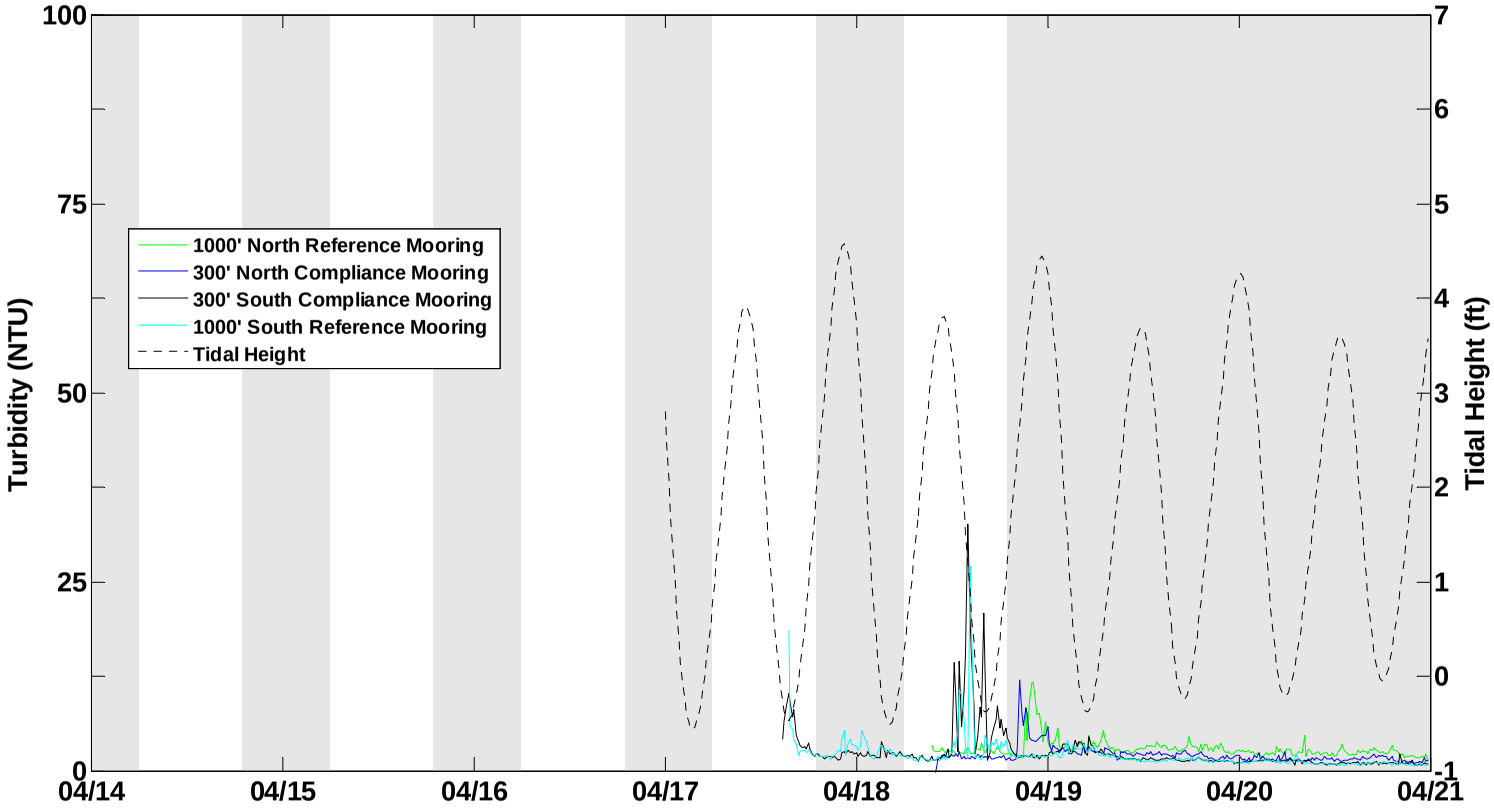
- **Tidal stage:** High tide at 03:16 and 15:51 EDT; low tide at 09:05 and 21:44 EDT.
- **Dredge activity:** Debris removal and active dredging in Area R. Stand-down for lightning on the water until ~14:00.
- **Monitoring activity**: Week 1, Day 2 of Level I monitoring. Monitored flood tide through high water. Collected prescribed Level I samples for flood tide. Monitored ebb tide. Collected prescribed Level I samples for ebb tide.
- **Fishery and Wildlife Observations:** Very minimal wildlife activity. Heavy rain reduced visibility.

- **Results summary:** Readings collected at reference locations, values of 4.08 NTU to 3.55 NTU. Dissolved oxygen values throughout the survey area ranged from 10.11 mg/L to 10.42 mg/L, with uniform values throughout the area and at all depths. The southern (ebb tide) station had turbidity of 4.75 NTU and the northern (flood) station had turbidity of 4.89 NTU. In addition to the compliance location monitoring and sampling, additional monitoring was conducted closer to the dredging activity. Turbidity values in this area were all below 10NTU. No oil sheens observed.

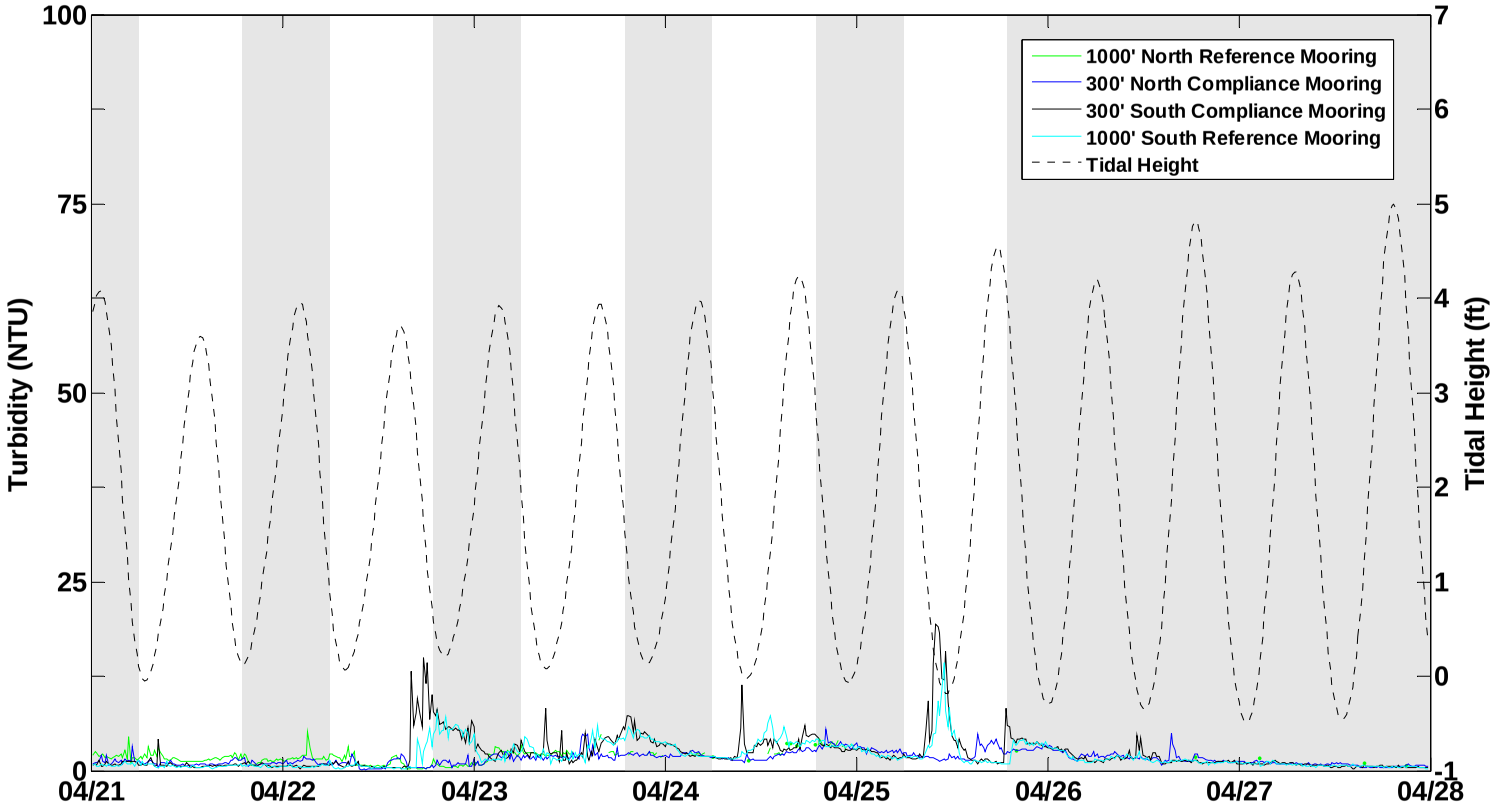
April 24, 2014:

- **Tidal stage:** High tide at 04:19 and 16:50 EDT; low tide at 10:17 and 23:01 EDT.
- **Dredge activity:** Debris removal in Area R and active dredging in Areas R and P.
- **Monitoring activity**: Week 1, Day 3 of Level I monitoring. Monitored ebb tide through low water. Collected prescribed Level I samples for ebb tide. Monitored flood tide. Collected prescribed Level I samples for flood tide.
- **Fishery and Wildlife Observations:** Very minimal wildlife activity.
- **Results summary:** Readings collected at reference locations, values of 1.68 NTU to 5.52 NTU. Dissolved oxygen values throughout the survey area ranged from 8.51 mg/L to 9.67 mg/L, with fairly uniform values throughout the area and at all depths. The southern (ebb tide) station had turbidity of 1.82 NTU and the northern (flood) station had turbidity of 5.57 NTU. In addition to the compliance location monitoring and sampling, additional monitoring was conducted closer to the dredging activity. Turbidity values in this area reached 15-25NTU within ~300' of active operations, especially push boats working at low tide. Values dropped off to background beyond ~300'. Slight oil sheens observed around dredge activity. All sheens were contained by the oil booms.

Turbidity data from the moored sensor arrays is provided in Figure 1 below.
Note: Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.



Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.



Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Battelle — Daily Field Summary Sheet for Water Quality Monitoring

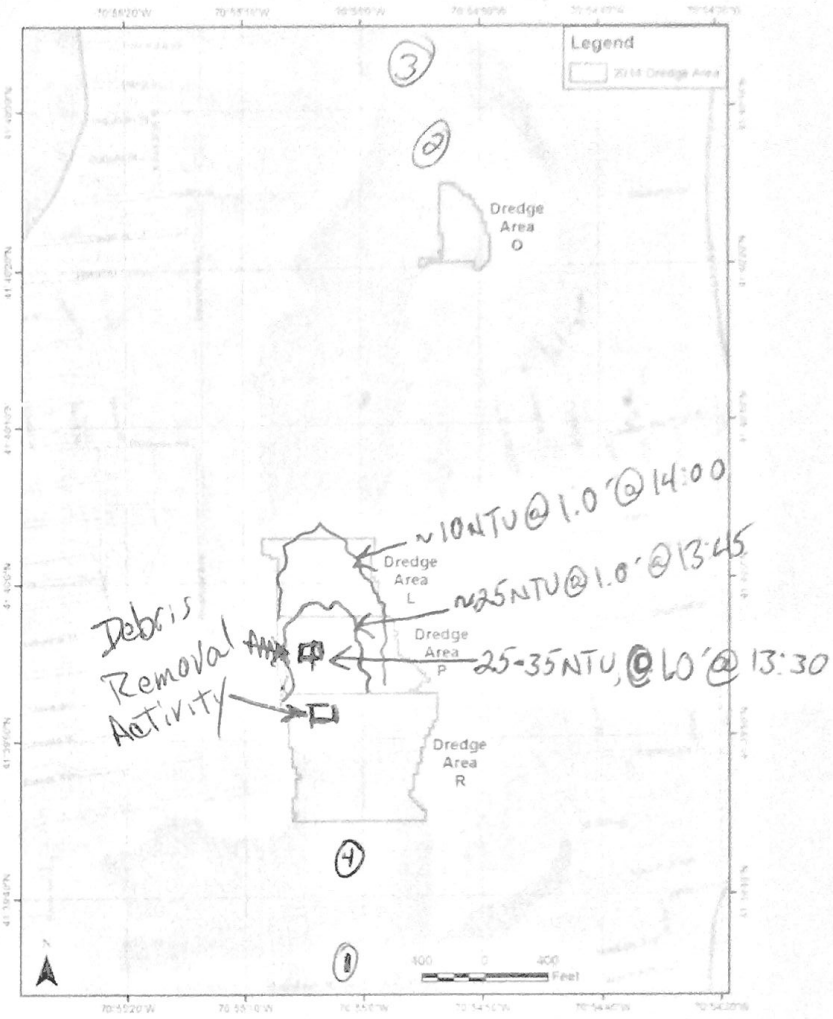
Date: 4/22/2014 **Weather:** 55°, Thin clouds, S 5-10 → increased to 10-15 @ ~3pm

Tides:
low 0.07' @ 7:53
High 3.71' @ 14:49
low 0.20' @ 20:21

Monitoring Period:
From: 11:30 **To:** _____

Tidal Stage: HWS (Ebb) LWS (Flood)

Dredging Activity:
Debris Removal Area R Northern end, Plus dredging same area



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
① Reference 1000' South	0.52	6.6'/12'
② Compliance 300' North	1.73	5.2'/8.1'
③ Reference 1000' North	5.50*	2.13'/7.1'
④ Compliance 300' South	0.80	4.82/7.4'

*Wind picked up. Stirred up water column

Oil sheen/ Debris:
None

Fish Passage: _____

Samples Collected for Laboratory Analysis – Sample IDs:
TSS (1L) See below **Turbidity (1L)** See below
Total PCB (2x1L) See below **Dissolved PCB (2x1L)** See below
Toxicity (5 gal) _____ **Metals (500ml)** _____

Notes: Started on flood Tide. Sampled at 1000' South Reference station. Turbidity uniform throughout water column. Sampled at 300' North compliance. In closer to activity Turbidy ~25-35NTU.

Sampling Crew: J Mansfield, M. Walsh
Chief Scientist Signature: _____

Sample IDs

Reference 1,000' South = WQ - TSS TUR TPC DPC - 001 - 042214
Compliance 300' North = WQ - XXX - 002 - 042214
Reference 1,000' North = WQ - XXX - 003 - 042214

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Water Quality Monitoring
In situ Data Field Form

Dredging Location	Area R
Dredging Description	Debris Removal + Dredging
Survey Vessel	Gale Force
Chief Scientist	Alex Mansfield
Sampling Technician	
Vessel Captain	Mike Walsh
Other Personnel	
Weather conditions	55°, Thin clouds, S 5-10 → increased to 10-15+

Date	4/22/2014
Page	1 of 1

Tide information		
High		
Low	7:53	0.07'
High	14:49	3.71'
Low	20:21	0.20'

	Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
Reference	1000' South	12:15	41.65966°	70.91717°	12.0'	6.6'	0.52	28.25	10.80	10.34	Turb uniform Top To Bottom 0.52 used as Background
											WQ-xxx-001-042214
Compliance	300' North	13:00	41.67462°	70.91504°	8.1'	5.23'	1.73	26.78	11.92	11.83	WQ-xxx-002-042214
Reference	1000' North	15:05	41.67652°	70.91611°	7.1'	2.13'	5.50*	22.12	12.85	14.05	WQ-xxx-003-042214
											*Wind increased considerably Water Column Stirred up
Compliance	300' South	16:20	41.66151°	70.91735°	7.4'	4.82	0.80	27.67	11.41	11.42	WQ-xxx-004-042214

Battelle — Daily Field Summary Sheet for Water Quality Monitoring

Date: 4-23-2014 **Weather:** Rain, 55°, W 5-10

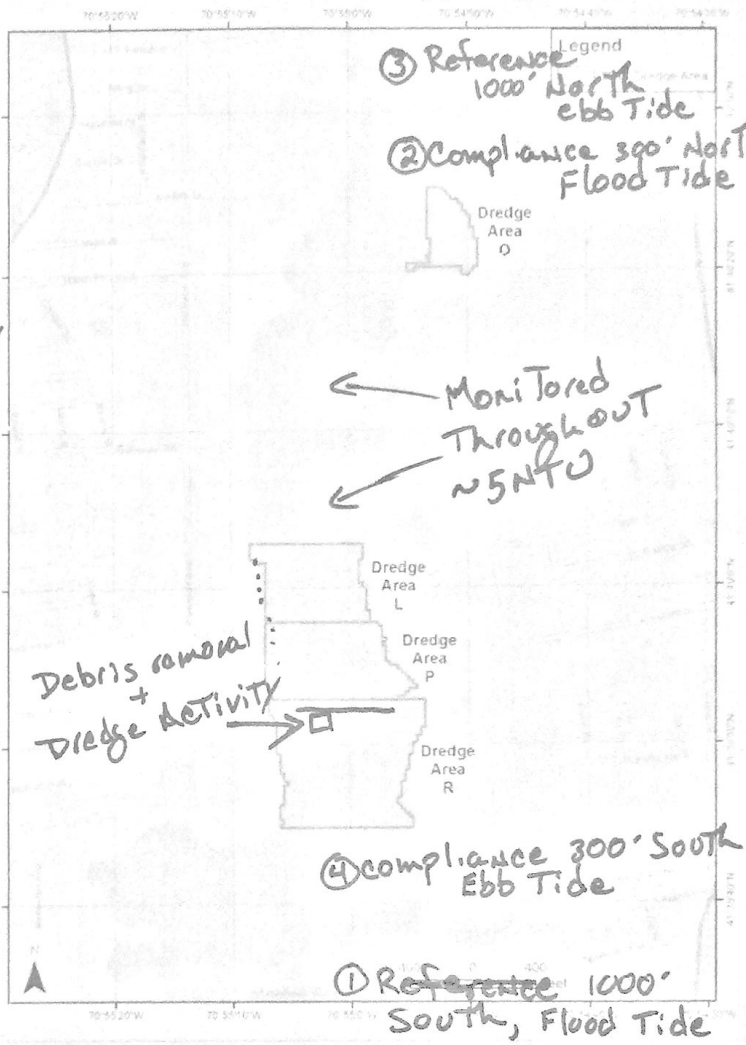
Tides:
low 0.44' @ 9:20
High 4.00' @ 15:41
low 0.52' @ 21:36

Monitoring Period:
From: 14:30 **To:** 17:45

Tidal Stage: HWS Ebb LWS Flood

Dredging Activity:
Dredging area R + Debris Removal

On Lightning Stand-down until ~14:00



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
① Reference	4.08	1.5'/11.9'
② Compliance	4.89	1.5'/10.1'
③ Reference	3.53	0.56/7.1'
④ Compliance	4.75	0.63/7.4'

Oil sheen/ Debris:
None

Fish Passage: No obstacles, No fish observed

Samples Collected for Laboratory Analysis – Sample IDs:
TSS (1L) See below Turbidity (1L) See below
Total PCB (2x1L) See below Dissolved PCB (2x1L) See below
Toxicity (5 gal) — Metals (500ml) —

Notes: Collected AT 4 STATIONS

WQ < TSS / TUR / TPC / DPC > 001 / 002 / 003 / 004 = 042314

Also collected QC at STATION 3

WQ < TPC / DPC > 003 - 042314 < MS / MSD / REP

WQ < TUR / TSS > 003 - 042314 - REP

WQ < TPC / DPC > 003 - 042314 < EB / EB

Sampling Crew: A. Mansfield, M. Walsh

Chief Scientist Signature: [signature]

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	Area R
Dredging Description	Debris Removal + Dredging. ON lightning stand-down UNTIL ~14:00
Survey Vessel	Gale Force
Chief Scientist	Alex Mansfield
Sampling Technician	—
Vessel Captain	Mike Walsh
Other Personnel	—
Weather conditions	Rain, 55°; W 5-10

Date	4-23-2014
Page	1 of 1

Tide information		
High		
Low	9:20	0.44'
High	15:41	4.00'
Low	21:36	0.52'

Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes (1)
Reference 1000' South	14:30	41.65953	70.91710	11.9'	1.5'	4.08	17.12	10.15	12.34	WQ-xxx-001-042314
Compliance 300' North	15:25	41.67463	70.91504	10.1'	0.54'	4.89	10.62	10.21	12.52	WQ-xxx-002-042314
Reference 1000' North	16:25	41.67654	70.91612	7.1'	0.56'	3.55	17.07	10.42	12.29	WQ-xxx-003-042314 (2)
Compliance 300' South	17:30	41.66151	70.91736	7.4'	0.63'	4.75	15.61	10.11	12.23	WQ-xxx-004-042314

(1) Samples collected at each station for: Total PCB, Dissolved PCB, Turbidity, TSS
ID "xxx" = TPC DPC TUR TSS

(2) QC Samples collected at this station: MS, MSD, RCP, Equip Blank

Battelle — Daily Field Summary Sheet for Water Quality Monitoring

Date: 4/24/14 **Weather:** Sunny/Windy 15-30 WNW

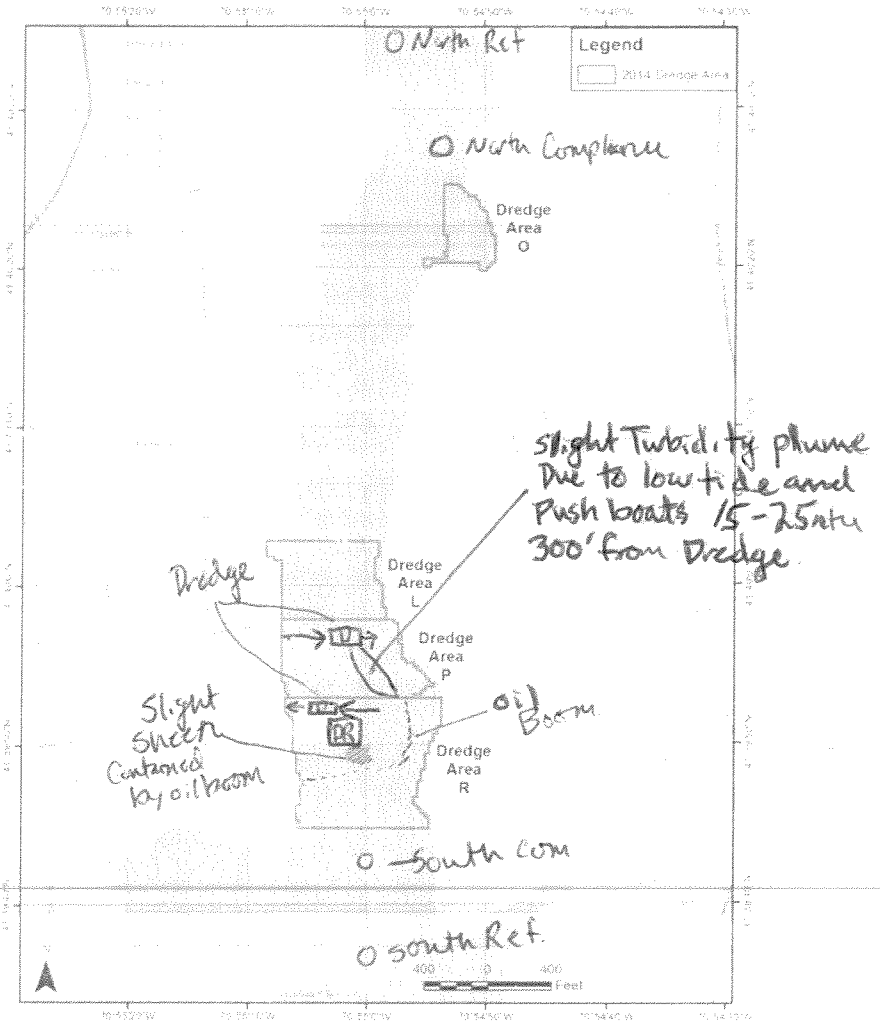
Tides:

3.98'	@	0412
0.29'	@	1024
4.43'	@	1645

Monitoring Period:
From: ~~0500~~ 0715 **To:** 1330

Tidal Stage: HWS Ebb LWS Flood

Dredging Activity:
Debris Removal Area R (center)
Dredging Area R (N west corner)
Dredging Area P (EAST side)



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
~~1000~~ 300' N Ref	1.68	0.49/4.0'
300' S Compliance	1.82	1.85/5.1'
1000' S Ref	5.52	7.59/10.5'
300' N Compliance	5.57	2.21/5.1'

Oil sheen/ Debris:
Slight Sheen Due to debris Removal in Area R contained by oil boom.

Fish Passage: None Observed

Samples Collected for Laboratory Analysis – Sample IDs:
TSS (1L) See bellow **Turbidity (1L)** See bellow
Total PCB (2x1L) _____ **Dissolved PCB (2x1L)** _____
Toxicity (5 gal) _____ **Metals (500ml)** _____

Samples Notes:
WQ-TPC-001-042414 / WQ-DPC-001-042414 / WQ-THR-001-042414
WQ-TPC-002-" " / WQ-DPC-002-" " / WQ-THR-002-" "
WQ-TPC-003-" " / WQ-DPC-003-" " / WQ-THR-003-" "
WQ-TPC-004-" " / WQ-DPC-004-" " / WQ-THR-004-" "

WQ-TSS-001-042414
WQ-TSS-002-042414
WQ-TSS-003-042414
WQ-TSS-004-042414

Sampling Crew: Mike Walsh / Paul Salvatore
Chief Scientist Signature: Mike Walsh

Battelle

Water Quality Monitoring

In situ Data Field Form

Dredging Location	Area R / Area P
Dredging Description	Debris Removal Area R / Dredging Area R and P
Survey Vessel	Gale Force
Chief Scientist	Mike WALSH
Sampling Technician	Paul Schaloff
Vessel Captain	Mike WALSH
Other Personnel	
Weather conditions	Sunny / windy WNW 15-30

Date	4/24/14
Page	1 of 1

Tide information		
High	0412 @	3.98'
Low	1024	0.29'
High	1645	4.43'
Low		

Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
Ref North 1000'	0737	41.67633	70.91604	4.0'	0.49	1.68	17.89	8.51	10.32	Samples Collected 001
Compliance 300' south	0815	41.66138	70.91735	5.1'	1.85	1.82	22.63	9.24	9.41	Samples Collected 002
Ref South 1000'	1050	41.65948	70.91708	10.5'	7.59	5.52	23.89	9.36	9.85	Samples Collected 003
Compliance 300' North	1230	41.67444	70.91498	5.1'	2.21	5.57	22.71	9.67	10.94	Samples Collected 004
100' South of Debris Removal	0845	Area R		7.3	1.00	1.71	23.72	9.17	9.89	
200' South of Debris Removal	0853	Area R		6.2	1.20	16.87	23.89	9.09	10.01	
200-400' South of Dredge	0900	Area P		6.2	1.21	15-25 ntu	22.75	9.10	9.95	

SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of April 28, 2014 (Week 2)

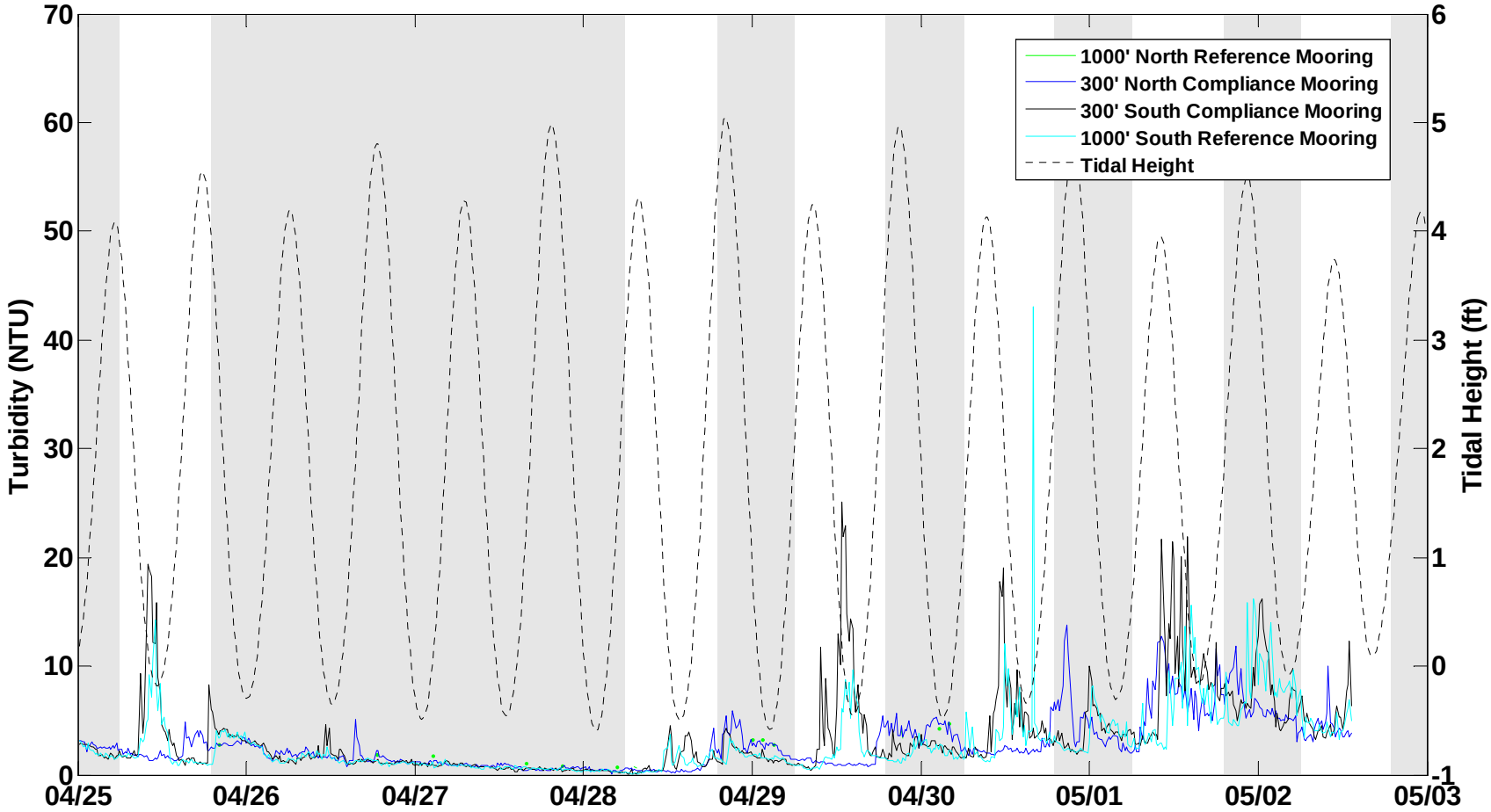
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. High and low tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

April 28, 2014:

- **Tidal stage:** High tide at 07:50 and 20:11 EDT; low tide at 1:46 and 13:43 EDT.
- **Dredge activity:** Debris removal in Area R and active dredging in Area P. A second debris removal barge removing timbers from near the western shoreline
- **Monitoring activity**: Week 2, Day 1 of Level I monitoring. Monitored ebb tide through low water. Monitored flood tide.
- **Fishery and Wildlife Observations:** Very minimal wildlife activity.
- **Results summary:** Readings collected at reference locations, values of 0.67 NTU to 2.03 NTU. Readings at the Northern and Southern Reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 7.41 mg/L to 8.72 mg/L, with fairly uniform values throughout the area and at all depths. Turbidity values at the compliance transects were low. In addition to the compliance location monitoring and sampling, additional monitoring was conducted closer to the debris removal and dredging activity. Turbidity values in this area ranged from ~1NTU to 20 NTU with the highest values recorded within ~100' of the dredging activities and values dropping to background at ~300'. Minor sheen was observed near the debris removal located near the center of area R. All sheen was contained by the absorbent boom.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Communications with the 1000' Northern reference location were lost and are currently being repaired.



Battelle — Daily Field Summary Sheet for Water Quality Monitoring

Date: 4/28/14 **Weather:** Sunny / Breezy NW @ 10-20

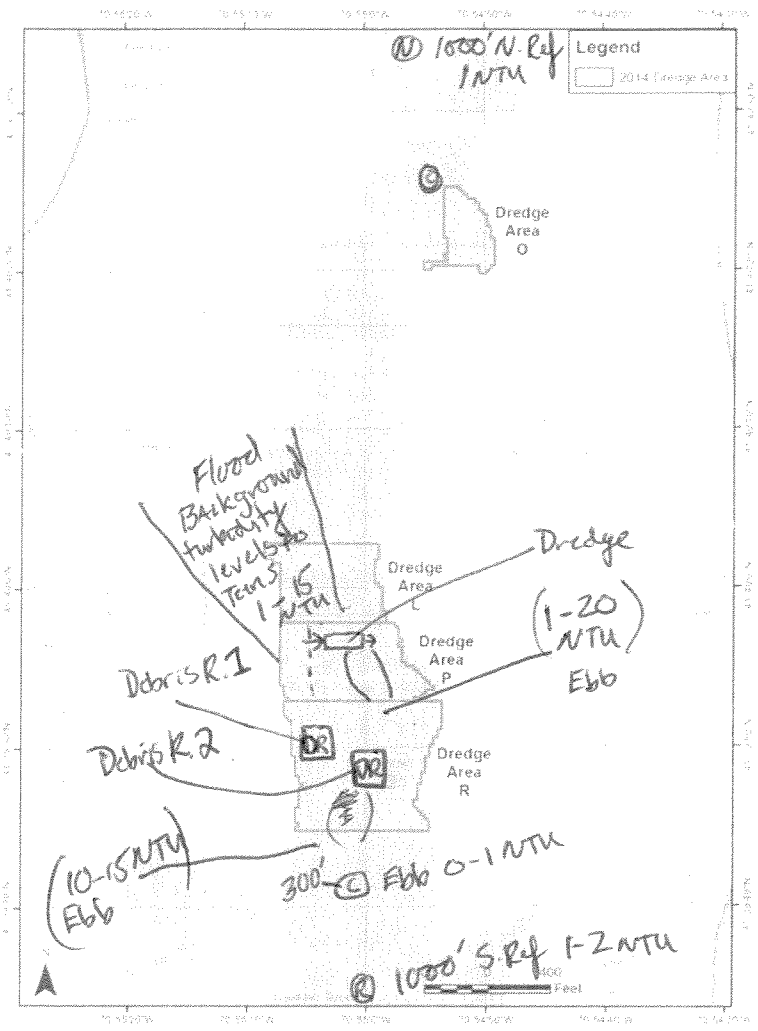
Tides:

4.23'	@	0757
922	@	1313
4.86'	@	2018

Monitoring Period:
From: 0900 **To:** 1530

Tidal Stage: (HWS) (Ebb) LWS Flood

Dredging Activity:
Debris Removal in Area R (west Edge of River)
Dredging in Area P (middle to NE corner)
2nd Debris Removal Moved in to Area R



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000' N Ref	0.67	6.3/7.1'
300' S of Dredge(P)	1.38	3.95/9.0'
300' S of DR(R)	0.42	1.05/3.6'
1000' South Ref	2.03	1.49/10.7

Oil sheen/ Debris:
Minimal Sheen Observed near Debris Removal 2 - contained by Boom.

Fish Passage: None Observed

Samples Collected for Laboratory Analysis – Sample IDs:

TSS (1L)		**Turbidity (1L)**	
Total PCB (2x1L)		**Dissolved PCB (2x1L)**	
Toxicity (5 gal)		**Metals (500ml)**	

Notes: Second Debris Removal Barge moved into Area R. There ~~was~~ were ~~not~~ two Debris Removals working at the same time. The Debris Removal working on shoreline was focused on removing timbers from an old dock. Even with this activity of both debris removals turbidity levels were only slightly above background at 10-15 NTU.

Sampling Crew: Mike Walsh / Greg Hendrington

Chief Scientist Signature: Mike Walsh

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	Area P
Dredging Description	Debris Removal Area R (West) / 2nd Debris Removal (Centr Area R)
Survey Vessel	Gale Force
Chief Scientist	Mike WALSH
Sampling Technician	Greg Herchington
Vessel Captain	Mike WALSH
Other Personnel	—
Weather conditions	Sunny / Breezy NW @ 10-20

Date	4/28/14
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Tide information	
High	4.23' @ 0757
Low	-0.22' @ 1313
High	4.86' @ 2018
Low	

Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000' North Ref	0921	41.67635	70.91609	7.1	6.3	0.67	27.62	7.41	9.91	
300's of Dredge Area P	1005	41.66491	70.91653	9.0	3.95	1.38	28.30	8.74	9.29	
300's of Debris Rem. Area R	1027	41.66306	70.91771	3.6	1.05	0.42	24.83	8.59	9.99	
300's Compliance	1045			7.4	1.57	0.45	25.89	8.62	9.95	
300' South of Dredge	1110	4166492	70.91676	7.2	1.48	19.13	25.95	8.49	10.01	
" "	1115	"	"	7.2	1.49	7.44				
" "	1120	"	"	7.2	1.55	4.34				
" "	1126	41.66494	70.91686	6.9	1.55	1.63				
		41.66494	70.91686	6.25		2.41	26.50	8.68	10.25	
300' South of Debris R.	1320	41.66285	70.91741	3.2	1.46	14.42	26.06	8.56	11.00	
600' South Ref.	1354	41.65946	70.91721	10.9	1.49	2.03	26.25	8.72	10.71	
300' North of Dredge (P)	1449	41.66644	70.91703	6.8	1.11	16.03	25.92	8.72	11.21	
100' North of Debris R	1457	41.66535	70.91792	6.9	1.08	2.04	26.11	8.72	11.11	

SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of May 5, 2014 (Week 3)

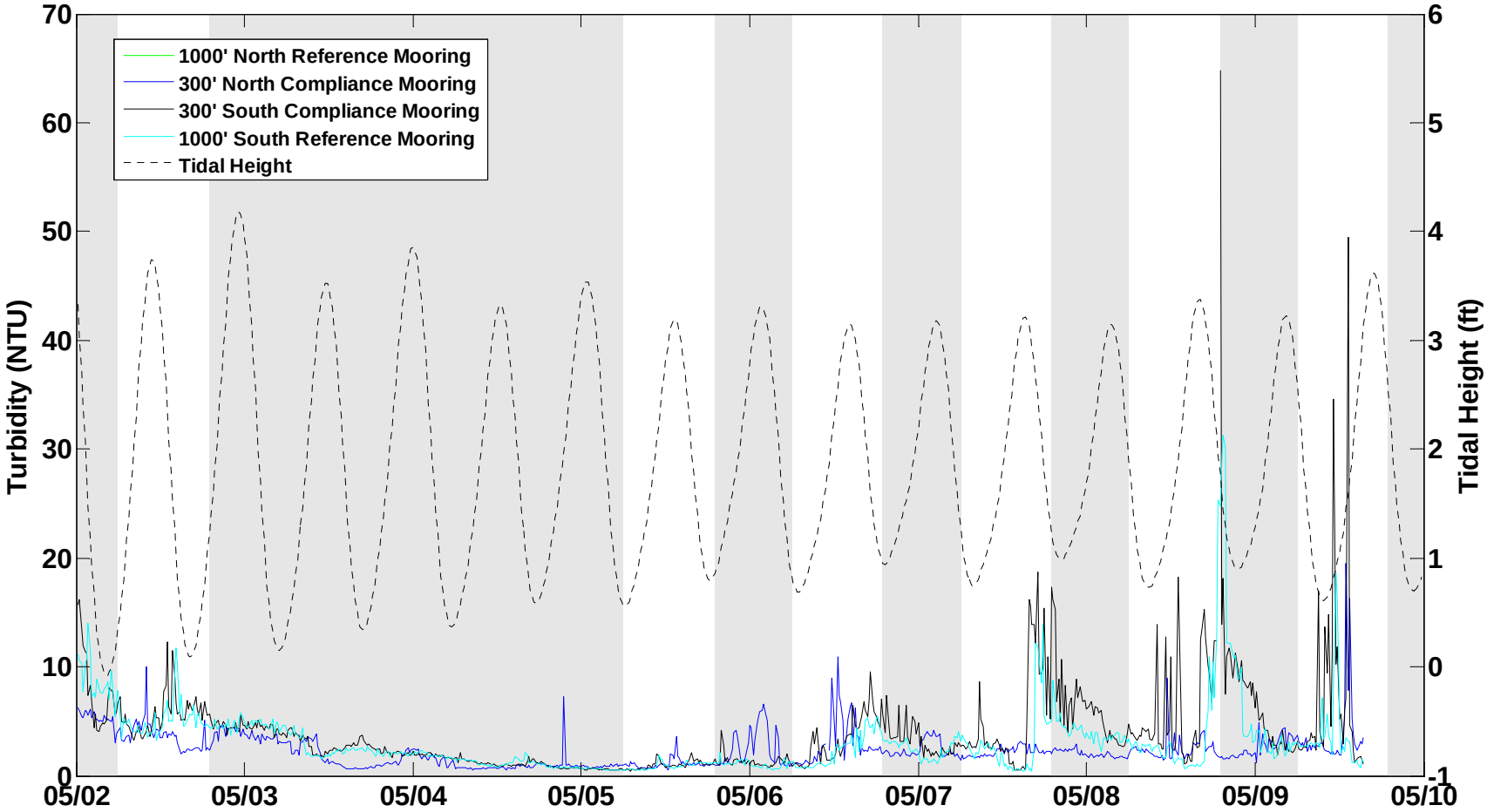
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. High and low tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

May 6, 2014:

- **Tidal stage:** High tide at 01:38 and 14:14 EDT; low tide at 06:56 and 19:15 EDT.
- **Dredge activity:** Debris removal and active dredging in Area R.
- **Monitoring activity**: Week 3, Level I monitoring. Monitored flood tide through higjh water. Monitored ebb tide.
- **Fishery and Wildlife Observations:** Very minimal wildlife activity.
- **Results summary:** Readings collected at reference locations, values of 1.10 NTU to 4.43 NTU. Readings at the Northern and Southern Reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 7.43 mg/L to 8.63 mg/L, with fairly uniform values throughout the area and at all depths. Turbidity values at the compliance transects were low. In addition to the compliance location monitoring and sampling, additional monitoring was conducted closer to the debris removal and dredging activity. Turbidity values in this area ranged from ~5NTU to ~40 NTU with the highest values recorded within ~100' of the dredging activities and values dropping to background at ~300'. No oil sheen was observed at any locations.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Communications with the 1000’ Northern reference location were lost and are currently being repaired.



Battelle — Daily Field Summary Sheet for Water Quality Monitoring

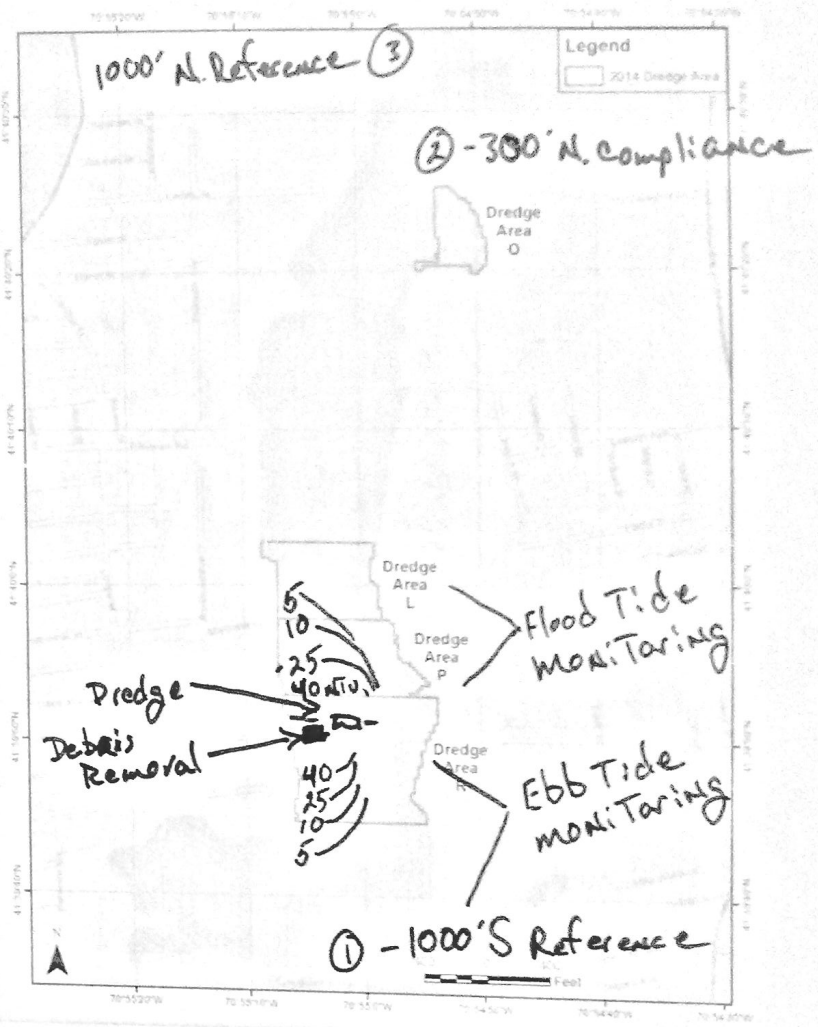
Date: MAY 6, 2014 Weather: Partly Cloudy, 60°, light west wind (North later)

Tides:
low 0.69' @ 06:56
High 3.15' @ 14:14
low 0.94' @ 19:15

Monitoring Period:
From: 09:30 To: 16:30

Tidal Stage: (HWS) Ebb LWS (Flood)

Dredging Activity:
Debris Removal Area R
Dredging Afternoon Area R



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1,000' S Reference	1.10	0.74
300' N Compliance	2.29	0.73
1,000' N Reference	4.43	0.54

Oil sheen/ Debris:
None

Fish Passage: No fish Observed, Some birds Working, Millions of small jellies

Samples Collected for Laboratory Analysis – Sample IDs:
TSS (1L) _____ Turbidity (1L) _____
Total PCB (2x1L) _____ Dissolved PCB (2x1L) _____
Toxicity (5 gal) _____ Metals (500ml) _____

Notes:

Sampling Crew: Alex Mansfield, Matt Fitzpatrick
Chief Scientist Signature: [signature]

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	AREA R
Dredging Description	Debris Removal
Survey Vessel	Gale Force
Chief Scientist	Matt Mitzpatrick
Sampling Technician	—
Vessel Captain	Alex Mansfield
Other Personnel	—
Weather conditions	Partly Cloudy, 60°, light West wind

Date	May 6, 2014
Page	1 of 1

Tide information		
High	01:38	3.31'
Low	06:56	0.69'
High	14:14	3.15'
Low	19:15	0.94'

Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000'S South Ref	09:48	41.65947°	70.91720°	~~12.2~~ 12.1	0.74	1.10	17.90	8.58	13.04	Peak Turbidity/depth
↓	09:51	41.65950°	70.91720°	12.1	5.46	0.46	28.54	7.87	10.71	Mid-depth Reading
1000'S South Ref	09:55	41.65950°	70.91720°	12.1	0.68	1.08	17.75	8.56	13.08	Re-measure at Peak Turb
300'N North Comp.	10:38	41.67446°	70.91499°	6.7'	0.73	2.29	15.2	8.41	13.23	Peak Turbidity/depth
300'N. Compliance	10:44	41.67447°	70.91499°	6.7'	3.13	1.12	26.72	7.43	11.82	Mid-depth reading
Near Dredging	12:27	41.66539°	70.91830		2.50	18.4	21.15	7.93	13.18	Just outside boom @ N. of Active Dredging
300'N. Compliance	13:44	41.67448°	70.91502°	8.5'	3.86	3.64	26.32	7.38	11.82	Revisited at End of Flood Tide
		Turn of Tide								
1,000'N Reference	14:23	41.67633	70.91619°	6.6'	0.54	4.43	18.34	8.32	13.14	Peak Turbidity depth
300'S Compliance	15:25	41.66153°	70.91790	5.7'	1.5	4.88	19.23	8.63	14.22	Peak Turbidity depth

SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

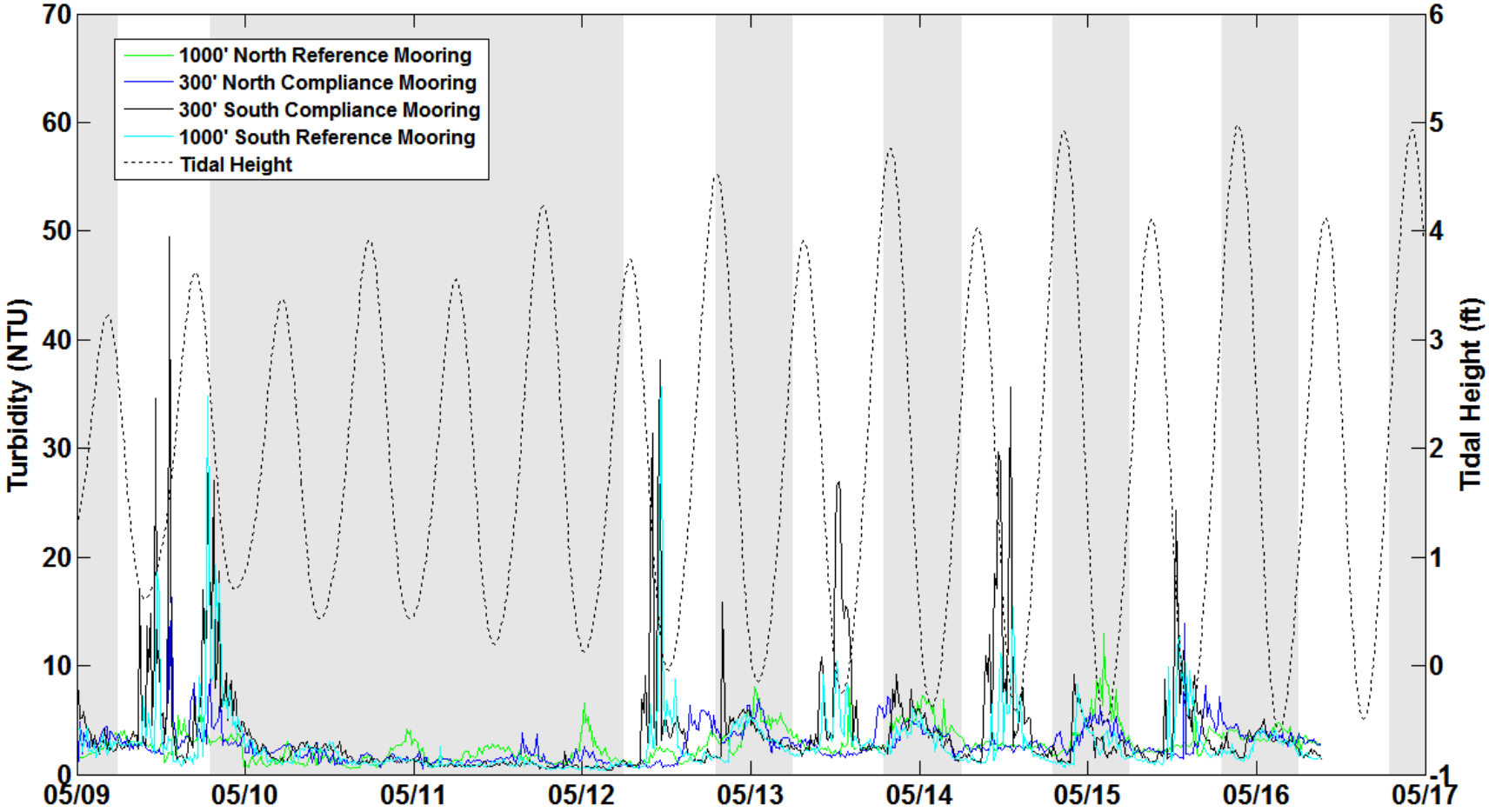
Week of May 12, 2014 (Week 4)

All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. High and low tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

May 14, 2014:

- **Tidal stage:** High tide at 08:13 and 20:36 EDT; low tide at 01:28 and 13:30 EDT.
- **Dredge activity:** Morning dredging in Area O. Afternoon dredging in Area P and Area R. Debris removal in Area R
- **Monitoring activity**: Week 4, Level I monitoring. Monitored ebb tide through low water. Monitored flood tide.
- **Fishery and Wildlife Observations:** Very minimal wildlife activity.
- **Results summary:** Readings collected at reference locations had turbidity values of 1.32 NTU to 4.98 NTU. Readings at the Northern and Southern Reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 7.08 mg/L to 8.33 mg/L, with fairly uniform values throughout the area and at all depths. Turbidity values at the compliance transects were low (<10NTU). In addition to the compliance location monitoring and sampling, additional monitoring was conducted closer to the debris removal and dredging activity. Turbidity values in this area ranged from ~2NTU to ~20 NTU with the highest values recorded within ~150' of the dredging activities and values dropping to background at ~300'. Light oil sheen was observed in the L,P,R Dredging areas but was contained by the booms and not observed outside the booms.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.



Battelle — Daily Field Summary Sheet for Water Quality Monitoring

Date: 14-May-14 **Weather:** Sunny

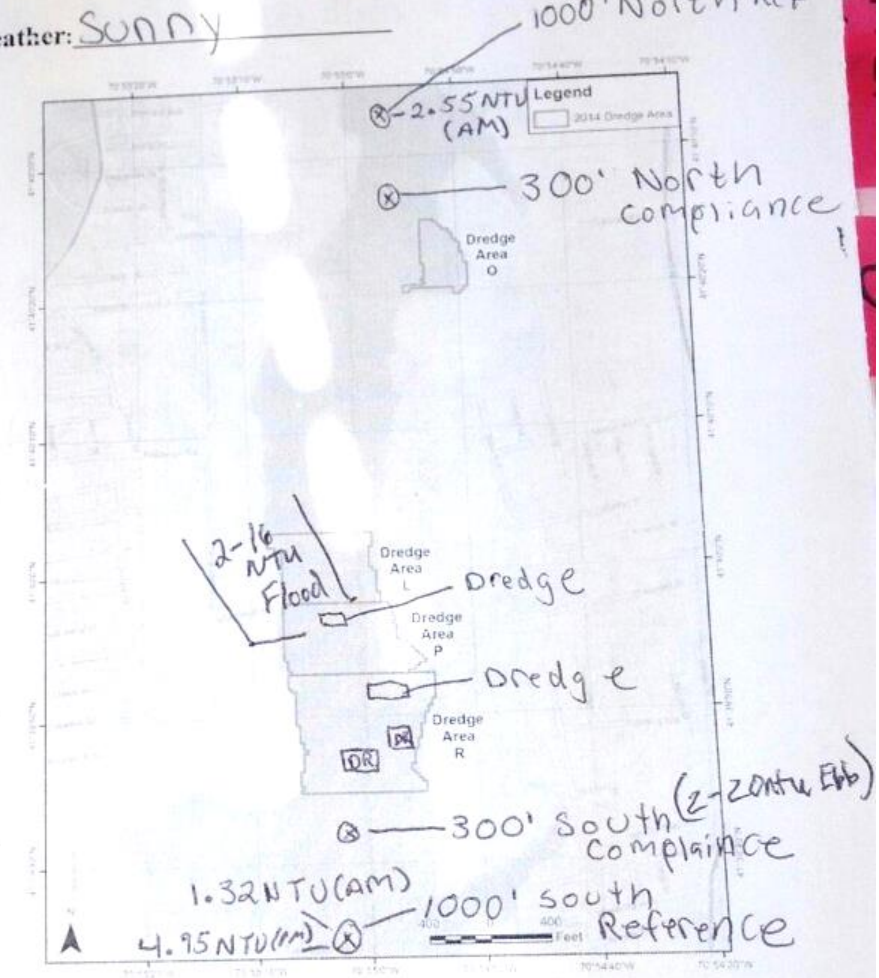
Tides:

4.05	@ 0813
0.01	@ 1335
4.88	@ 2036

Monitoring Period:
From: 0730 **To:** 1530

Tidal Stage: (HWS) (Ebb) (LWS) Flood

Dredging Activity:
morning dredging Area O
Afternoon dredging Area P
Afternoon dredging Area R
Debris Remoal Area R



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000' South Ref	1.32	9.61/13.5
1000' N Ref	2.55	6.49/8.0
300' S Comp	8.15	2.49/5.7
1000' S Ref	4.95	1.56/9.9

Oil sheen/ Debris:
Light sheen observed in L, P, and R contained by boom

Fish Passage: some fish observed on surface

Samples Collected for Laboratory Analysis – Sample IDs:

TSS (1L)	**Turbidity (1L)**
Total PCB (2x1L)	**Dissolved PCB (2x1L)**
Toxicity (5 gal)	**Metals (500ml)**

Notes:

Sampling Crew: Paul Sokoloff, Mike Walsh
Chief Scientist Signature: Mike Walsh

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	Debris Removal Area R;
Dredging Description	Debris Removal Area R;
Survey Vessel	R/V Gale Force
Chief Scientist	Mike Walsh
Sampling Technician	Paul Sokoloff
Vessel Captain	Mike Walsh
Other Personnel	—
Weather conditions	Sunny

Date	14-May-14
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Tide information	
High	4.05' @ 0813
Low	.01' @ 1335
High	4.88' @ 2036
Low	

	Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000	South Reference	0747	41.65963	70.91721	13.5	9.61	1.32	28.31	8.84	13.89	
500ft North of Debris Removal Area		0806	41.66582	70.91778	12.4	8.20	2.30	27.94	8.80	13.95	
300' North of Dredge Area		0815	41.67379	70.91478	10.1	8.01	2.06	27.28	7.57	14.67	Active dredging in Area O
1000' N	Reference	0830	41.67644	70.91605	8.0	6.49	2.55	27.08	7.08	14.89	
300' South	Compliance	0938	41.66142	70.91791	5.7	2.49	8.15	26.51	8.66	14.73	
300' South	Compliance	1025	41.66142	70.91791	5.0	2.43	10.75	27.64	8.59	14.40	
300' South	Compliance	1234	41.66138	70.91724	5.2	1.98	7.74	25.75	8.62	16.81	
300' south	Compliance	1246	41.66138	70.91724	5.0	1.95	20.04	25.52	8.66	17.00	
1000' S of	Reference	1355	41.65972	70.91717	9.9	1.56	41.95	26.19	9.33	17.06	Flood
Dredge Boundary	Area	1440	41.66619	70.91798	10.3	2.14	11.54	25.51	9.22	17.28	

SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

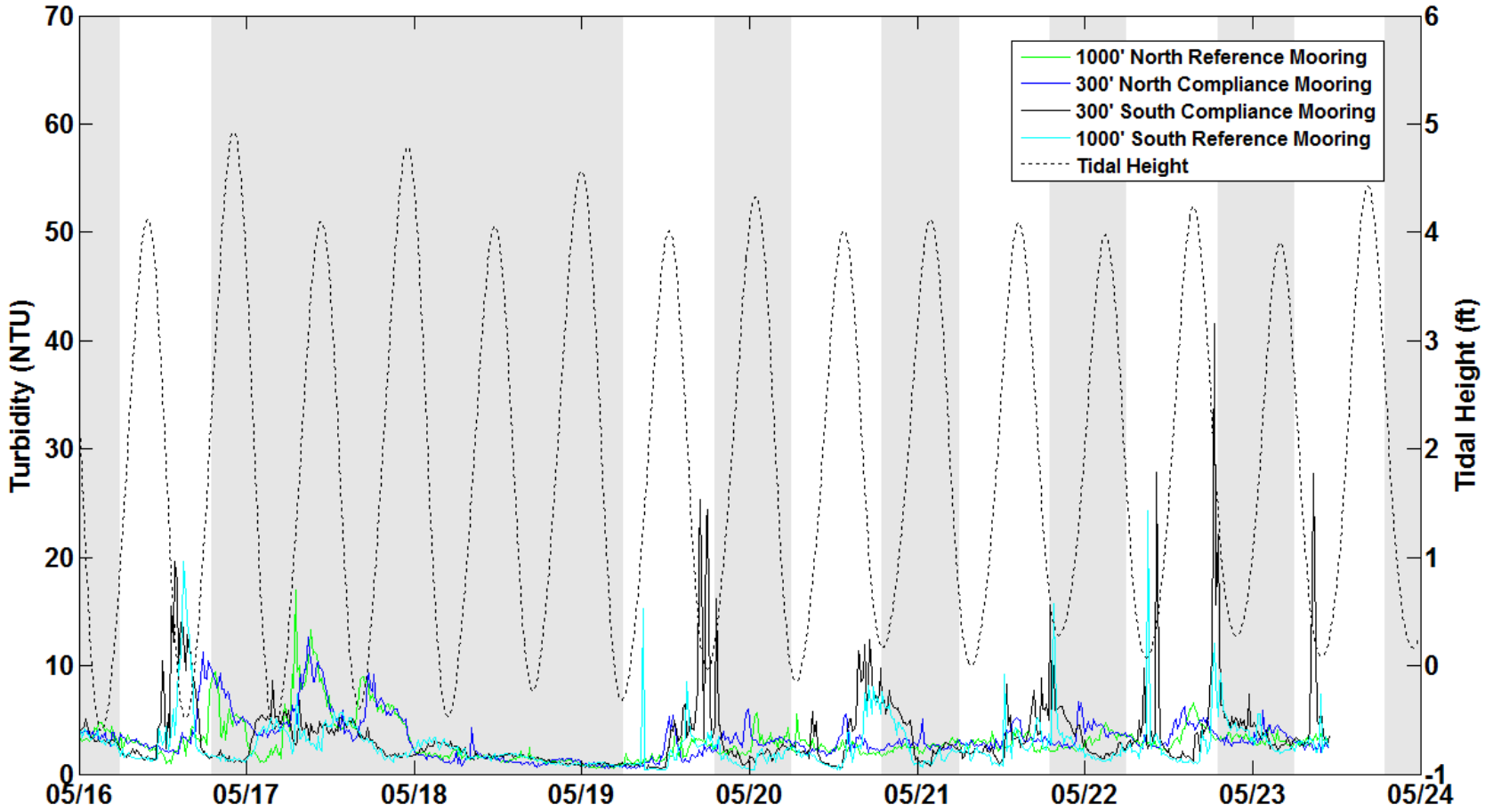
Week of May 19, 2014 (Week 5)

All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. High and low tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

May 19, 2014:

- **Tidal stage:** High tide at 12:29 EDT; low tide at 05:32 and 17:33 EDT.
- **Dredge activity:** Morning dredging in Area R. Afternoon dredging in Area O. Debris removal in Area R.
- **Monitoring activity**: Week 5, Level I monitoring. Monitored flood tide through high water. Monitored ebb tide.
- **Fishery and Wildlife Observations:** A few fish were observed feeding north of area O.
- **Results summary:** Readings collected at reference locations had turbidity values of 1.32 NTU to 1.96 NTU. Readings at the Northern and Southern Reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 6.68 mg/L to 7.44 mg/L, with fairly uniform values throughout the area and at all depths. Turbidity values at the compliance transects were low (<20 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to the debris removal and dredging activity. Turbidity values in areas R and P ranged from ~2 NTU to ~40 NTU with the highest values recorded within ~300' of the debris removal activities. Light oil sheen was observed in area R, and was associated with debris removal. Readings observed around the perimeter of area O ranged from 2 to 10 NTU. Higher readings (5 to 10 NTU) were observed only on the ebb tide near the southwest corner of the dredge area.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.



Battelle — Daily Field Summary Sheet for Water Quality Monitoring

Date: 19-May-2014 Weather: Sunny North wind ~ 10-15 becoming Cloudy Northwest ~ 5

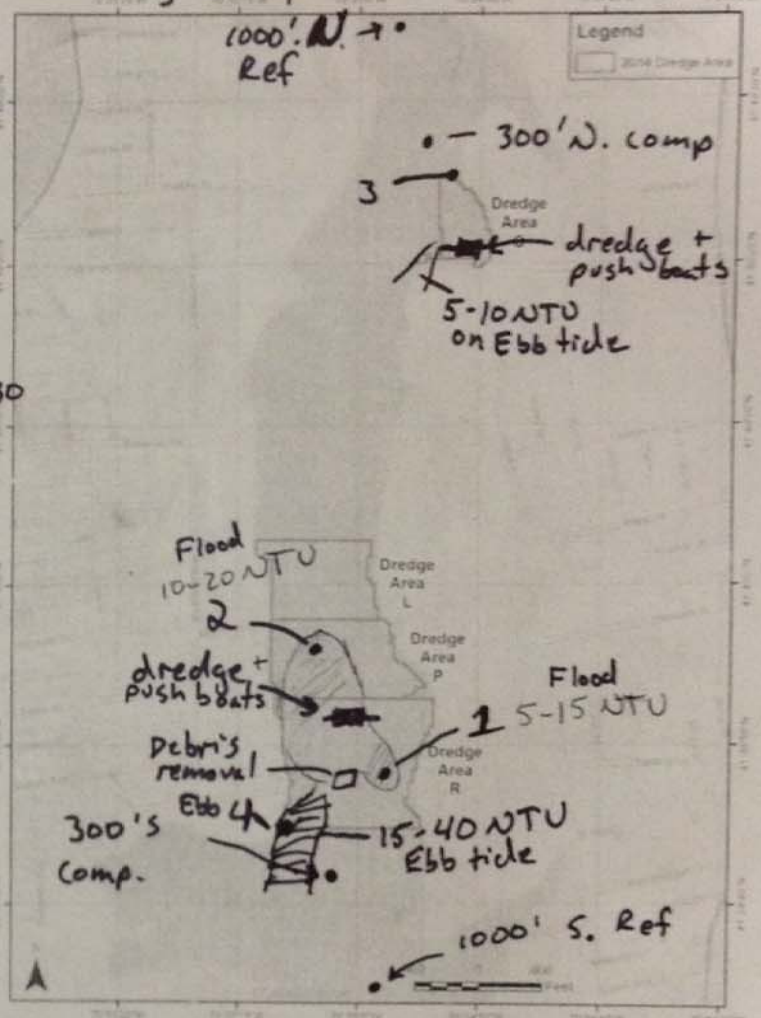
Tides:

Low	@	05:32
High	@	12:29
Low	@	~~05:33~~ 17:33

Monitoring Period:
From: 0815 To: 1555

Tidal Stage: HWS Ebb LWS Flood

Dredging Activity:
dredging in Area R until ~ 10:20
debris Removal - Area R until ~ 1430
dredging area O start up ~ 11:15



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000's. Ref	1.32	9.15 / 11.5
1	12.84	1.93 / 8.4
2	19.80	6.44 / 11.3
300' N comp	2.24	3.03 / 7.1
3	2.21	2.89 / 9.9
1000' N. Ref	1.96	1.31 / 7.2
4	38.36	1.19 / 5.2

Oil sheen/ Debris:
Minor sheen associated w/ debris removal

Fish Passage: a few fish feeding North of Area O

Samples Collected for Laboratory Analysis – Sample IDs:
TSS (1L) _____ Turbidity (1L) _____
Total PCB (2x1L) _____ Dissolved PCB (2x1L) _____
Toxicity (5 gal) _____ Metals (500ml) _____

Notes: Readings along perimeter of Area O ranged from 2-5 NTU during flood tide. Small thin band of 15-40 NTU running south from debris removal during ebb tide.

Sampling Crew: Mike Walsh, Matt Fitzpatrick
Chief Scientist Signature: Matthew R Fitz

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	All Areas R + O
Dredging Description	debris removal in R dredging in R + O
Survey Vessel	Gale Force
Chief Scientist	M. Fitzpatrick
Sampling Technician	—
Vessel Captain	M. Walsh
Other Personnel	—
Weather conditions	Sunny North wind ~ 10 kts

Date	19-May-2014
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Tide information	
High	—
Low	0532
High	12:29
Low	17:33

	Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000' South	Ref	0835	41.65947	70.91710	11.5	9.15	1.32	28.36	7.01	16.31	
	1	0913	41.66393	70.91662	8.4	1.93	12.84	26.36	6.95	16.55	
	2	0938	41.66576	70.91779	11.3	6.44	19.80	26.31	6.70	16.60	
300' N.	Comp	0954	41.67445	70.91493	7.1	3.03	2.24	26.34	6.19	16.99	
	3	1132	41.67370	70.91484	9.9	2.89	2.21	25.19	6.82	17.22	
300' N.	Comp	1220	41.67441	70.91504	9.1	1.41	2.03	20.84	7.38	17.69	
1000' N.	Ref	1245	41.67632	70.91610	7.2	1.31	1.96	25.60	6.68	17.48	
4 SW Edge	of Area R	1308	41.66219	70.91808	5.2	1.19	38.36	25.23	7.39	17.30	
300'	S of R	1314	41.66145	70.91843	6.0	1.82	18.0	25.89	7.42	17.06	
									7		
SW edge	of Area O	1446	41.67235	70.91539	4.8	1.60	8.78	25.19	7.20	17.03	
300' S	Comp	1532	41.66132	70.91747	5.6	3.72	4.96	27.40	7.44	16.80	

SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of May 26, 2014 (Week 6)

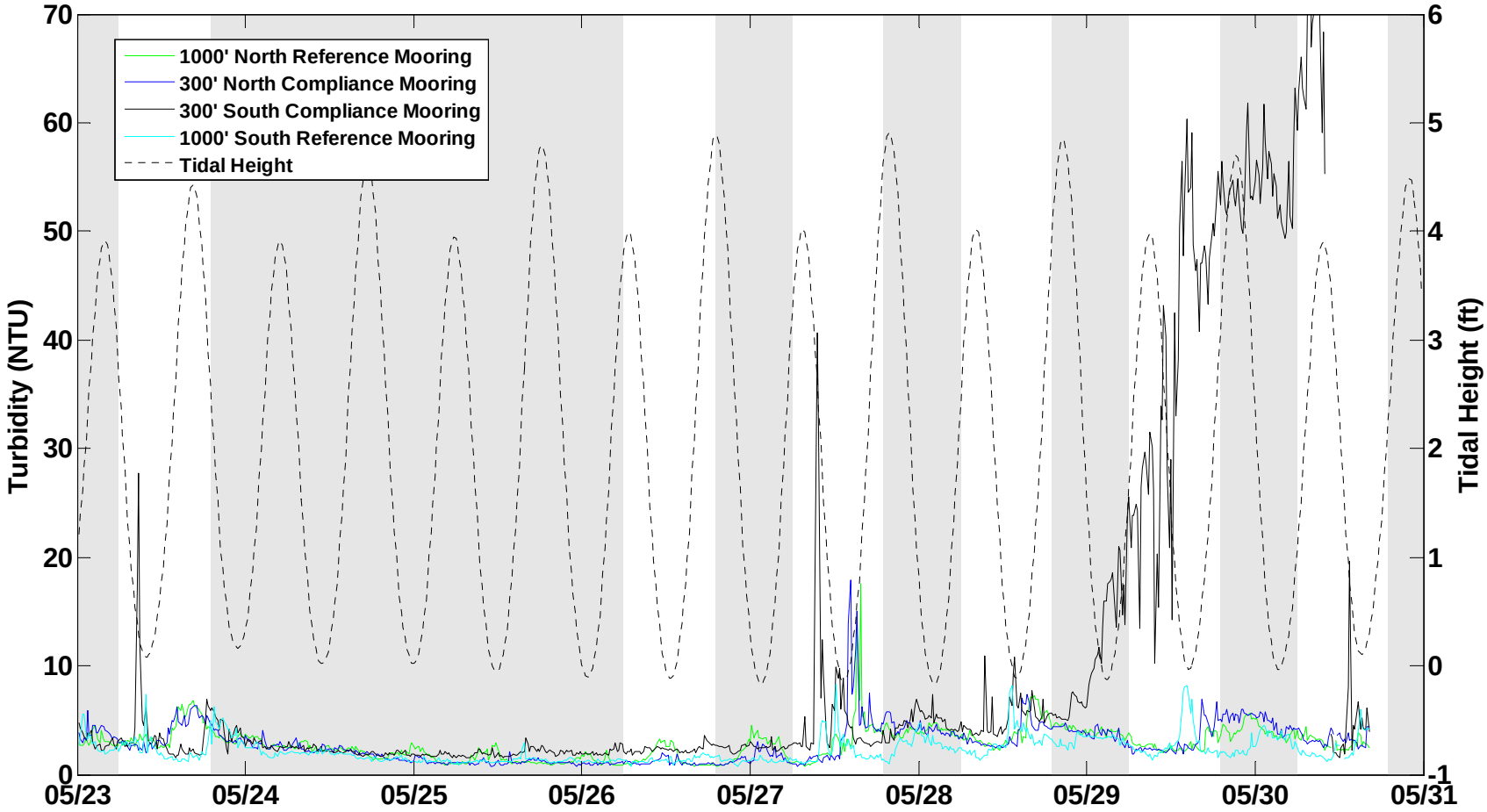
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. High and low tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

May 29, 2014:

- **Tidal stage:** High tide at 09:07 and 21:26 EDT; low tide at 05:32 and 14:05 EDT.
- **Dredge activity:** Morning dredging in Area O. Afternoon dredging in Area R. Debris removal in Area R. Sheet pile installations along the eastern shoreline.
- **Monitoring activity**: Week 5, Level I monitoring. Monitored flood tide through high water. Monitored ebb tide through low water.
- **Fishery and Wildlife Observations:** A few fish were observed south of area R.
- **Results summary:** Readings collected at reference locations had turbidity values of 2.08 NTU to 8.39 NTU. The reference readings of 8.39 NTU were observed at the southern reference location, just after the predicted slack low water and were repeated 35 minutes later. The second reference reading was slightly lower at 6.61 NTU. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 5.61 mg/L to 7.31 mg/L, with fairly uniform values throughout the area and at all depths. Turbidity values at the compliance transects were low (<20 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to the debris removal and dredging activity. Turbidity values in areas R and P ranged from ~2 NTU to ~50 NTU with the highest values recorded within ~150' of the debris removal activities. No oil sheen was observed throughout the course of the day. Readings observed around the perimeter of area O ranged from 2 to 30 NTU. Higher readings (20 to 30 NTU) were observed only on the ebb tide near the southwest corner of the dredge area.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

NOTE: The increased values at the 300'South compliance buoy beginning on 5/29/2014 do not represent actual water column turbidity. Boat-based monitoring was conducted on 5/29/2014, including at this buoy location. Boat-based turbidity readings at this location were <10NTU throughout the water column. The elevated mooring values triggered a 75 NTU warning alert at 07:48 on 5/30/2014. These alerts are sent via email from the mooring to Battelle staff. Upon receipt of the alert Battelle staff reviewed the mooring data. The steadily increasing values (including during non-dredging overnight hours) and the departure from concurrent boat-based readings suggested that there was a problem with the sensor rather than true water column turbidity readings. Battelle contacted Paul L'Heureux at the site to report the situation and dispatched a team to the site to check the mooring and initiate Level III sampling if required. The sensor array was pulled up from the mooring and it was identified that filamentous algae had been growing on the inside of the mooring housing and was waving in front of the optical sensor array resulting in the elevated readings. The system was thoroughly cleaned, and at ~11:00 on 5/30/2014 values returned to actual water column turbidity readings.



Battelle Daily Field Summary Sheet for Water Quality Monitoring

Date: 5/29/14 Weather: Sunny NE ~5 kts

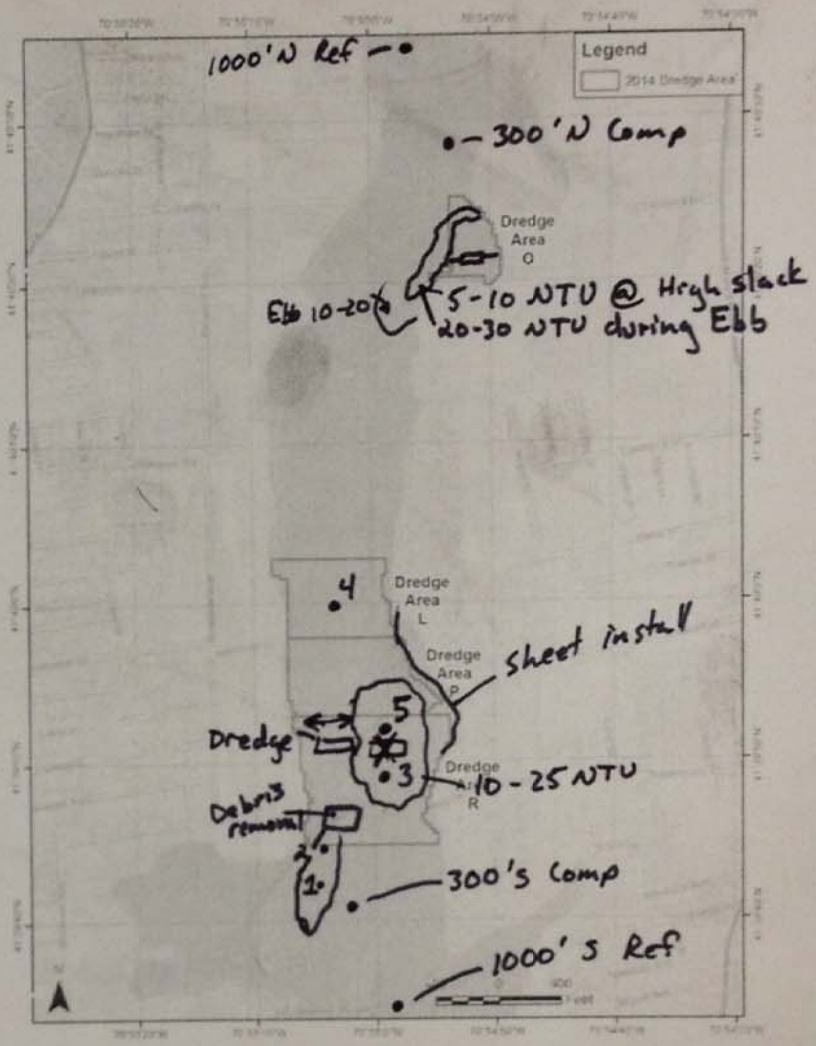
Tides:

High	@	0907
Low	@	1405
High	@	2126

Monitoring Period:
From: 0830 To: 1600

Tidal Stage: HWS Ebb LWS Flood

Dredging Activity:
Dredging Area O
Sheet install along eastern shore
debris removal Area R ~~until 1245~~
Dredging Area R - start ~1200



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000's Ref	2.08	1.14 / 14.1
1000'N Ref	3.08	1.71 / 6.8
1	12.57	1.81 / 5.6
SW of Area O	23.52	1.04 / 5.1
2	51.2	1.06 / 4.0
3	18.7	3.0 / 9.8
4	5.5	1.3 / 10.3

Oil sheen/ Debris:
None

Fish Passage: Small fish (3-4") observed south of Area R

Samples Collected for Laboratory Analysis – Sample IDs: None

TSS (1L) _____ Turbidity (1L) _____
Total PCB (2x1L) _____ Dissolved PCB (2x1L) _____
Toxicity (5 gal) _____ Metals (500ml) _____

Notes: 50-55 NTU when in close proximity to debris removal; decreased to ~10-20 NTU by 300' South compliance transect. Turbidity associated w/ dredge + pushboats ranged from 10-30 NTU.

Sampling Crew: Matt Fitzpatrick / Mike Walsh
Chief Scientist Signature: Matthew Fitzpatrick

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	Area O + R
Dredging Description	Dredging in O; Dredging + Debris Removal in R
Survey Vessel	Gale Force
Chief Scientist	Matt Fitzpatrick
Sampling Technician	—
Vessel Captain	Mike Walsh
Other Personnel	—
Weather conditions	Sunny NE ~ 5 kts

Date	5/29/14
Page	1 of 1

Tide information	
High	0907
Low	1405
High	2126
Low	

Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000's Ref	0839	41.65947	70.91740	14.1	1.14	2.08	28.91	6.66	16.10	
Area O	0859	41.67324	70.91520	8.7	1.99	6.53	26.31	6.04	15.66	
300'N Comp	0905	41.67444	70.91510	8.4	2.20	2.69	27.06	5.76	15.87	High slack tide
1000'N Ref	0923	41.67632	70.91618	6.8	1.71	3.08	27.58	5.25	16.44	
1	1020	41.66154	70.91811	5.6	1.81	12.57	27.90	6.63	15.98	Turbidity ranged 5-40 NTU
SW of Area O	1058	41.67179	70.91599	5.1	1.04	23.52	27.03	5.61	17.05	
2	1150	41.66216	70.91798	4.0	1.064	51.20	26.09	6.37	16.66	~ 150' from debris removal
300'S comp	1158	41.66133	70.91753	5.2	1.41	2.50	27.01	6.62	16.43	
3	1248	41.66320	70.91671	9.8	3.00	18.7	26.98	6.37	17.25	
3	1255	"	"	9.8	1.47	3.30	26.68	6.40	17.62	
near 2	1338	41.66201	70.91764	3.1	1.14	21.90	26.94	6.58	17.69	
300's comp	1401	41.66146	70.91757	3.4	107	9.84	27.30	7.02	17.67	
1000's Ref	1410	41.65952	70.91737	10.4	1.18	8.39	26.95	7.24	18.03	- readings seem high
"	1445	"	"	10.4	1.54	6.61	27.00	7.31	18.24	- repeat to make sure tide changed
4	1453	41.66507	70.91734	10.3	WL 5.5 1.33	5.51	27.03	6.67	18.23	
5	1507	41.66431	70.91683	7.3	1.75	19.32	27.20	6.55	18.07	
300'N Comp	1535	41.67445	70.91512	5.3	0.89	3.92	27.44	6.75	18.15	

SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of June 2, 2014 (Week 7)

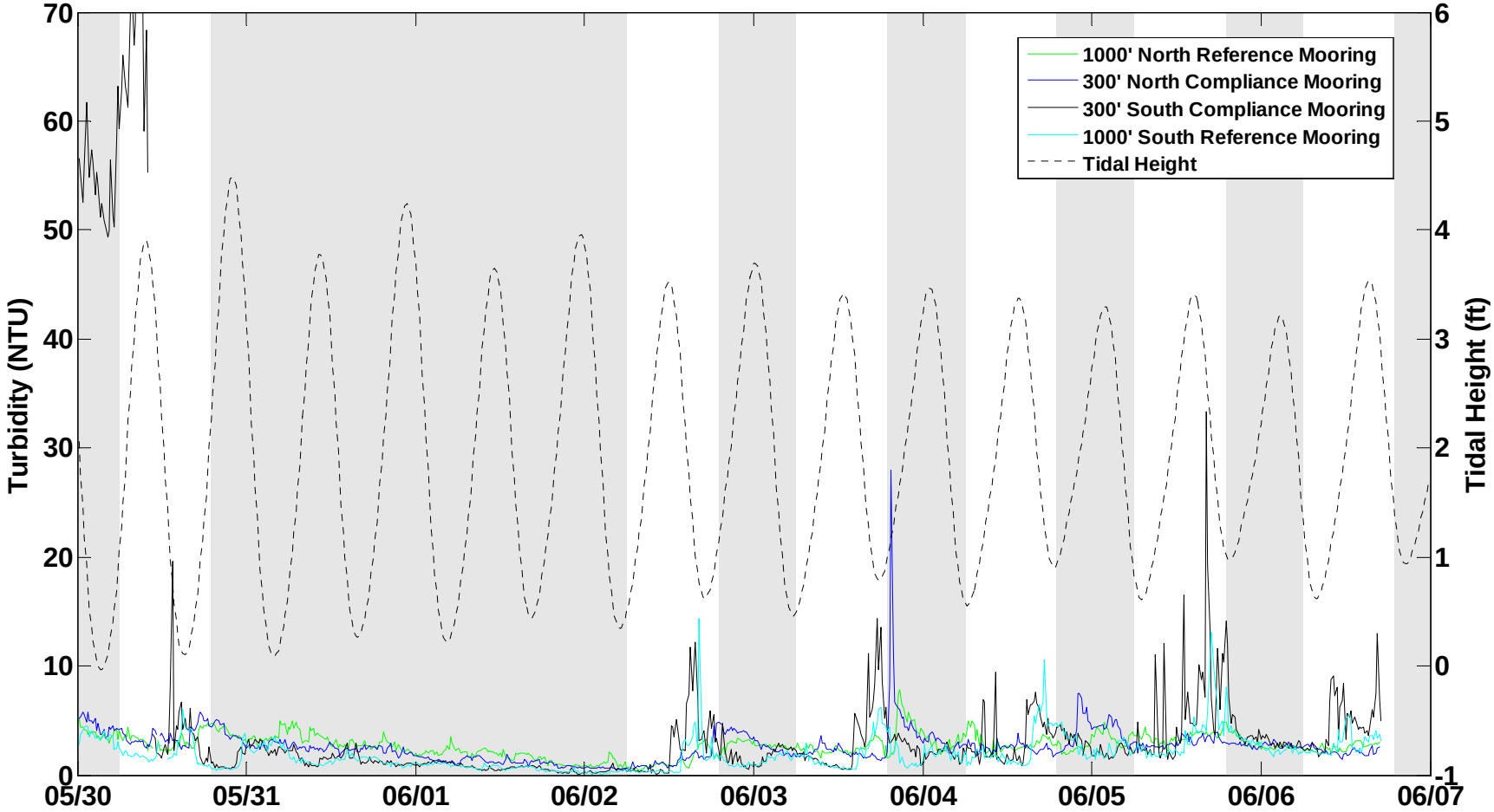
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. High and low tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

June 6, 2014:

- **Tidal stage:** High tide at 02:44 and 15:22 EDT; low tide at 07:50 and 20:31 EDT.
- **Dredge activity:** Morning dredging in Area R. Afternoon dredging in Area O and P. Debris removal in Area R. Sheet pile installations in the middle of area L.
- **Monitoring activity**: Week 7, Level I monitoring. Monitored flood tide until 15:40.
- **Fishery and Wildlife Observations:** A few fish were observed feeding west of area O.
- **Results summary:** Readings collected at the southern reference location had turbidity values of 2.69 NTU. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 4.03 mg/L to 7.46 mg/L, with slightly higher values observed in the surface water. Turbidity values at the compliance transects were low (<10 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to the debris removal and dredging activity. Turbidity values around area O were around background and ranged from 2 to 3 NTU. Turbidity values in areas R and P generally ranged from ~5 to 10 NTU, with a few 10 to 15 NTU readings observed at a depth of 4 feet. Additionally, one reading of ~33 NTU was recorded within 50 to 75'of the dredge and push boats. Minor oil sheen was observed in area R, and it was contained by the boom.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

NOTE: The elevated values at the 300'South compliance buoy on 5/30/2014 do not represent actual water column turbidity. The sensor became fouled starting on 5/29/2014. The buoy and was hauled and thoroughly cleaned on 5/30/2014. After the cleaning, values returned to actual water column turbidity readings.



Battelle — Daily Field Summary Sheet for Water Quality Monitoring

Date: 06-June-14 Weather: Partly sunny NW wind ~10 kts

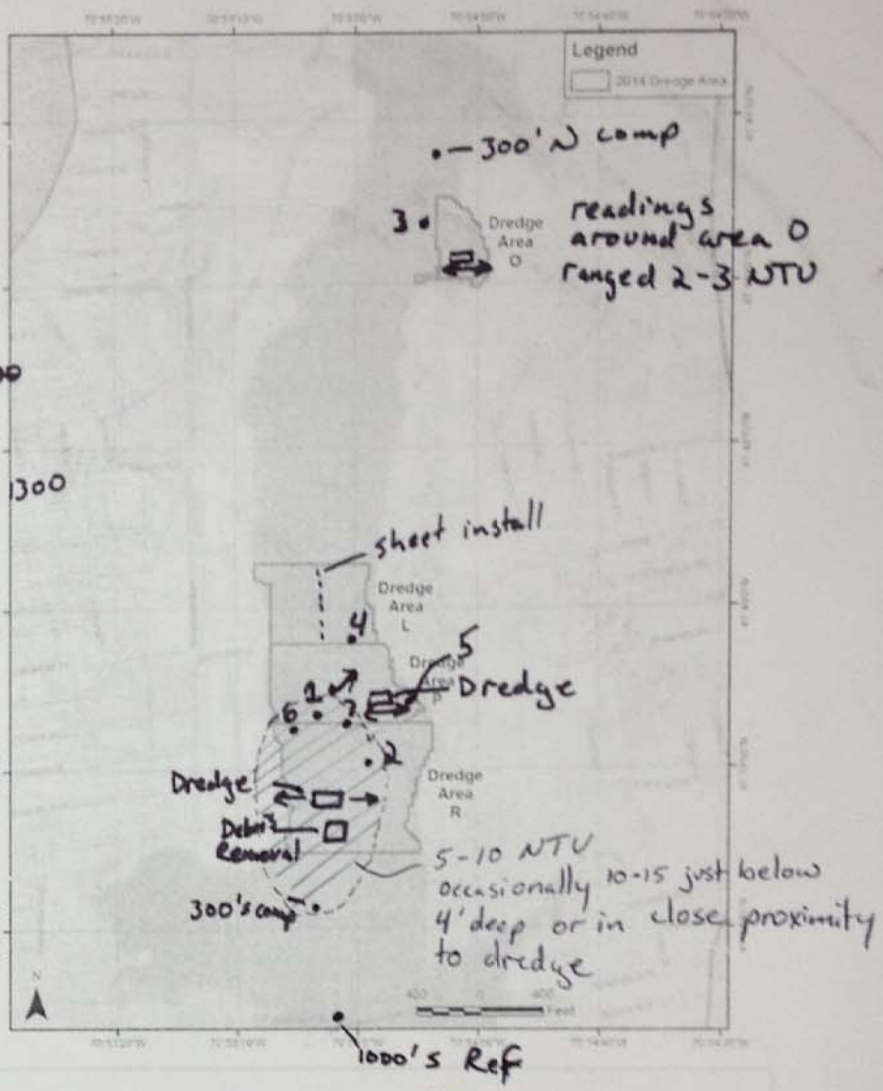
Tides:

High	@ 02:44
low	@ 07:50
High	@ 15:22
low	@ 20:31

Monitoring Period:
From: 07:45 To: 1540

Tidal Stage: HWS Ebb LWS Flood

Dredging Activity:
Debris Removal area R ~~until 0500~~
Dredging area R until ~11:00
Sheet install area L until ~0930
Dredging area O start ~1100 until 1300
Dredging area P start ~1300



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000's Ref	2.69	1.23/11.6
1	14.86	4.16/9.2
300'N Comp	3.61	4.63/6.0
2	32.81	2.46/9.9
4	3.80	1.23/5.8
5	4.95	2.5/4.0

Oil sheen/ Debris:
Minor sheen contained by boom in Area R. No other sheen.

Fish Passage: A few fish observed feeding west of Area O

Samples Collected for Laboratory Analysis – Sample IDs: None

TSS (1L) _____ Turbidity (1L) _____
Total PCB (2x1L) _____ Dissolved PCB (2x1L) _____
Toxicity (5 gal) _____ Metals (500ml) _____

Notes: 5-7 NTU in surface/low salinity water (<26PSU) near debris removal - including South + East.

Sampling Crew: Mike Walsh Matt Fitzpatrick
Chief Scientist Signature: Matthew R Fitz

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	Area R + Area O + Area P
Dredging Description	Debris removal Area R, dredging in Areas R + O + P
Survey Vessel	Gale Force
Chief Scientist	M. Fitzpatrick
Sampling Technician	—
Vessel Captain	M. Walsh
Other Personnel	—
Weather conditions	Partly sunny NW wind ~ 10 kts

Date	06 - June - 2014
Page	1 of 1

Tide information	
High	02:44
Low	07:50
High	15:22
Low	20:31

	Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000'S	Ref	0805	41.65946	70.91713	11.6	1.23	2.69	26.07	6.64	18.17	
	1	0829	41.66409	70.91749	9.2	4.16	14.86	27.93	6.18	18.52	400' from dredge 450' from DR
	"	0834	"	"	"	1.56	~~8~~ 8.18	26.05	6.26	18.70	"
300'N Comp		0902	41.67446	70.91496	6.0	4.63	3.61	28.18	4.03	19.47	
"		0905	"	"	"	1.05	3.53	24.71	5.73	18.83	
1000'N Ref		0915	41.67632	70.91604	3.8	1.05	2.81	27.16	5.43	19.44	
	2	10:22	41.66373	70.91667	9.9	2.46	32.81	27.09	6.03	18.62	50-75' from dredge + Push boats
300'N Comp		11:27	41.67451	70.91499	6.1	1.22	2.54	24.93	6.62	19.57	
	3	1151	41.67368	70.91520	8.5	2.04	2.51	27.10	5.56	19.43	~200' from dredge
300'S Comp		1215	41.66137	70.91759	5.6	1.21	6.64	25.17	7.05	19.76	
near	4	1235	41.664~~08~~	70.917~~38~~	11.2	4.21	12.53	28.26	5.96	18.49	
"		1236	"	"	11.2	1.01	5.20	24.68	6.72	19.86	~450-500' from debris removal
	4	1313	41.66615	70.91658	5.8	1.23	3.80	25.07	7.22	19.41	~250 from Dredge
300'N Comp		1330	41.67448	70.91496	7.5	1.34	2.61	24.06	6.65	20.25	
	5	1411	41.66526	70.91564	4.0	2.50	4.85	26.38	7.46	19.38	50' from Dredge (no push boats)
	6	1500	~~41.66628~~	~~70.91071~~ Om	7.6	2.06	6.23	26.01	7.26	20.76	500' from Debris R.
			41.66410	70.91747							
	7	1525	41.66455	70.91696		2.72	10.3	26.11	7.09	19.00	500' from Debris Removal + 250' SW of dredge

O WN, M. Walsh 7/6/14

SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of June 9, 2014 (Week 8)

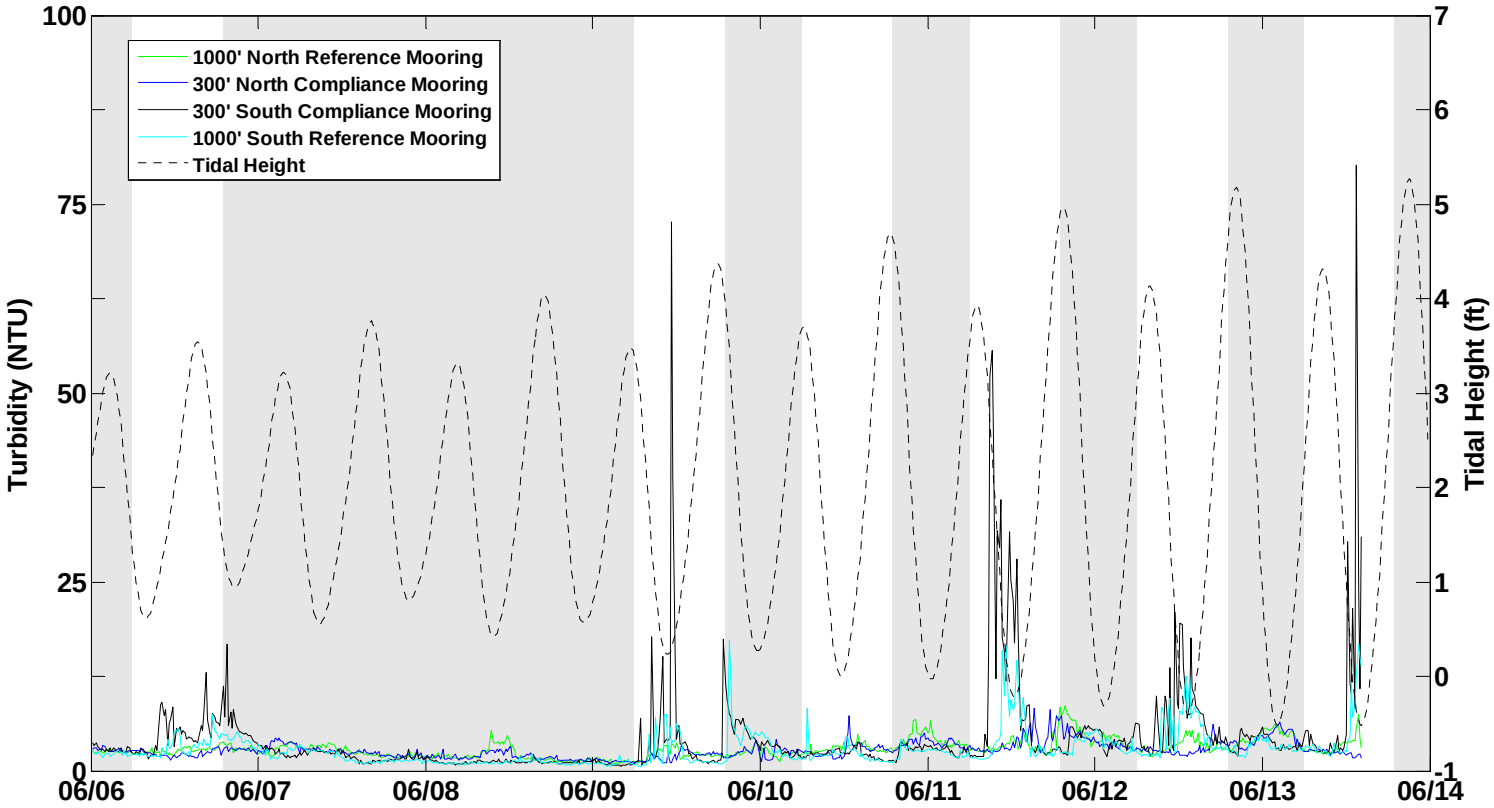
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. High and low tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

June 10, 2014:

- **Tidal stage:** High tide at 06:14 and 18:37 EDT; low tide at 11:37 EDT.
- **Dredge activity:** Morning dredging in Area O. Mid-morning dredging in Area P. Late morning and afternoon dredging in Area R. Debris removal in Area R.
- **Monitoring activity**: Week 8, Level I monitoring. Monitored ebb tide through low slack water and into the flood tide.
- **Fishery and Wildlife Observations:** Fish were occasionally observed throughout the survey area.
- **Results summary:** Readings collected at the reference locations had turbidity values of 4.17 and 3.89 NTU. Readings at the Northern and Southern Reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 4.16 mg/L to 6.03 mg/L, with fairly uniform values throughout the area and at all depths. Turbidity values at the compliance transects were low (<5 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to the debris removal and dredging activity. Turbidity values around area O were around background- 3.75 NTU. Turbidity values in areas R and P generally ranged from ~5 to 15 NTU. Additionally, two readings of ~20 and ~33NTU were recorded 400' and 200' down current of the dredge and push boats. Oil sheen was observed in area R. The sheen was pushed north by the southerly winds and was carried past the oil boom. Debris removal had already stopped by that point. Paul L'Heureux and Jacobs Engineering were both contacted, and the dredge crew deployed additional boom.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Note: The turbidity exceedance criteria is 100 NTU. When NTU readings of >75 are recorded the ACOE Project Engineer is notified so that operational decisions can be made to help prevent a turbidity exceedance. This protocol was triggered at ~ 14:00 on June 13, 2014. Only a single reading of >75 was recorded before turbidity levels dropped back to <30NTU.



Battelle — Daily Field Summary Sheet for Water Quality Monitoring

Date: 6/10/14 **Weather:** overcast/drizzle - wind SW 5-10/10-15

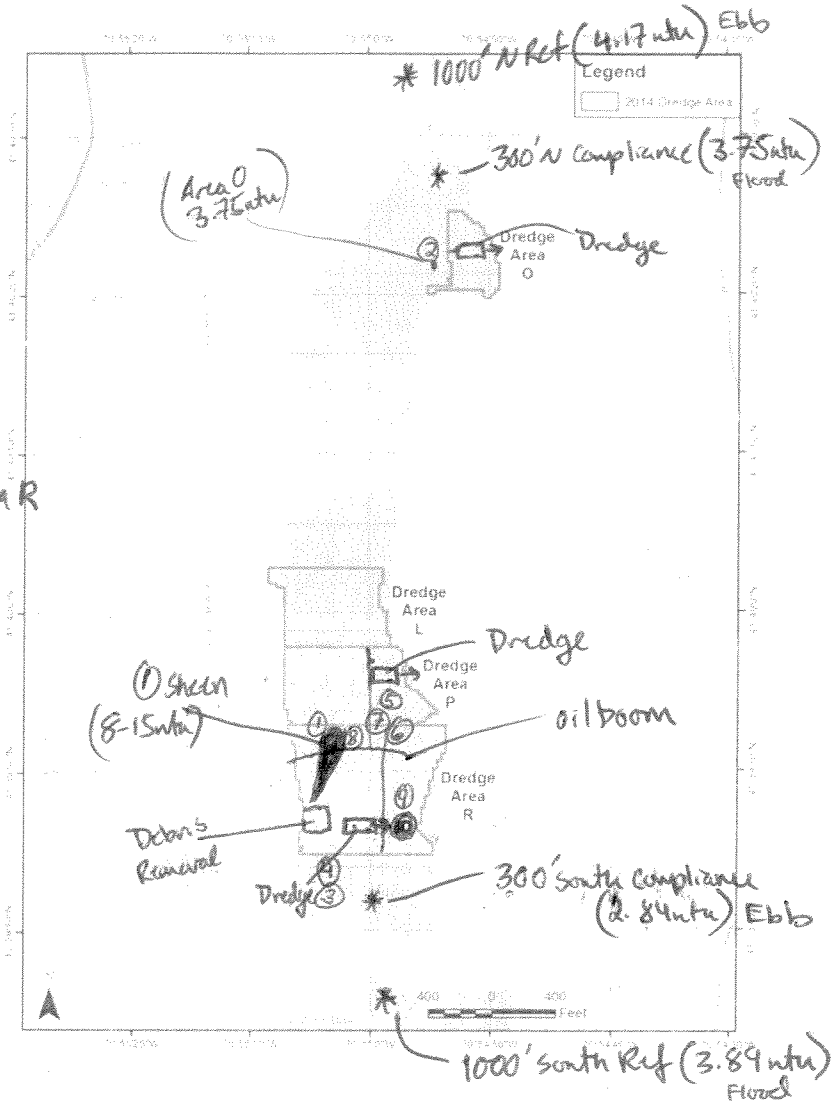
Tides:

3.7'	@	0614
0.0'	@	1137
4.7'	@	1837

Monitoring Period:
From: 0745 **To:** 1515

Tidal Stage: HWS (Ebb) LWS (Flood)

Dredging Activity:
Morning Dredging West to East Area O
Debris Removal Area R shoreline (near CSO)
Mid-Morning Dredging West to East Area P
Late Morning/Afternoon Dredging west to East Area R



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000' North Ref	4.17	3.31/6.1
300' South Comp	2.84	1.55/5.2
1000' South Ref	3.89	10.5/2.01
300' North Comp	3.75	1.98/5.9

Oil sheen/ Debris:
(1) See Notes Below

Fish Passage: Occasional Fish breaking surface

Samples Collected for Laboratory Analysis – Sample IDs: NONE

TSS (1L)		Turbidity (1L)	
Total PCB (2x1L)		Dissolved PCB (2x1L)	
Toxicity (5 gal)		Metals (500ml)	

Notes: Heavy Slug of sheen escaped Area R Boom, sheen was short lived with no associated turbidity (8-15 ntu) Debris Removal near Coffin Ave CSO appeared to be cause of sheen. Debris Removal operator appeared to notice sheen and stopped activity. Paul L'Heureux was notified as well as Jacobs Engineering. Dredge Crew deployed more oil boom.
- Please see In situ Data Field form readings numbered 1-10 Locations

Sampling Crew: Mike Walsh, Sam Guimaraes

Chief Scientist Signature: Mike Walsh

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	Morning Area O dredge / Area R debris Removal
Dredging Description	West to East Area O / Western Shoreline Area R (near CSO) Debris Removal
Survey Vessel	Gale Force → West to East North East Area P / west to East Area R
Chief Scientist	Mike WALSH
Sampling Technician	Sam Guimaraes
Vessel Captain	Mike Walsh
Other Personnel	—
Weather conditions	Overcast light Rain/drizzle - wind SW 5-10 / 10-15

Date	6/10/14
Page	1 of 1

Tide information	
High	0614 - 3.7'
Low	1137 - 0.0'
High	1837 - 4.7'
Low	—

Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000' North Ref.	0820	41.67641	70.91602	6.1	3.31	4.17	27.01	4.16	21.61	
(2) 300' South of Dredge	0847	41.67256	70.91532	6.2	1.54	3.75	24.58	5.01	21.51	Area O (2)
(3) 300' sout Debris Remaval	0912	41.66198	70.91800	3.8	1.52	4.27	26.14	5.18	21.12	AREA R (Border) (3)
300' South Compliance	0917	41.66147	70.91746	5.2	1.55	2.84	26.30	5.21	21.24	
" "	0950	"	"	4.8	1.91	3.30	26.78	5.03	20.95	
(4) 275' south Debris Remaval	0957	41.66202	70.91754	4.2	1.58	4.44	27.49	5.11	20.99	AREA R (Border) (4)
~~275~~										
(5) 150' south Dredge AREA P	1009	41.66459	70.91599	3.9	1.52	5.78	23.96	5.84	20.87	AREA P (5)
(6) 400' south Dredge Area P	1021	41.66374	70.91620	4.8	1.89	3.47	24.85	5.21	20.91	AREA P (6)
275' south Dredge Area P	1044	41.66435	70.91648	4.7	1.93	3.24	24.65	5.76	21.27	Push Boats Holding Dredge
(7) 200' SW of Dredge Area P	1057	41.66442	70.91682	5.9	1.54	33.1	25.82	5.44	20.37	Push Boats Holding Dredge (7)
300' SW of Dredge Area P	1100	41.66393	70.91661	6.3	2.43	6.16	25.54	5.67	20.45	" "
500' South Compliance	1124	41.66153	70.91740	4.0	1.86	2.87	26.03	5.72	21.28	
1000' south ~~Compliance~~ Reference	1206	41.65974	70.91717	10.5	2.01	3.89	26.24	5.82	21.08	
(1) 500' north of Dredge + Debris	1233	41.66456	70.91733	10.6	2.35	15.73	26.47	5.75	21.29	Taken at time of sheen (1) (Area R)
500' north of Dredge + DRem	1301	"	"	10.7	2.28	15.17	26.56	5.80	21.29	Area R
300' north Compliance	1328	41667459	70.91499	5.9	1.98	3.75	23.29	6.02	21.50	Area R
(8) 400' North of Dredge	1416	41.66470	70.91753	10.4	2.48	19.88	27.37	5.25	20.87	Push Boats Holding Dredge (8) Area R
200' north East of Dredge	1440	41.66362	70.91682	10.8	2.31	3.78	27.65	5.98	20.74	Area R (9)
(10) 100' East of Dredge	1500	41.66306	70.91673	10.6	2.72	5.25	27.93	6.03	20.41	Area R (10)

SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of June 16, 2014 (Week 9)

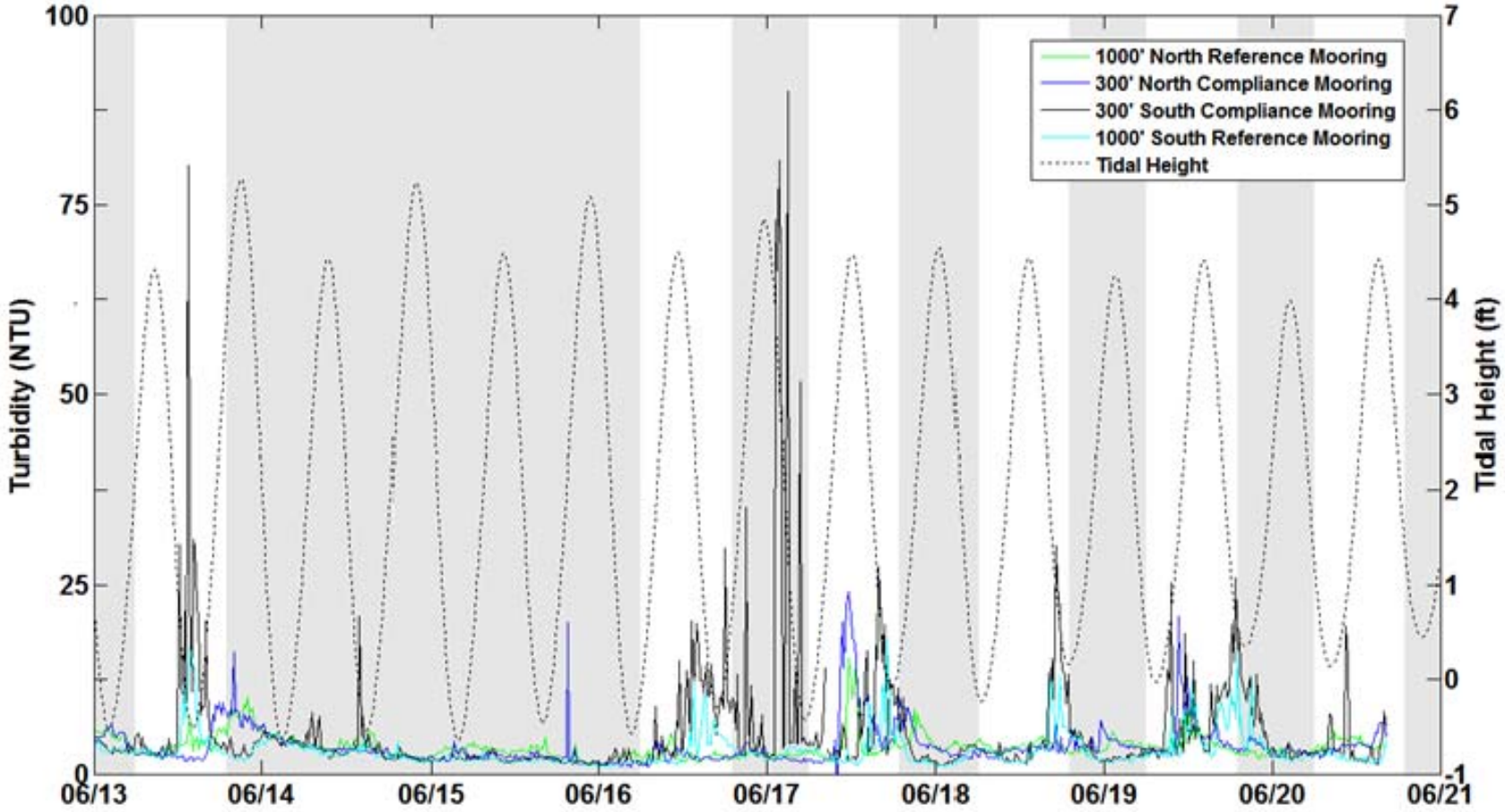
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. High and low tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

June 17, 2014:

- **Tidal stage:** Low tide at 05:25 and 17:48 EDT; high tide at 12:12 EDT.
- **Dredge activity:** Morning dredging followed by debris removal in Area R. Mid-morning dredging in Area P. Late morning and afternoon dredging in Area R. Dredging Area O starting at ~09:30. Dredging Area P starting at ~14:15
- **Monitoring activity**: Week 8, Level I monitoring. Monitored flood tide through low slack high water and into the ebb tide.
- **Fishery and Wildlife Observations:** Several small fish observed jumping near Area O. Near Area O there was one dead fish ~18" significantly decomposed, and one ~6" dead fish.
- **Results summary:** Readings collected at the reference locations had turbidity values of 2.97 NTU at the Southern Reference and 15.34 NTU at the northern Reference. This somewhat elevated reference turbidity was found in a thin band at 2.4 ft deep. Turbidity throughout the rest of the water column at the Northern Reference site was ≤4 NTU. Readings at the Northern and Southern Reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 6.2 mg/L to 8.6 mg/L, with fairly uniform values throughout the area and at all depths. Turbidity values at the compliance transects were low (<10 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to the debris removal and dredging activity. Turbidity values around area O were around background showed a small, low-level turbidity signature of 15-30 NTU within 100 ft of the work area. Turbidity dropped off sharply beyond that distance. Turbidity values in areas R and P generally ranged from ~5 to 15 NTU.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Note that the elevated turbidity readings on June 17th at the 300' South Compliance Mooring are not related to dredge activity and do not represent suspended sediment concentrations. Battelle staff received alerts of high turbidity via the telemetery system at 2am and 3am on 6/17. The time of day made it clear that the readings were not dredge-related. The Battelle field team conducted boat-based sampling on 6/7 and began by checking the buoy sensors. A large piece of macro algae was caught on the sensor frame and was responsible for the elevated readings. All sensors on all four buoys were cleaned on 6/17.



Battelle Daily Field Summary Sheet for Water Quality Monitoring

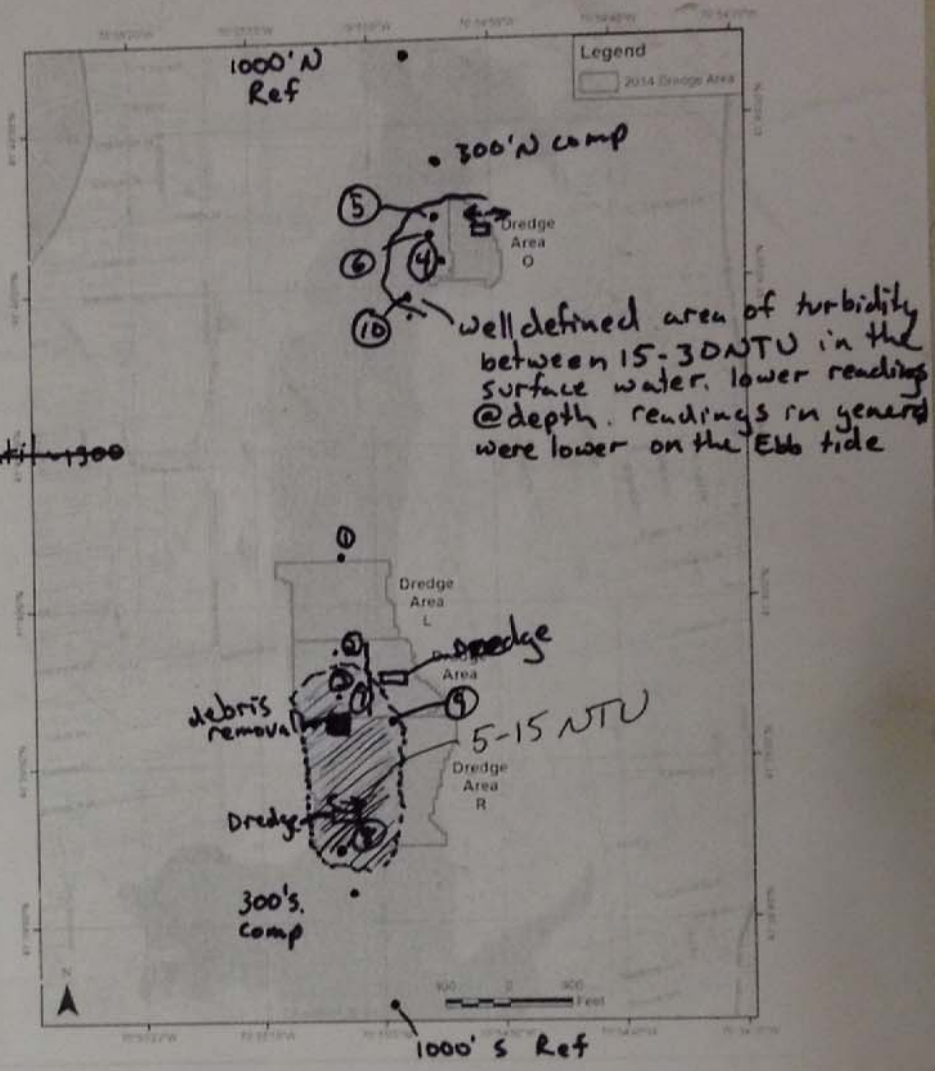
Date: 17-June-14 Weather: Overcast South ~10

Tides:
low (-0.4) @ 05:25
high (4.3) @ 12:12
low (-0.1) @ 17:48

Monitoring Period:
From: 0750 To: 1515

Tidal Stage: HWS Ebb LWS Flood

Dredging Activity:
Dredging Area R until ~9:00
Debris Removal Area R
Dredging Area O - start ~9:30 until ~1300
Dredging Area P - start ~1315



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000's Ref	2.97	1.42 / 10.2
①	4.00	1.86 / 6.0
⑤	22.89	1.35 / 8.6
1000'N Ref	15.34	2.44 / 7.9
⑧	12.23	2.43 / 7.3
300's comp	4.12	1.67 / 5.8

Oil sheen/ Debris:
None

Fish Passage: Several small fish observed jumping near area O
near Area O one ~18" dead fish - heavy decomp, ~6" dead fish

Samples Collected for Laboratory Analysis – Sample IDs: None
TSS (1L) _____ Turbidity (1L) _____
Total PCB (2x1L) _____ Dissolved PCB (2x1L) _____
Toxicity (5 gal) _____ Metals (500ml) _____

Notes:

Sampling Crew: M. Walsh M. Fitzpatrick
Chief Scientist Signature: _____

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	Areas: R, P, + O
Dredging Description	Debris removal in R dredging in: R, P, + O
Survey Vessel	Gale Force
Chief Scientist	M. Fitzpatrick
Sampling Technician	—
Vessel Captain	M. Walsh
Other Personnel	—
Weather conditions	Overcast South ~ 10 kts

Date	17 - June - 2014
Page	1 of 1

Tide information	
High	—
Low	05:25
High	12:12
Low	17:48

	Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000' S	Ref	0805	41.65969	70.91742	10.2	1.42	2.97	28.81	6.50	20.84	
① N. Edge of C		0907	41.66744	70.91763	6.0	1.86	4.00	28.21	6.72	21.31	~1500' from debris removal
	2	0918	41.66564	70.91783	9.4	1.554	10.78	28.87	6.49	21.26	~400' from debris removal
	3	09:25	41.66489	70.91834	5.5	2.8	13.22	28.59	6.26	20.96	~100' from debris removal
	4	0949	41.67270	70.91523	6.2	2.53	6.65	27.38	7.84	22.00	~150' from dredge/pushboat
300' N	Comp	0956	41.67463	70.91502	7.3	2.18	3.40	27.11	7.72	21.77	
	5	1016	41.67337	70.91525	8.6	1.35	22.89	27.29	7.07	21.83	~75' from dredge/pushboat
	"	1018	"	"	"	5.0	5.2	27.55	6.85	21.75	"
	6	1114	41.67295	70.91540	8.5	0.83	27.32	27.07	7.51	21.95	~75' from dredge/pushboat
	7	11.48	41.66478	70.91734	14.1	1.53	5.10	29.40	7.03	20.85	75-100' from debris removal
1000' N	Ref	1227	41.67651	70.91598	7.9	3.71	3.35	27.58	6.72	21.93	
	"	1231	"	"	"	2.44	15.34	26.92	7.57	22.01	thin band of high turbidity
	"	1233	"	"	"	1.15	4.01	7.32	8.62	21.52	
	8	1300	41.66207	70.91776	7.3	1.50	9.32	29.45	7.35	20.94	~500' from debris Removal
	"	1302	"	"	"	2.43	12.23	29.47	7.24	20.90	"
300's	Comp	1307	41.66152	70.91743	8.0	1.19	9.82	29.53	7.14	20.85	
	9	1418	41.66456	70.91603	5.7	2.30	4.45	29.38	7.98	21.26	100' from dredge / pushboat
	10	1449	41.67199	70.91579	4.9	1.76	13.64	27.11	7.70	22.11	
	near 8	1506	41.68211	70.91769	4.8	✗ 1.54	4.30	29.13	6.68	21.29	
300's	Comp	1510	41.66148	70.91734	5.8	1.67	4.12	29.15	6.83	21.25	

SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of June 23, 2014 (Week 10)

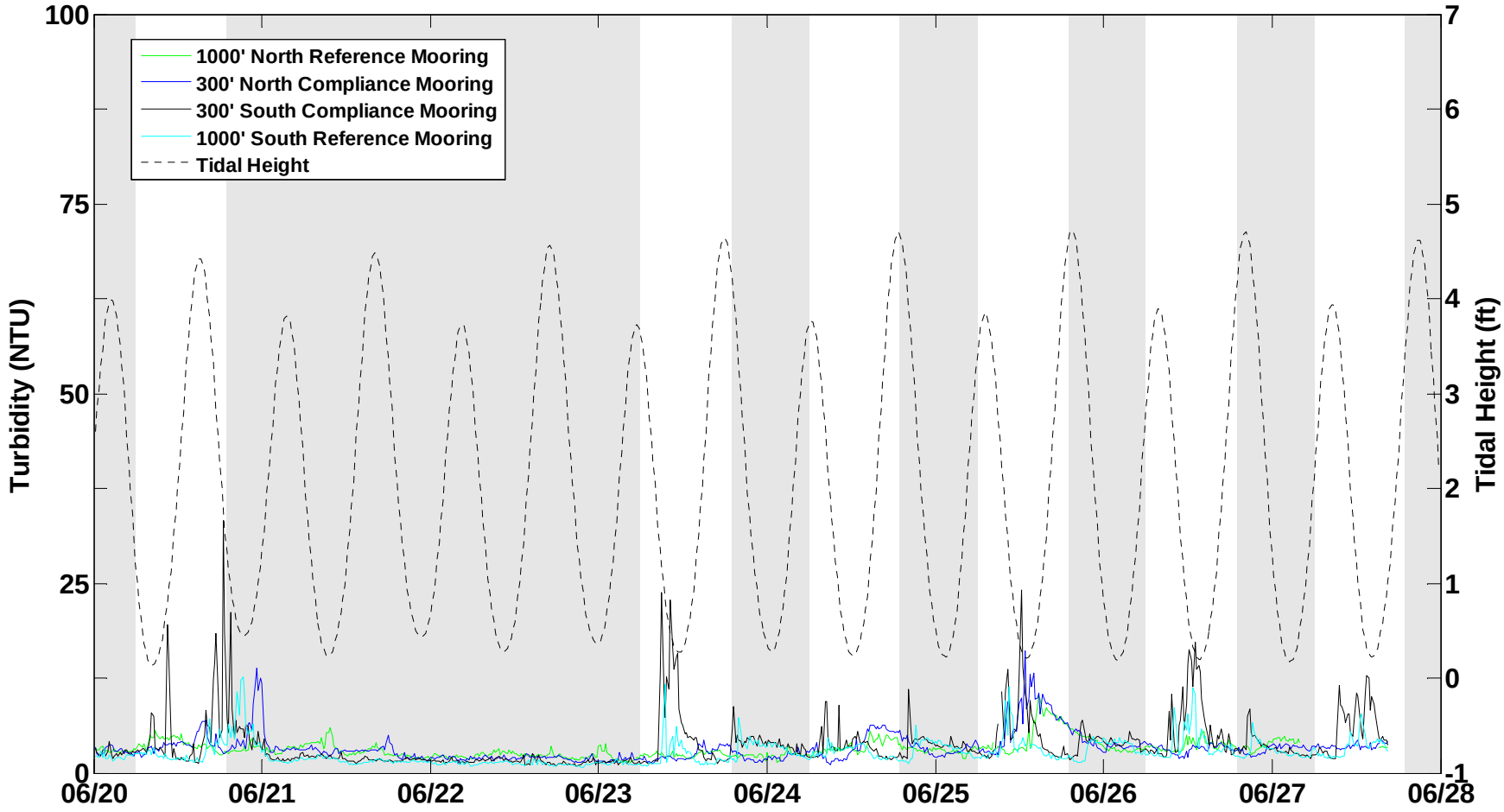
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. High and low tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

June 25, 2014:

- **Tidal stage:** Low tide at 01:22 and 12:55 EDT; high tide at 07:05 and 19:27 EDT.
- **Dredge activity:** Debris removal and afternoon dredging in Area R. Morning dredging in Area O. Late morning and early afternoon dredging in Area P.
- **Monitoring activity**: Week 10, Level I monitoring. Monitored ebb tide through low slack water and into the flood tide.
- **Fishery and Wildlife Observations:** Occasional fish were observed jumping in all monitoring areas.
- **Results summary:** Readings collected at the reference locations had turbidity values of 4.35 NTU at the Northern Reference and 8.09 NTU at the Southern Reference. The slightly elevated background readings observed at the Southern Reference location was observed only at the near bottom depths (within 2 feet of the sediment water interface). Turbidity throughout the rest of the water column at the Southern Reference site was around 5.3 NTU. Readings at the Northern and Southern reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 5.2 mg/L to 10.9 mg/L, with a general trend of increasing values throughout the day. Turbidity values at the compliance transects were low (<15 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to the debris removal and dredging activity. Turbidity values around area O showed a well-defined, low-level turbidity signature of 15-20 NTU within 300-400 ft of the work area. Turbidity dropped off sharply beyond that distance. Turbidity values in areas R and P generally ranged from 10 to 20 NTU during the ebb tide, with one observed reading of 26.5 NTU near the area R dredge boundary. During the flood tide, Turbidity readings were slightly higher, with 15 to 30 NTU readings observed in areas P and R.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Note: The communications were lost with YSI on the 1000' North Reference Mooring at 04:15 on 6/27/2014. A team was sent down that afternoon to assess the communication problem, which was determined to be a leaky connector on the YSI. The connector was cleaned and tightened and communications were restored at 14:45.



Battelle

Daily Field Summary Sheet for Water Quality Monitoring

Date: 25-June-2014 Weather: Overcast South wind 10-15

Tides:

low	@ 1:22
high	@ 07:05
low	@ 12:55
high	@ 19:27

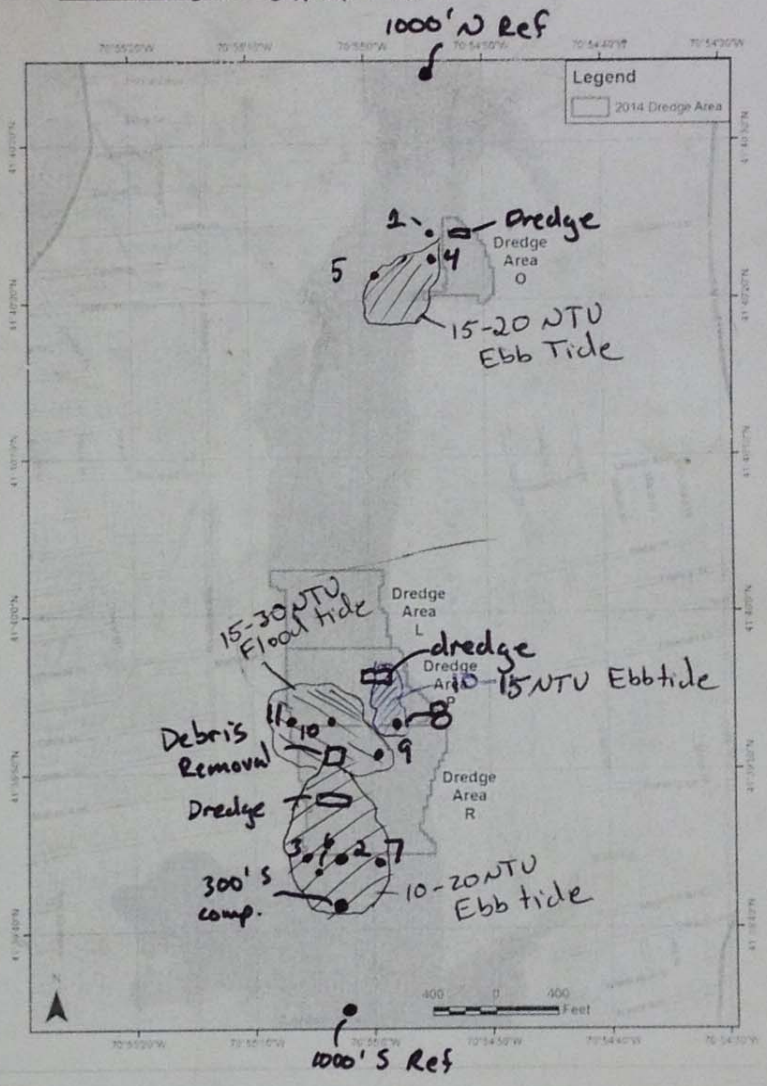
Monitoring Period:

From: 0800 To: 1510

Tidal Stage: HWS Ebb LWS Flood

Dredging Activity:

Dredging Area O until ~11:00
Debris Removal Area R
Dredging Area R
Dredging Area P until ~1300



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000'N Ref	4.35	2.72 / 6.1
4	17.2	2.01 / 5.5
300'S comp	8.61	3.97 / 4.5
7	26.52	2.99 / 7.5
1000'S Ref	8.09	9.85 / 11.8

Oil sheen/ Debris: None

Fish Passage: Occasional fish observed in all areas

Samples Collected for Laboratory Analysis – Sample IDs: None

TSS (1L) _____ Turbidity (1L) _____

Total PCB (2x1L) _____ Dissolved PCB (2x1L) _____

Toxicity (5 gal) _____ Metals (500ml) _____

Notes:

Sampling Crew: M. Walsh M. Fitzpatrick

Chief Scientist Signature: [signature]

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	Areas: O, P, and R
Dredging Description	Dredging areas O, P, and R; Debris Removal in Area R
Survey Vessel	Gale Force
Chief Scientist	M. Fitzpatrick
Sampling Technician	—
Vessel Captain	M. Walsh
Other Personnel	J. McKay, T. Randall (10:00 - 11:45)
Weather conditions	Overcast West wind ~10 becoming South 10-15

Date	25-June-2014
Page	1 of

Tide information	
High	0705
Low	12:55
High	19:27
Low	

	Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000'N	Ref	~~0818~~	41.67649	70.91607	6.1	2.72	4.35	28.23	5.17	24.50	
	1	0844	41.67332	70.91525	8.1	1.75	8.87	26.35	7.59	23.43	~100' from dredge
300's	Comp	0904	41.66150	70.91737	6.6	4.65	9.72	29.92	6.70	22.49	
	"	0906	"	"	"	2.04	6.18	29.89	6.80	22.55	
	2	0934	41.66210	70.91745	5.6	3.75	12.96	29.93	6.53	22.45	300' from dredge + Push boat
	3	0950	41.66219	70.91782	5.0	1.36	18.78	29.82	6.49	22.93	"
	4	1012	41.67288	70.91513	5.5	2.01	17.2	26.39	7.37	23.80	~200' from dredge
	5	1045	41.67281	70.91574	NR	1.86	14.27	26.85	7.44	24.05	~3-400' from dredge (edge of
	6	1104	41.66205	70.91784	4.0	1.99	6.04	29.58	6.89	23.47	500' from debris removal plume)
300's	Comp	1133	41.66150	70.91730	4.5	3.97	8.61	29.50	6.83	23.35	
	"	1134	"	"	"	1.54	5.56	29.43	6.91	23.64	
	7	1157	41.66192	70.91679	7.5	2.99	26.52	29.20	6.60	23.57	500' from debris removal
	8	1218	41.66451	70.91633	3.3	1.50	11.30	28.40	7.72	24.43	150' from dredge + Push boats
300's	Comp	1248	41.66145	70.91735	4.0	1.60	12.29	29.34	7.10	24.22	
Low tide	"	1249	"	"	"	3.22	8.58	29.60	7.30	24.15	
1000's	Ref	1308	41.65969	70.91719	11.8	9.85	8.09	29.69	6.15	22.92	
	"	1311	"	"	"	1.65	5.26	29.40	7.58	24.22	
9	~~new 8~~	1343	41.66403	70.91676	8.2	1.52	16.73	28.93	7.85	24.48	
	10	1350	41.66461	70.91726	9.2	1.93	13.48	28.78	7.97	24.79	400' from dredge + Push boats
	11	1355	41.66452	70.91788	4.5	2.70	28.90	28.99	7.70	24.97	"
300'N	Comp	1435	41.67459	70.91494	4.5	1.75	7.06	23.56	10.90	26.22	

SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of June 30, 2014 (Week 11)

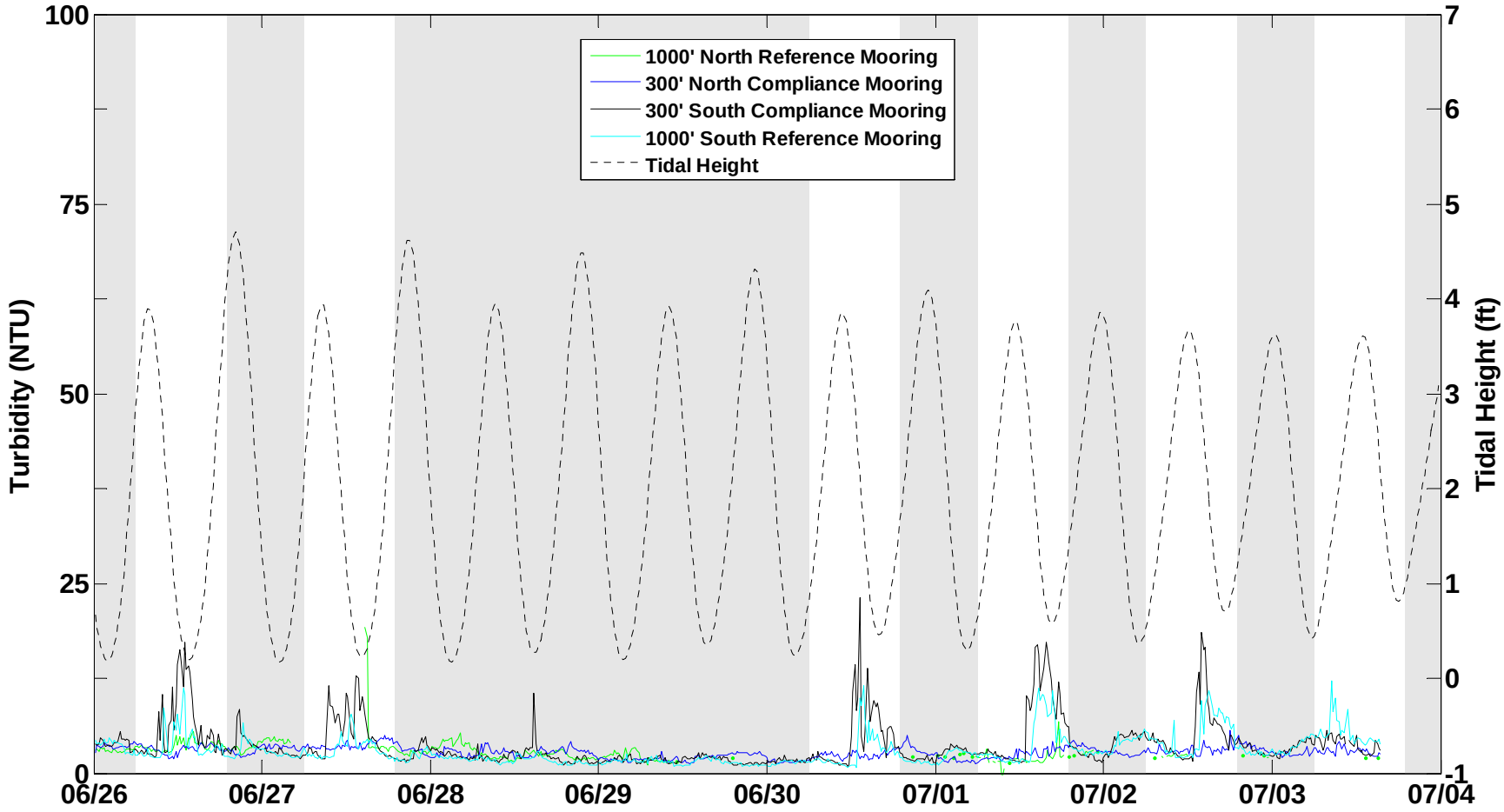
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. Flood and ebb tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

~~July 2,~~ 2014: July 1, 2014 (DTDahlen 2/23/2015)

- **Tidal stage:** Low tide at 04:29 and 16:37 EDT; high tide at 11:27 and 23:37 EDT.
- **Dredge activity:** Debris removal and dredging in Area R. Dredging in Area P.
- **Monitoring activity**: Week 11, Level I monitoring. Monitored flood tide through high slack water and into the ebb tide.
- **Fishery and Wildlife Observations:** Occasional fish were observed in Areas R, P and west of Area O.
- **Results summary:** Readings collected at the reference locations had turbidity values of 2.79 NTU at the Southern Reference and 3.43 NTU at the Northern Reference. Readings at the Northern and Southern reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 5.6 mg/L to 9.7 mg/L, with higher readings (>9.5 mg/L) observed in the low salinity surface water. Turbidity values at the compliance transects were low (<10 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to the debris removal and dredging activity. Turbidity values in areas R and P generally ranged from 10 to 15 NTU during the flood tide. During the ebb tide, Turbidity readings were slightly higher, with 10 to 20 NTU readings observed in area R.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Note: The communications between the 1000' North Reference Mooring and the YSI have been intermittent. A cable that connects the YSI to the buoy will be replaced on Monday July 7.



Battelle Daily Field Summary Sheet for Water Quality Monitoring

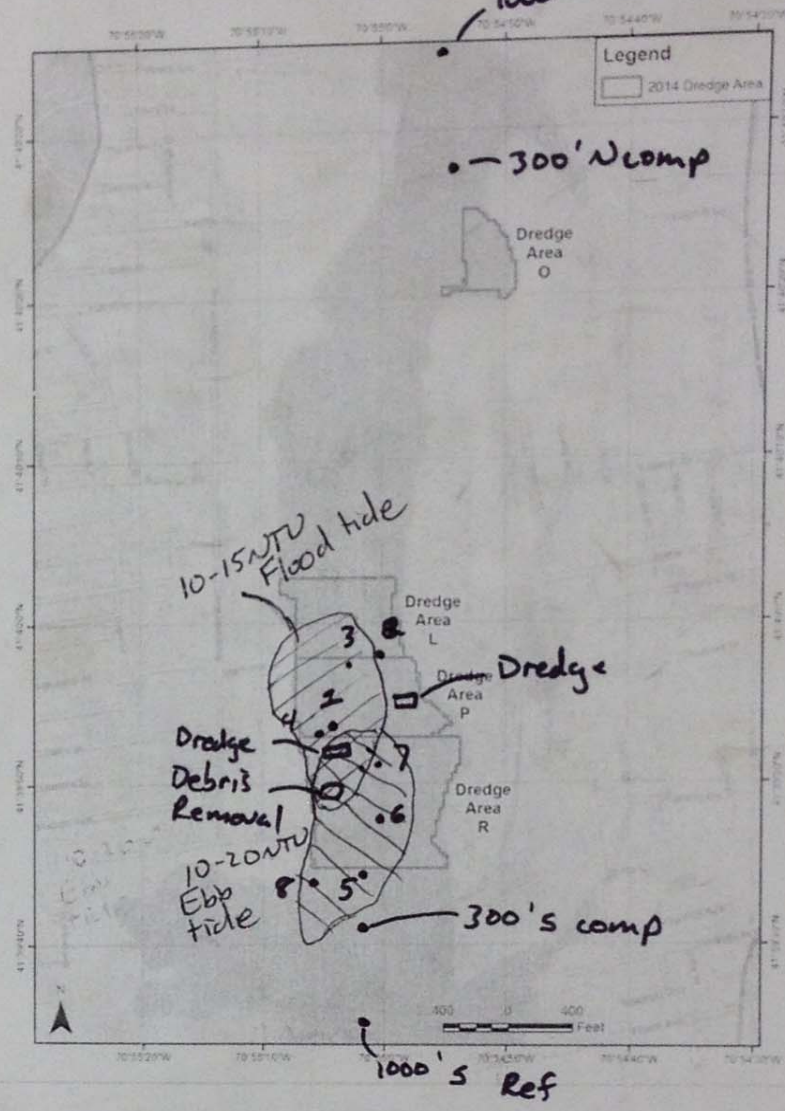
Date: 7/1/2014 Weather: Partly cloudy SW wind 10-20kts

Tides:
low @ 04:29
high @ 11:27
low @ 16:37

Monitoring Period:
From: 08:00 To: 1445

Tidal Stage: (HWS Ebb) LWS (Flood)

Dredging Activity:
Dredging Area R
Debris Removal Area R
Dredging Area P



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000's Ref	2.79	1.80/12.5
1	11.54	1.59/6.8
3	10.08	1.85/13.0
1000'N Ref	2.80	1.85/7.0
6	15.5	1.30/12.8
300'S comp	9.83	1.67/6.9

Oil sheen/ Debris: None

Fish Passage: fish observed in Areas P, R + west of area O

Samples Collected for Laboratory Analysis – Sample IDs: None
TSS (1L) _____ Turbidity (1L) _____
Total PCB (2x1L) _____ Dissolved PCB (2x1L) _____
Toxicity (5 gal) _____ Metals (500ml) _____

Notes:

Sampling Crew: Sam Guimarães Matt Fitzpatrick
Chief Scientist Signature: Matthew Fitzpatrick

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	Areas R + P
Dredging Description	Debris Removal Area R
Survey Vessel	Gale force
Chief Scientist	M. Fitzpatrick
Sampling Technician	—
Vessel Captain	Sam Guimaraes
Other Personnel	—
Weather conditions	Partly cloudy clearing SO wind 10 increasing to 20 kts

Date	7/1/2014
Page	1 of 1

Tide information	
High	
Low	04:29
High	10:27
Low	16:37

	Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000's	Ref	0813	41.65966	70.91711	12.5	1.80	2.79	30.13	6.22	23.94	
	1	0847	41.66492	70.91811	6.8	1.59	11.54	29.18	5.85	24.69	50-75' from dredge
	"	0855	"	"	"	5.50	5.10	29.80	6.15	24.40	
300'N comp		0921	41.67464	70.91501	6.2	3.32	3.06	28.50	6.03	25.31	
	2	1013	41.66633	70.91682	7.3	1.50	3.95	29.90	6.58	24.93	~200' from dredge
	3	1029	41.66620	70.91765	13.0	1.85	10.08	30.04	6.41	25.114	~400' from dredge
	"	1033	"	"	"	4.45	7.85	30.10	6.11	24.47	"
	"	1035	"	"	"	8.18	5.06	30.28	6.10	24.18	"
	4	1108	41.66480	70.91802	7.9	1.62	11.21	30.09	6.20	24.98	~60' from dredge + push boat
300'N comp		1131	41.67466	70.91503	9.0	1.78	2.69	26.60	9.73	26.10	
1000'N Ref		1149	41.67650	70.91608	7.0	5.27	3.43	28.94	5.60	25.88	
	"	1151	"	"	7.0	1.89	2.8	~~26.17~~ 25.95	9.54	26.06	
	5	1223	41.66213	70.91737	8.0	1.22	5.21	30.34	6.89	24.80	400' from debris Removal
	6	1234	41.66321	70.91673	12.8	1.30	15.50	30.28	6.51	24.77	300' " " "
300's comp		1256	41.66153	70.91744	6.9	1.67	9.83	30.30	6.48	24.63	
	"	1258	"	"	"	5.51	10.36	30.32	6.19	24.37	
	7	1345	41.66392	70.91687	9.8	2.06	4.68	30.12	7.07	25.46	
	"	1349	"	"	"	9.03	12.07	30.25	5.82	24.45	~75' from dredge + push boat
	8 Ø	1415	41.66190	70.91787	4.9	1.99	21.26	30.16	6.38	25.30	~500' from dredge + push boat
300's comp		1435	41.66153	70.91738	5.5	2.03	5.64	30.15	7.19	25.45	

DRAFT SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of July 7, 2014 (Week 12)

All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. Flood and ebb tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

Dredging was shut down for the holiday starting at noon on July 3. The monitoring plan for July 7 was to collect background readings in the morning prior to dredge startup, and then track active dredging in the afternoon. Issues resulting from the July 4th storm resulted in a delay of dredge startup until July 8. Once this was decided, the WQ monitoring team discontinued monitoring mid-day on July 7 and resumed monitoring of the active dredging on July 11. Both July 7 and July 11 are reported here.

July 7, 2014:

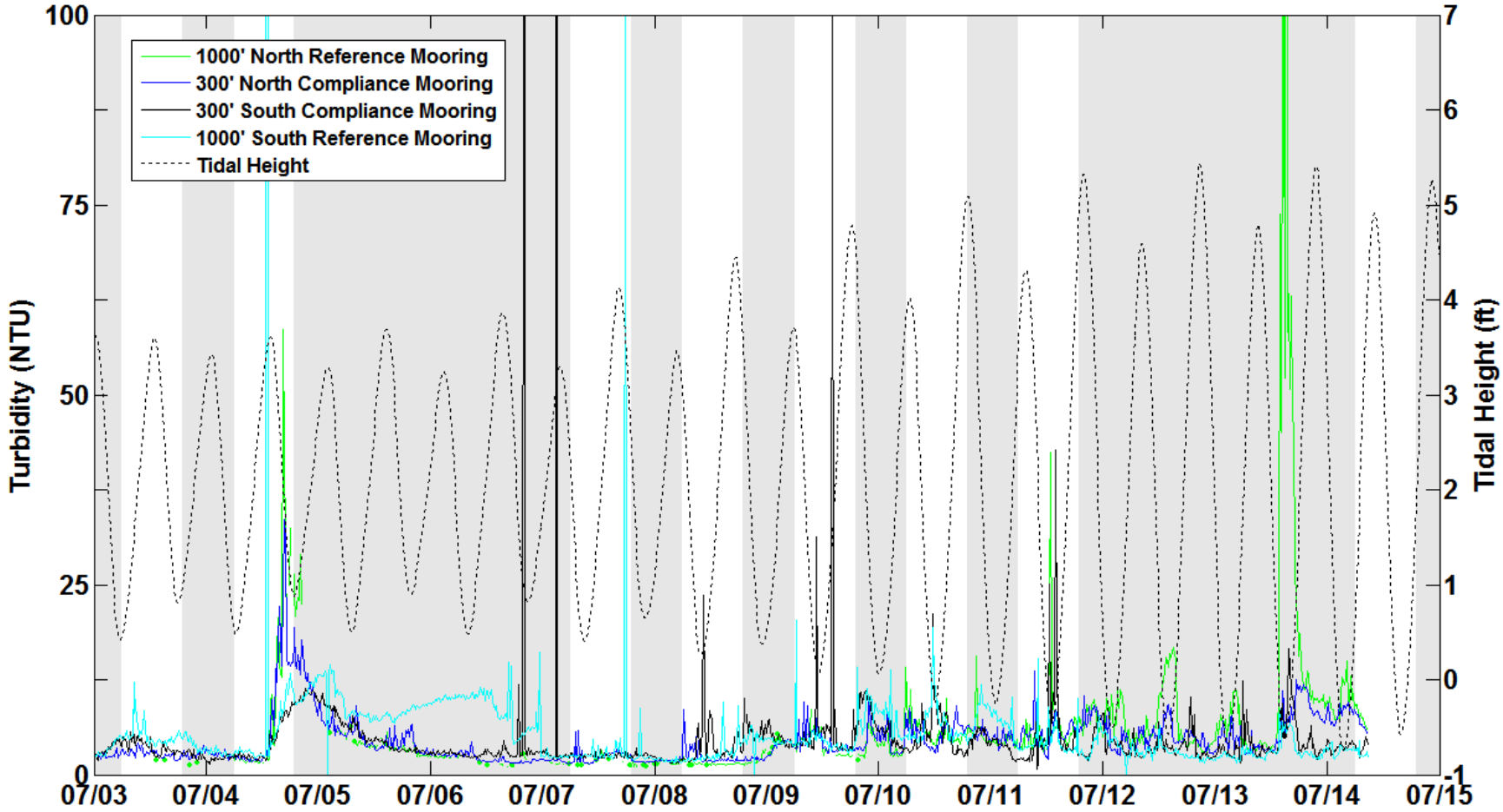
- **Tidal stage:** Low tide at 08:44 and 21:41 EDT; high tide at 03:53 and 16:26 EDT.
- **Dredge activity:** No active dredging.
- **Monitoring activity**: Week 12, Level I monitoring (half day of background monitoring) monitored flood tide.
- **Fishery and Wildlife Observations:** None observed. Strong breeze and chop limited ability to see fish.
- **Results summary:** Readings collected at the reference locations had turbidity values of 2.76 NTU at the Southern Reference and 2.76 NTU at the Northern Reference. Reported turbidity values represent a 30 second average of instantaneous readings. Readings were collected throughout the entire (non-active) work zone. Turbidity was low throughout the area, ranging from 1.65 to 8.75. Vertically, the highest turbidities were generally found at approximately 2 feet deep. Dissolved oxygen values throughout the survey area ranged from 4.8 mg/L to 6.8 mg/L. A large fresh water signal was still present even on the flood tide as a result of the ~10.5 inches of rain received on July 4.

July 11, 2014:

- **Tidal stage:** Low tide at 00:56 and 12:56 EDT; high tide at 07:32 and 19:56 EDT.
- **Dredge activity:** Active dredging in Area R. Two dredges switching between east and west sides
- **Monitoring activity**: Week 12, Level I monitoring (half day of active dredge monitoring) monitored ebb tide.
- **Fishery and Wildlife Observations:** Minimal fish and bird activity.
- **Results summary:** The northern reference station had a turbidity reading to 4.25 NTU. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 0.8 mg/L to 8.6 mg/L with most values between 2 and 6 mg/L. Turbidity values at the compliance transects were low (<10 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to dredging activity. Two short-lived, elevated turbidity plumes were observed. The first was during shutdown of the East dredge at approximately 10:30. Elevated turbidity was visually observed south of the dredge and then tracked with the instruments. Turbidity levels reached a peak of ~66 NTU for less than five minutes at a distance of approximately 200-300' due South from the dredge. Readings at the compliance transect were 9.2 NTU during this event. The second turbidity plume was very similar and occurred just as the West dredge was starting up at approximately 11:00. Again, elevated turbidity was visually observed south of the dredge and then tracked with the instruments. Turbidity levels reached a peak of ~45 NTU for less than five minutes at a distance of approximately 200-300' due south from the dredge. Readings at the compliance transect were 4.2 NTU during this event.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Note: Elevated turbidity was observed at all stations from July 4 to July 5. This was a result of ~10.5 inches of rain on July 4th. A few instantaneous data spikes on July 7 and July 9 appear to be related to sensor fouling. The single point nature of the readings do not suggest a real suspended sediment plume. Elevated turbidity at the 1000' Northern reference station on July 14 is the result the sensors hitting bottom at this shallow station on the extreme low spring tides this week.



Battelle — Daily Field Summary Sheet for Water Quality Monitoring

Date: 11 July 2014 **Weather:**

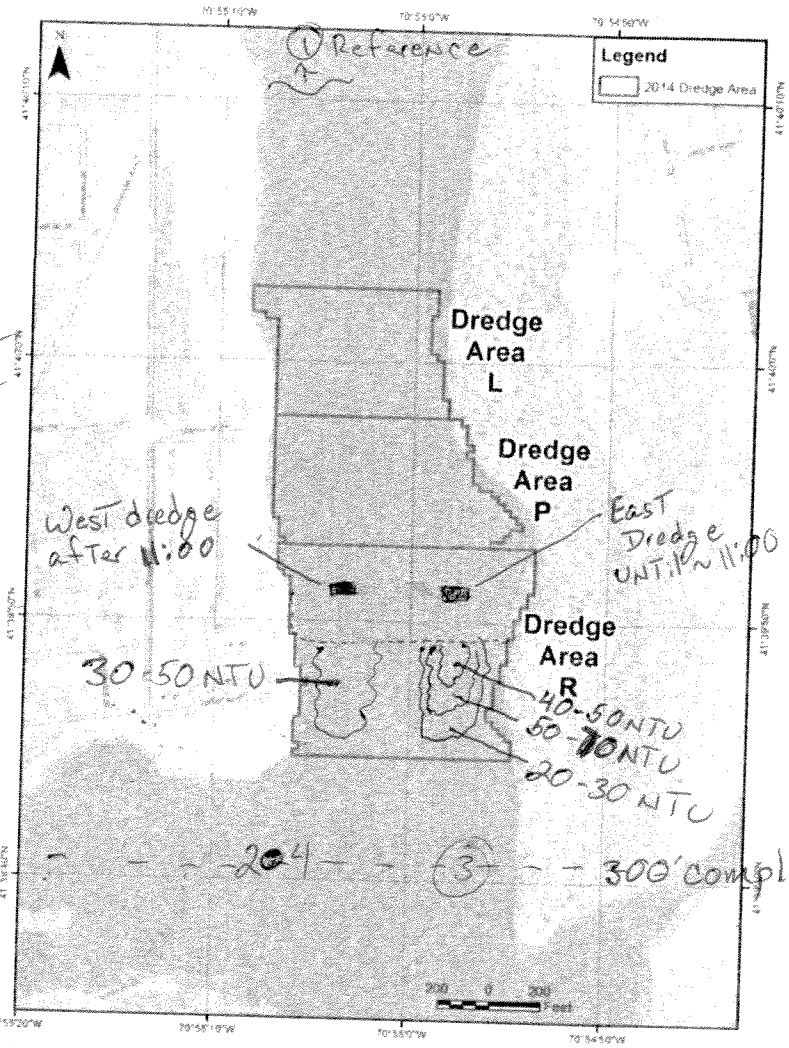
Tides:

High	4.08	@ 07:32
Low	-0.48	@ 12:56
High	5.04	@ 19:56

Monitoring Period:
From: 08:30 **To:** 12:00

Tidal Stage: HWS/Ebb LWS Flood

Dredging Activity:
Before 11am dredging AREA R East
After 11am dredging AREA R West



Turbidity Summary

	Location	Turbidity (NTU)	Sensor/water Depth (ft)
(1)	1000' North Reference	4.25	2.38/ 6.2'
(2)	300' South Compliance	8.46	2.03/ 5.9'
300'	South Compliance	9.17	2.54/ 4.0'
(4)	300' South Compliance	4.23	1.98/ 3.1

Oil sheen/ Debris:
Some oil sheen following 'Backflush' of eastern dredge at ~10:30. All contained by oil boom

Fish Passage: minimal fish and bird activity

Samples Collected for Laboratory Analysis – Sample IDs:

TSS (1L) **Turbidity (1L)**
Total PCB (2x1L) **Dissolved PCB (2x1L)**
Toxicity (5 gal) **Metals (500ml)**

Notes: At both dredge locations there were Turbidity plumes of 30-50NTU (and up to 70NTU at east) that were short-lived (<30 min) and limited to a distance of ~100' from the dredge.

Sampling Crew: Alex Mansfield, Ray Shield
Chief Scientist Signature:

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	AREA R
Dredging Description	Dredging, NO debris removal, switching between E+W
Survey Vessel	CRE JON Boat
Chief Scientist	Alex Mansfield
Sampling Technician	—
Vessel Captain	Ray Shield
Other Personnel	—
Weather conditions	partly cloudy,

Date	11 July 2014
Page	1 of 1

Tide information		
High	07:32	4.08'
Low	12:56	-0.48'
High	19:56	5.04'
Low		

	Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
Reference	1000' North	08:41	41.67637°	70.91603°	6.2'	2.38	4.25	23.7	1.02	24.2	
NorthEdge	of Area R	09:26	41.66563°	70.91656°	5.3'	2.36	4.86	22.8	0.83	24.2	AT edge of oil boom
Compliance	300' South	09:37	41.66141°	70.91750	5.9'	2.03	8.46	21.4	3.87	23.9	Ebb Tide Compliance
SouthEdge	of Area R	10:14	41.66384°	70.91611	5.5	2.08	4.10	25.2 22.2	4.21	24.2	AT oil boom
	↓ EAST	10:25	41.66326°	70.91681	6.6	2.93	6.02	24.5	2.65	24.0	↓
Drifting	South from	10:30	41.66325°	70.91667		2.99	7.89	24.1	2.67	24.1	
	Dredge	10:34	41.66335	70.91634		2.08	4.19	19.02	5.29	24.7	
		10:35	41.66352	70.91619		1.69	47.1	20.8	4.61	25.19	Backflushed dredge
		10:37	41.66328	70.91674		1.49	66.1	18.9	5.33	25.32	Created short-lived elevated
	↓	10:38	41.66307	70.91618		1.02	28.2	18.8	6.06	25.5	NTU plume
AT edge of	Area R EAST	10:46	41.66372	70.91608		1.70	3.70	22.48	3.95	24.9	AT oil Boom
Drifting		10:48	41.66357	70.91608		1.90	3.93	21.32	3.76	25.3	plume diminished
South		10:50	41.66341	70.91614		2.08	3.93	21.47	4.45	25.0	↓
	↓	10:52	41.66300	70.91634		2.47	3.01	24.16	3.43	24.06	
mpliance 300'	Due South		41.66145	70.91624	4.0'	2.54	9.17	23.61	4.14	24.3	
ıthEdge of	Area R West	11:15	41.66326	70.91768		1.35	33.9	22.27	2.82	24.8	short lived plume
Drifting		11:25	41.66322	70.91768		1.38	44.7	21.57	2.46	25.2	within 200' of
South		11:27	41.66304	70.91762		1.45	39.2	21.67	2.66	25.1	active dredging
of R	↓	11:29	41.66289	70.91762		1.46	25.7	19.7	3.36	25.7	↓
	↓	11:30	41.66246	70.91776		1.39	4.25	17.6	8.6	25.9	
	↓	11:45	41.66242	70.91779		2.04	3.02	24.09	2.4	24.3	
mpliance 300'		12:00	41.66134	70.91750	3.1	1.98	4.23	20.8	5.6	24.7	AT Compliance due South of dredge

Battelle — Daily Field Summary Sheet for Water Quality Monitoring

Date: 7 July 2014 **Weather:** Overcast, 75°, S wind 10-20

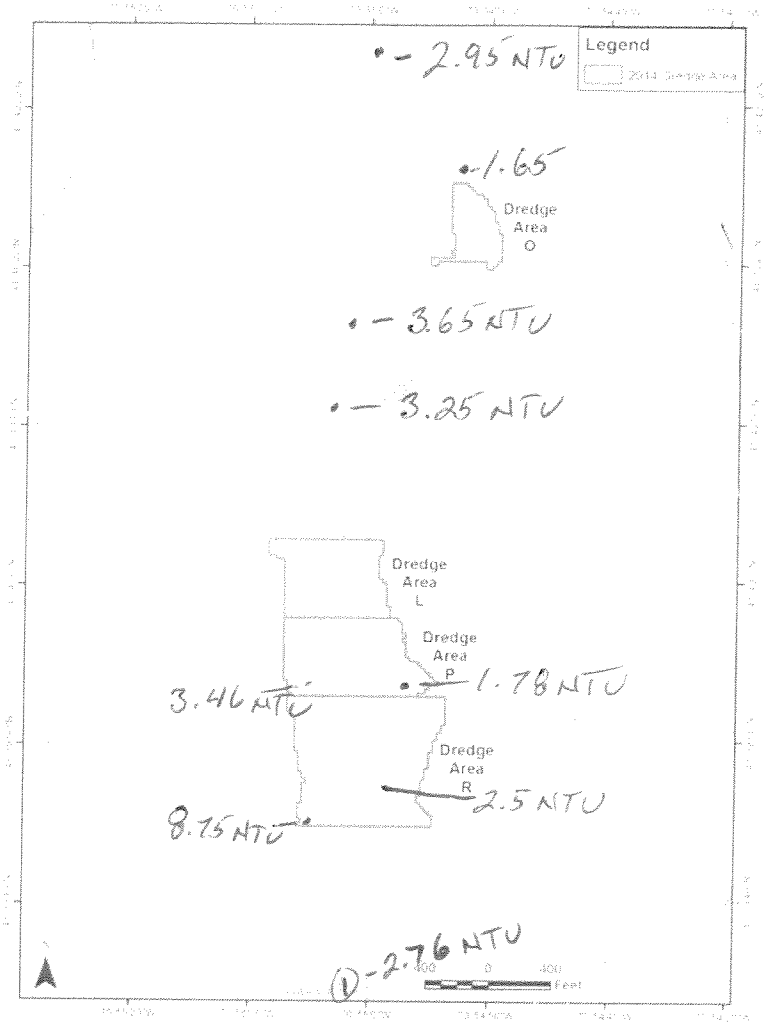
Tides:

0.92 m	@ 03:53	High
0.08 m	@ 08:44	low
1.17 m	@ 16:26	High

Monitoring Period:
From: 08:30 **To:** 12:00

Tidal Stage: HWS Ebb LWS (Flood)

Dredging Activity:
No Active dredging. On break for July 4 weekend.



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
① 1000' South	2.76	1.9/10.5

Oil sheen/ Debris:
None

Fish Passage: None Observed. Strong breeze + chop limited visibility on water

Samples Collected for Laboratory Analysis – Sample IDs:

TSS (1L)		Turbidity (1L)	
Total PCB (2x1L)		Dissolved PCB (2x1L)	
Toxicity (5 gal)		Metals (500ml)	

Notes: Dredging was on hold from July 3 - July 7 for holiday. Planned to capture background readings throughout work area in AM, followed by monitoring dredge start up in PM. After learning that start up was not occurring until July 8, monitoring was discontinued. Another monitoring day will be conducted this week.

Sampling Crew: Alex Mansfield, Ray Sheild

Chief Scientist Signature:

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	No Dredging. Conducted background readings
Dredging Description	—
Survey Vessel	CRE Jon Boat
Chief Scientist	Alex Mansfield
Sampling Technician	—
Vessel Captain	Ray Shield
Other Personnel	—
Weather conditions	Overcast, 75°

Date	7-July-2014
Page	1 of 1

Tide information		
High	03:53	0.92m
Low	08:44	0.08m
High	16:26	1.17m
Low		

Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1,000' SOUTH Reference	09:47	41 39.574	70 55.026	10.5'	1.9'	2.76	7.01	6.28	21.8	CONSISTENT NTUs vertically
AT edge of R SOUTH	09:54	41 39.726	70 55.049	3.5'	2.1'	2.85	6.84	5.57	22.3	Prior To dredge start
1,000' North Reference	10:10	41 40.619	70 54.989	2.0'	1.8'	2.95	0.05	5.35	21.3	
300 North Buoy	10:30	41 40.491	70 54.864	3.7	1.9	1.65	0.56	6.72	21.1	
	10:42	41 40.284	70 54.996	5.2	1.9	3.65	2.16	6.81	21.9	
	10:45	41 40.185	70 55.018	6.1	2.2	3.25	5.61	6.76	21.2	
	11:01	41 39.889	70 55.112	1.8'	1.5'	3.46	0.31	5.21	22.3	
	11:11	41 39.876	70 54.918	1.9'	1.5'	1.78	0.36	5.34	22.2	
	11:29	41 39.750	70 55.085	2.0'	1.6'	8.75	0.04	4.83	21.8	
	11:40	41 39.749	70 54.926	2.0'	1.6'	2.50	0.16	5.85	22.1	

DRAFT SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of ~~June~~ 14, 2014 (Week 13)
July (DTDahlen 2/23/15)

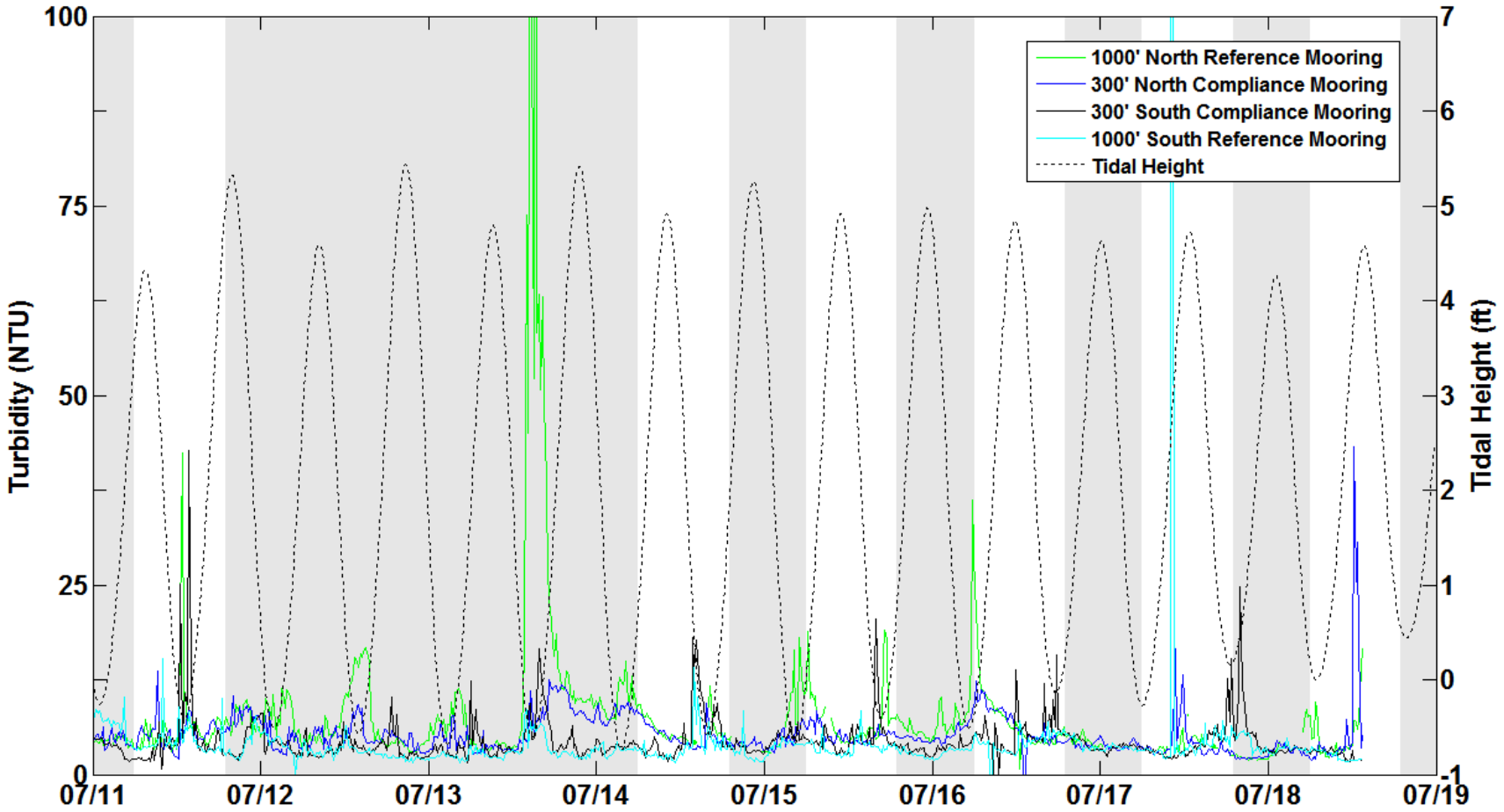
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. Flood and ebb tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

July 16, 2014:

- **Tidal stage:** Low tide at 05:07 and 17:37 EDT; high tide at 11:50 EDT.
- **Dredge activity:** Debris removal and dredging in Area R. Dredging in Area R West until ~12:30. Dredging in Area R East start ~12:30. Dredging and monitoring on hold during lightening event from ~9:00 to 11:30.
- **Monitoring activity**: Week 13, Level I monitoring. Monitored flood tide through high slack water and into the ebb tide.
- **Fishery and Wildlife Observations:** None observed
- **Results summary:** Readings collected at the reference locations had turbidity values of 5.63 NTU at the Southern Reference and 5.54 NTU at the Northern Reference. Readings at the Northern and Southern reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 3.7 mg/L to 6.6 mg/L. Turbidity values at the compliance transects were low (<15 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to the debris removal and dredging activity. Turbidity values throughout the work area were generally less that 20 NTU except for at ~25' from the active dredge were values were 45 NTU.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Note: Elevated turbidity at the 1000' Northern reference station on July 14 is the result of the sensors hitting bottom at this shallow station on the extreme low spring tides last weekend. The spike at the 1,000' south sensor on 7/18 does not appear to be indicative of a dredge-related suspended sediment plume as it is; a) on the upstream side of the operation at flood tide and b) a single elevated point reading rather than a sustained period of high turbidity readings.



Battelle — Daily Field Summary Sheet for Water Quality Monitoring

Date: 7/16/14 **Weather:** Rain South wind 10-15

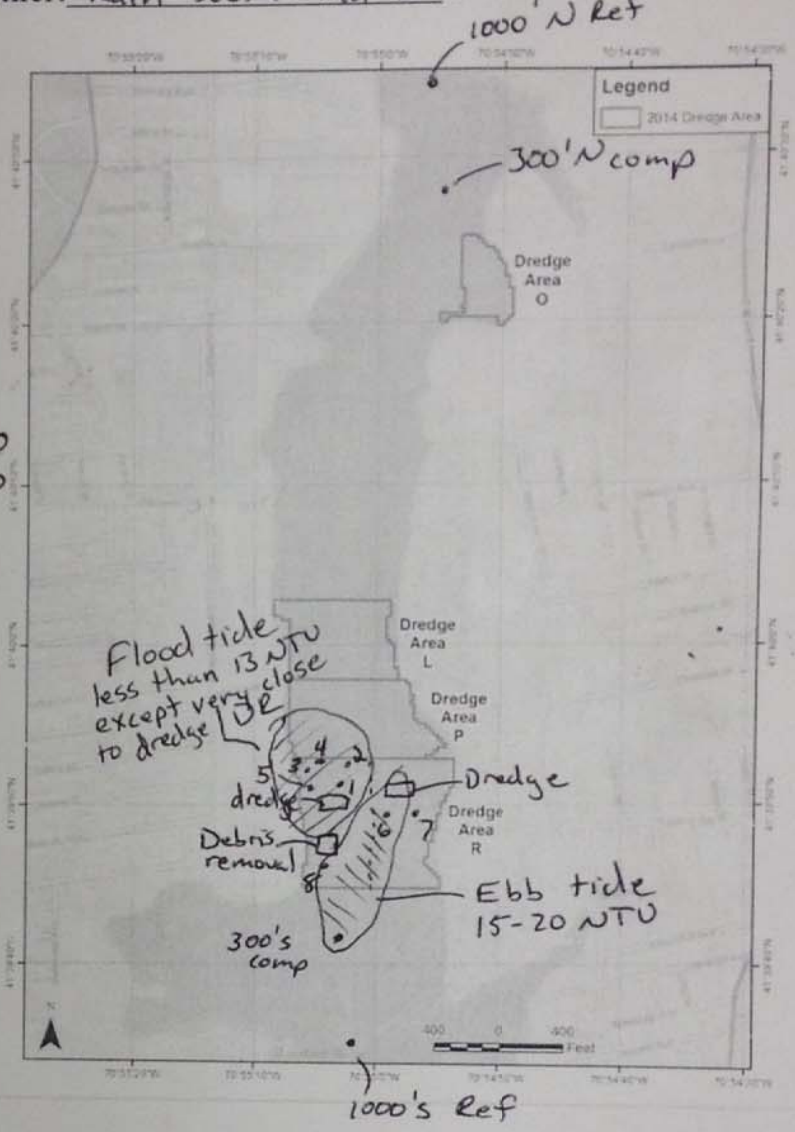
Tides:

low	@	05:07
high	@	11:50
low	@	17:37

Monitoring Period:
From: 0745 **To:** 1530

Tidal Stage: (HWS Ebb) LWS (Flood)

Dredging Activity:
Debris removal Area R
Area R west dredge until ~1230
Area R East dredge start ~1230



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000's Ref	5.63	4.43/10.8
1	8.20	4.78/8.4
4	12.23	5.35/8.9
5	45.75	2.38/10.2
① 300' ~~S~~ comp	5.46	1.47/7.1
6	21.29	9.47/12.7

Oil sheen/ Debris: None observed

Fish Passage: No fish observed

Samples Collected for Laboratory Analysis – Sample IDs: None
TSS (1L) _____ **Turbidity (1L)** _____
Total PCB (2x1L) _____ **Dissolved PCB (2x1L)** _____
Toxicity (5 gal) _____ **Metals (500ml)** _____

Notes: Called off the water due to lightning @ ~9:00 + 11:30

Sampling Crew: M. Fitzpatrick / M. Walsh
Chief Scientist Signature: Matthew Kirkpatrick

① should be 300' S comp. MKF 7/16/14

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	Area R
Dredging Description	Debris Removal + Dredging
Survey Vessel	Gale force
Chief Scientist	M. Fitzpatrick
Sampling Technician	
Vessel Captain	M. Walsh
Other Personnel	—
Weather conditions	rain Southwind ~10-15

Date	7/16/14
Page	1 of 1

Tide information	
High	—
Low	0507
High	11:50
Low	17:37

	Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000	S Ref	0812	41.65968	70.91730	10.4	4.43	5.63	25.66	4.30	24.15	
	1	956	41.66452	70.91787	8.4	4.78	8.20	25.77	4.49	24.10	100' from dredge
	2	1000	41.66471	70.91767	8.7	5.7	6.52	25.75	4.50	24.09	200' from dredge
	3	10:05	41.66456	70.91810		1.39	6.26	24.36	4.14	24.20	200' from dredge
300'	N Comp	1028	41.67463	70.91505	9.9	1.6	7.33	1.42	6.57	22.68	
	"	1029	"	"	"	4.20	5.62	17.29	5.67	23.89	
	"	1031	"	"	"	7.92	7.21	18.75	3.68	24.08	
	4	1053	41.66452	70.91797	8.9	5.35	12.23	26.01	4.54	24.07	150' from dredge
	5	1114	41.66407	70.91785	10.2	2.38	45.75	25.22	4.28	25.13	25' from dredge, 75' DR
1000'	N Ref	1223	41.67632	70.91608	7.8	1.24	5.54	2.37	6.02	22.26	
	"	1224		"	"	5.07	4.85	21.94	3.86	24.20	
300'	S comp	1353	41.66138	70.91750	7.1	1.47	5.46	18.71	5.75	24.02	
	"	1355	"	"	"	4.79	14.19	26.01	4.26	24.01	
	6	1410	41.66349	70.91702	12.7	9.47	21.29	26.49	4.26	24.06	150' from dredge
	"	1413	"	"	"	5.06	6.35	26.13	4.38	24.08	
	7	1422	41.66372	70.91618	6.8	4.52	9.66	24.63	4.42	24.08	75' from DR
	8	1505	41.66278	70.91776	4.8	2.41	15.85	22.07	4.34	24.15	150' from dredge

DRAFT SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of July 21, 2014 (Week 14)

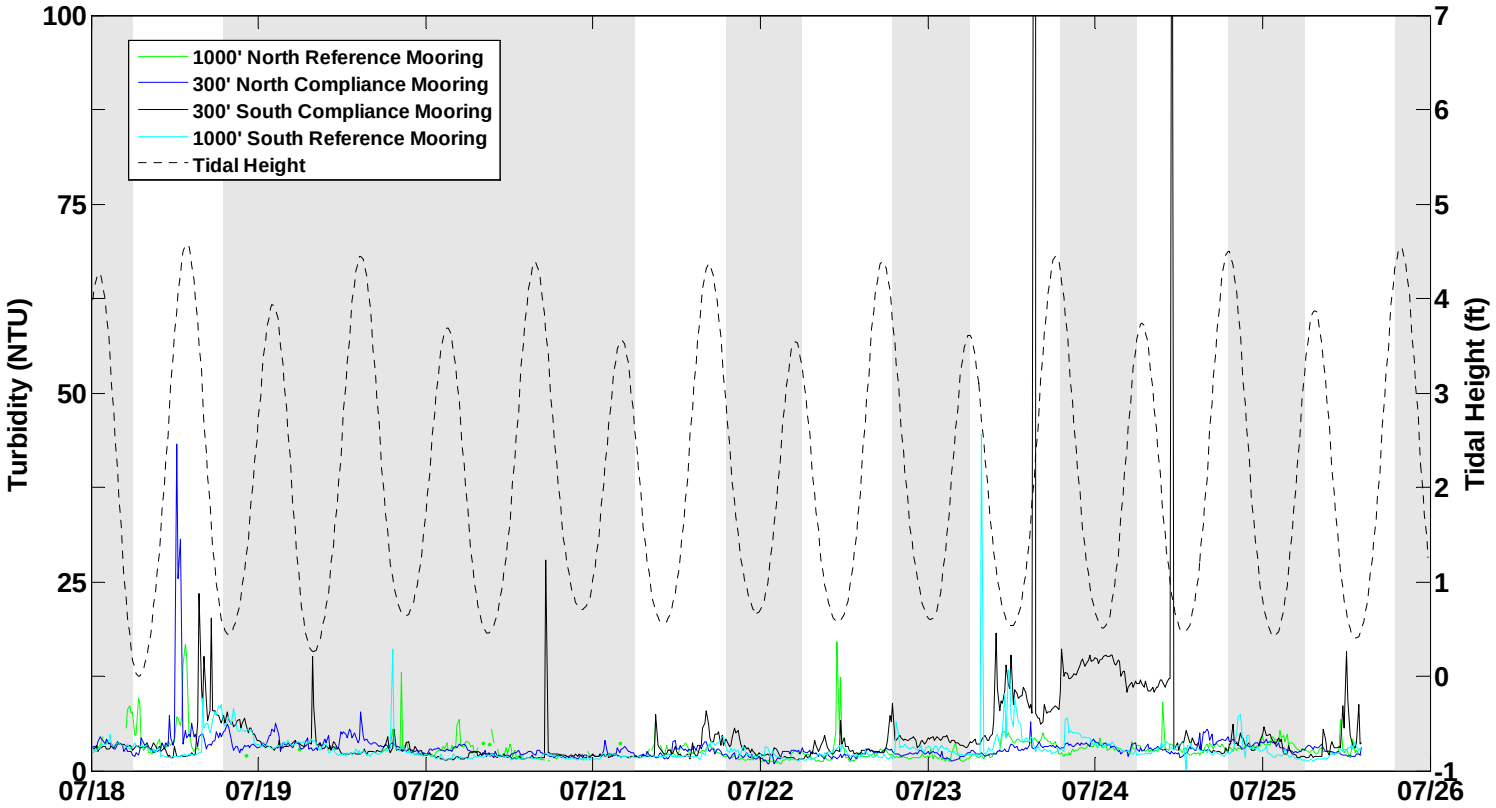
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. Flood and ebb tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

July 24, 2014:

- **Tidal stage:** Low tide at 01:07 and 12:40 EDT; high tide at 06:42 and 19:05 EDT.
- **Dredge activity:** Dredging in Area R East until ~13:00. Dredging in Area R West start ~14:00.
- **Monitoring activity**: Week 14, Level I monitoring. Monitored ebb tide through low slack water and into the flood tide.
- **Fishery and Wildlife Observations:** Fish were observed breaking throughout areas P, R and south to the 1000' South reference buoy.
- **Results summary:** Readings collected at the reference locations had turbidity values of 4.11 NTU at the Northern Reference and 3.45 NTU at the Southern Reference. Readings at the Northern and Southern reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 2.1 mg/L to 6.2 mg/L. Turbidity values at the compliance transects were low (<10 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to the debris removal and dredging activity. Turbidity values throughout the work area were generally less that 20 NTU except for at <75' from the active dredge were values were 46 NTU and 70NTU (around 40' from dredge).

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Note: Elevated turbidity at the 300' South compliance buoy do not appear to be dredge related. The 7/23 spike was associated with a temporary blockage of the sensor and the 7/24 spike occurred while the mooring was being serviced.



Battelle

Daily Field Summary Sheet for Water Quality Monitoring

Date: 7/24/14 **Weather:** Overcast light Northerly winds

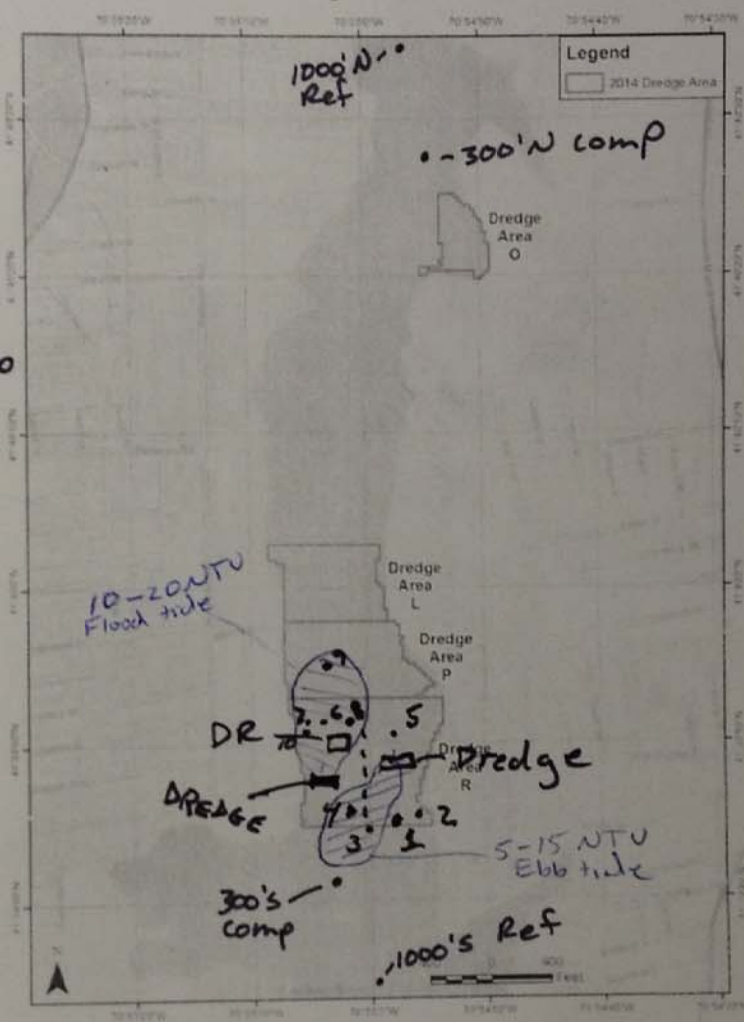
Tides:

low	@	01:07
high	@	06:42
low	@	12:40
high		19:05

Monitoring Period:
From: 0845 **To:** _____

Tidal Stage: HWS Ebb LWS Flood

Dredging Activity:
Debris Removal moved @1200 and not active
Eastern Dredge until ~ 1300
Western Dredge start ~ 1400



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000'N Ref	4.11	1.33/5.0
4	14.65	6.3/7.5
1000's Ref	3.45	3.12/11.4
6	18.92	7.28/8.3
9	10.77	4.06/9.8
10	70.3	4.02/5.4

Oil sheen/ Debris: Minor sheen observed in area R (contained by boom)

Fish Passage: Fish observed breaking in areas P, R and south to 1000's Ref

Samples Collected for Laboratory Analysis – Sample IDs: None

TSS (1L) _____ Turbidity (1L) _____
Total PCB (2x1L) _____ Dissolved PCB (2x1L) _____
Toxicity (5 gal) _____ Metals (500ml) _____

Notes: Higher turbidity observed on flood tide. 45-70 NTU observed in very close proximity to dredge (<70' from dredge).

Sampling Crew: R. Restucci M. Fitzpatrick
Chief Scientist Signature: _____

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	Area R
Dredging Description	Eastern dredge until afternoon, western dredge after 1400
Survey Vessel	Gale force
Chief Scientist	M. Fitzpatrick
Sampling Technician	—
Vessel Captain	M. Fitzpatrick
Other Personnel	R. Restucci
Weather conditions	Overcast light Northerly winds

Date	7/24/14
Page	1 of 1

Tide information	
High	—
Low	01:07
High	06:42
Low	12:40
High	19:05

Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000'N Ref	0930	41.67638	70.91602	5.0	1.33	4.11	26.08	2.77	25.73	Consistent NTU
300'N comp	1000	41.67449	70.91501	6.8	1.82	3.31	26.03	2.08	25.62	
300'S comp	1047	41.66134	70.91742	5.2	2.99	3.90	23.65	5.54	25.41	
1	1130	41.66236	70.91682	8.9	1.74	3.24	23.23	4.91	25.8	250' from dredge
2	1136	41.66264	70.91608	4.6	2.26	3.67	29.10	4.92	25.82	"
3	1242	41.66227	70.91689	7.8	5.33	6.11	25.35	3.81	24.96	300' "
4	1249	41.66261	70.91733	7.5	6.3	14.65	27.26	3.30	24.85	200'
1000's REF	1257	41.65947	70.91722	11.4	3.12	3.45	23.76	4.87	25.68	consistent NTU
5	1342	41.66456	70.91666	7.5	2.69	5.78	24.41	6.17	25.68	100' from dredge
6	1415	41.66416	70.91749	8.3	7.28	18.92	27.25	3.16	24.81	150'
6 SURFACE	1420	↓	↓	↓	1.65	7.01	24.12	5.77	25.69	↓
7	1423	41.66410	70.91811	6.9	2.95	9.70	26.13	4.40	25.31	100'
8	1433	41.66392	70.91787	8.2	6.14	16.33	27.12	3.09	24.82	100'
9	1443	41.66578	70.91776	9.8	4.06	10.77	26.96	3.83	25.67	300'
300'N COMP TO 82	1456	41.67451	70.91511	6.3	2.99	4.87	25.34	4.34	25.72	
South of 6	1520	41.66391	70.91777	6.2	3.41	46.20	24.46	5.26	25.82	60' from dredge
10	1525	41.66377	70.91803	5.4	4.02	70.30	24.58	4.88	25.77	40' from dredge

DRAFT SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of July 28, 2014 (Week 15)

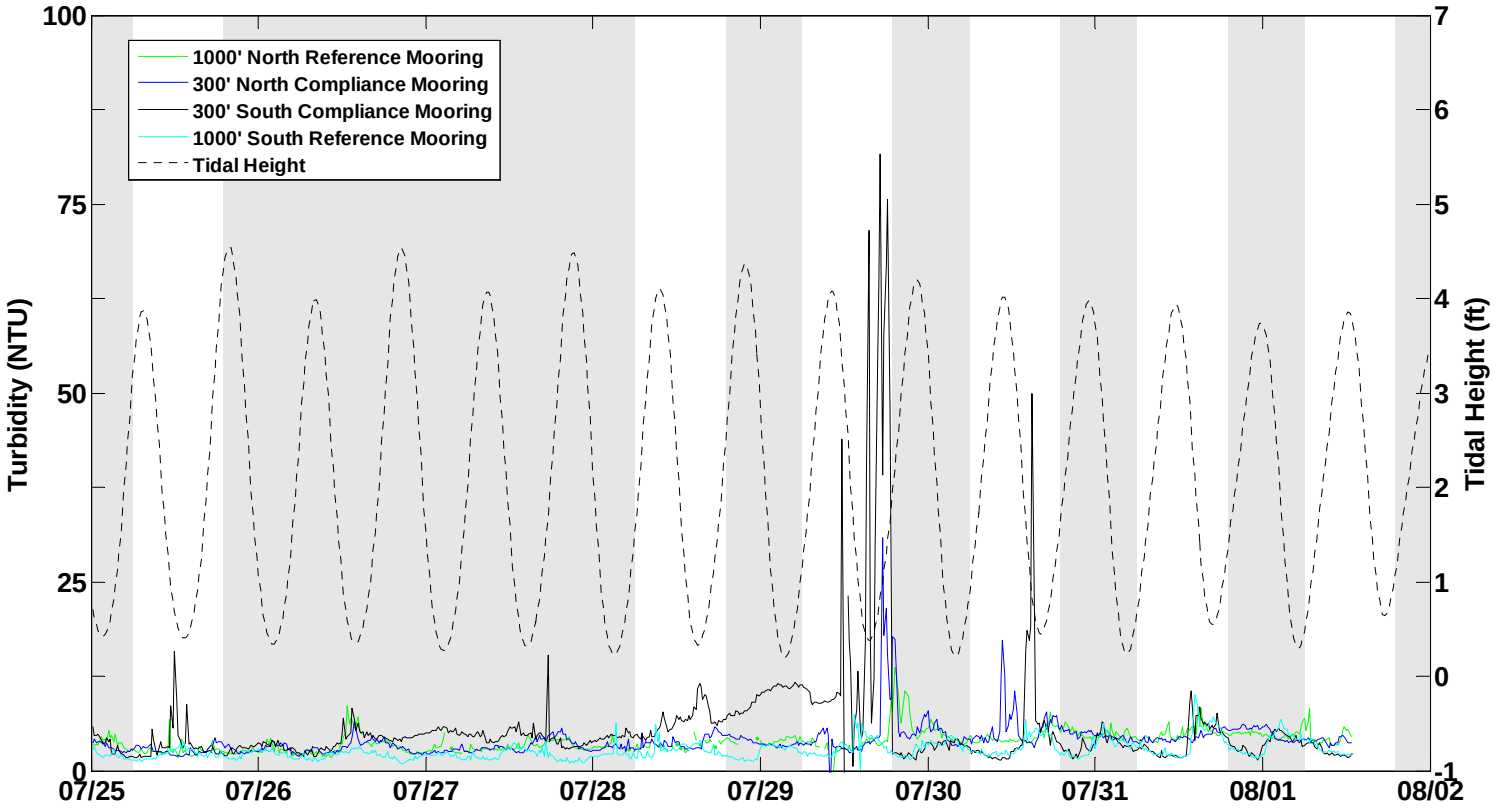
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. Flood and ebb tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

July 29, 2014:

- **Tidal stage:** Low tide at 03:29 and 15:56 EDT; high tide at 10:13 and 22:28 EDT.
- **Dredge activity:** Dredging East to West mid river in Area R and debris removal western shore of Area R (all day). Dredging North to South in Area O (morning).
- **Monitoring activity**: Week 15, Level I monitoring. Monitored ebb tide through low slack water and into the flood tide. Jacobs is expanding south of Area R and installing sheet pile so the 300' South Compliance buoy was moved to approximately 425' south of Area R.
- **Fishery and Wildlife Observations:** Numerous small and medium fish observed breaking surface throughout the study area.
- **Results summary:** Readings collected at the reference locations had turbidity values of 4.01 NTU at the Northern Reference and 2.7 to 3.7 NTU at the Southern Reference. Readings at the Northern and Southern reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 4.9 mg/L to 11.4 mg/L. Turbidity values at the compliance transects were low (<10 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to the debris removal and dredging activity. Turbidity values throughout the work area were less that 20 NTU.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Note: Elevated turbidity readings at the 300' South compliance buoy on 7/29 do not appear to be dredge related; the spikes were temporary, occurred during a flood tide and could be associated with a temporary blockage or vessel activity.



Battelle — Daily Field Summary Sheet for Water Quality Monitoring

Date: 7/29/14 **Weather:** Sunny/NW @ 10 to SW @ 10-15 (4.0)

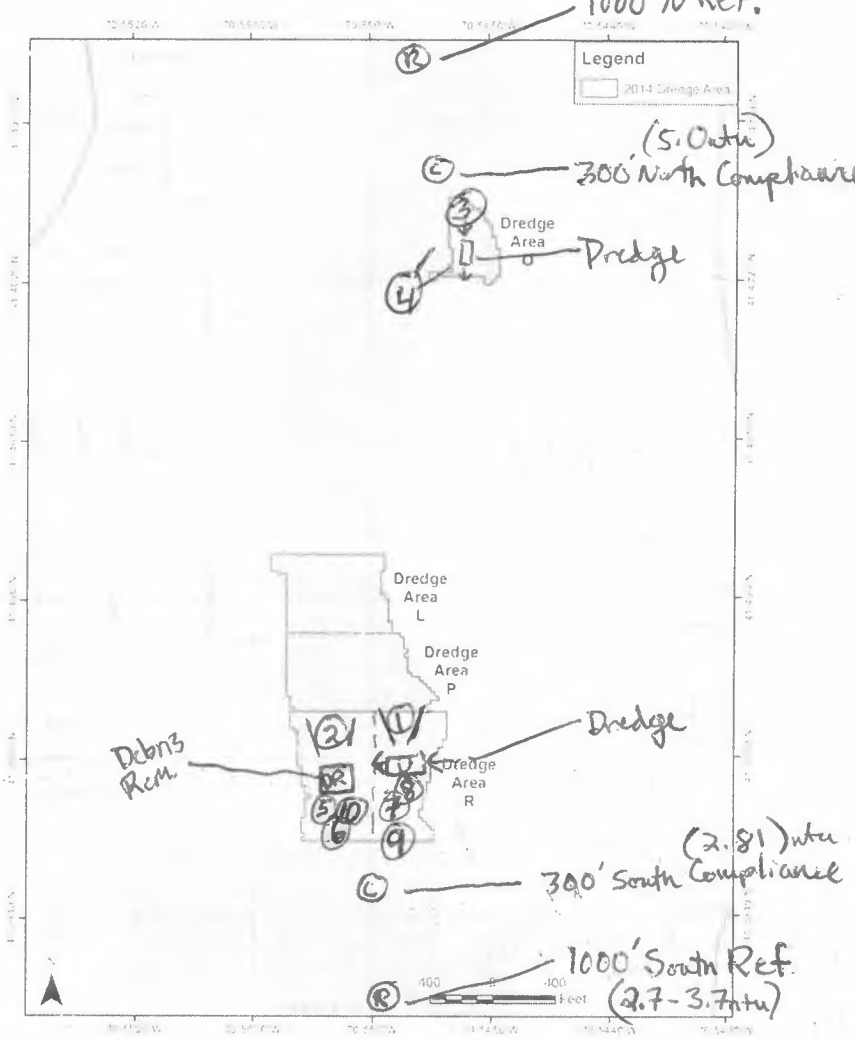
Tides:

4.1	@	1012
0.7	@	1535
4.2	@	1027pm

Monitoring Period:
From: 0730 **To:** 1515

Tidal Stage: (HWS) (Ebb) LWS (Flood)

Dredging Activity:
East to West mid River Area R
Debris Removal Western Shore Area R
North to South Area O (morning)



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000' South Ref	2.7-3.7	1.5/12.3/13.2'
300' North Comp	5.03	1.7/8.5'
1000' north Ref	4.01	1.8/6.7'
300' South Comp	2.81	1.6'/7.3'

Oil sheen/ Debris:
Very Slight sheen associated with dredge in Area R, contained by oil boom

Fish Passage: numerous small and medium fish seen breaking surface

Samples Collected for Laboratory Analysis – Sample IDs:
TSS (1L) _____ **Turbidity (1L)** _____
Total PCB (2x1L) _____ **Dissolved PCB (2x1L)** _____
Toxicity (5 gal) _____ **Metals (500ml)** _____

Notes: 300' South Compliance buoy moved to approx 425' south of Area R. Jacobs is expanding south of Area R installing sheet Pile. This move is likely Temporary.

Sampling Crew: N. Walsh, F. Guimaraes
Chief Scientist Signature: Nikki Walsh

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	Area O (south) Area R (mid River) Debris Removal Area R (western shore)
Dredging Description	East to west middle Area R / North to South
Survey Vessel	Gale Force
Chief Scientist	Mike WALSH
Sampling Technician	Sam Guimaraes
Vessel Captain	Mike Walsh
Other Personnel	—
Weather conditions	Sunny/wind NW @ 10 switching SW @ 10-15

Date	7/29
Page	1 of 1

Tide information	
High	4.1' @ 1012
Low	0.4 @ 1535
High	
Low	

045

	Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000' South Ref		0803	41.65955	-70.91711	13.2	12.39	3.70	28.81	5.74	23.8	Bottom
"		0810	"	"	13.2	1.59	2.73	27.83	6.35	23.74	Surface
100' North of Dredge		0829	41.66437	-70.91634	8.7	5.68	4.77	28.23	5.58	24.00	Area R
(1) 100' North of Dredge		0846	41.66431	-70.91655	8.9	1.61	10.78	25.52	6.53	23.68	Push boat holding Dredge
150' North of Debris R		0907	41.66392	-70.91763	7.5	2.95	5.19	28.07	5.91	24.38	Area R Debris Removal
(2) (3) 150 North of Dredge O		0936	41.67336	-70.91502	8.6	1.53	4.85	22.24	7.76	24.49	Area O
360' North Compliance		0944	41.67447	-70.91499	8.5	1.71	5.03	25.50	6.59	24.92	Surface
1000' North Ref		1020	41.67636	-70.91601	6.7	1.83	4.01	25.61	5.26	25.02	surface
150' south Dredge O		1054	41.67244	-70.91526	7.4	1.72	15.45	26.22	4.89	24.81	Area O
(4) 300' south Dredge O		1102	41.67224	-70.91555	6.0	1.79	8.54	26.01	4.94	24.94	Area O
(5) 150' South Debris Rem		1124	41.66225	-70.91763	6.0	1.70	5.73	24.54	8.61	24.42	Area R Debris Removal
300' south Compliance		1140	41.66138	-70.91737	7.3	1.63	2.81	24.78	9.31	24.21	
Serviced 300's mooring											
Moved 300' South Mooring			41.66107	-70.91752							SEE Comments in Field Summary
(6) 200' south of Debris Rem		1336	41.66207	-70.91754	5.0	1.92	9.23	25.42	10.03	25.62	Area R
(7) 200' south of Dredge		1342	41.66264	-70.91654	8.9	2.34	7.50	26.13	8.18	25.27	Area R
(8) 150' south of Dredge		1434	41.66302	-70.91685	10.0	1.90	4.87	23.31	10.58	26.10	Area R
(8) 150' south of Dredge		1439	"	"	10.0	4.83	14.92	27.05	6.90	24.79	Area R
(9) 300' south of Dredge		1450	41.66258	-70.91650	9.6	4.34	5.32	27.27	6.95	24.83	Area R
(10) 150' south of Debris Rem		1505	41.66224	-70.91771	4.8	1.52	6.56	23.54	11.36	26.20	Area R

DRAFT SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of August 4, 2014 (Week 16)

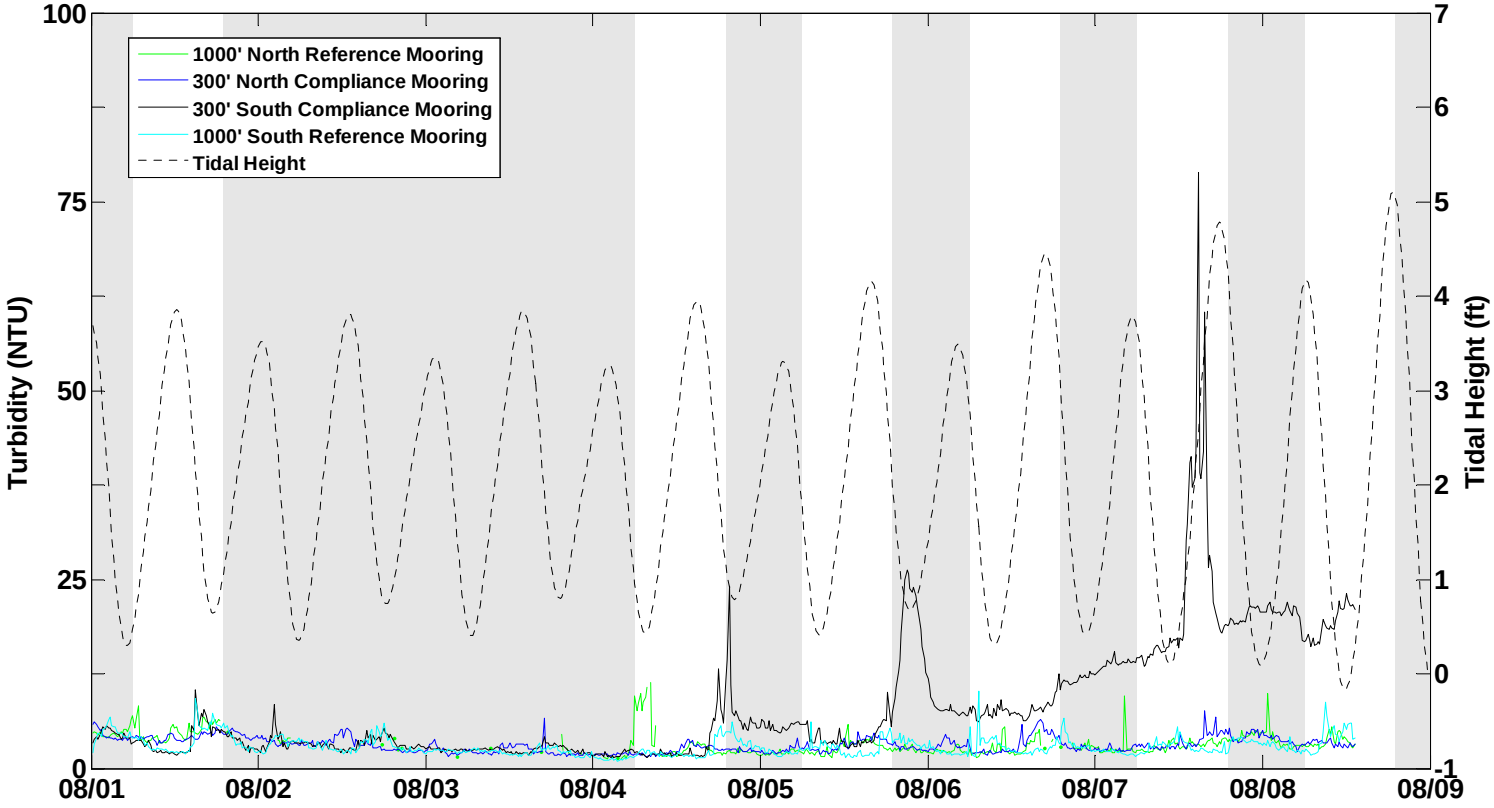
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. Flood and ebb tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

August 4, 2014:

- **Tidal stage:** Low tide at 07:26 and 20:17 EDT; high tide at 02:17 and 14:54 EDT.
- **Dredge activity:** Dredging East to West Area R near Coffin Street CSO and eastern portion of Area R. Debris removal southeast corner of Area R.
- **Monitoring activity**: Week 16, Level I monitoring. Monitored flood tide through high slack water and into the ebb tide.
- **Fishery and Wildlife Observations:** Numerous fish observed breaking surface harbor wide.
- **Results summary:** Readings collected at the reference locations had turbidity values of 4.5 to 5.1 NTU at the Northern Reference (actual background reading taken approximately 1500' north because the 1000'North Reference area was not accessible in the afternoon due to pipeline) and 2.2 to 3.0 NTU at the Southern Reference. Readings at the Northern and Southern reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 1.9 mg/L to 7.4 mg/L. Turbidity values at the compliance transects were low (<5 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to the debris removal and dredging activity. Turbidity values throughout the work area were less that 22 NTU.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Note: The steadily increasing values (including during non-dredging overnight hours) at the 300'South compliance buoy suggest that the sensor may becoming fouled; the sensor will be checked next week. The spike at the 300'South compliance buoy on 8/7 does not appear to be dredge related as it is upstream of the operation at flood tide.



Battelle — Daily Field Summary Sheet for Water Quality Monitoring

Date: 8/4/14 **Weather:** Partly Cloudy / wind calm <5 west/switching to SW 10

Tides:

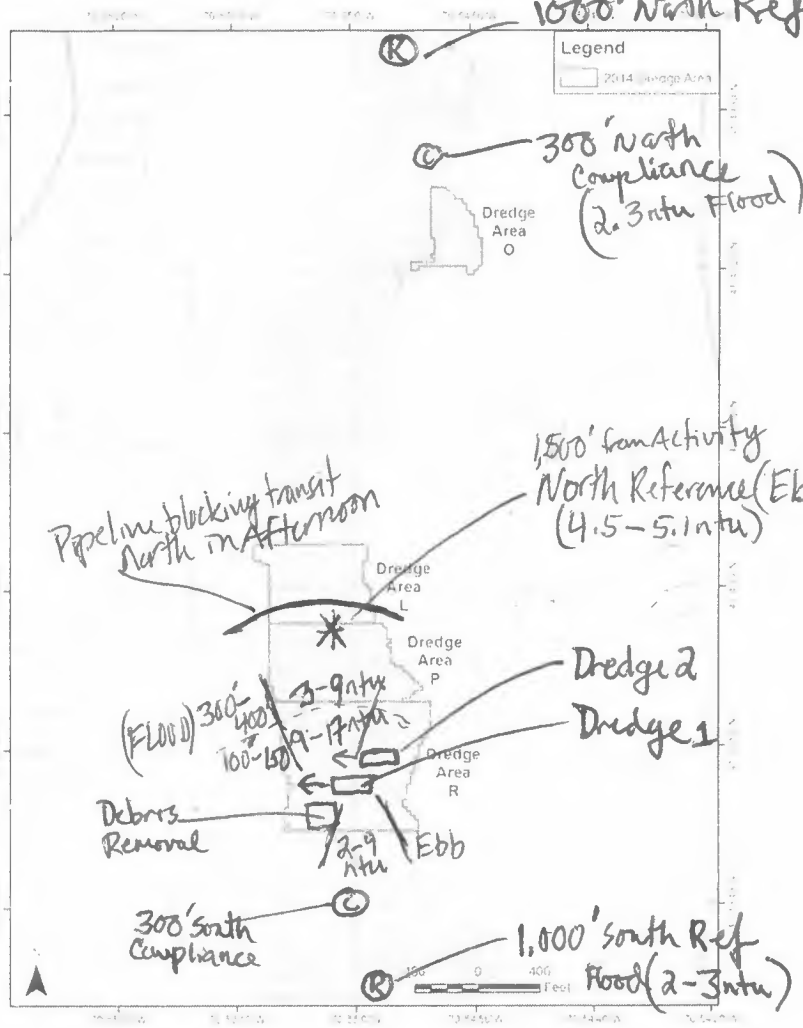
3.23	@	0201
0.51	@	0718
3.79	@	1438

Monitoring Period:
From: 0730 **To:** 1500 (1)

(1) Added by DDahlen per communication with Mike Walsh. DTD 8/5/2014

Tidal Stage: (HWS) Ebb (LWS) Flood

Dredging Activity:
- East to West Area R near Coffin St. CSO
- Debris Removal South East Corner Boundary of Area R
- East to West Area R eastern Portion of Area R



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)	
1000' South Ref	2-3	~~2-3~~ 2-9' / 10.8'	
300' North Comp.	2.3	2.08 / 6.2	
* 1000' North Ref	4.5-5.1 ntu	2.0-10.1 / 12.6	

Oil sheen/ Debris:
Persistent light to moderate sheen Contained by boom in Area R throughout Morning due to dredging near Coffin St. CSO.

Fish Passage: Numerous fish observed breaking Surface Harbor wide.

Samples Collected for Laboratory Analysis – Sample IDs:

TSS (1L)	**Turbidity (1L)**
Total PCB (2x1L)	**Dissolved PCB (2x1L)**
Toxicity (5 gal)	**Metals (500ml)**

Notes: Very difficult navigating and accessing dredge areas due to pipline, Oil Booms and Dredge cables. Turbidity Readings were low Around Dredge and Debris Removal Activities. During low tide turbidity hovered near the surface but as the tide came in turbidity readings while low were observed at depth. Dissolved Oxygen readings ranged between 2mg/L - 6.8mg/L in the lower dredge areas to 2-3 mg/L up near the northern Compliance and reference buoys in the morning.

* Ebb (1000' North Ref) Not accessible in Afternoon due to pipeline. Background readings taken 1,500 north of Activity.

Sampling Crew: Mike Walsh, Sam Gunnoe

Chief Scientist Signature: Mike Walsh

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	Dredging/Debris Removal Area R
Dredging Description	East to west Dredging near Coffin St. CSO/Debris R. South boundry
Survey Vessel	Gale Force
Chief Scientist	Mike WALSH
Sampling Technician	Sam Guimaraes
Vessel Captain	Mike WALSH
Other Personnel	—
Weather conditions	Partly Cloudy/windwest @ 5 switching SW @ 10

Date	8/4/14
Page	1 of 1

Tide information	
High	3.23 @ 0201
Low	0.51 @ 0718
High	3.79 @ 1438
Low	

	Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000' South Ref		0807	41.65963	-70.91710	10.8	1.99	2.25	27.18	3.23	24.11	Surface (Flood)
1000' South Ref		0810	" "	" "	10.8	8.56	3.04	28.53	2.10	23.79	Bottom (Flood)
100' North Dredge		0846	41.66375	-70.91763	5.8	1.49	7.42	26.03	5.16	23.48	Area R (300' North of Debris Removal)
150' North of Dredge		0905	41.66391	-70.91753	6.7	1.89	17.91	25.95	4.94	23.65	" "
300' North of DR		0923	41.66382	-70.91744	8.0	1.97	21.75	25.99	5.17	23.77	Area R
500' North of Dredge		0942	41.66444	-70.91702	10.8	10.8	6.57	27.03	4.27	23.92	~~Eastern~~ Area R
1000' North of Dredge		0950	41.66546	-70.91666	5.5	1.98	4.46	26.51	4.76	23.98	" "
300' North Compliance		1018	41.67454	-70.91502	6.2	2.08	2.33	27.52	2.48	24.71	(Flood)
400' North of Debris R		1124	41.66381	-70.91795	6.3	1.87	9.13	27.33	2.99	24.12	Area R
400' North of Dredge/DR		1209	41.66449	-70.91709	11.0	1.57	4.69	26.32	6.87	24.65	Area R (mid River) - Surface
"	"	1215	41.66449	-70.91709	11.0	8.62	12.04	28.79	2.27	23.78	Area R (mid-River) - Bottom
"	"	1310	"	"	11.2	2.02	4.19	28.29	5.80	24.45	" "
"	"	1314	"	"	11.2	8.16	10.70	28.87	3.25	23.83	" "
		1340	Dredge/Debris Removal Activity				S topped				
300' North of Dredge		14.30	41.66449	-70.91739	11.8	2.15	5.19	28.18	5.89	24.48	Area R (mid-River) No Debris Removal
*1500' from Dredge Activity	Dredge	1450	41.66585	70.91752	12.6	2.06	4.53	27.45	7.31	25.615	Surface
	Reference	1450	41.66585	70.91752	12.6	10.13	5.13	28.76	1.92	23.83	Bottom
100' south of Dredge	Dredge	1510	41.66234	70.91676	11.8	2.19	2.03	28.11	7.38	25.50	Area R (mid River)
100' south of Dredge	Dredge	1515	~~-70.91676~~		11.8	9.23	5.43	28.60	5.87	24.49	SAME AS Above No Debris Removal

* Due to pipeline Across river we were unable to transit to 1000' North Reference buoy to establish the Ebb background. Ebb Reference was taken Appox. 1500' from dredge activity. (background)

DRAFT SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of August 14, 2014 (Week 17)

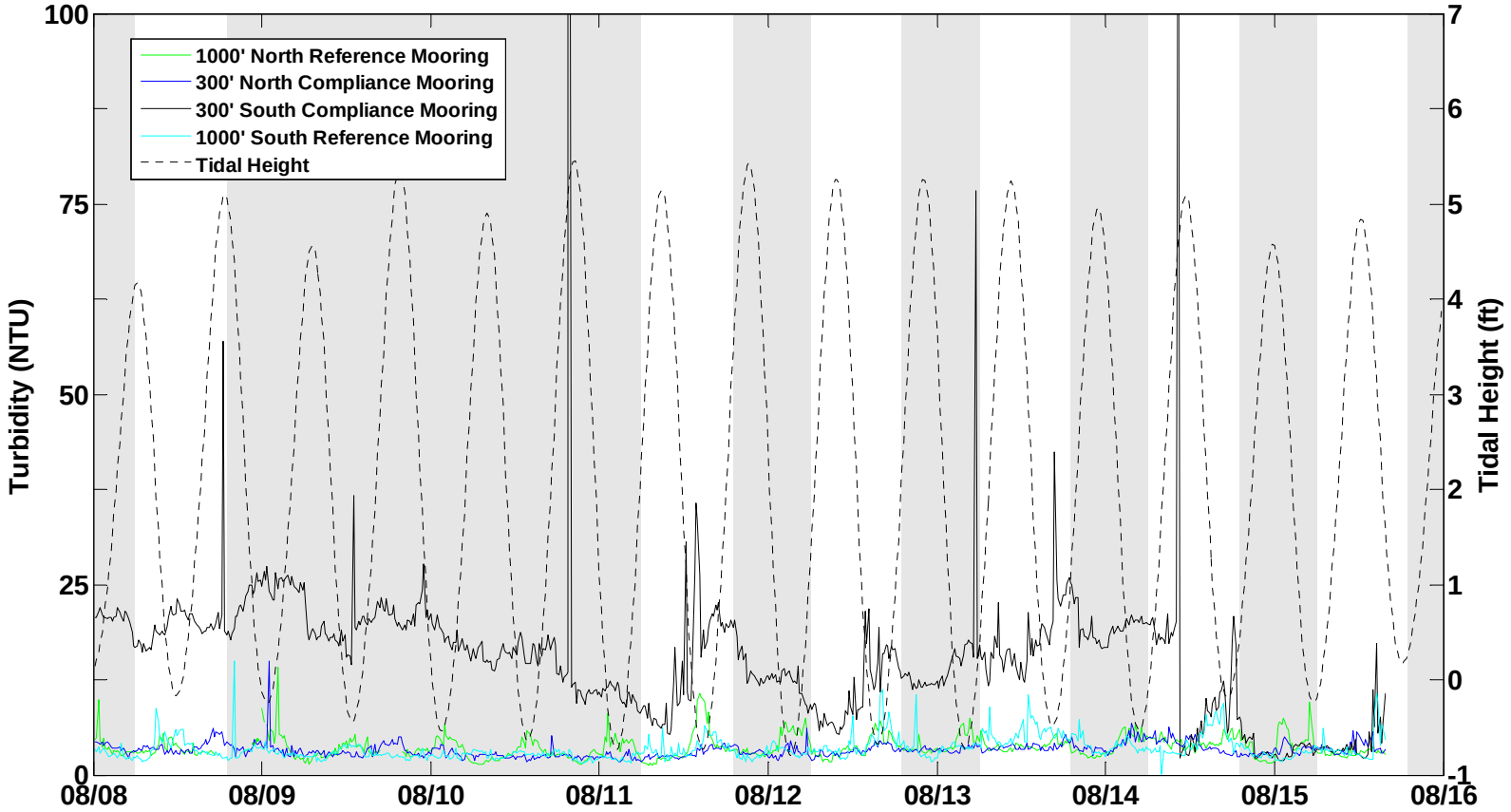
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. Flood and ebb tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

August 14, 2014:

- **Tidal stage:** Low tide at 04:29 and 17:01 EDT; high tide at 11:29 and 23:52 EDT.
- **Dredge activity:** Dredging Area R, west side. Debris removal Area R, east side.
- **Monitoring activity**: Week 17, Level I monitoring. Monitored flood tide through high slack water and into the ebb tide.
- **Fishery and Wildlife Observations:** Small and medium fish observed at the water surface.
- **Results summary:** Readings collected at the reference locations had turbidity value of 3.3 NTU at the Northern Reference and 4.0 NTU at the Southern Reference. Readings at the Northern and Southern reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 2.6 mg/L to 8.2 mg/L. Turbidity values at the compliance transects were low (≤7 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to the debris removal and dredging activity. Turbidity values throughout the work area were less that 25 NTU during the monitoring period.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Note: The 300'South compliance buoy became fouled. When the sensor was checked, it was confirmed that the wiper that cleans the turbidity probe has malfunctioned and is no longer working. The probe was cleaned manually with a gloved finger, and a new wiper mechanism has been ordered and will be replaced next week. The spikes at the 300'South compliance buoy on 8/10 and 8/13 were not dredge related as they occurred during non-dredging hours. The spike on 8/14 occurred when the sensor was being serviced.



Battelle Daily Field Summary Sheet for Water Quality Monitoring

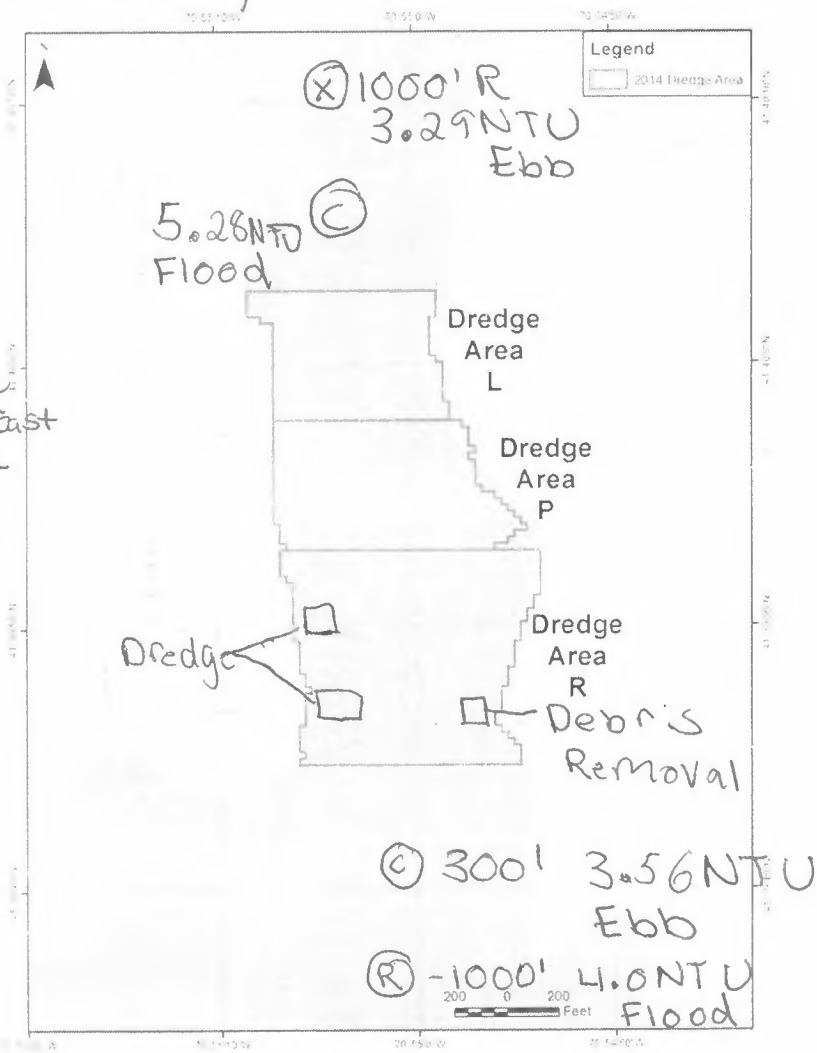
Date: 14-Aug-14 Weather: Sunny 5-10kts

Tides:
Low @ 429
High @ 1129
Low @ 1901

Monitoring Period:
From: 0730 To: ~~0214~~ 1430 PDS

Tidal Stage: (HWS) (Ebb) LWS (Flood)

Dredging Activity:
AM Dredge Area R West Side
AM Debris Removal Area R East
PM Debris Removal East Area R
PM Dredge Area R West Side



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
SouthRef	4.0	3.2
NorthComp	7.06	5.3
NorthRef	3.29	3.3
SouthComp	3.56	4.39

Oil sheen/ Debris: None

Fish Passage: small & medium Fish at surface

Samples Collected for Laboratory Analysis – Sample IDs:
TSS (1L) _____ Turbidity (1L) ✓
Total PCB (2x1L) ✓ Dissolved PCB (2x1L) _____
Toxicity (5 gal) _____ Metals (500ml) ✓

Notes:

Sampling Crew: Patrick Curran, Paul Sokoloff
Chief Scientist Signature: Paul Sok

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	Area R
Dredging Description	Debris Removal R, Dredging Area R
Survey Vessel	Gale Force
Chief Scientist	Paul Sokoloff
Sampling Technician	Patrick Curran
Vessel Captain	Patrick Curran
Other Personnel	
Weather conditions	Sunny; wind 0-5

Date	14-Aug-14
Page	1 of 1

Tide information	
High	
Low	0429
High	1129
Low	1701

Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000'SouthRef	0748	41.65961	70.91714	~~3.2~~ (1)	3.2	4.00	28.83	4.85	23.35	
300' NorthComp	0823	41.67450	70.91499	6.8	5.3	7.06	28.32	2.62	23.74	
300' North DebrisR	0842	41.66319	70.91651	8.1	5.4	5.28	28.76	5.17	23.27	
100' NorthDebris	0848	4166275	70.91637	8.6	5.7	7.49	28.74	5.2	23.07	
300'N Dredge R	0901	41.6644	70.91753	8.9	4.04	5.50	22.95	5.2	23.92	
" 2	0910	"	"	9.1	4.2	8.36				
3	0916	41.66442	70.91769	~~3.9~~ (1)	4.45	13.9				
4	0918	"	"	10.1	3.36	24.8				
300'N DebisR	0924	41.66288	70.91656	13.1	3.7	3.97	28.83	5.36	23.31	
100'N Dredge R	1109	41.66442	70.91752	10.8	1.9	6.02	28.78	6.54	23.61	
"	1112	"	"	10.8	3.4	5.88			~~23.67~~	PDS 14-AUG-14
1000'NRef	1219	4167636	70.91602	8.5	3.3	3.29	28.35	7.79	23.67	
300' SComp	1236	41.66107	70.91738	9.6	4.39	3.56	29.13	7.00	23.85	Dredging Inactive
100' SDebris R	1244	41.66149	70.91653	12.7	2.79	5.54	29.19	7.17	23.83	
400'S Dredge	1306	41.66217	70.91756	7.7	4.35	9.31	29.34	6.37	23.66	
"	1314	"	"	"	2.08	9.56	29.17	6.86	23.86	
"	1322	"	"	7.3	2.08	6.44	29.00	7.44	24.07	
"	1332	"	"		2.07	5.18	28.88	7.74	24.26	
"	1352	"	"	6.9	2.09	6.98	28.73	8.18	24.48	
"	1415	"	"	6.0	2.13	9.40	28.75	7.37	24.42	
"	1426	"	"	5.6	2.07	9.18	28.94	7.35	24.09	

(1) PDS 14-AUG-14 11.6
(2) PDS 14-AUG-14 10.1

DRAFT SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of August 18, 2014 (Week 18)

All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. Flood and ebb tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

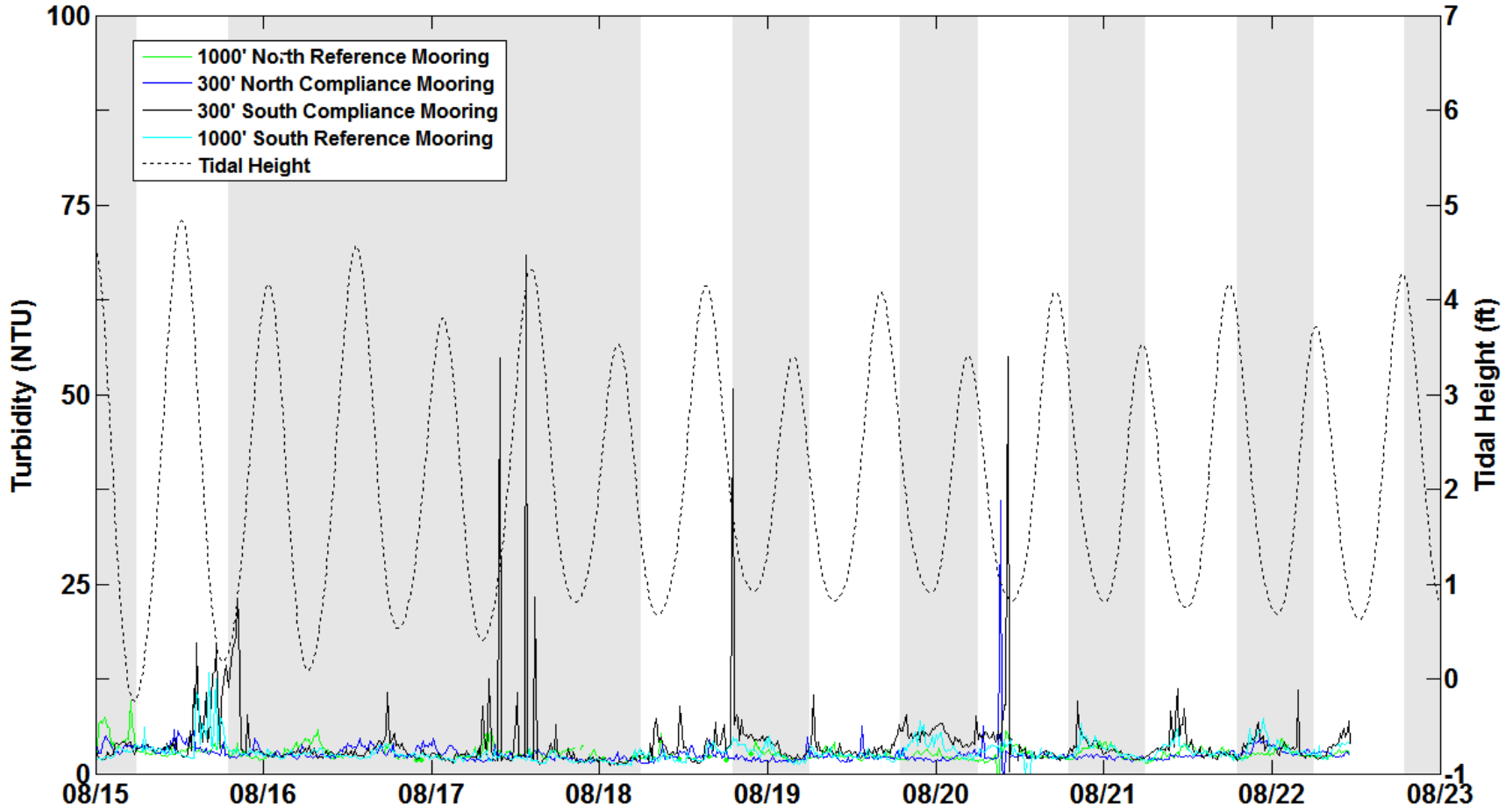
August 20, 2014: Serviced all water quality mooring systems.

August 21, 2014:

- **Tidal stage:** Low tide at 00:50 and 11:46 EDT; high tide at 05:27 and 17:55 EDT.
- **Dredge activity:** Dredging Area R, west side until ~12:15, then dredging east side of Area R.
- **Monitoring activity**: Week 18, Level I monitoring. Monitored ebb tide through slack low water and into the flood tide.
- **Fishery and Wildlife Observations:** Small and medium fish observed at the water surface throughout work area.
- **Results summary:** Readings collected at the reference locations had turbidity value of 3.4 NTU at the Northern Reference and 3.9 NTU at the Southern Reference. Readings at the Northern and Southern reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 4.0 mg/L to 10.6 mg/L. Turbidity values at the compliance transects were low (<10 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to the debris removal and dredging activity. Turbidity values throughout the work area were generally less that 15 NTU throughout the work area. Peak turbidity values of 20-25 NTU were found in close proximity to the dredges (100-200 feet).

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Note: Spikes in the 300' South data were the result of sensor fouling and a failed wiper mechanism (as reported in the previous weekly report). All buoys and sensors were serviced on 8/20 including replacement of the failed wiper. The spikes seen on 8/20 are from the servicing activities in the field.



Battelle — Daily Field Summary Sheet for Water Quality Monitoring

Date: 8/21/14 Weather: mostly cloudy light/variable wind

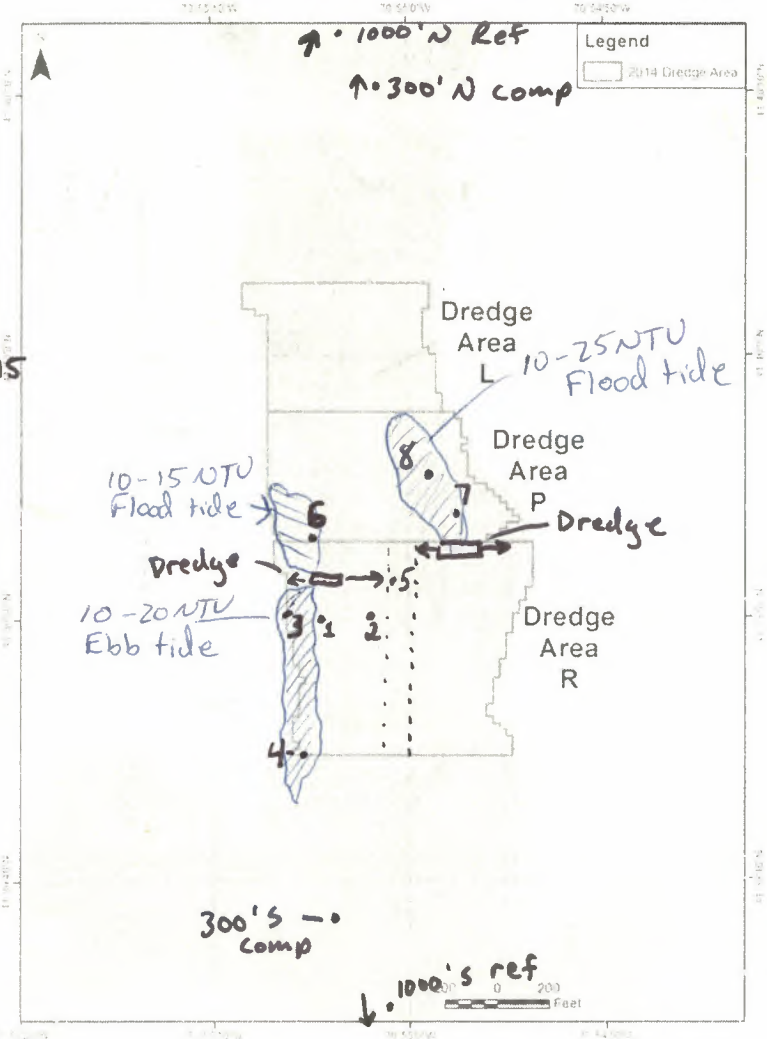
Tides:

High	@	5:29
low	@	11:46
High	@	17:55

Monitoring Period:
From: 08:00 To: 15:10

Tidal Stage: HWS Ebb LWS Flood

Dredging Activity:
Dredge West side of Area L until ~1215
Dredging East side of Area L
Start @ 13:40
End @ 14:25



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000'N Ref	3.44	4.53/5.4
1	4.85	5.08/6.2
3	22.64	2.44/5.1
4	11.25	1.62/2.4
1000'S Ref	3.87	1.85/12.5
6	12.12	3.85/4.8
8	25.38	2.01/6.1

Oil sheen/ Debris:
minor sheen observed near location 3 - Jacobs/dredge crew notified + fixed it right away

Fish Passage: small (2-3") + med (4-12") fish observed in all areas.

Samples Collected for Laboratory Analysis – Sample IDs: None

TSS (1L) _____ Turbidity (1L) _____
Total PCB (2x1L) _____ Dissolved PCB (2x1L) _____
Toxicity (5 gal) _____ Metals (500ml) _____

Notes: @ 11:10 - move 1000's Ref ~100' South to 41.65918/70.91717

Sampling Crew: M. Fitzpatrick + M. Walsh
Chief Scientist Signature: [signature]

WATER QUALITY MONITORING
IN-SITU FIELD LOG SHEET

Dredging Location	Area R
Dredging Description	Active dredging in area R 08:00 - 11:40 → continue on next page
Survey Vessel	R/V Gale Force
Chief Scientist	M. Fitzpatrick
Sampling Technician	—
Vessel Captain	M. Walsh
Other Personnel	—
Weather Conditions	Mostly cloudy light + variable wind

Date: 8/21/14

Page: 1 of 2

Tide Information	
High	
Low	~8 00:05
High	5:29
Low	11:46
High	17:55

Location	Time	Latitude N	Longitude W	Water Depth (ft)	Reading/ Sample Depth (ft)	Turbidity (NTU)	DO (mg/L)	Salinity (ppt)	Temp (°C)	Notes
1000'N Ref	0814	41.67634	70.91609	5.4	4.53	3.44	4.08	29.39	24.58	2.5 NTU near surface
300's comp	0830	41.66101	70.91756	6.6	1.75	3.66	7.53	28.62	23.52	
"	0832	"	"	"	4.79	6.21	5.76	29.65	23.51	
1	0838	41.66333	70.91780	6.2	5.08	4.85	6.03	29.28	23.68	2.7 NTU near surface — 150's of dredge
2	0956	41.66336	70.91754	8.8	7.83	5.82	5.26	29.65	23.47	~150's of dredge
"	0958	"	"	"	1.97	5.61	6.72	28.45	24.40	"
3	1024	41.66323	70.91786	5.1	2.44	22.64	6.41	28.65	24.28	
4	1046	41.66217	70.91805	2.4	1.62	11.25	6.33	29.12	24.04	~400's of dredge
300's comp	1118	41.66098	70.91754	4.6	2.36	7.44	7.11	28.92	24.54	
5	1139	41.66395	70.91711	9.4	8.30	4.27	5.70	29.78	23.46	~40'E of dredge

— tide change —

WATER QUALITY MONITORING
IN-SITU FIELD LOG SHEET

Date: 8/21/14

Page: 2 of 2

Dredging Location: Area R

Dredging Description: Dredging in Area R - no debris removal

RPV Collection:

Chief Scientist: M. Fitzpatrick

Dredging Vessel(s): —

Water Sampler: M. Walsh

Data Recorder: —

Weather Conditions: Mostly cloudy light/variable wind becoming South

Tide Information	
High	—
Low	00:05
High	05:29
Low	11:46
High	17:55

Location	Time	Latitude N	Longitude W	Water Depth (ft)	Reading/ Sample Depth (ft)	Turbidity (NTU)	DO (mg/L)	Salinity (ppt)	Temp (°C)	Notes
1000's ago	11:52	41.65924	70.91715	12.5	1.85	2.87	8.54	28.72	24.61	
"	11:59	"	"	"	11.98	4.59	5.16	29.81	23.91	
6	12:07	41.66459	70.91800	4.8	3.85	12.12	6.91	29.53	23.98	50-75' N of dredge
7	13:57	41.66587	70.91595	6.0	1.95	4.58	9.63	29.19	25.27	50-75' N of dredge
8	14:13	41.66542	70.91639	6.1	2.02	11.34	9.81	28.88	25.58	25'-100' N of dredge
"	14:25	"	"	"	2.01	25.38	10.11	29.11	25.49	"
"	1440	"	"	"	4.01	12.02	10.29	29.06	25.43	"
300N	1452	41.67448	70.91516	7.2	1.87	3.16	10.60	28.50	26.69	
"	1454	"	"	"	6.25	3.63	6.87	29.52	24.85	

DRAFT SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of August 25, 2014 (Week 19)

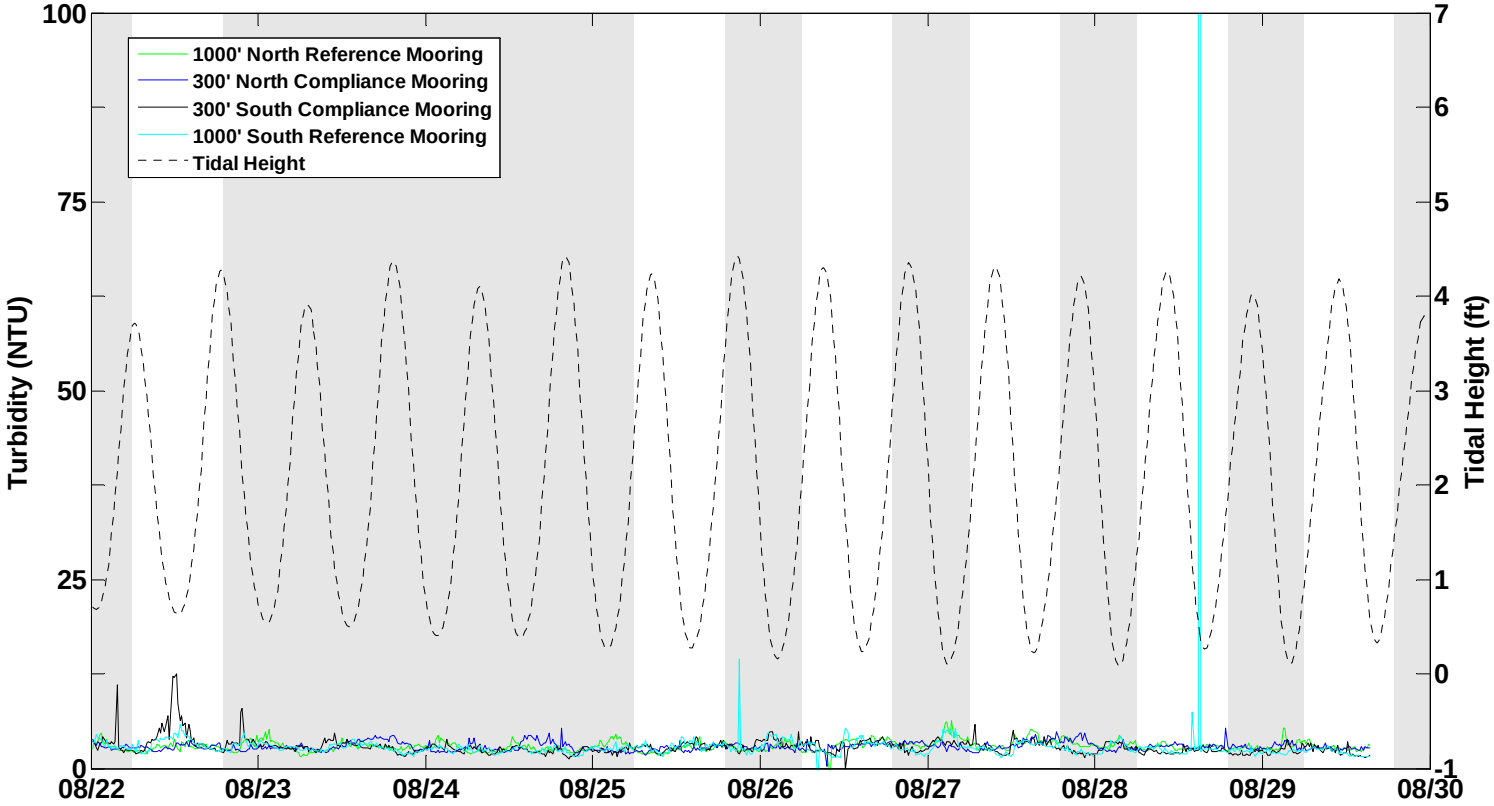
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. Flood and ebb tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

August 26, 2014:

- **Tidal stage:** Low tide at 02:25 and 14:37 EDT; high tide at 09:05 and 21:20 EDT.
- **Dredge activity:** Dredging Area R east and central areas.
- **Monitoring activity**: Week 19, Level I monitoring. Monitored flood tide through slack high water, then ebb tide through slack low water.
- **Fishery and Wildlife Observations:** Small and medium fish observed at the water surface throughout work area.
- **Results summary:** Readings collected at the reference locations had turbidity value of 3.4 NTU at the Southern Reference and 4.5 NTU at the Northern Reference. Readings at the Northern and Southern reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 3.0 mg/L to 9.4 mg/L, with the highest readings observed in the southern areas in the surface water. Lower readings were observed at the Northern Reference location. Turbidity values at the compliance transects were low (<10 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to the debris removal and dredging activity. Turbidity values throughout the work area were generally less that 15 NTU. Peak turbidity values of 15-20 NTU were found in close proximity to the dredges (<100 feet).

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Note: The spike at the 1000' south sensor on 8/29 does not appear to be indicative of a dredge-related suspended sediment plume as it is a single elevated point reading rather than a sustained period of high turbidity readings.



Battelle — Daily Field Summary Sheet for Water Quality Monitoring

Date: 8/26/14 Weather: Sunny calm wind becoming South ~ 10 kts

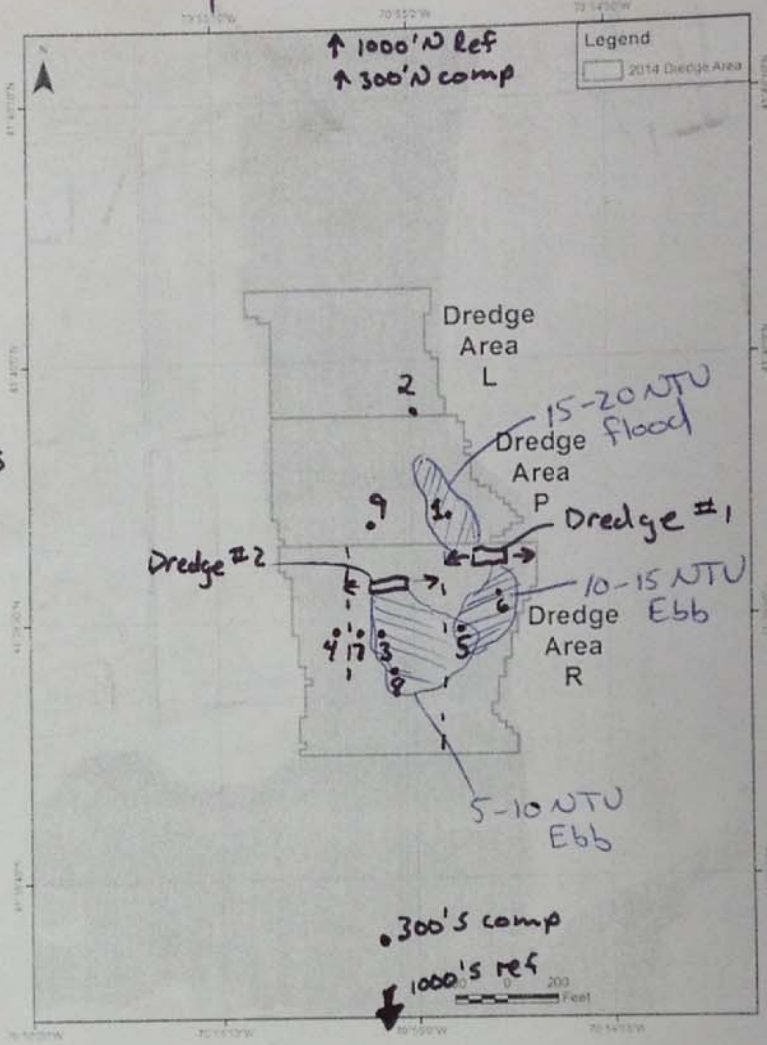
Tides:

low	@	02:25
high	@	09:05
low	@	14:37
high	@	21:20

Monitoring Period:
From: 08:00 To: 15:15

Tidal Stage: (HWS Ebb LWS Flood)

Dredging Activity:
Active dredging in east + central Area R throughout the day. No tar debris removal



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000'S Ref	3.43	1.60/15.0
1	17.08	3.08/8.8
2	5.82	4.31/5.8
1000'N Ref	4.45	5.76/7.1
6	15.26	3.21/5.5
300'S comp	5.72	1.60/3.9

Oil sheen/ Debris:
None

Fish Passage: fish observed in all areas mostly small (2-3") some 5-8"

Samples Collected for Laboratory Analysis – Sample IDs: None

TSS (1L) _____ Turbidity (1L) _____
Total PCB (2x1L) _____ Dissolved PCB (2x1L) _____
Toxicity (5 gal) _____ Metals (500ml) _____

Notes:

Sampling Crew: M. Fitzpatrick / M. Walsh
Chief Scientist Signature: Matthew R Fitzpatrick

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	Area R
Dredging Description	Active dredging in Eastern/Central Area R No debris Removal
Survey Vessel	Gale Force
Chief Scientist	M. Fitzpatrick
Sampling Technician	—
Vessel Captain	M. Walsh
Other Personnel	
Weather conditions	Sunny calm wind becoming South ~ 10 kts

Date	8/26/14
Page	1 of 6

Tide information	
High	—
Low	02:25
High	09:05
Low	14:37
High	21:20

Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000's Ref	08:06	41.65930	70.91724	15.0	14.35	3.08	30.10	6.07	23.47	
"	08:11	"	"	15.0	1.60	3.43	30.11	6.18	23.48	
1	08:51	41.66489	70.91637	8.8	1.82	6.03	29.86	6.23	23.47	~75' from dredge # 1
"	08:56	"	"	8.8	3.08	17.08	29.94	5.91	23.46	"
2	09:08	41.66623	70.91667	5.8	4.31	5.82	29.91	6.29	23.68	~4-500' from dredge # 1
300'N comp	09:21	41.67459	70.91510	9.2	6.36	2.98	29.53	5.63	24.06	
1000'N Ref	09:41	41.67642	70.91618	7.1	5.76	4.45	29.51	2.97	24.80	
3	10:24	41.66367	70.91690	14.6	4.36	8.62	30.06	6.33	23.70	~100' from dredge # 2
4	11:03	41.66354	70.91769	7.3	1.56	3.92	29.95	6.96	24.18	"
5	11:15	41.66343	70.91635	8.1	2.55	8.27	30.00	7.14	24.24	"
6	1125	41.66412	70.91591	5.5	3.21	15.26	29.99	7.11	24.18	~40' from dredge # 1
300's comp	12:05	41.66103	70.91759	5.7	2.86	3.55	30.05	7.55	24.22	
7	13:13	41.66370	70.91744	~~9.5~~ 8.3	6.85	4.36	30.04	6.40	24.00	~100' from dredge # 2
8	13 47	41.66330	70.91718	9.7	4.46	6.6	29.70	7.94	24.71	~175' from dredge # 2
new 5	14:11	41.66350	70.91643	6.5	2.82	10.18	29.60	9.04	25.43	~100' from dredge # 2
300's comp	14:35	41.66108	70.91755	3.9	1.60	5.72	30.03	8.83	25.44	
1000's Ref	14:42	41.65930	70.91727	11.6	10.36	5.24	30.10	6.29	23.89	
9	1501	41.66507	70.91702	9.9	1.73	4.59	29.41	9.42	25.91	

DRAFT SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of September 1, 2014 (Week 20)

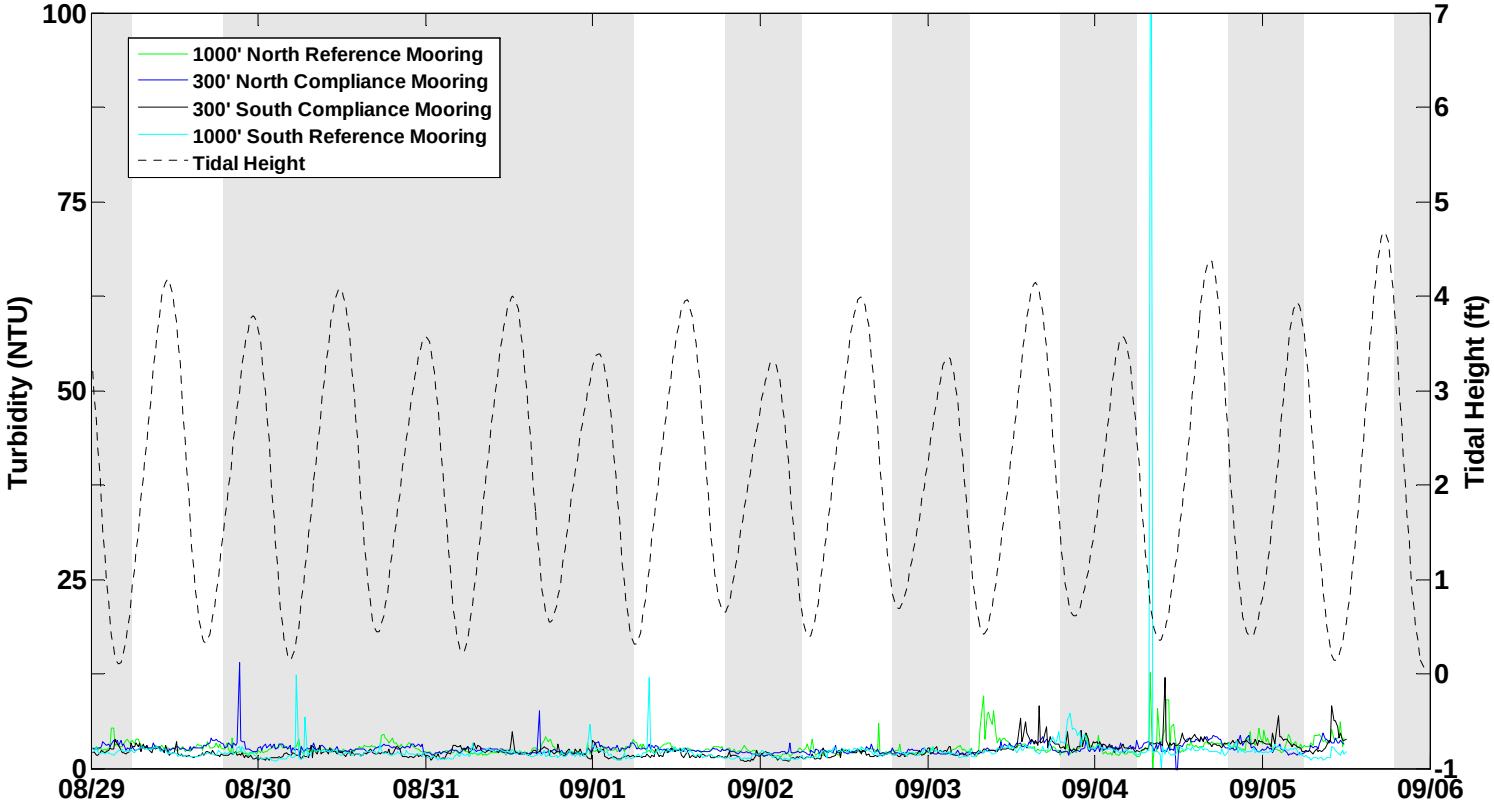
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. Flood and ebb tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

September 4, 2014:

- **Tidal stage:** Low tide at 09:15 and 22:17 EDT; high tide at 03:58 and 16:29 EDT.
- **Dredge activity:** Dredging Area R east and central areas; no debris removal.
- **Monitoring activity**: Week 20, Level I monitoring. Monitored ebb tide through slack low water, then flood tide.
- **Fishery and Wildlife Observations:** Small fish observed at the water surface throughout work area.
- **Results summary:** Readings collected at the reference locations had turbidity value of 2.9 NTU at the Southern Reference and 4.1 NTU at the Northern Reference. Readings at the Northern and Southern reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 2.8 mg/L (Northern Reference) to 6.1 mg/L (approximately 250 ft north of dredge). Turbidity values at the compliance transects were low (<3 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to the debris removal and dredging activity. Turbidity values throughout the work area were generally less that 5 NTU, with slightly higher readings (5.7 NTU to 14.8 NTU) in close proximity to the dredges (125 to 250 feet).

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Note: The spike at the 1000' south sensor on 9/4/2014 does not appear to be indicative of a dredge-related suspended sediment plume as it is a single elevated point reading rather than a sustained period of high turbidity readings.



Battelle Daily Field Summary Sheet for Water Quality Monitoring

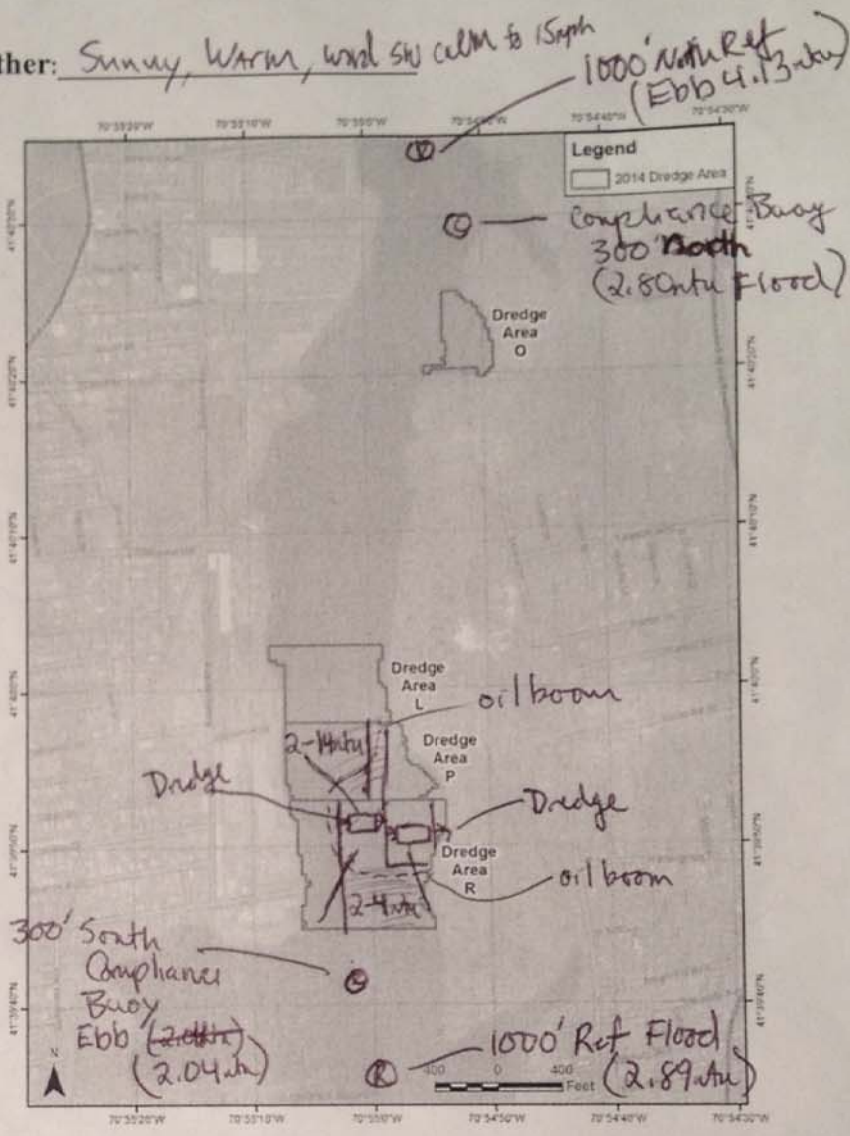
Date: 9/4/14 **Weather:** Sunny, Warm, wind SW calm to 15mph

Tides:
0.0' @ 0909
3.7' @ 1613
@

Monitoring Period:
From: 0715 **To:** 1500

Tidal Stage: HWS (Ebb) LWS (Flood)

Dredging Activity:
Eastern Section of Area R
Central Section of Area R
- NO Debris Removal -



Turbidity Summary

Location	Turbidity (NTU)	WATER/SENSOR ~~Sensor/water~~ Depth (ft)
1000'N Ref	4.13	3.7/2.0
300'S Comp	2.04	4.5/2.04
1000'S Ref	2.89	12.0/7.29
300'N comp	2.80	4.5/3.19

Oil sheen/ Debris: none observed

Fish Passage: Numerous small fish seen breaking water surface

Samples Collected for Laboratory Analysis – Sample IDs:
TSS (1L) _____ **Turbidity (1L)** _____
Total PCB (2x1L) _____ **Dissolved PCB (2x1L)** _____
Toxicity (5 gal) _____ **Metals (500ml)** _____

Notes: Some limited accessability to Areas due to oil boom, pipeline, cables and dredge wires. Background to NTU's in low teens observed.

Sampling Crew: Mike Walsh, Patrick Curran
Chief Scientist Signature: Mike Walsh

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	Eastern Side of Area R/Central Section of Area R
Dredging Description	West to East Area R / No Debris Removal
Survey Vessel	Gale Force
Chief Scientist	Mike Walsh
Sampling Technician	Patrick Curran
Vessel Captain	Patrick Curren
Other Personnel	—
Weather conditions	Sunny, Warm light wind in morning increasing SW @ 10-15

Date	9/4/14
Page	1 of 1

Tide information	
High	—
Low	0.0' @ 0909
High	3.7' @ 1613
Low	

Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000' North Ref	0750	41.67636	70.91611	3.7	2.0	4.13	29.04	2.76	25.53	Ebb
300' south Dredge	0847	41.66262	70.91645	9.1	7.7	4.16	30.06	4.09	24.23	East side Area R
400' south of Dredge	0903	41.66270	70.91692	10.2	5.04	3.76	29.98	4.48	24.48	Central Area R
300' South Compliance	0912	41.66283	70.91754	4.5	2.01	2.04	29.07	5.04	24.60	Service Mooring
1000' South Ref	0930	41.65930	70.91727	12.0	7.29	2.89	29.98	4.61	24.47	Flood
200' north of Dredge	1020	41.66468	70.91766	5.8	2.58	7.27	29.80	4.57	24.74	Central Area R
		— Dredges Shut Down —								
250' northwest of Dredge	1110	41.66468	70.91748	8.2	6.11	14.77	30.06	4.25	24.49	Central Area R
300' North Compliance	1135	41.67459	70.91494	4.5	3.19	2.80	29.40	5.38	25.56	Service Mooring
400' northwest of Dredge	1221	41.66560	70.91698	6.4	5.45	4.07	29.87	4.76	24.67	East side Area R
		— Dredges Shut Down —								
250' north of Dredge	1336	41.66565	70.91693	10.8	6.36	2.78	29.75	6.06	24.86	Central Area R / Push boat
250' north of Dredge	1480	41.66565	70.91693	11.0	8.10	9.37	30.06	4.85	24.55	Central Area R / Push boat
125' north of Dredge	1435	41.66477	70.91734	11.0	6.51	6.81	30.08	5.03	24.79	Central Area R
125' west of Dredge	1445	41.66421	70.91793	11.3	7.71	5.72	30.16	4.00	24.65	Central Area R

DRAFT SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of September 8, 2014 (Week 21)

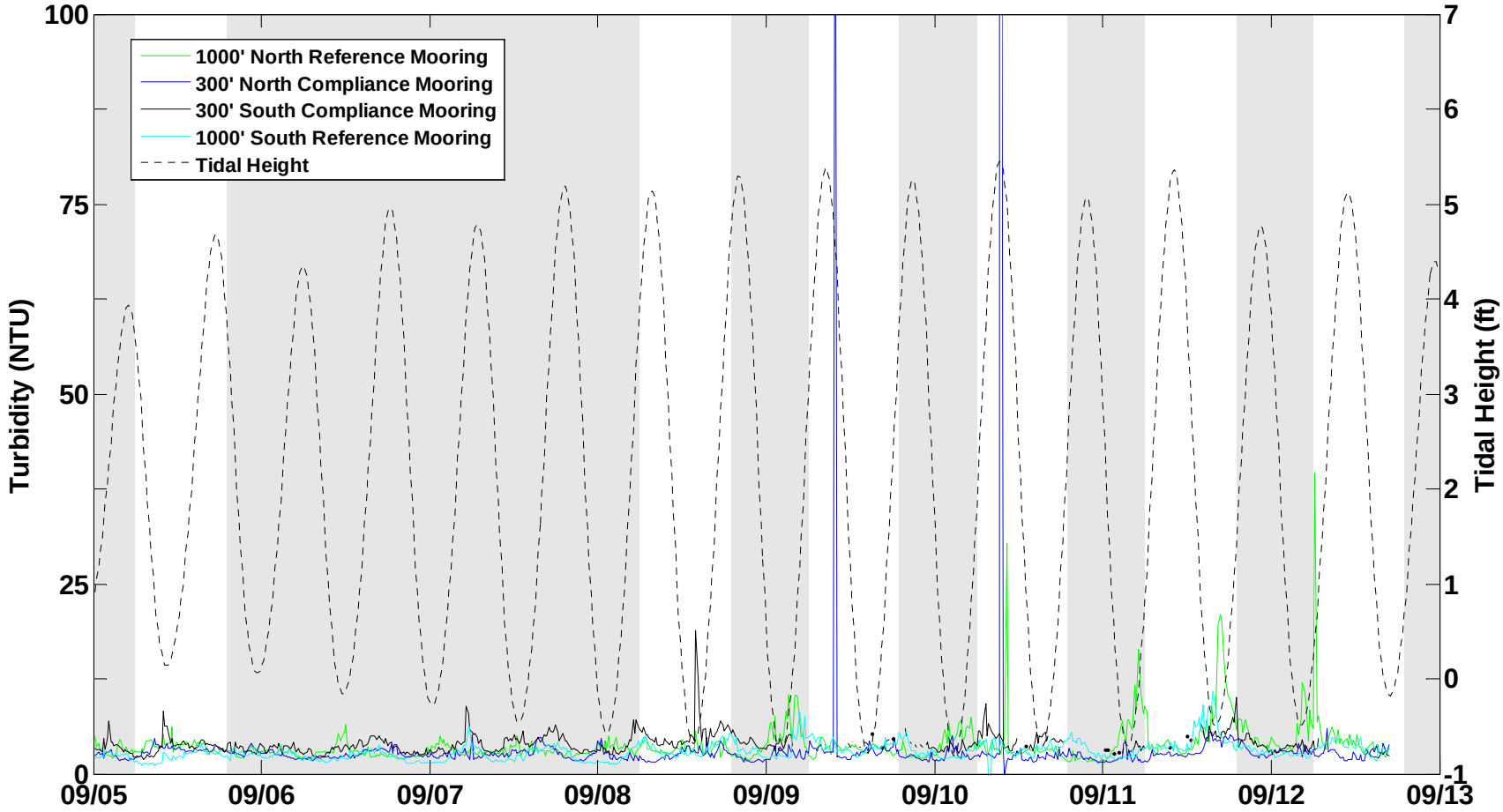
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. Flood and ebb tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

September 10, 2014:

- **Tidal stage:** Low tide at 02:46 and 15:16 EDT; high tide at 09:18 and 21:42 EDT.
- **Dredge activity:** Dredging Area R east and central areas; no debris removal.
- **Monitoring activity**: Week 21, Level I monitoring. Monitored flood tide through slack high water, then ebb tide.
- **Fishery and Wildlife Observations:** Small fish observed at the water surface throughout work area.
- **Results summary:** Readings collected at the reference locations had turbidity value of 4.9 NTU at the Southern Reference and 3.6 NTU at the Northern Reference. Readings at the Northern and Southern reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 4.4 mg/L (Northern Reference) to 6.0 mg/L (approximately 100 feet south of the dredge). Turbidity values at the compliance transects were low (<10 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to the dredging activity. Turbidity values throughout the work area were generally less than 10 NTU, with higher readings (22.2 NTU to 36.1 NTU) in close proximity to the dredges (100 feet).

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Note: The spike at the 300' north sensor on 9/9/2014 does not appear to be indicative of a dredge-related suspended sediment plume as it is a single elevated point reading rather than a sustained period of high turbidity readings. The two spikes observed on 9/10/2014 on the northern buoys occurred when the sensors were being serviced. The 300' South Compliance mooring had a few momentary losses of data transmission throughout the week. The problem will be investigated during Week 22.



Battelle — Daily Field Summary Sheet for Water Quality Monitoring

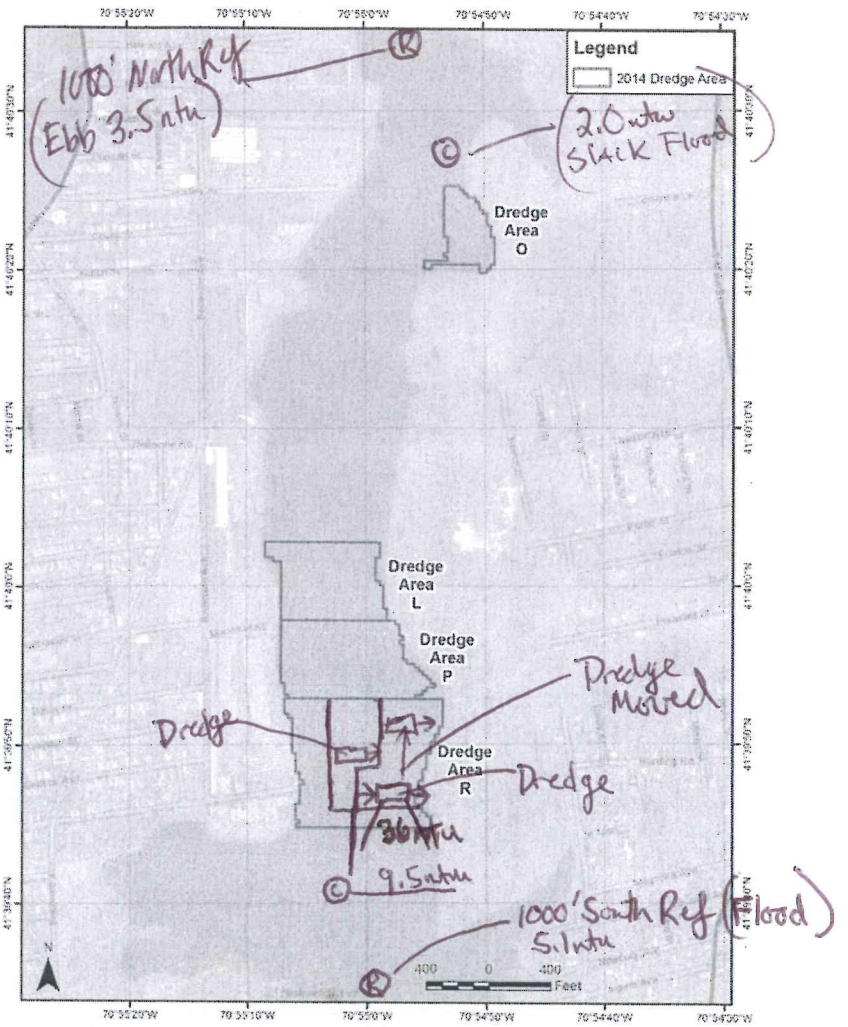
Date: 9/10/14 **Weather:** Sunny Some Clouds Wind North 10-15

Tides:
5.13' @ 0922
-0.48' @ 1506
@

Monitoring Period:
From: 0720 **To:** 1560

Tidal Stage: (HWS) (Ebb) LWS (Flood)

Dredging Activity:
West to East SE corner Area R
West to East Centr of Area R
No Debris Removal



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000'S Ref	4.9 - 5.1	1.1 / 15.1'
1000'N Ref	3.59	4.5 / 7.9'
300'N Comp.	2.92	0.01 / 10.1
300'S Comp	5.33	5.1 / 7.9
300'S Comp Transect	3.5-9.5	1'-4' / 4.9'

Oil sheen/ Debris:
Minimal Sheen Observed in Central Area R contained by oil boom

Fish Passage: Occasional Small fish breaking water Surface

Samples Collected for Laboratory Analysis – Sample IDs:
TSS (1L) _____ **Turbidity (1L)** _____
Total PCB (2x1L) _____ **Dissolved PCB (2x1L)** _____
Toxicity (5 gal) _____ **Metals (500ml)** _____

Notes: Dredge in Southeast Corner of Area R moved ~~NORTH~~
NTU's near or just Above background observed throughout. Small spike ~~of~~ 36ntu in Close proximity to Dredge (~100') in Southeast Corner of Area R near Low tide.

Sampling Crew: Mike Walsh, Patrick Curran
Chief Scientist Signature: _____

with push boats holding dredge in place.

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	South East Corner Area R / Center of Area R / NO Debris Removal
Dredging Description	~~East to~~ West to East
Survey Vessel	Gale Force
Chief Scientist	Mike Walsh
Sampling Technician	Patrick Curren
Vessel Captain	Patrick Curren
Other Personnel	—
Weather conditions	Mostly Cloudy / wind North @ 10-15

Date	9/10/14
Page	1 of 1

Tide information	
High	5.13' @ 0922
Low	-0.48' @ 1506
High	
Low	

Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000' South Ref	0725	41.65916	70.91725	15.1	10.05	4.90	30.45	4.61	23.02	FLOOD
" "	0728	"	"	15.1	1.10	5.14	30.44	4.64	23.00	"
300' North of Dredge	0824	41.66483	70.91618	9.9	6.55	5.26	30.51	4.64	22.95	Area R Southeast corner
350' North of Dredge	0850	41.66496	70.91575	8.0	6.12	6.09	30.58	4.53	22.96	Area R Southeast Corner
350' North Compliance	0942	41.67447	70.91505	10.1	2.01	2.92	29.95	5.33	22.78	
1000' North Ref	1007	41.67635	70.91609	7.9	4.50	3.59	29.96	4.43	22.78	Ebb
200' South of Dredge	1042	41.66295	70.91737	12.8	~~8.77~~	5.20	30.59	4.71	23.00	Central Area R
175' South of Dredge	1100	41.66305	70.91718	13.8	5.78	5.12	30.58	4.62	23.01	Central Area R
300' South Compliance	1146	41.66097	70.91754	7.9	5.17	5.33	30.58	4.79	23.02	Area R South east corner
150' South of Dredge	1214	41.66247	70.91627	~~7.9~~	6.36	4.47	30.51	4.58	23.00	" "
100' South of Dredge	1238	41.66271	70.91541	7.6	1.52	36.12	30.41	4.95	23.09	Area R Southeast Corner
" "	1247	"	"	7.5	2.01	22.22	30.52	4.47	23.13	" "
300' South of Dredge	1251	41.66204	70.91579	4.4	2.63	5.99	30.51	4.57	23.12	Area R Southeast Corner
300' South Compliance Transect	1255	41.66116	70.91598	4.9	4.17	9.57	30.54	4.61	23.20	" "
" "	1255	41.66116	70.91598	4.9	1.59	6.94				" "
200' South of Dredge	1323	41.66263	70.91710	10.4	6.75	8.87	30.37	5.00	23.99	Central Area R
	~~13~~ 14		NO Dredge Activity							
100' South of Dredge	1435	41.66293	70.91624	4.5	1.51	8.49	30.19	5.99	23.33	Mainly Dredge from SE corner of Area R

DRAFT SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of September 15, 2014 (Week 22)

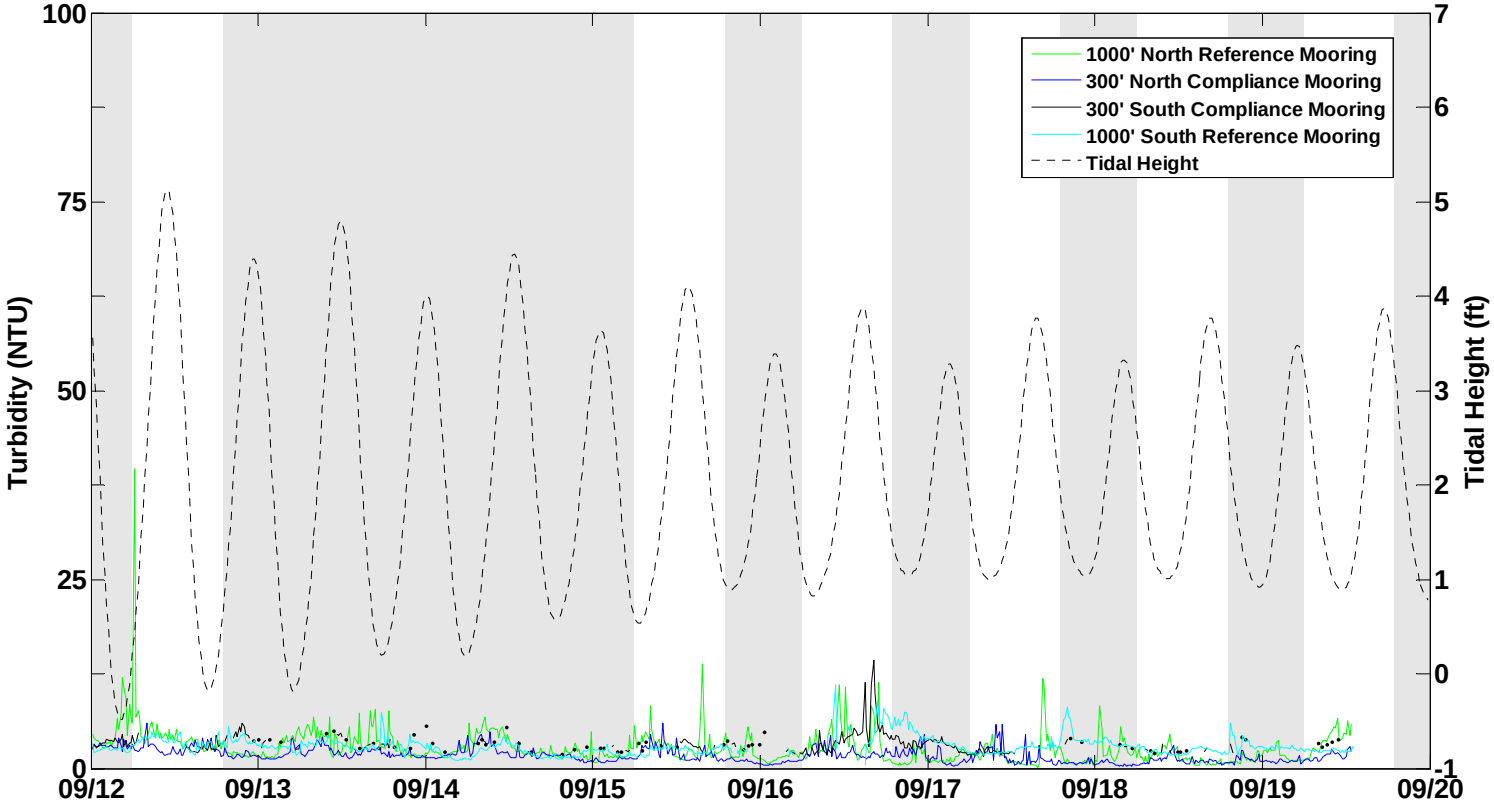
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. Flood and ebb tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

September 16, 2014:

- **Tidal stage:** Low tide at 07:31 and 21:16 EDT; high tide at 02:07 and 14:40 EDT.
- **Dredge activity:** Dredging Area R and debris removal Area S.
- **Monitoring activity**: Week 22, Level I monitoring. Monitored flood tide through slack high water, then ebb tide.
- **Fishery and Wildlife Observations:** Small fish observed at the water surface throughout work area.
- **Results summary:** Readings collected at the reference locations had turbidity value of 3.2 NTU at the Southern Reference and 2.3 NTU at the Northern Reference. Readings at the Northern and Southern reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values throughout the survey area ranged from 5.2 mg/L (Southern Reference) to 11.9 mg/L (Northern Reference). Turbidity values at the compliance transects were low (<2 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to the dredging and debris removal activities. Turbidity values throughout the work area ranged from 5 NTU to 15 NTU.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Note: The 300' South Compliance mooring was serviced on 9/16/2014 and communication issues repaired. Intermittent communications observed again on 9/17/2014; field staff deployed to investigate on 9/19/2014.



Battelle — Daily Field Summary Sheet for Water Quality Monitoring

Date: 9/16/14 **Weather:** Mostly cloudy SW wind 5-10kts

Tides:

High	@	2:07
low	@	7:31
High	@	14:40
low	@	21:16

Monitoring Period:
From: 07:40 **To:** 1575

Tidal Stage: (HWS) Ebb (LWS) Flood

Dredging Activity:
Dredging Area R

Debris Removal Area S

Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000's Ref	3.23	8.12 / 13.1
1	7.14	3.01 / 11.9
3	11.00	7.39 / 12.7
5	12.63	2.35 / 7.7
8	3.37	5.14 / 16.0
300'N comp	1.48	2.12 / 9.0

Oil sheen/ Debris:
Minor sheen contained in Area R

Fish Passage: Small 4-6" fish observed in all areas

Samples Collected for Laboratory Analysis – Sample IDs: None

TSS (1L) _____ **Turbidity (1L)** _____
Total PCB (2x1L) _____ **Dissolved PCB (2x1L)** _____
Toxicity (5 gal) _____ **Metals (500ml)** _____

Notes: Performed buoy maintenance during non-dredging activities
↳ 300'S + 1000'S

Sampling Crew: M. Fitzpatrick / P. Curran
Chief Scientist Signature: Matthew R

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	Area R + Area S
Dredging Description	Dredging central / lower area R / Debris Removal Area S
Survey Vessel	Gale Force
Chief Scientist	M. Fitzpatrick
Sampling Technician	
Vessel Captain	P. Curran
Other Personnel	
Weather conditions	Mostly cloudy SW wind 5-10 kts

Date	9/16/14
Page	1 of 1

Tide information	
High	2:07
Low	7:31
High	14:40
Low	21:16

Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000's Ref	0750	41.65920	70.91718	13.1	8.12	3.23	30.79	5.24	20.68	2-3.2 NTU surf→Bot.
1	0840	41.66346	70.91665	11.9	3.01	7.14	30.40	6.14	20.39	~70' from dredge
		No Dredge activity								
2	1055	41.66372	70.91695	12.3	7.28	12.67	30.58	5.66	20.75	~100' from dredge
3	1126	41.66361	70.91683	12.7	7.39	11.00	30.59	5.62	20.74	~75-100' from dredge
4	1212	41.66267	70.91588	4.9	2.53	2.87	30.51	6.02	20.76	~100' from debris removal
5	1231	41.66354	70.91630	7.7	2.35	12.63	30.58	5.59	20.82	~400' from debris removal
6	1245	41.66415	70.91602	7.4	4.02	7.20	30.48	5.38	20.82	~475' from debris removal
7	1252	41.66349	70.91615	7.7	4.54	3.63	30.64	5.40	20.82	~100' from dredge/400 from debris Re
Near 3	1316	41.66360	70.91668	13.9	8.69	6.35	30.67	5.34	20.88	~75-100' from dredge
8	1321	41.66428	70.91675	16.0	5.14	3.37	30.60	5.63	20.91	~500' from dredge
Near 2	1337	41.66351	70.91665	14.7	5.34	14.93	30.66	5.28	20.89	~75' from dredge
~~1000' N Ref~~	~~1430~~	~~41.67642~~	~~70.91595~~	~~7.3~~						
300' N comp	1432	41.67559	70.91513	9.0	7.75	0.91	29.96	7.68	20.84	
"	1433	"	"	"	2.12	1.48	29.84	10.32	20.86	
1000' N Ref	1440	41.67640	70.91593	7.3	1.55	2.30	29.75	11.89	20.98	

DRAFT SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of September 22, 2014 (Week 23)

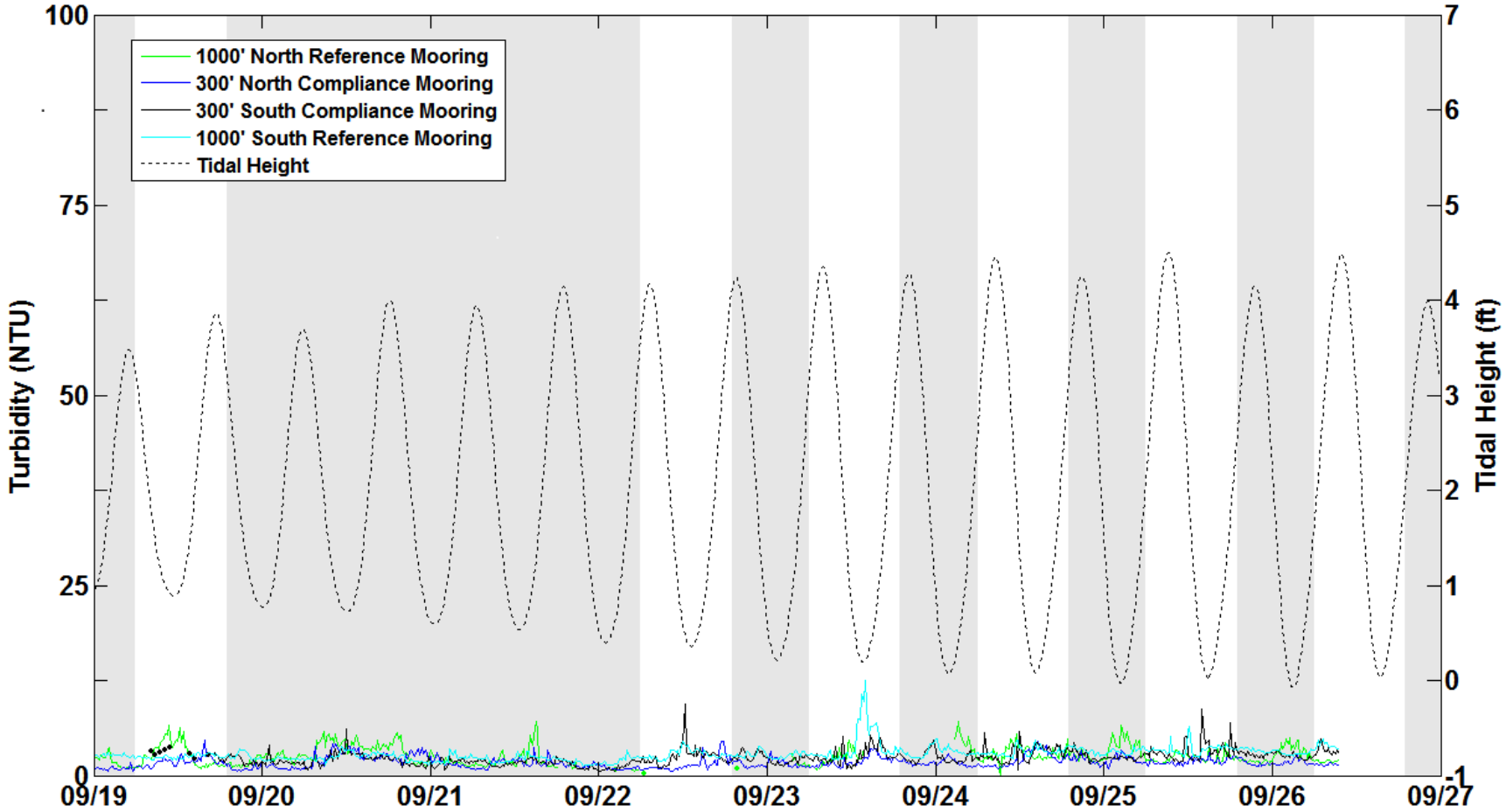
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. Flood and ebb tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

September 24, 2014:

- **Tidal stage:** Low tide at 01:47 and 14:08 EDT; high tide at 08:34 and 20:50 EDT.
- **Dredge activity:** Dredging Area L west to east. Debris removal barge moving and welding pipeline just north of 'no spud zone'. No active debris removal.
- **Monitoring activity**: Week 23, Level I monitoring. Monitored ebb tide through slack low water, then flood tide through slack high.
- **Fishery and Wildlife Observations:** Several schools of medium sized fish were seen feeding on smaller fish. Bald Eagle was noted circling the Northern portion of the work area.
- **Results summary:** Readings collected at the reference locations had turbidity value of 2.1- 3.1 NTU at the Southern Reference and 2.3 NTU at the Northern Reference. Readings at the Northern and Southern reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values were consistent throughout the survey area at 5.1 to 6.2 mg/L. Turbidity values at the compliance transects were low (<7 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to the dredging activities. Maximum recorded turbidity was 21.4 NTU within 150' of the dredge.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Note: The 1,000' North Reference mooring had intermittent signals throughout the week. The buoy was serviced on 9/24 to repair the issue.



Battelle — Daily Field Summary Sheet for Water Quality Monitoring

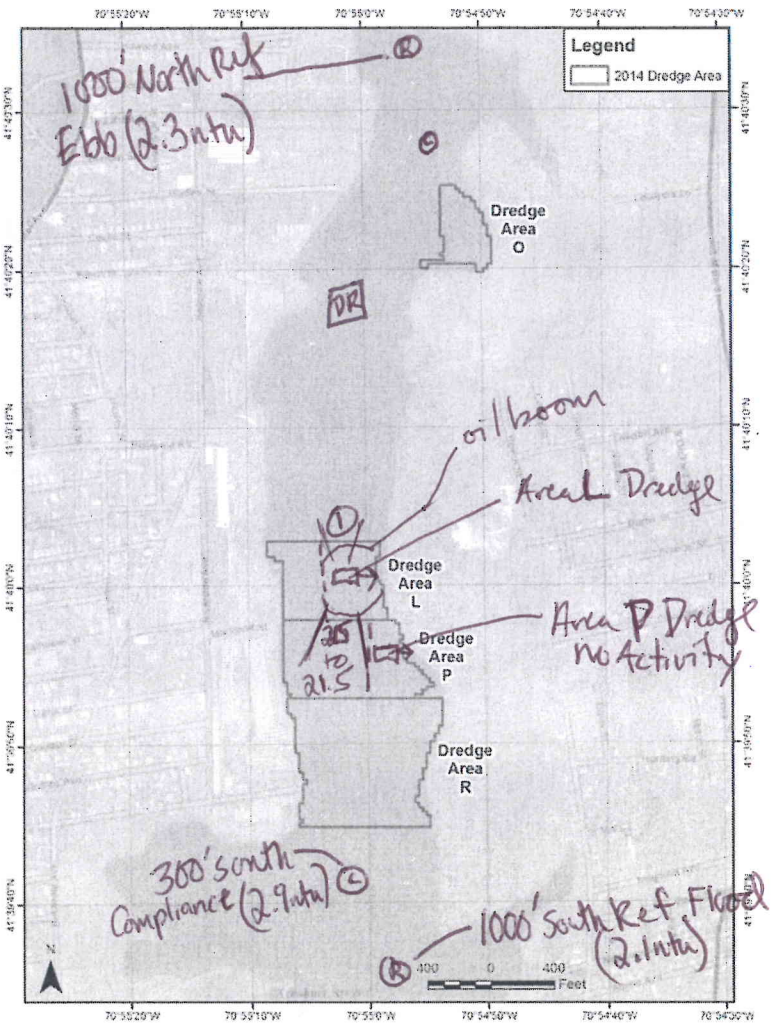
Date: 9/24/14 **Weather:** Sunny, Clear, Cool and North @ 5 / wind South @ 5

Tides:
4.10' @ 0834
0.06 @ 1408
@

Monitoring Period:
From: 0807 **To:** 1445

Tidal Stage: (HWS) Ebb (LWS) (Flood)

Dredging Activity:
- Dredging Area L West to East
- Debris Removal Barge mooring and welding Pipeline Just North of NO Spud Zone. No Debris Removal Activity



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000' North Ref	2.3ntu	2.9 / 6.8
1000 south Ref	2.1ntu	8.2 / 16.1
300' South Comp	2.9ntu	2.0 / 3.7
1000' South Ref	3.1ntu	4.0 / 10.8

Oil sheen/ Debris:
Light Sheen (Area L) contained by boom

Fish Passage: Several schools of ~~Large~~ medium sized fish seen feeding on smaller fish

Samples Collected for Laboratory Analysis – Sample IDs:
TSS (1L) _____ **Turbidity (1L)** _____
Total PCB (2x1L) _____ **Dissolved PCB (2x1L)** _____
Toxicity (5 gal) _____ **Metals (500ml)** _____

Notes: Bald Eagle seen circling upper harbor/River Area.
Very Low turbidity readings seen throughout the day. A short lived spike of 21.45ntu 150' south of dredge at low tide with push boats working.

Sampling Crew: Mike Walsh, Paul Sokoloff
Chief Scientist Signature: Mike Walsh

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	Area L
Dredging Description	West to East / Debris Removal working on Pipeline
Survey Vessel	Gale Force
Chief Scientist	Mike Walsh
Sampling Technician	Paul Sokoloff
Vessel Captain	Paul Sokoloff
Other Personnel	
Weather conditions	Sunny Clear Cool wind North @ 5 am / wind South @ 5 pm

Date	9/24/14
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Tide information		
High	0834	4.10'
Low	1408	0.06'
High	2047	3.79'
Low		

Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000' South Ref	0750	41.65915	70.91705	16.1'	8.21	2.11	30.91	5.63	19.08	Flood
① 200' North of Dredge	0830	41.66790	70.91711	7.4'	6.22	4.42	30.30	5.56	19.24	Flood Area L
208' south of Debris Barge	0845	41.67048	70.91673	6.2	4.02	3.47	30.18	5.57	19.38	Ebb/Moving/welding Pipline
1000' North Ref	0918	41.67637	70.91614	6.8	2.98	2.34	29.78	5.08	20.24	Ebb
200' South of Dredge	0940	41.66568	70.91747	11.9	4.25	6.72	30.23	5.97	19.19	AREA L
500' South of Dredge	1024	41.66488	70.91654	8.4	2.44	6.39	30.30	5.72	19.27	AREA L
150' South of Dredge	1030	41.66602	70.91697	8.7	2.56	6.39	30.35	5.63	19.37	AREA L
175' South of Dredge	1057	41.66587	70.91721	8.7	3.25	2.51	30.27	5.86	19.46	AREA L
		NO	DREDGE	ACTIVITY						
~ 175' South of Dredge	1224	41.66584	70.91732	8.1	4.08	5.81	29.91	6.10	19.74	AREA L
175' South of Dredge	1255	41.66592	70.91723	6.5	4.11	10.03	29.80	6.11	19.84	AREA L
150' South of Dredge	1306	41.66607	70.91708	6.3	2.81	21.45	29.88	6.08	19.88	AREA L
400' South of Dredge	1310	41.66531	70.91749	10.2	2.83	7.57	29.79	6.13	19.87	AREA L
400' South of Dredge	1311	"	"	10.2	8.04	11.07	30.30	5.48	19.56	AREA L
300' South Compliance	1330	41.66109	70.91753	3.7	2.00	2.94	29.95	6.02	19.80	Ebb
		NO	DREDGE	ACTIVITY						
1000' South Ref	1430	41.65915	70.91705	10.8	4.06	3.12	30.19	6.21	19.70	FLOOD

DRAFT SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of September 29, 2014 (Week 24)

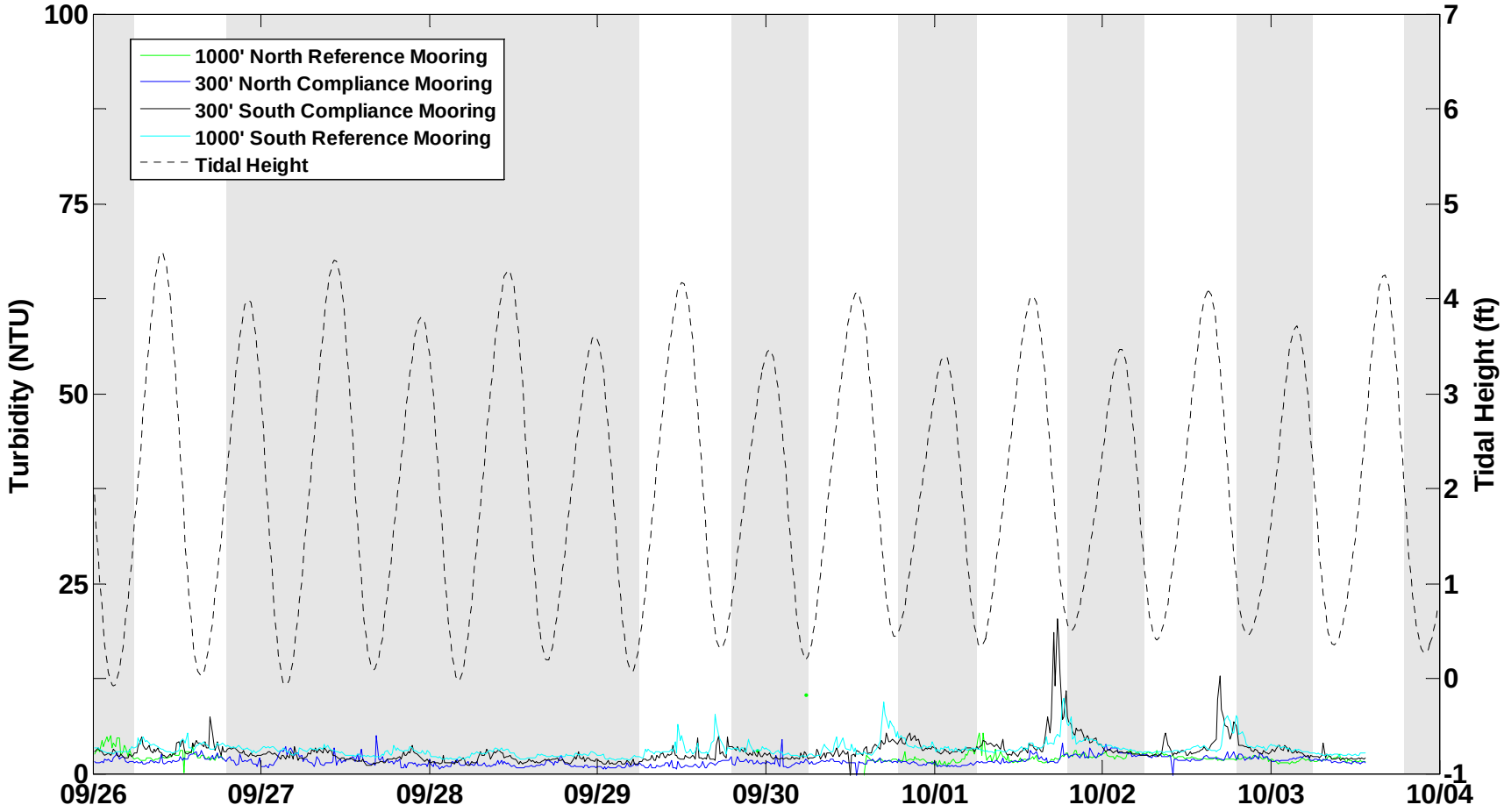
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. Flood and ebb tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

September 30, 2014:

- **Tidal stage:** High tide at 00:28 and 12:58 EDT; low tide at 05:40 and 18:26 EDT.
- **Dredge activity:** Dredging Area S north to south. Dredging area L west to east. Debris removal at the north boundary of Area S during the morning.
- **Monitoring activity**: Week 24, Level I monitoring. Monitored flood tide through slack high water, then ebb tide.
- **Fishery and Wildlife Observations:** Numerous fish were observed breaking the surface throughout the area.
- **Results summary:** Readings collected at the reference locations had turbidity values of 4.0 NTU at the Southern Reference and 2.1 NTU at the Northern Reference. Readings at the Northern and Southern reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values were between 4.7 and 6.0 mg/L throughout the survey area with the lowest values observed near the northern reference and compliance buoys < 5.1 mg/L. Turbidity values at the northern compliance transect were low (1.2 NTU). Turbidity readings were not collected at the southern compliance transect, because values were only 5.1 NTU 250 feet down current of the dredge (1.1NTU above background). Maximum recorded turbidity throughout the day was only 8.6 NTU, which was observed within 100’ of the dredge.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.

Note: The sonde on the 1,000' North Reference mooring failed on 9/26. It was replaced on 9/30 during the water quality monitoring.



Battelle — Daily Field Summary Sheet for Water Quality Monitoring

Date: 9/30/14 **Weather:** Rain, wind NNE@ 10-15

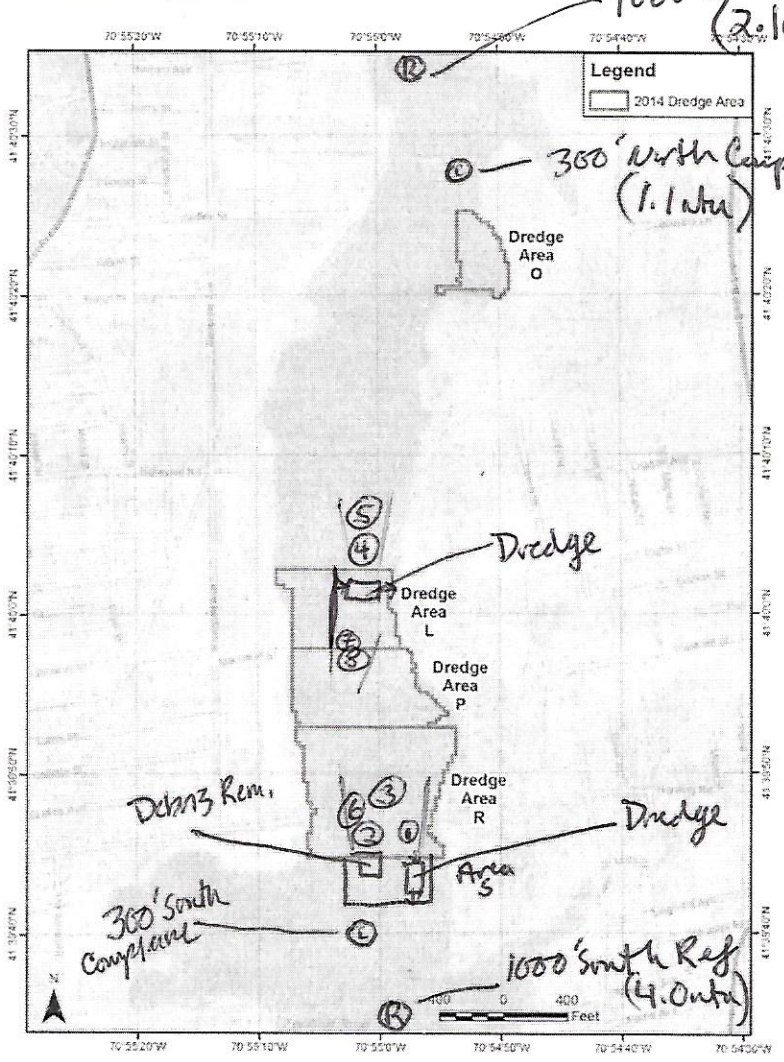
Tides:

3.96'	@	1257
0.67	@	1819
	@	

Monitoring Period:
From: 0745 **To:** 1520

Tidal Stage: (HWS) (Ebb) LWS (Flood)

Dredging Activity:
Area 5 north to South
Debris Removal Area 5 north boundary
Area L west to East
No Debris Removal during Afternoon Monitoring



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000' South Ref	4.02	8.3/13.7
300 North Comp	1.16	2.3/10.2
1000 North Ref	2.10	2.3/7.4

Oil sheen/ Debris: No Sheen Observed

Fish Passage: Numerous Fish Breaking Surface

Samples Collected for Laboratory Analysis – Sample IDs:
TSS (1L) _____ **Turbidity (1L)** _____
Total PCB (2x1L) _____ **Dissolved PCB (2x1L)** _____
Toxicity (5 gal) _____ **Metals (500ml)** _____

Notes: Single digit turbidity values seen throughout All Areas.

Sampling Crew: Mike Walsh, Paul Sokoloff
Chief Scientist Signature: _____

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	Area S / Area L / Debris Removal
Dredging Description	North to South / West to East
Survey Vessel	Gale Force
Chief Scientist	Amy WALSH
Sampling Technician	Paul Sokoloff
Vessel Captain	Paul Sokoloff
Other Personnel	—
Weather conditions	Rainy / wind NNE @ 10-15

Date	9/30/14
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Tide information	
High	3.96 @ 1257
Low	0.67 @ 1819
High	
Low	

	Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000's	South Ref	0812	41.65929	70.91719	13.7	8.3	4.02	30.84	5.73	19.88	Flood
(1)	75' north of Dredge	0828	41.66295	70.91637	10.2	6.4	5.52	30.66	5.91	19.92	Area S
(2)	75' north of Debris R.	0830	41.66286	70.91666	13.0	4.1	1.62	30.61	6.03	19.87	Area S
(3)	250' north of Area S	0903	41.66375	70.91651	8.6	5.52	3.31	30.55	5.81	19.84	Debris R and Dredging
				NO Dredge / Debris Removal							
(4)	100' north of Dredge	1043	41.66807	70.91689	6.6	3.34	8.57	30.59	5.52	19.83	Area L
(5)	300' North of Dredge	1122	41.66895	70.91655	5.8	1.54	5.78	30.68	5.32	19.83	Area L
(6)	100' north of Debris R	1146	41.66334	70.91713	13.5	4.53	4.87	30.89	5.81	19.74	Area S
	300' North Compliance	1239	41.67447	70.91508	10.2	2.38	1.16	30.10	5.08	19.87	FLOOD
	1000' North Ref	1308	41.67630	70.91614	7.4	2.37	2.10	30.12	4.67	20.09	Ebb
(7)	250' South of Dredge	1428	41.66566	70.91738	9.4	2.19	5.12	30.36	5.73	19.71	Area L
(8)	250' South of Dredge	1443	41.66585	70.91724	9.1	5.87	5.08	30.40	5.65	19.73	Area L

DRAFT SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

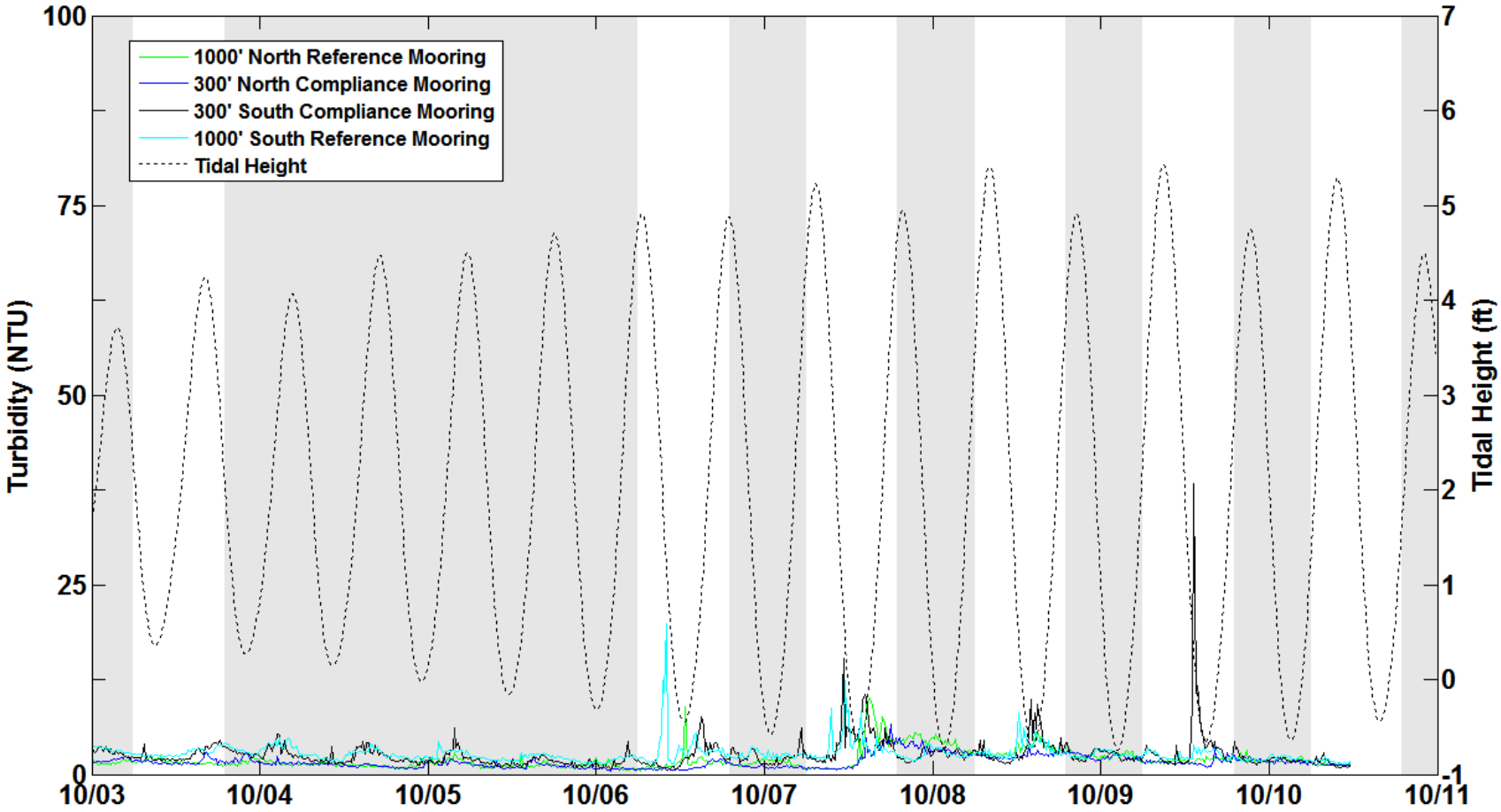
Week of October 6, 2014 (Week 25)

All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. Flood and ebb tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

October 7, 2014:

- **Tidal stage:** High tide at 07:19 and 19:43 EDT; low tide at 00:52 and 13:25 EDT.
- **Dredge activity:** Dredging Area S north to south. Dredging area L west to east. Debris removal Area S.
- **Monitoring activity**: Week 25, Level I monitoring. Monitored ebb tide through slack low water, then flood tide.
- **Fishery and Wildlife Observations:** Occasional fish were observed breaking the surface throughout the area.
- **Results summary:** Readings collected at the reference locations had turbidity values of 1.1 NTU at the Northern Reference and 4.2 NTU at the Southern Reference. Readings at the Northern and Southern reference locations were low throughout the day. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values were consistent throughout the survey area at 5.5 to 6.5 mg/L. Turbidity values at the compliance transects were low (<5 NTU). In addition to the compliance location monitoring, additional monitoring was conducted closer to the dredging activities. Maximum recorded turbidity was 17.8 NTU within 200’ of the dredge.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.



Battelle — Daily Field Summary Sheet for Water Quality Monitoring

Date: 10/7/14 **Weather:** Mostly Cloudy / Rain / Breezy SSW 10-20

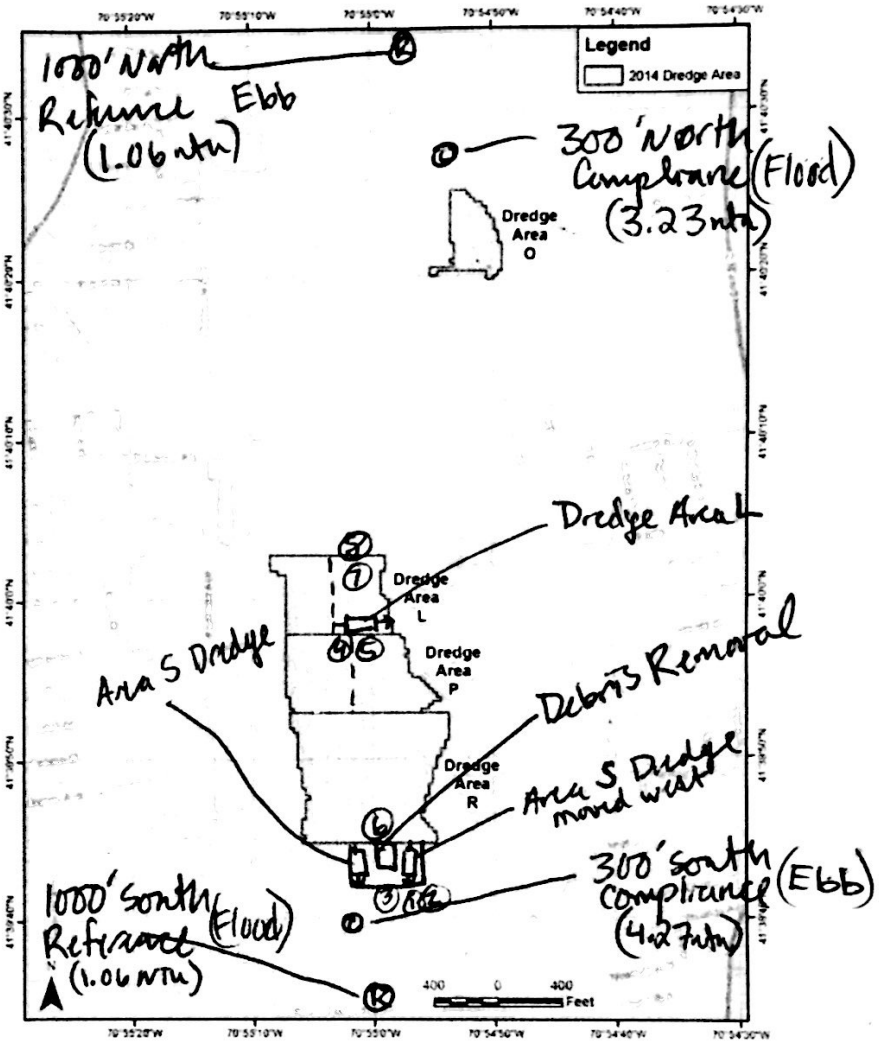
Tides:

4.94'	@	0721
-0.37'	@	1311
4.67'	@	1947

Monitoring Period:
From: 0745 **To:** 1505

Tidal Stage: HWS Ebb LWS Flood

Dredging Activity:
Area S North to south Dredging
Debris Removal Area S
Area L west to East Dredging
Area S dredge moved to west boundary
Debris Removal moved to center of Area S



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000' North Ref	1.06	3.5/7.7
300' South Comp	4.27	2.1/6.0
1000' South Ref	4.17	7.3/11.4
300' North Comp	3.23	3.7/5.3

Oil sheen/ Debris:
None

Fish Passage: Occasional small fish breaking water surface

Samples Collected for Laboratory Analysis – Sample IDs:

TSS (1L)		**Turbidity (1L)**	
Total PCB (2x1L)		**Dissolved PCB (2x1L)**	
Toxicity (5 gal)		**Metals (500ml)**	

Notes: Low Turbidity Readings seen throughout Areas (single digit to mid-teens NTUs). While low some turbidity also seemed to be driven by the low tide and strong South/Southwest wind.

Sampling Crew: Mike Walsh, Patrick Curran
Chief Scientist Signature: Mike Walsh

Scanned by CamScanner

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	East side / Area S / Area L / Debris Removal Area S / West side Area S
Dredging Description	North to South Area S / West to East Area L
Survey Vessel	Gale Force
Chief Scientist	Mike Walsh
Sampling Technician	Patrick Curran
Vessel Captain	Patrick Curran
Other Personnel	—
Weather conditions	Mostly Cloudy Breezy SSW @ 10-15 kn / Rain

Date	10/7/14
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Tide information	
High	4.94' @ 0721
Low	-0.37 @ 1311
High	4.67 @ 1947
Low	

	Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000' North Ref		0815	41.67646	70.91613	7.7	3.55	1.06	28.13	5.49	18.52	Ebb
① 200' South of Dredge		0844	41.66126	70.91605	9.1	6.01	17.77	29.84	6.03	17.39	Area S (Depth)
② 200' South of Dredge		0847	"	"	~~1.82~~	1.82	8.55	29.82	6.08	17.41	Area S (surface)
③ 100' South of Debris R.		0905	41.66147	70.91739	7.52	5.25	3.91	29.84	6.22	17.42	Area S
150' South of Dredge		0915	41.66544	70.91649	9.6	6.90	2.17	29.63	6.07	17.47	Area L
					Dredge moved to west side of Area S						
					Debris Removal moved to center of Area S						
150' South of Debris R		1010	41.66137	70.91724	8.6	4.22	2.97	29.68	6.12	17.52	Area S
④ 125' South of Dredge		1106	41.66529	70.91692	8.5	4.31	2.81	28.79	5.94	17.96	Area L
125' South of Dredge		1148	41.66528	70.91695	8.08	3.36	6.67	28.53	6.16	18.23	Area L
300' South Compliance		1205	41.66104	70.91793	6.08	2.11	4.27	29.20	6.43	17.97	Ebb
⑤ 125' South of Dredge		1227	41.66531	70.91663	6.1	2.34	12.13	28.56	6.45	18.34	Area L
125' South of Debris R.		1306	41.66146	70.91680	7.21	3.12	11.57	28.72	6.24	18.18	Area S
1000' South Ref		1322	41.65932	70.91727	11.4	7.13	4.17	29.05	6.39	18.06	FLOOD
⑥ 100' North of Debris R		1345	41.66322	70.91676	11.0	5.79	5.27	28.71	6.29	18.26	Area S
⑦ 200' North Dredge		1400	41.66748	70.91714	6.1	3.31	9.26	28.25	5.52	18.64	Area L
⑧ 300' North of Dredge		1420	41.66772	70.91705	3.4	1.02	13.91	28.28	6.18	18.73	AREA L
300' North Compliance		1448	41.67461	70.91509	5.3	3.71	3.23	27.32	6.56	18.67	FLOOD

Scanned by CamScanner

DRAFT SURVEY CHRONOLOGY, DAILY OBSERVATIONS, AND MOORING DATA

Week of October 13, 2014 (Week 26)

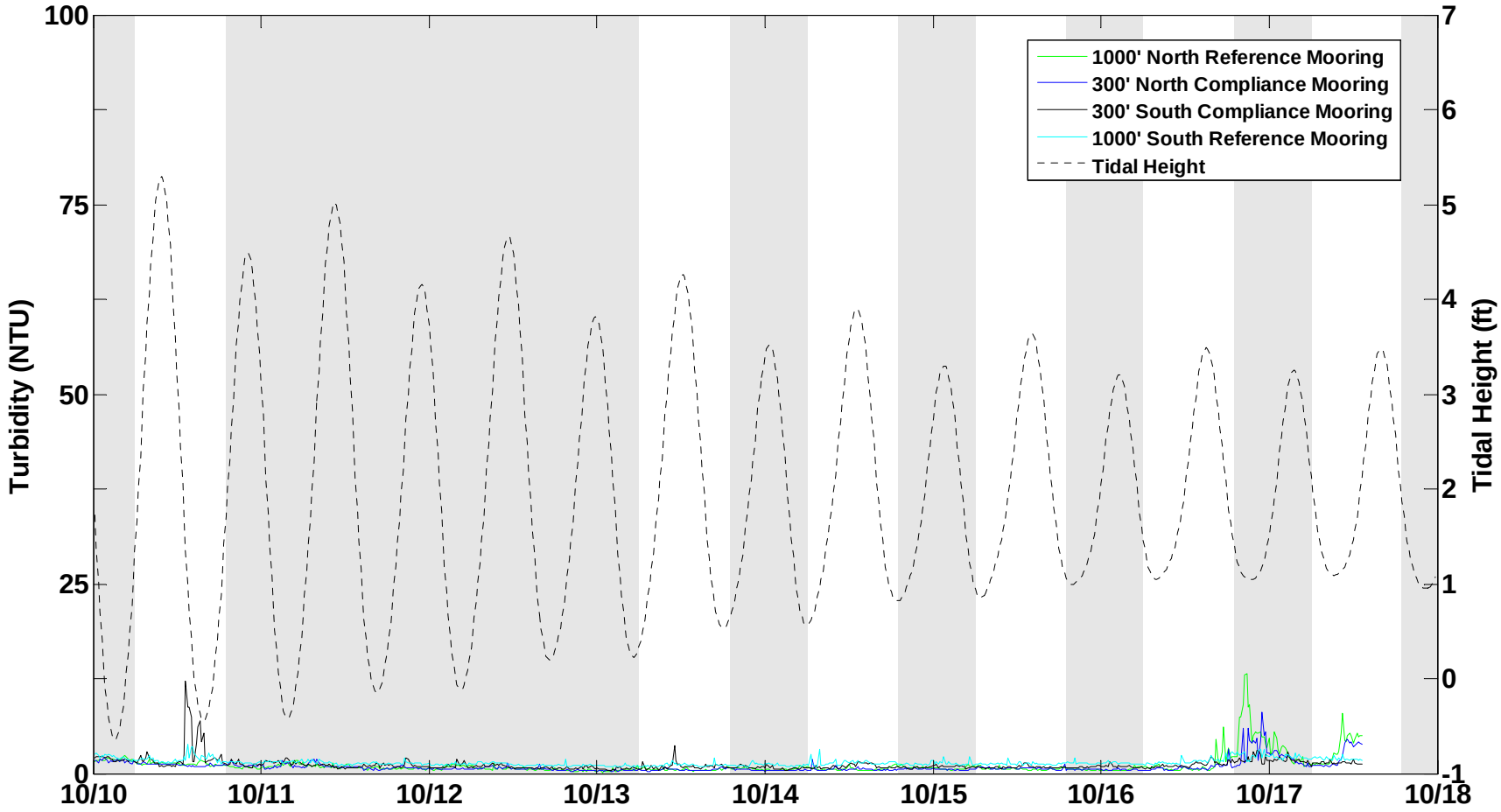
All turbidity readings referenced below are the actual values from the sensor and are not corrected for background levels. Flood and ebb tide data for each day that water quality monitoring was performed during operations is summarized below; all times are Eastern Daylight Time (EDT).

October 14, 2014:

- **Tidal stage:** High tide at 00:35 and 13:03 EDT; low tide at 05:37 and 18:32 EDT.
- **Dredge activity:** No dredging or debris removal. Demobilization activities consisted of boom and sheet pile removal and pipeline back flushing.
- **Monitoring activity**: Week 26, Level I monitoring. Monitored flood tide. Additionally, moved the 300' south mooring to 41.65913/70.91611.
- **Fishery and Wildlife Observations:** No fish were observed.
- **Results summary:** Readings collected throughout the monitoring period were less than 1.0NTU at all locations. Reported turbidity values represent a 30 second average of instantaneous readings. Dissolved oxygen values were consistent throughout the survey area at 6.8 ± 0.2 mg/L.

October 14, 2014 was the final day of water quality monitoring for the 2014 dredging season. The moorings will stay in the water until after demobilization is complete.

Turbidity data from the moored sensor arrays is provided in Figure 1 below. Shaded areas indicate nights and weekends, periods of inactivity in the dredging operations.



Battelle

Daily Field Summary Sheet for Water Quality Monitoring

Date: 10/14/2014 **Weather:** Cloudy, 90% Cloud Cover, Wind 5-10 South

Tides:

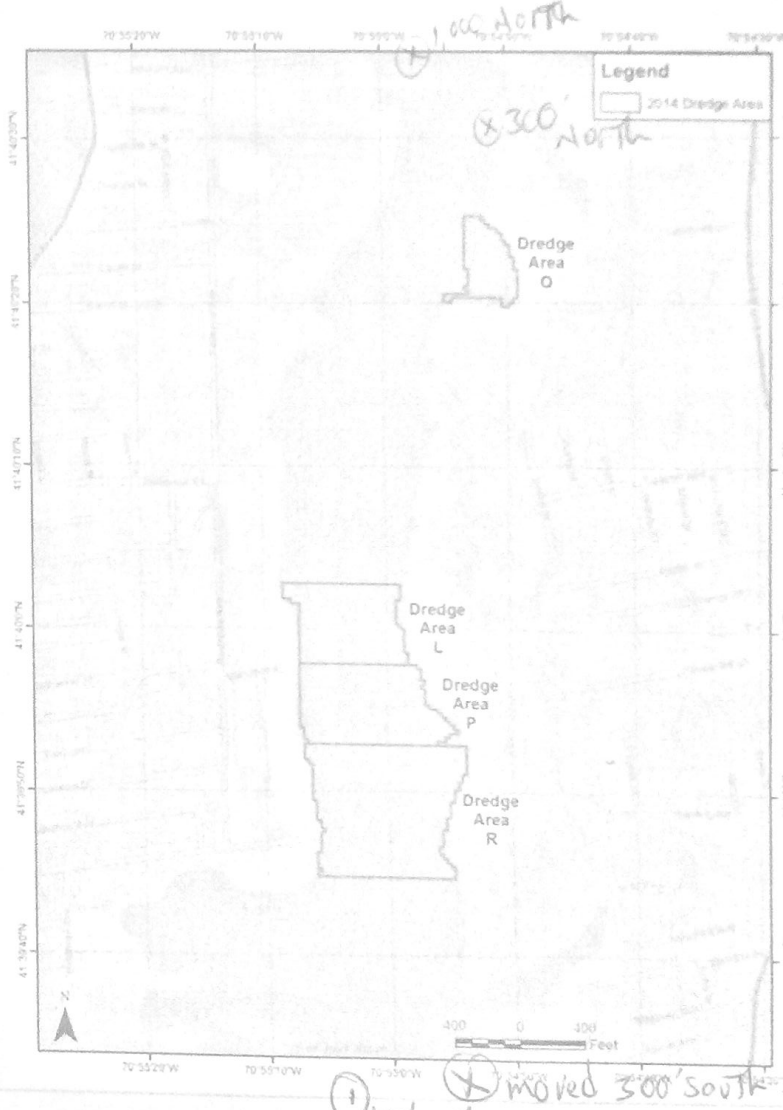
Low	@ 05:33
High	@ 13:13
Low	@ 18:37

Monitoring Period:
From: 0815 **To:** _____

Tidal Stage: HWS Ebb LWS [Flood]

Dredging Activity:
DEMOB ACTIVITY FOR DREDGING.
- BOOM & SHEET PILE REMOVAL
- PIPELINE BACK FLUSHING

BATTELLE: REMOVED TIDE BOARD
- RELOCATED 300'S BOUY/MOORING



Turbidity Summary

Location	Turbidity (NTU)	Sensor/water Depth (ft)
1000' South	0.71	2.8
300' North	0.66	1.17
1000' North	0.67	1.23

Oil sheen/ Debris:
NO SHEEN / DEBRIS

Fish Passage: NONE

Samples Collected for Laboratory Analysis – Sample IDs:

TSS (1L) NONE	Turbidity (1L) NONE
Total PCB (2x1L) NONE	Dissolved PCB (2x1L) NONE
Toxicity (5 gal) NONE	Metals (500ml) NONE

Notes: NEW COORDINATES FOR "300'S" MOORING

41.65913
70.91611

Sampling Crew: PATRICK CURRAN ALEX MANSFIELD

Chief Scientist Signature: _____

Battelle

Water Quality Monitoring
In situ Data Field Form

Dredging Location	N/A
Dredging Description	DEMOB ACTIVITY (NO DREDGING)
Survey Vessel	GALE FORCE
Chief Scientist	ALEX MANSFIELD
Sampling Technician	PATRICK CURRAN
Vessel Captain	ALEX MANSFIELD
Other Personnel	NONE
Weather conditions	90% Cloud Cover, 5-10 KT WIND S

Date	10/14/2014
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Tide information	
High	12:49 AM
Low	5:33 AM
High	1:13 PM
Low	6:37 PM

Station Number	Time	Latitude	Longitude	Water depth	Sample Depth	Turbidity	Salinity	DO	Temp	Notes
1000' South	1022	41.65934	70.91711	~~2.8~~ 14.2	2.8	0.71	29.90	6.96	16.51	Reference Station, No Dredging or DR*
AREA "S"	1056	41.66276	70.91692	12.1	2.20	0.85	29.90	7.00	16.60	NO DREDGING/NO DR/ SURFACE
AREA "S"	1056	41.66276	70.91692	12.1	10.10	0.84	29.91	6.70	16.50	NO DREDGING / NO DR / BOTTOM
300' NORTH	1115	41.67461	70.91492	6.1	1.17	0.66	27.26	6.97	17.27	NO DREDGING/NO DR
1000' NORTH	1140	41.67648	70.91599	5.0	1.23	0.67	25.91	6.80	16.72	NO DREDGING/NO DR
1000' NORTH	1230	41.67646	70.91604	5.8	1.56	0.68	26.40	6.81	17.23	NO DREDGING/NO DR

*DR = Debris Removal

Additional wildlife observations from field staff not directly recorded on the field logs include:

- A variety of waterfowl including gulls, swans, cormorants, egrets, terns, osprey, and other wading birds were observed living and feeding in the estuary surrounding all active dredge areas.
- Cormorants were observed in large groups in late summer sitting on the dredge pipeline.
- The species most frequently present were cormorants, gulls and terns.
- Ospreys were regularly observed diving and feeding on fish in spring and early summer.
- Bald eagles were also observed circling the upper harbor on a few occasions (field record for Week 23, September 23, 2014).

Appendix B

Continuous In Situ Water Quality Data

(Raw and processed water quality data files provided on CD only, with Appendix B)

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NATIVE FILE TARGET SHEET
US EPA New England
Superfund Document Management System

To view the attached files, open the "Attachment Panel" by clicking on the paper clip icon in the left side panel of this window.

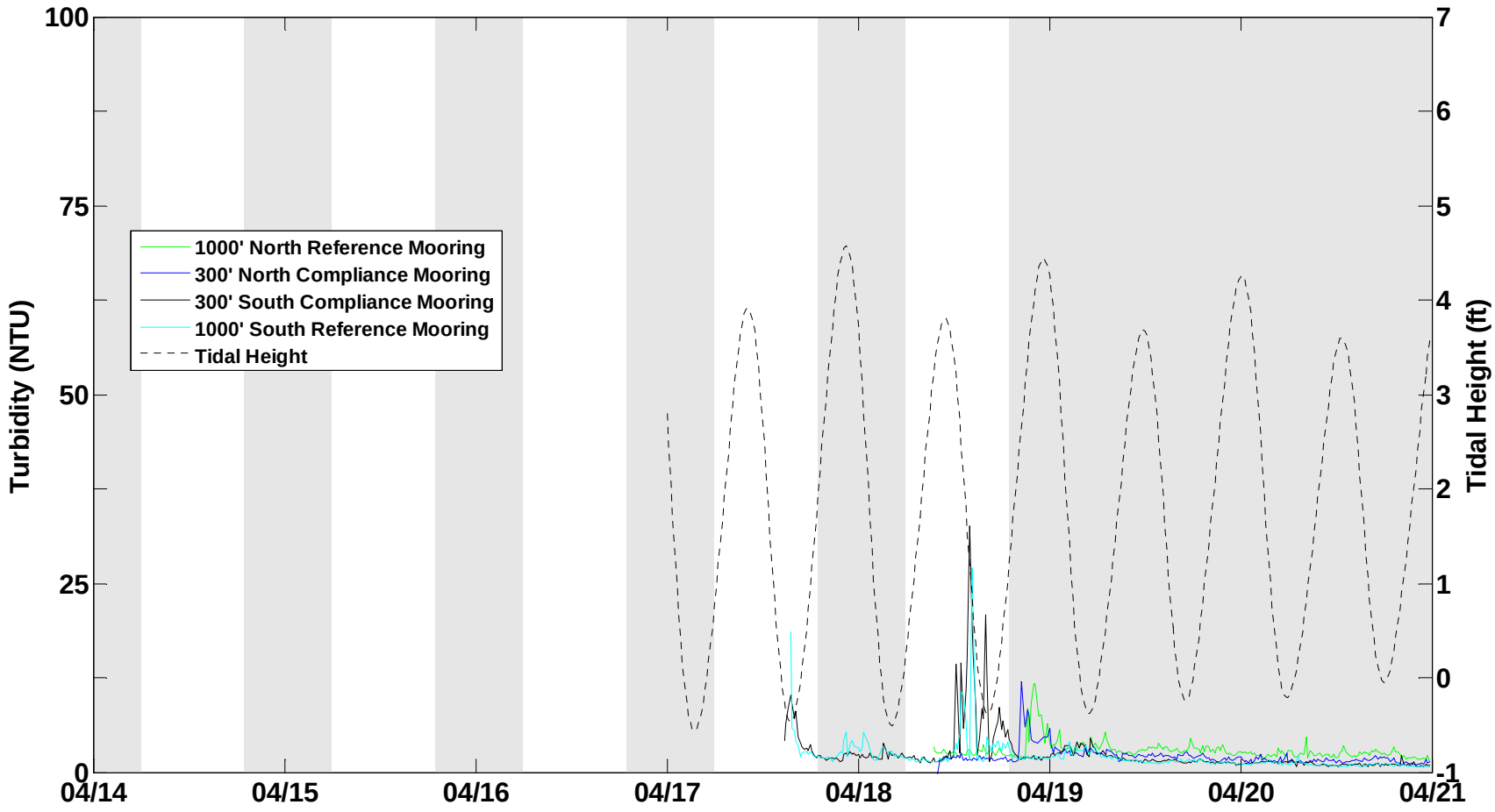
File Type(s) attached: .csv, .xlsx
Example: .jpg, .xls

Description or Comments:

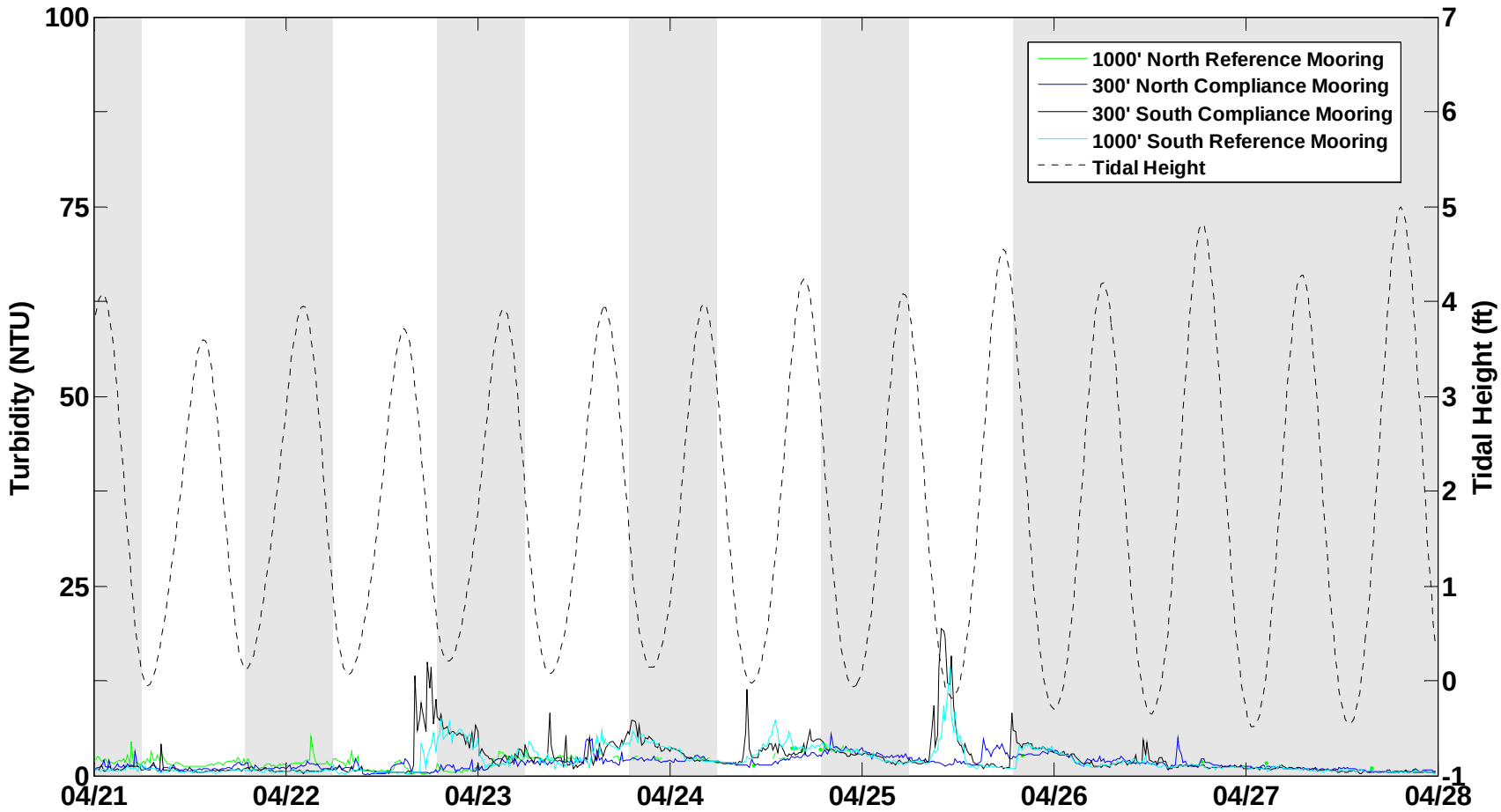
Original All sites all Data Download.csv, Processed All sites all Data.xlsx
Raw and processed water quality data files

Please Note: To view attachments the software corresponding with the specified file type is necessary.

For any additional assistance please contact the EPA New England Office of Site Remediation and Restoration Records and Information Center
617-918-1440



Shaded Areas Indicate Nights and Weekends, Periods of Inactivity in the Dredging Operations



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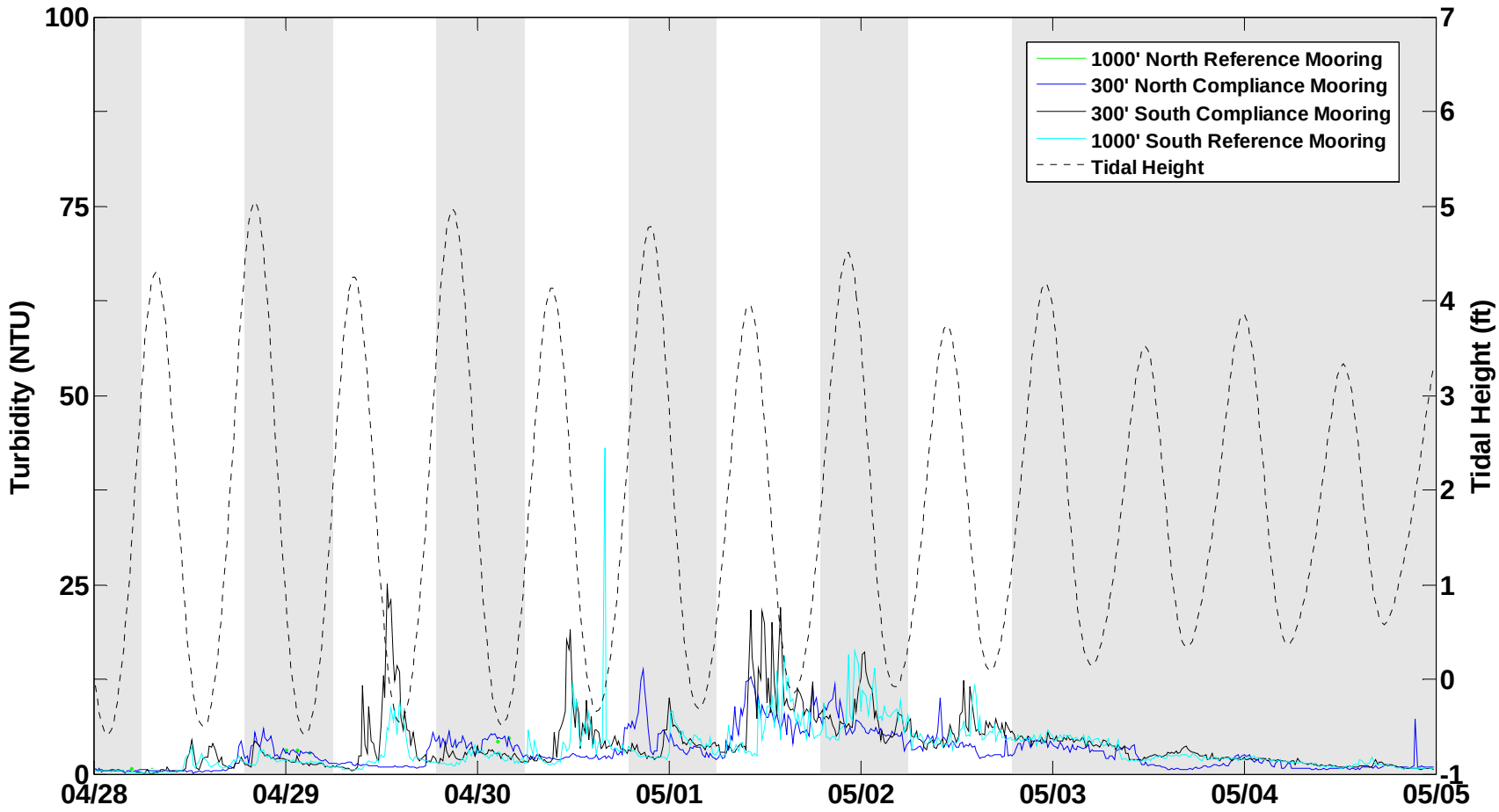

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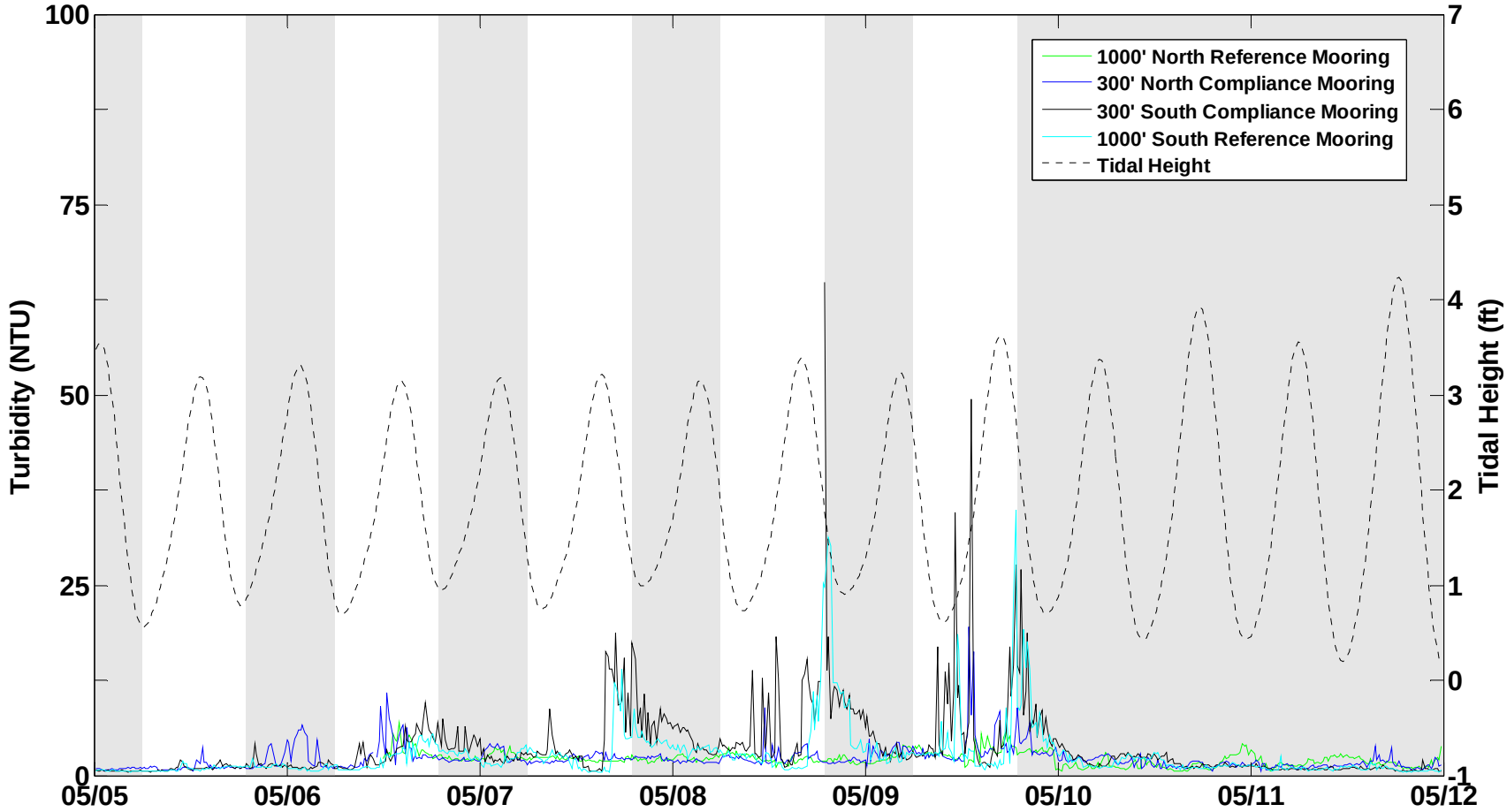

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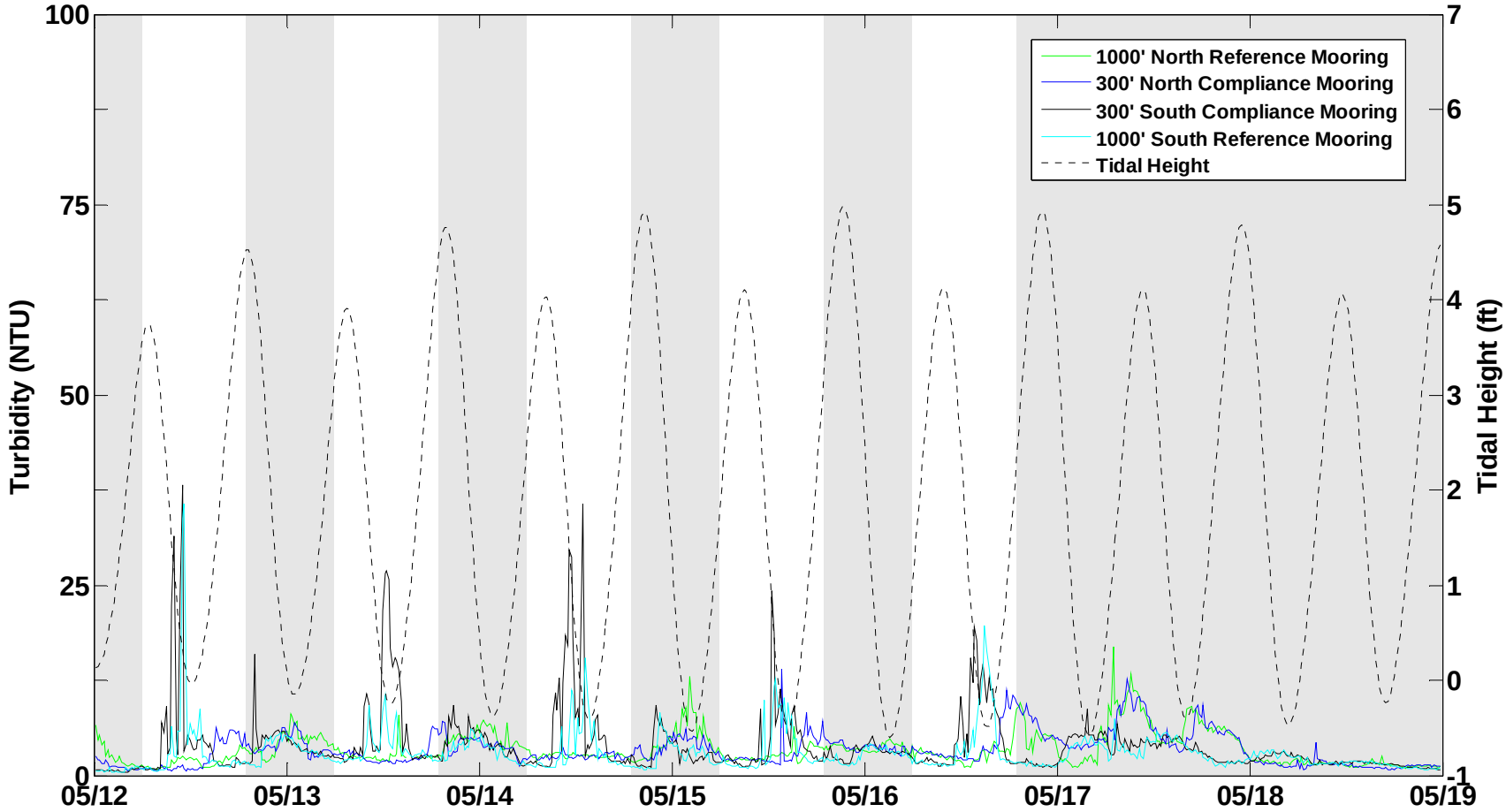

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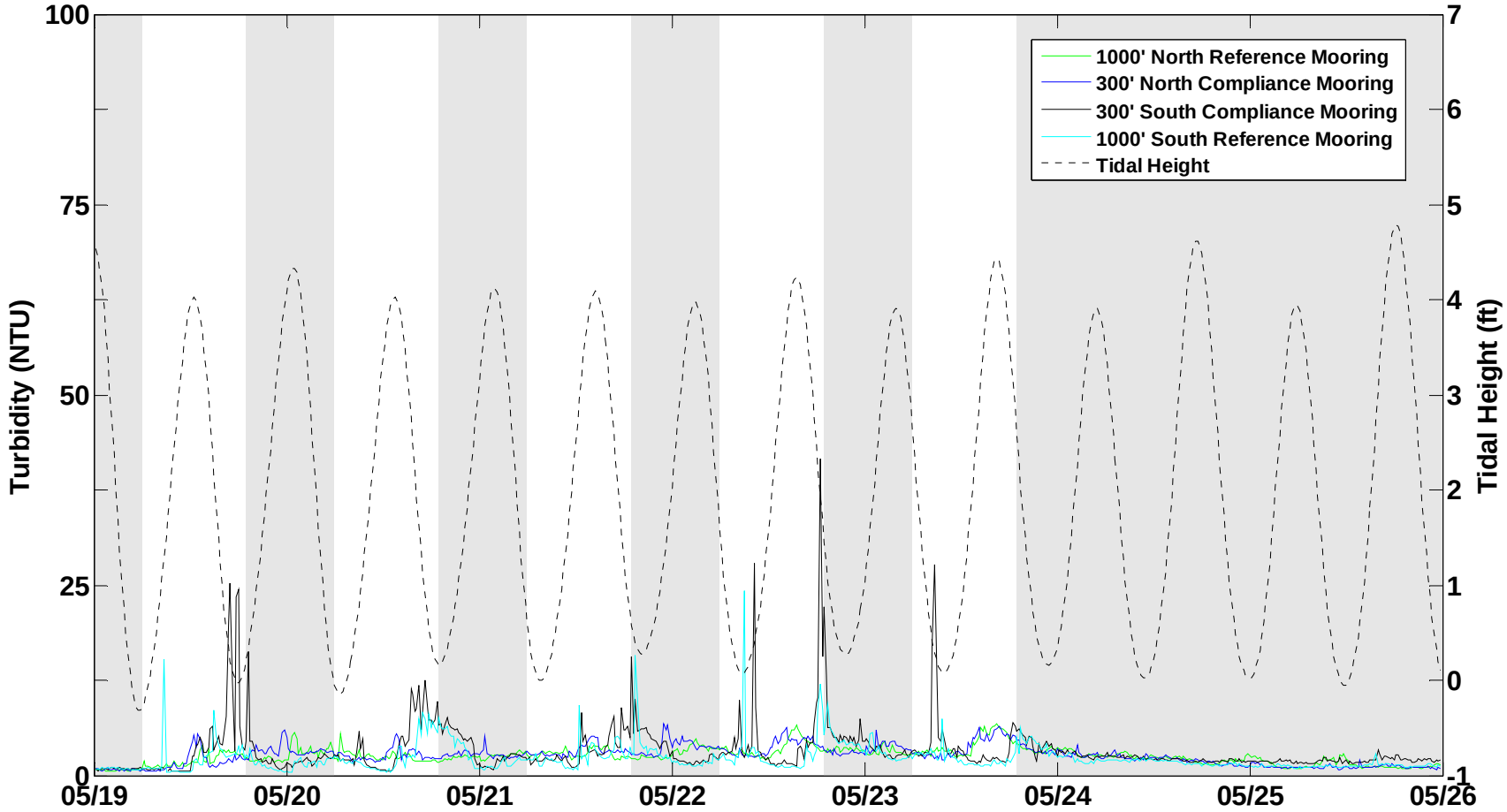

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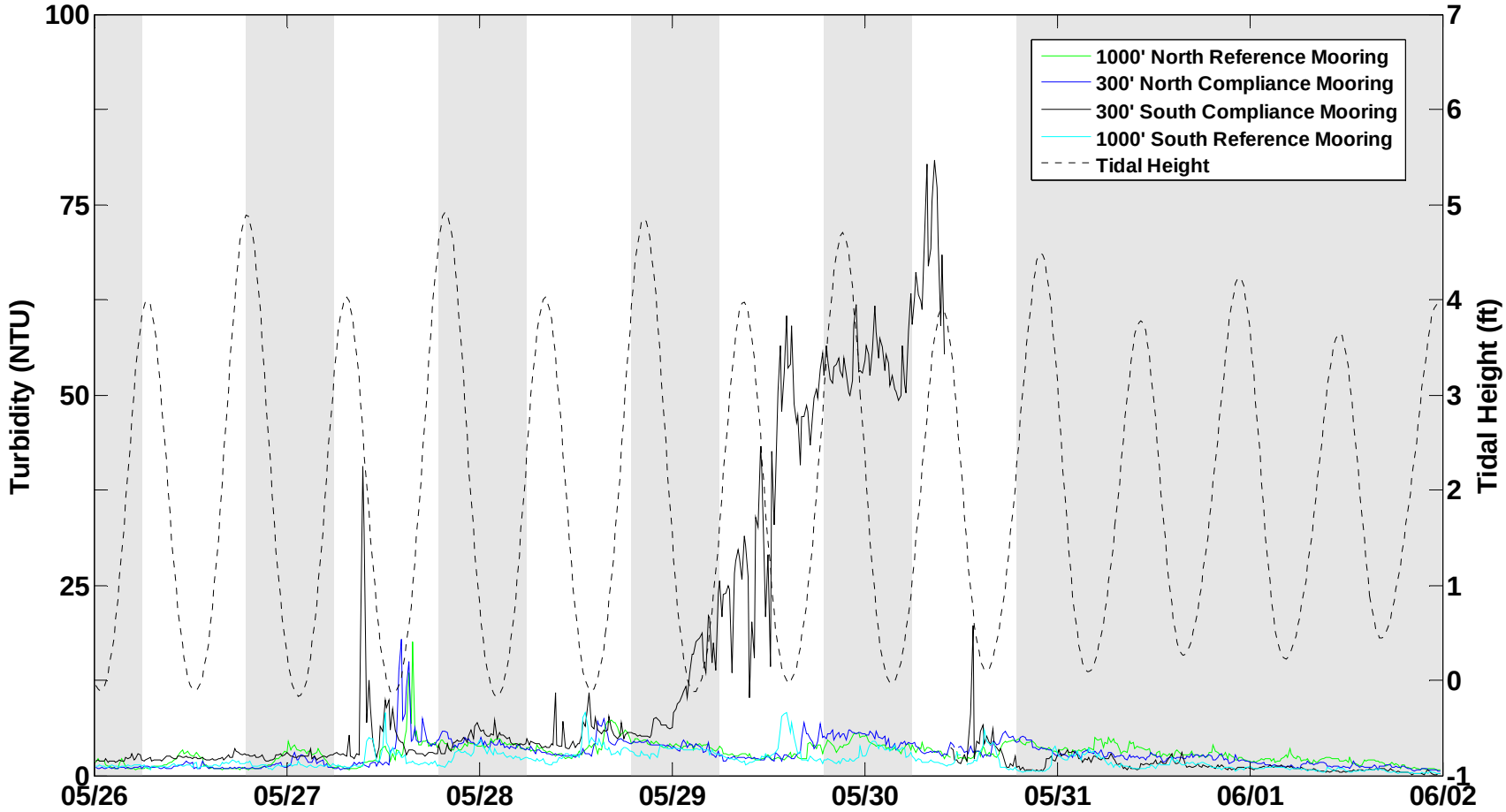

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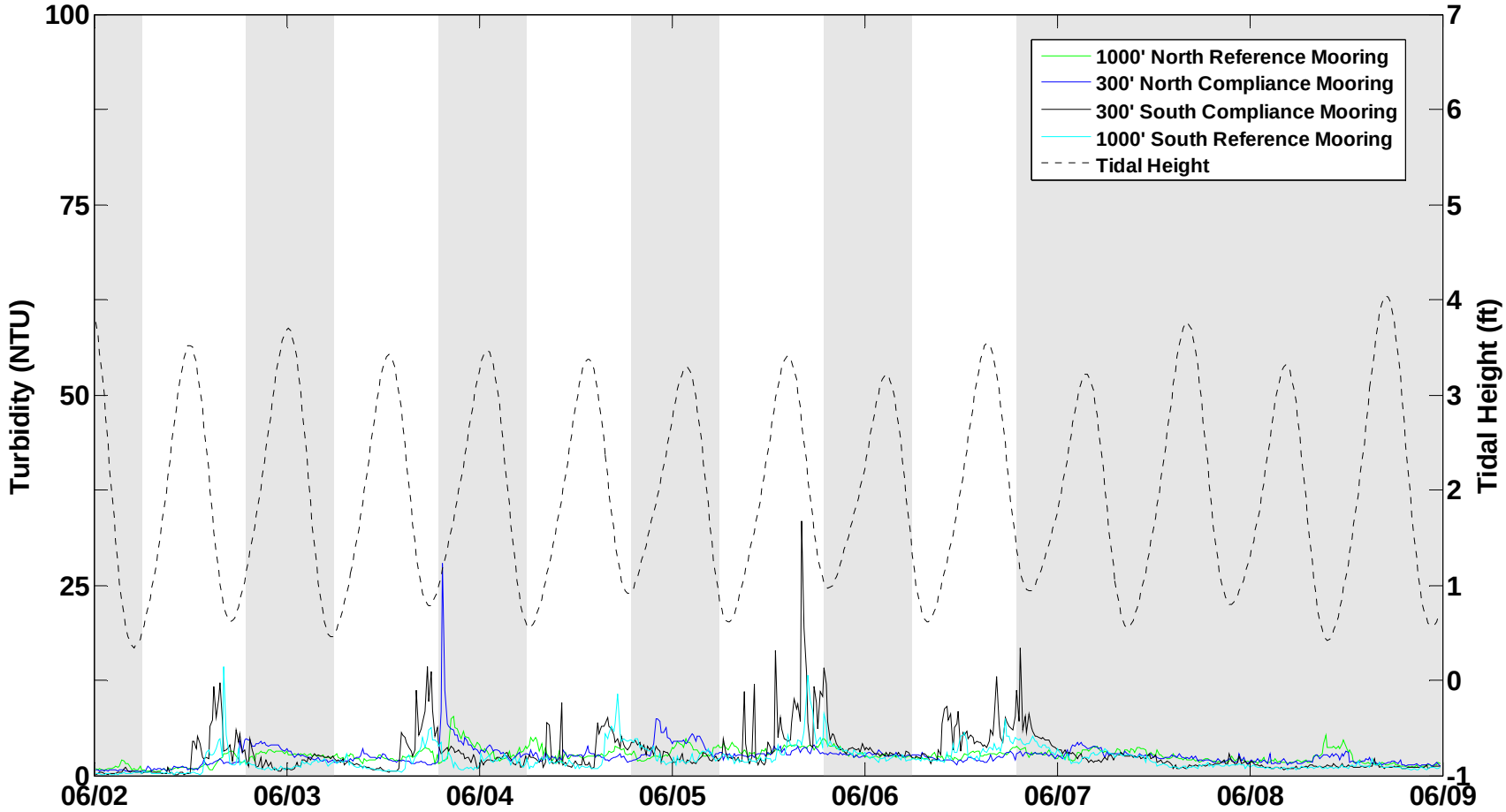

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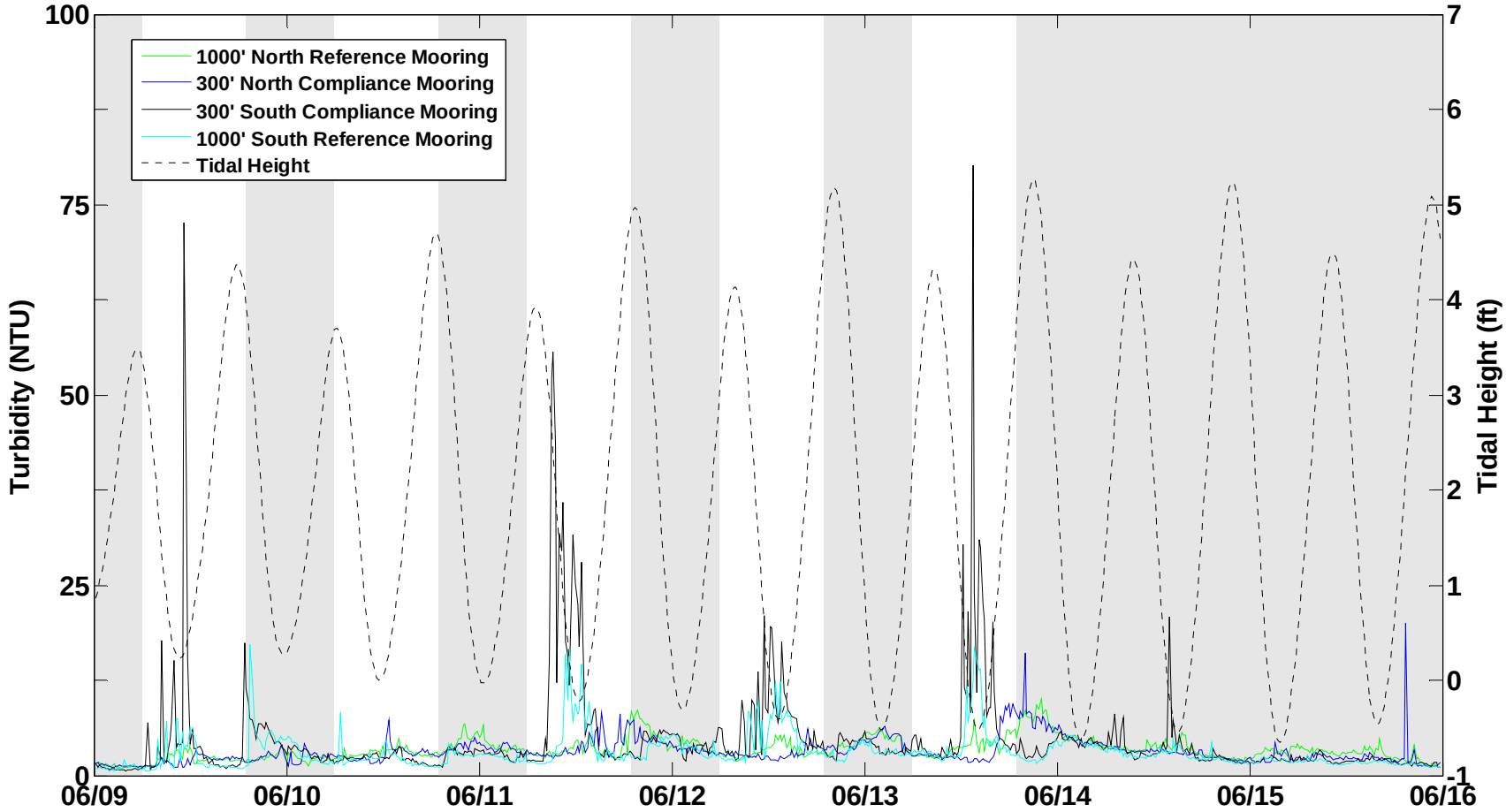

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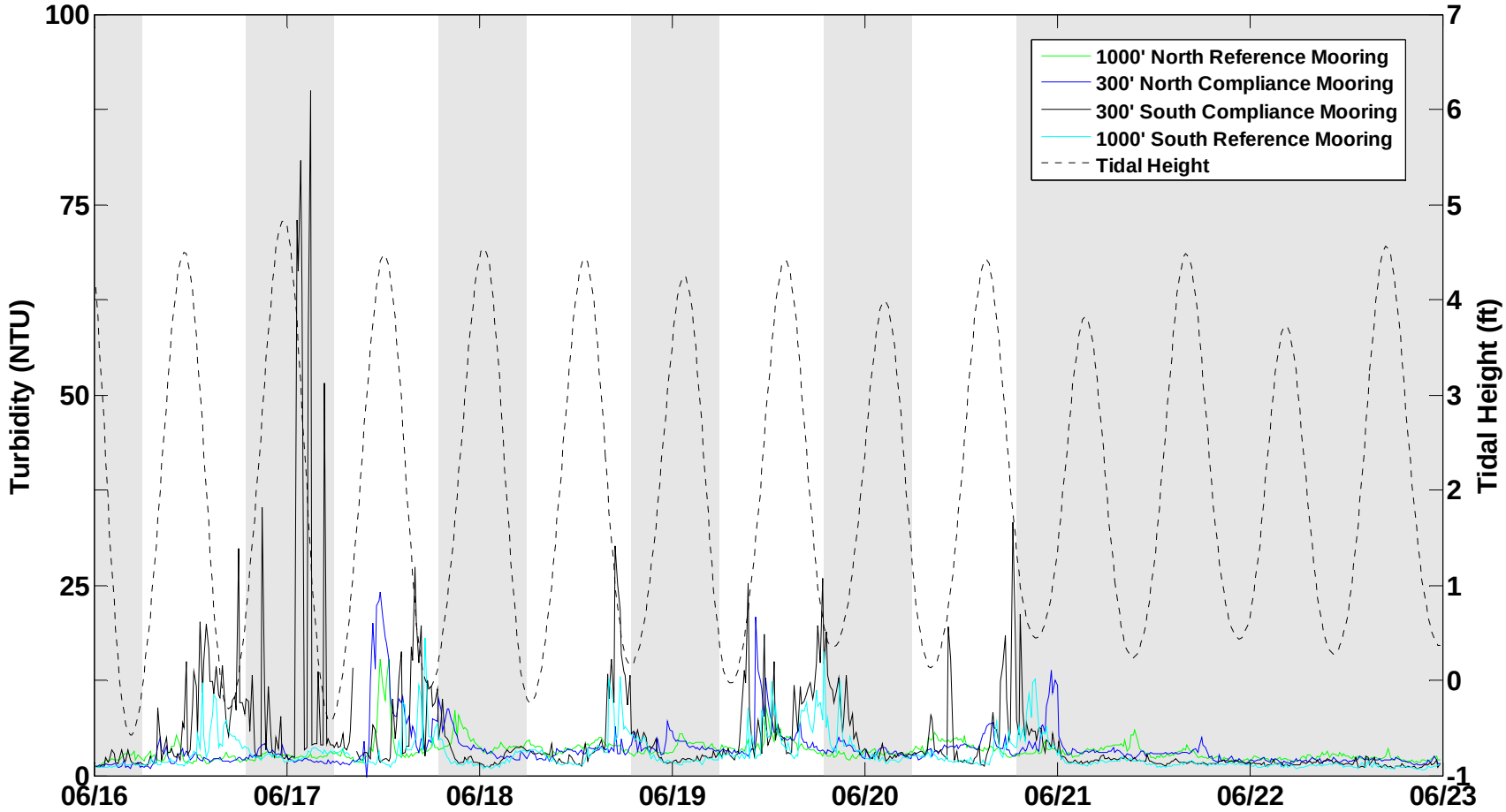

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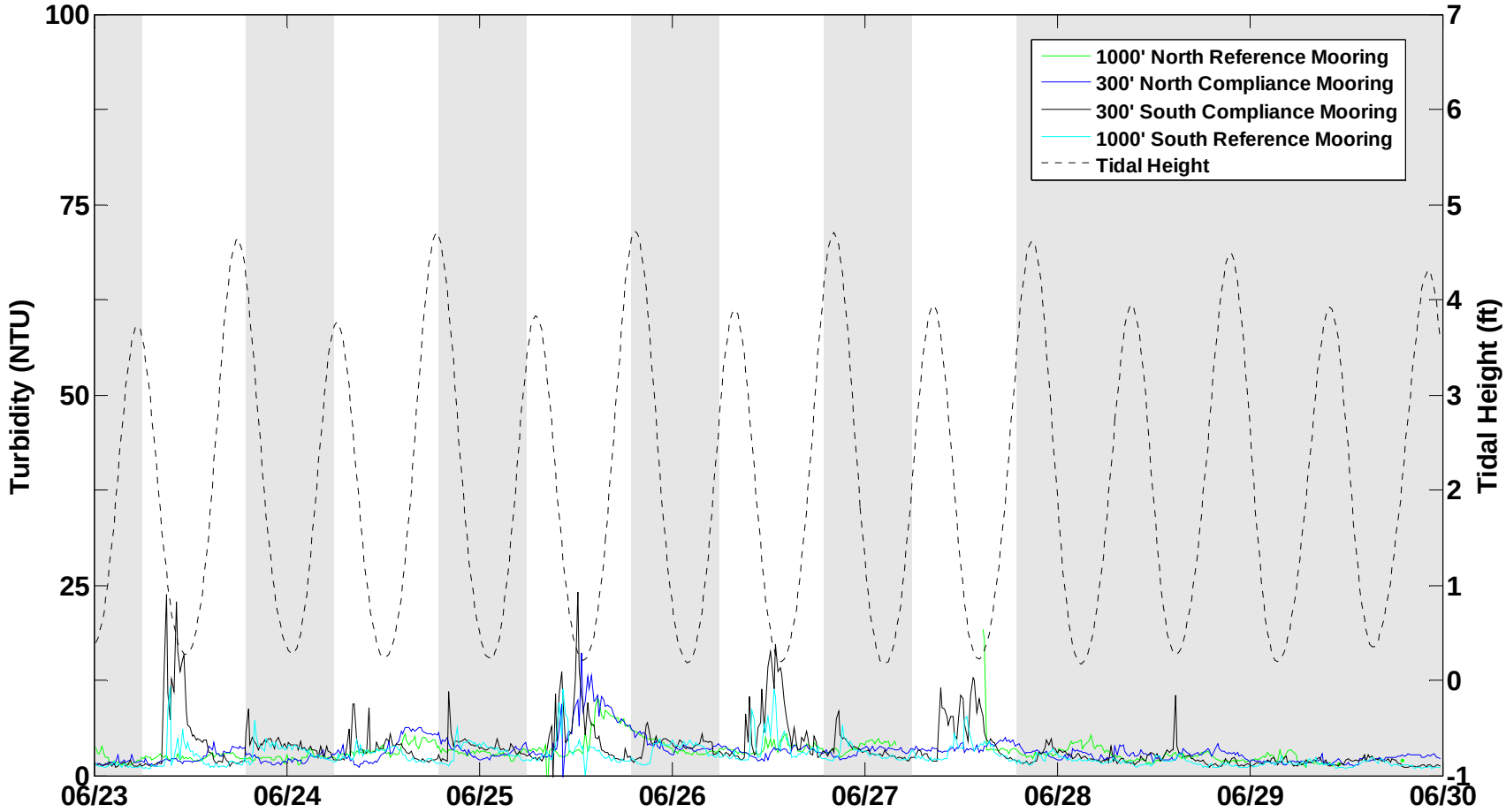

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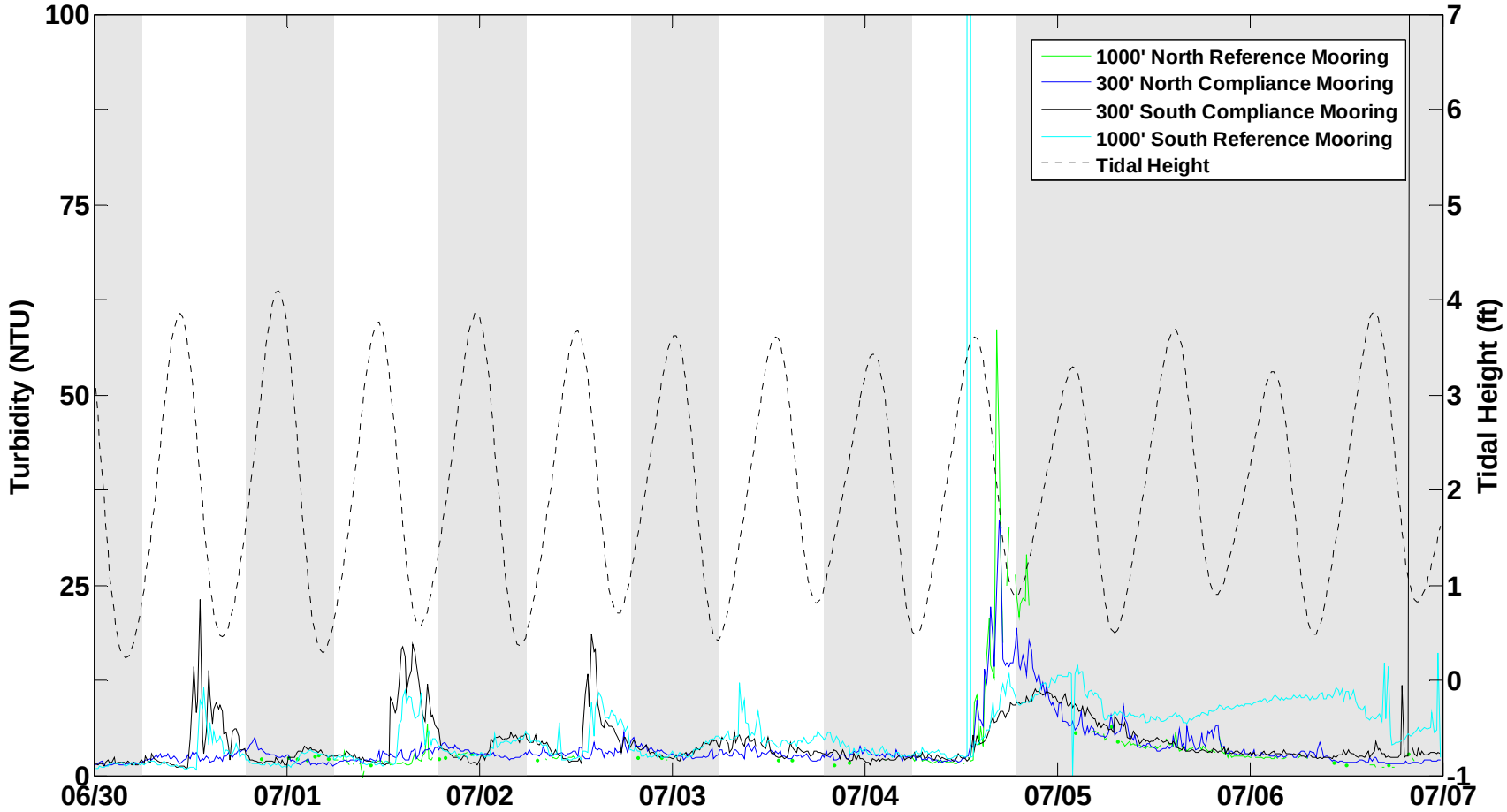

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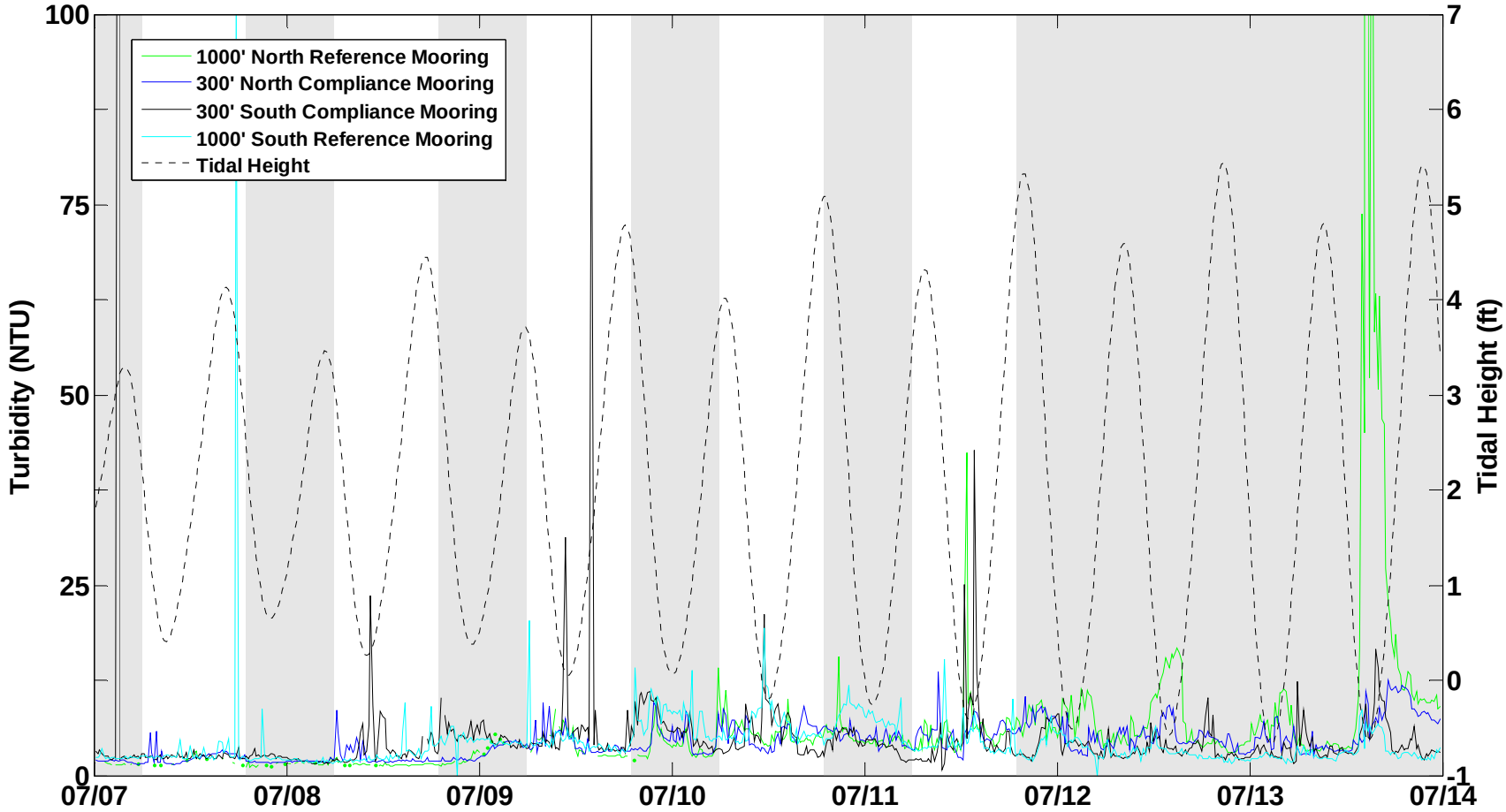

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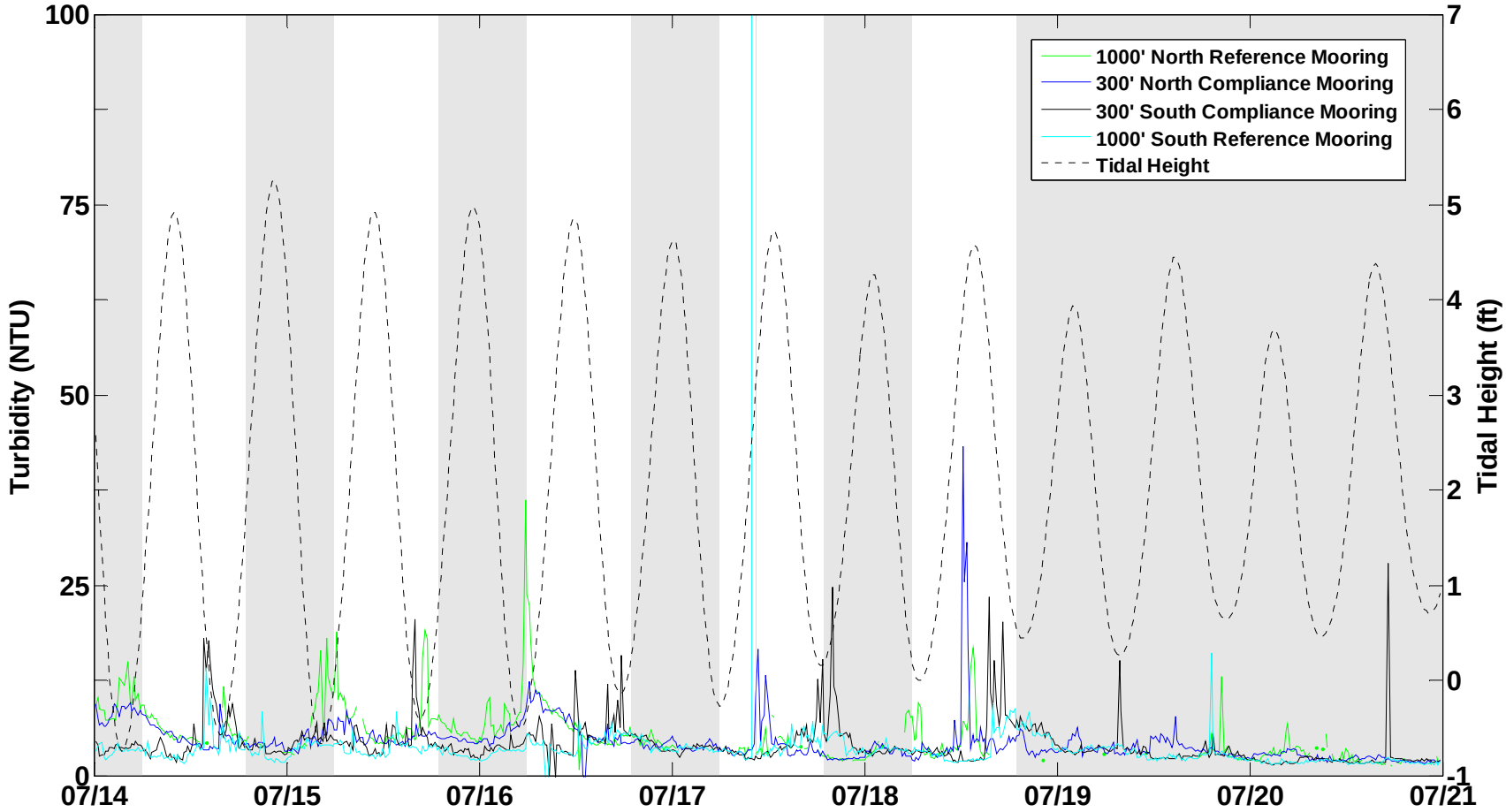

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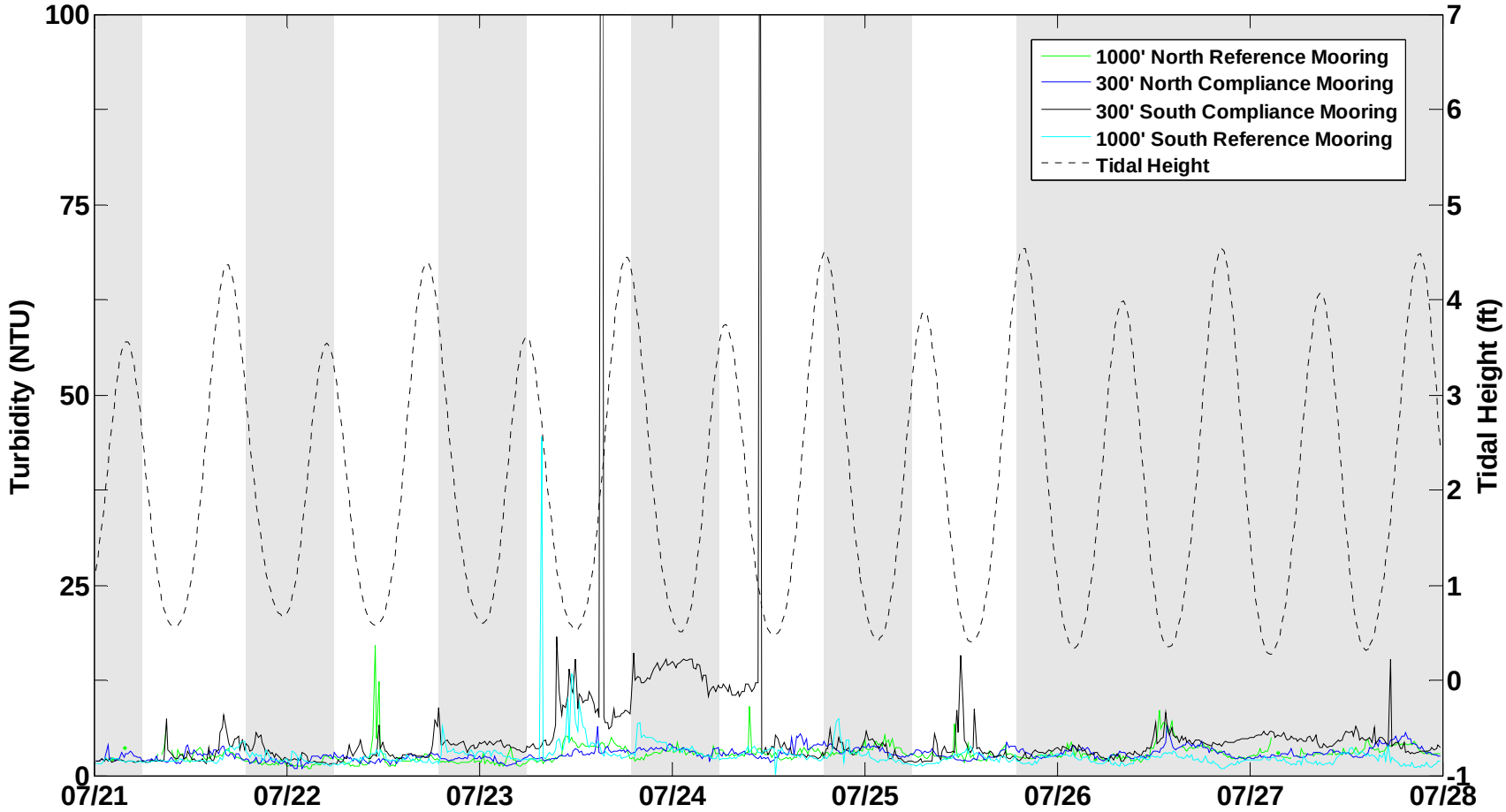

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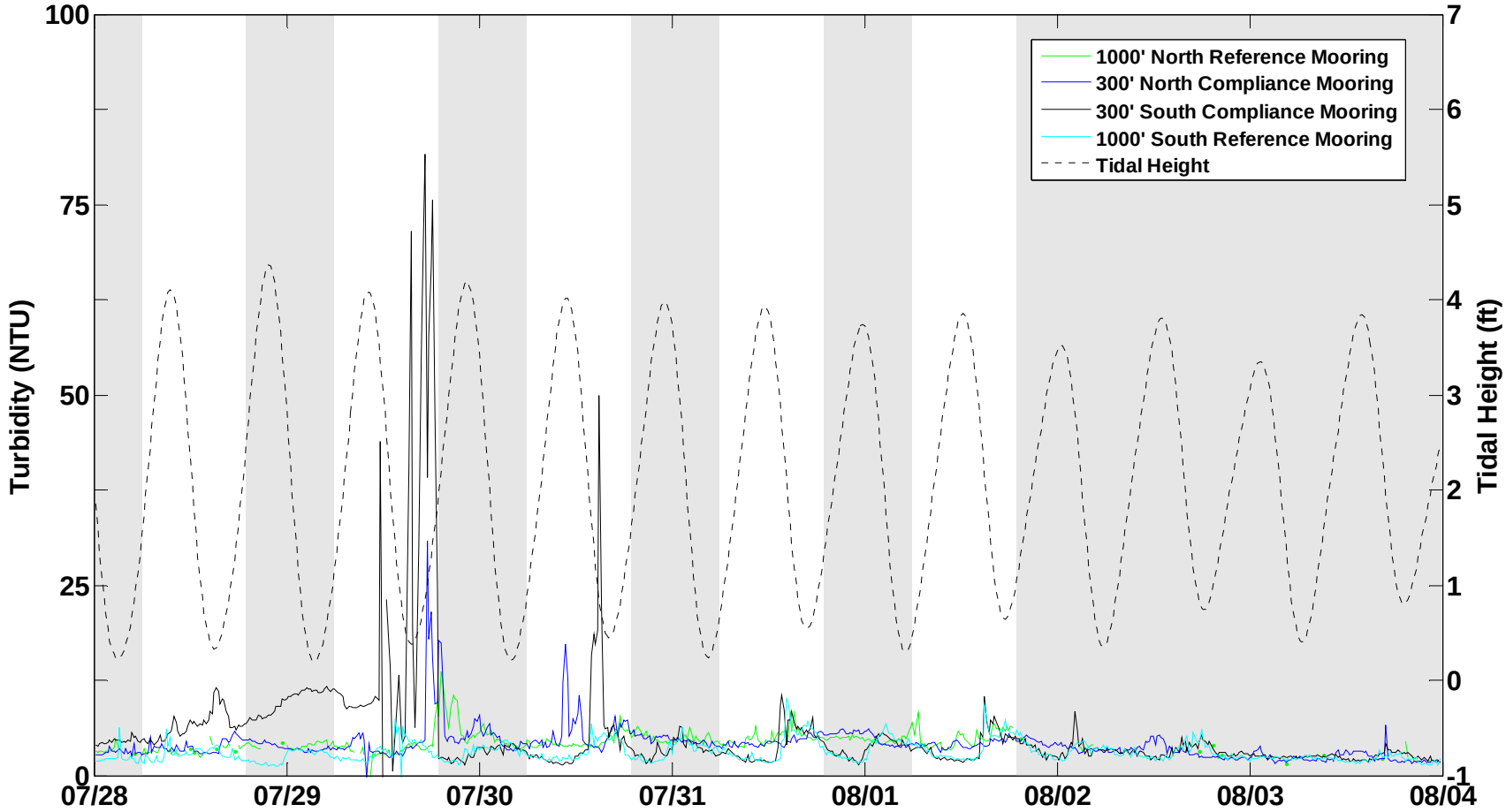

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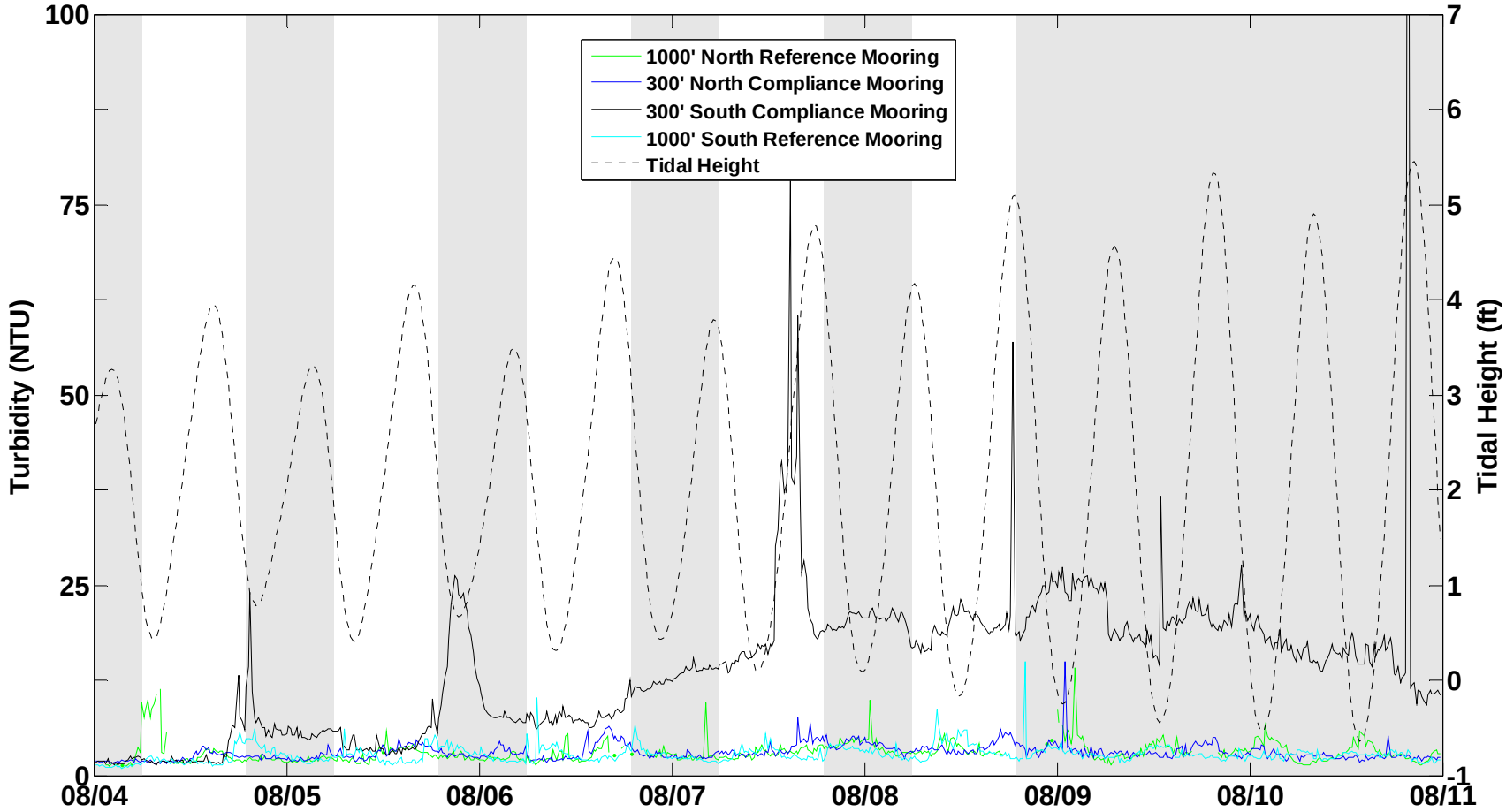

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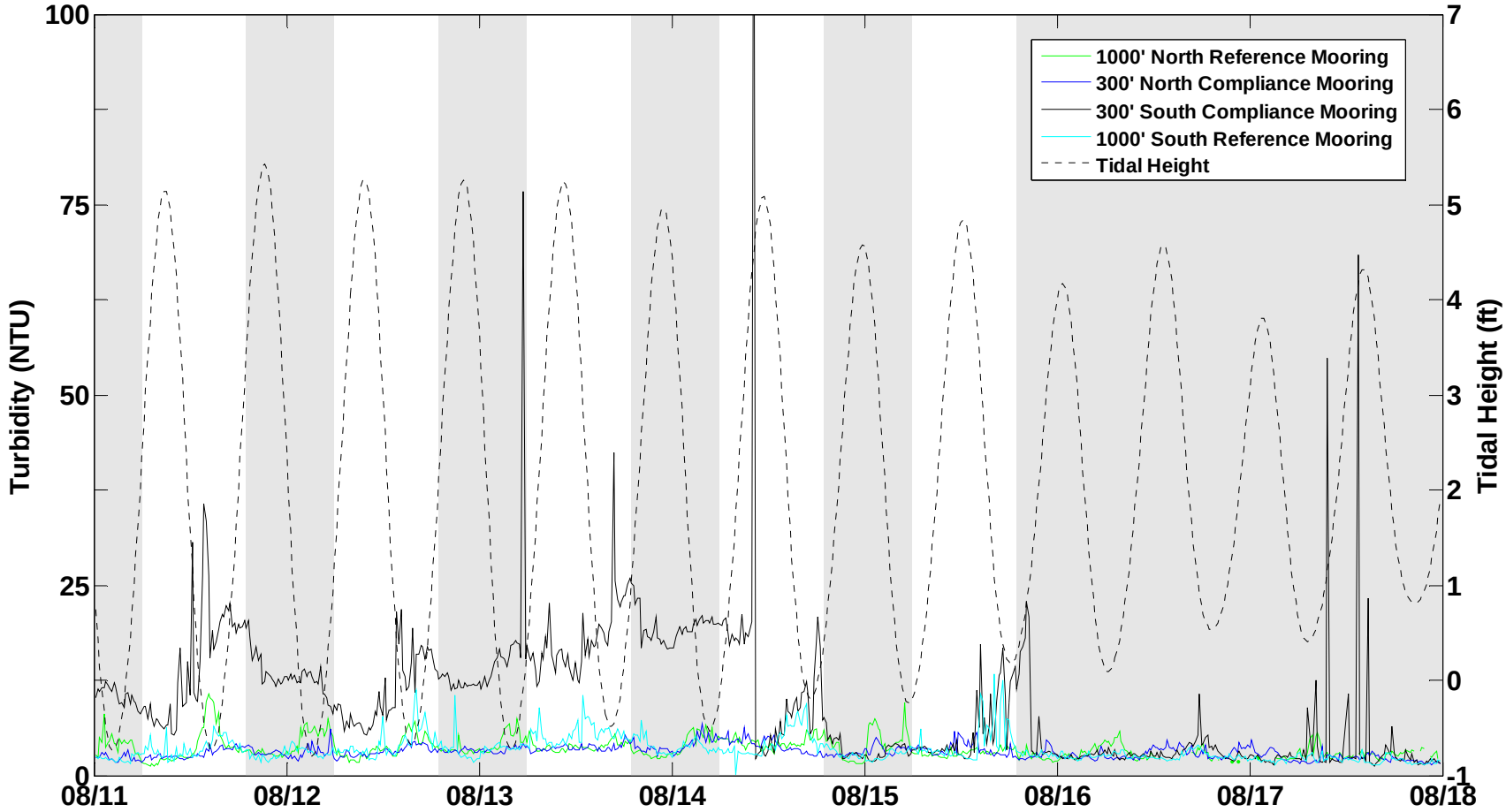

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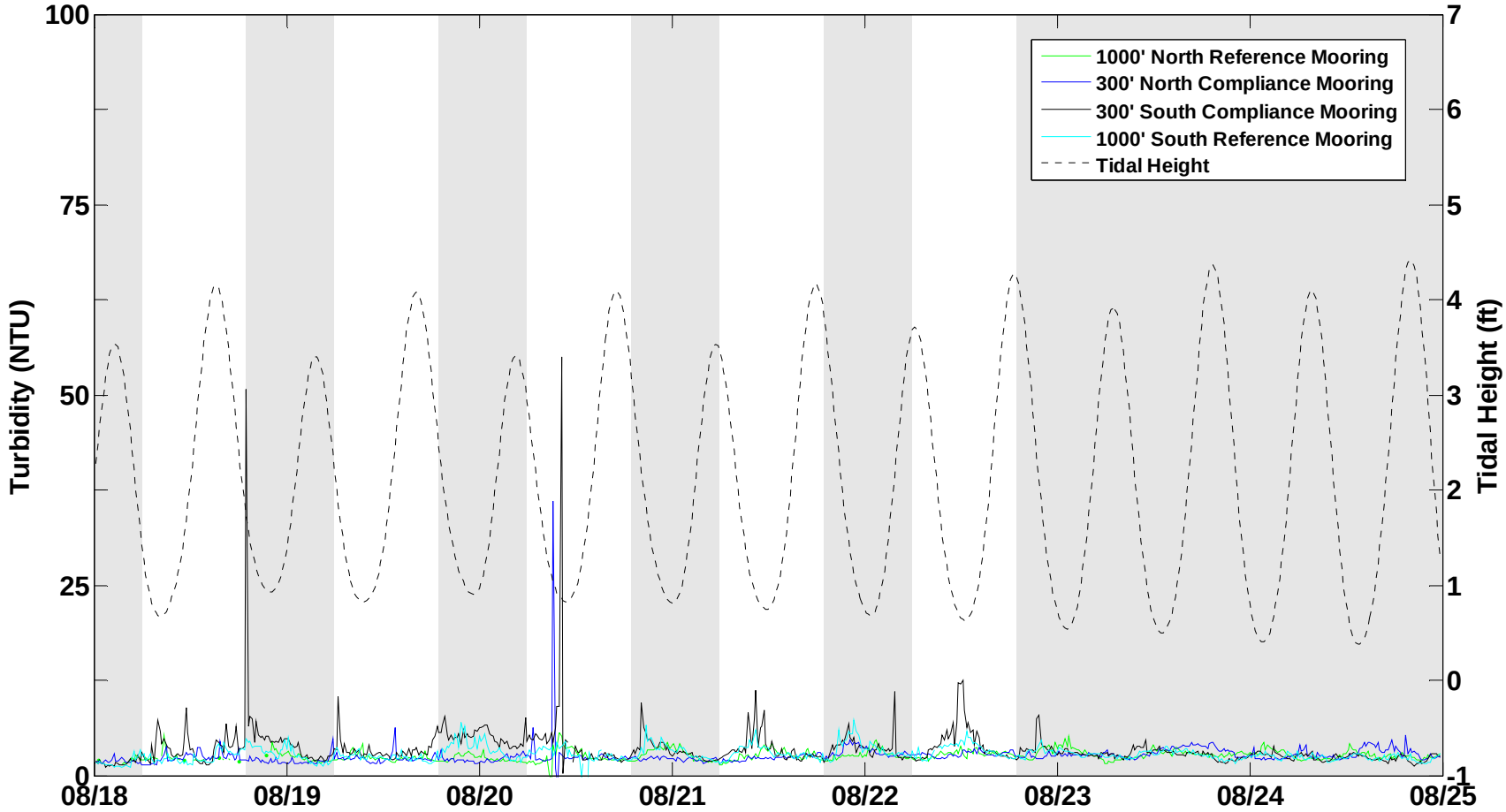

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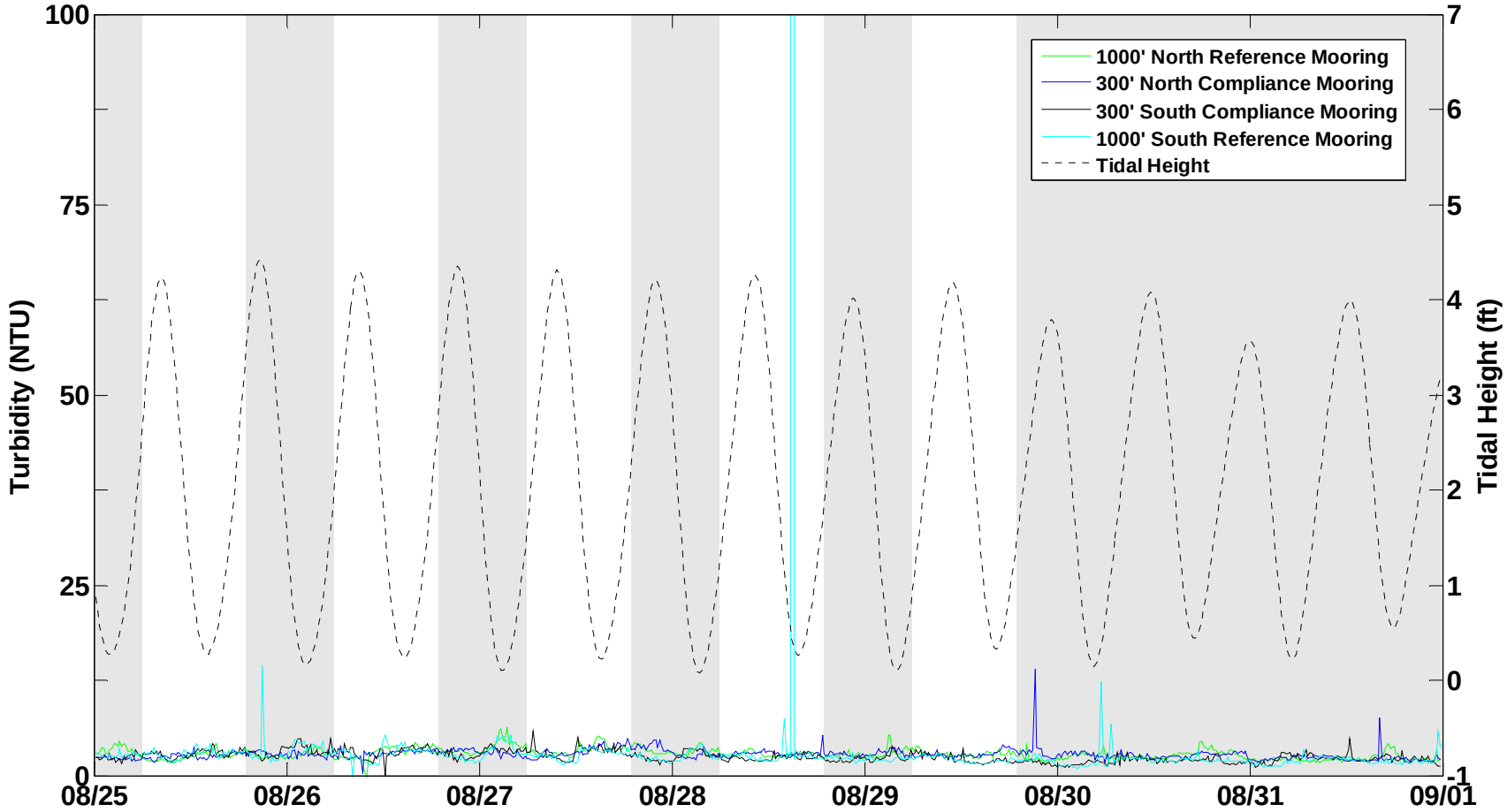

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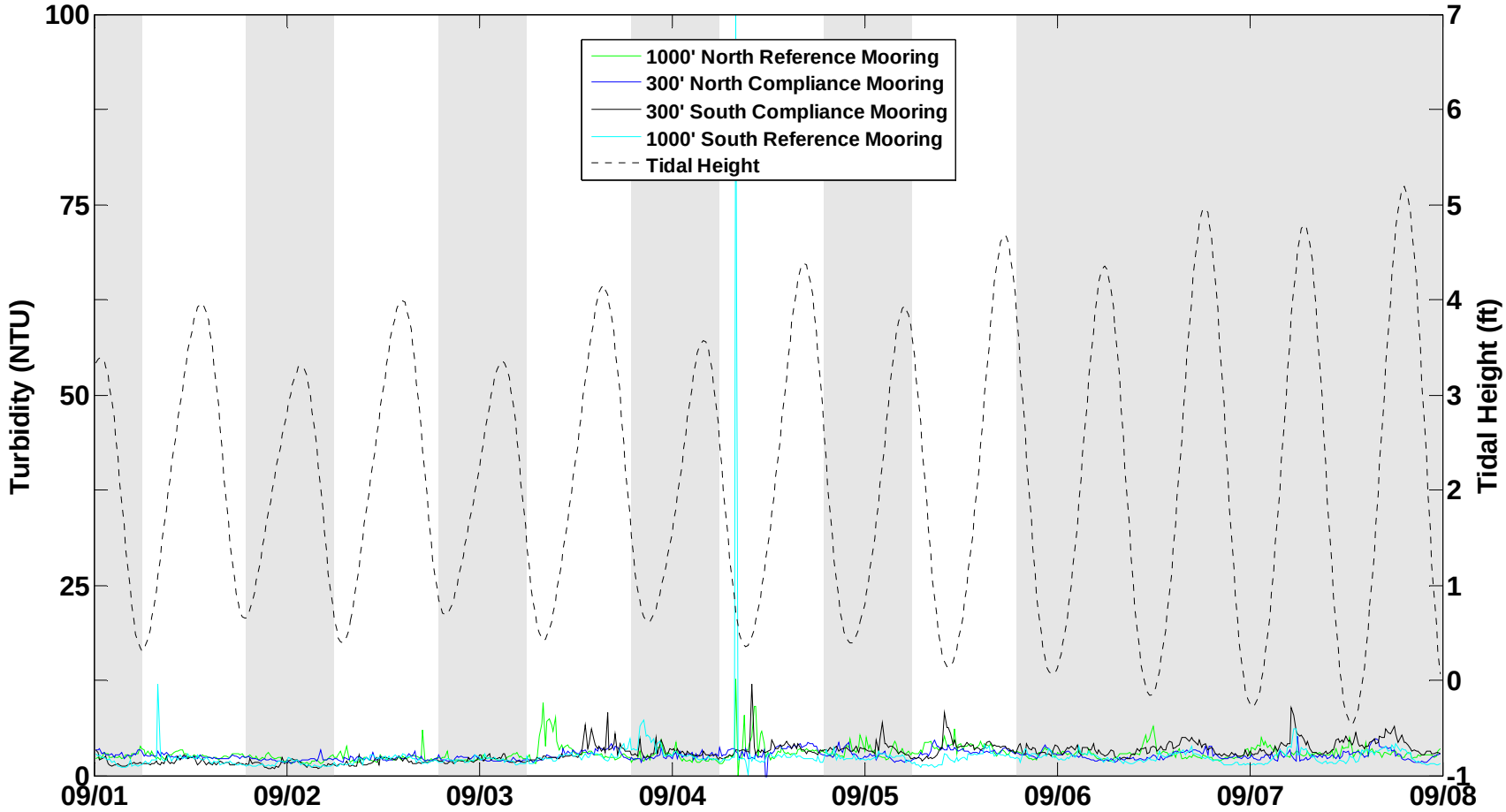

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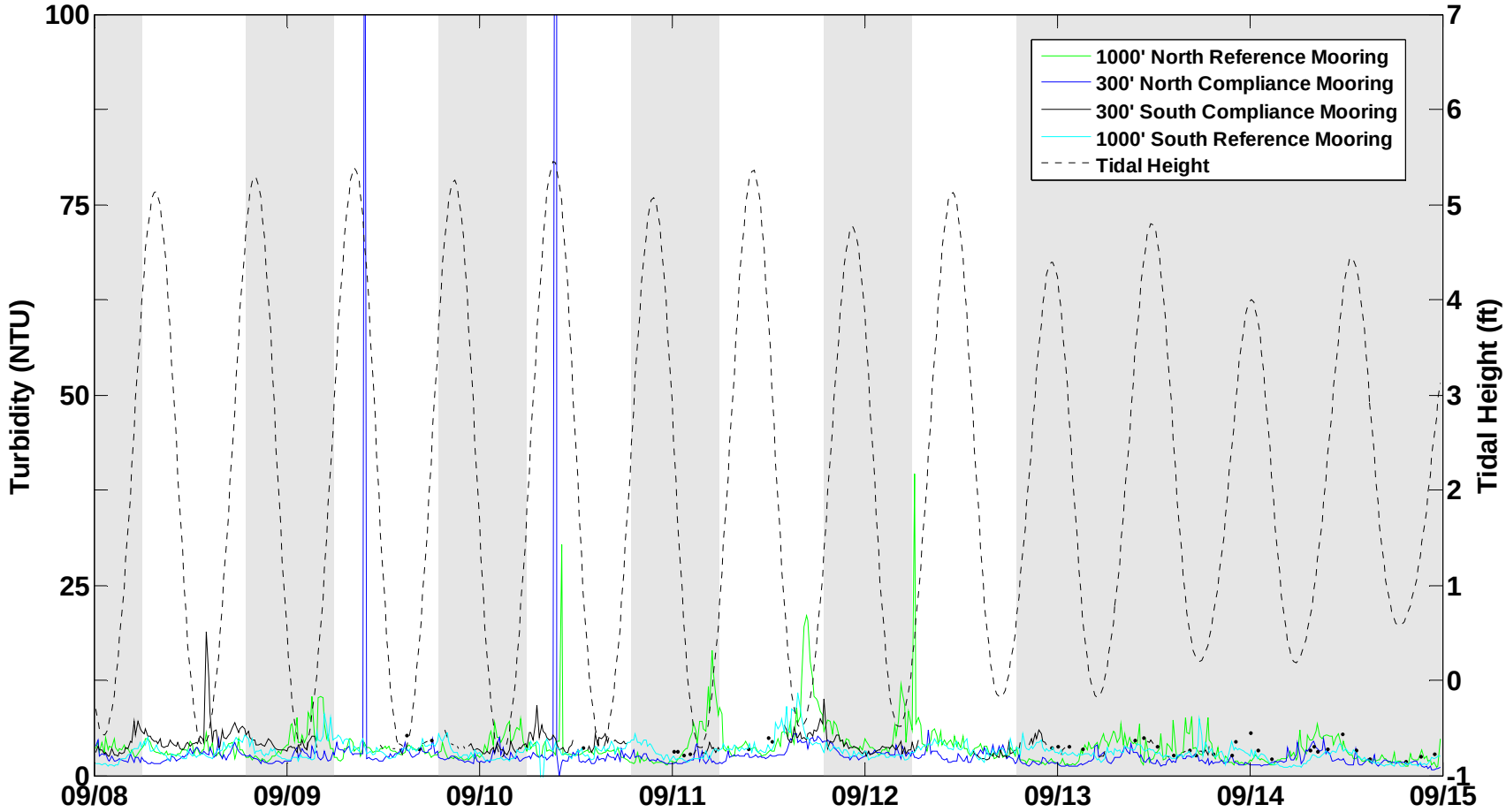

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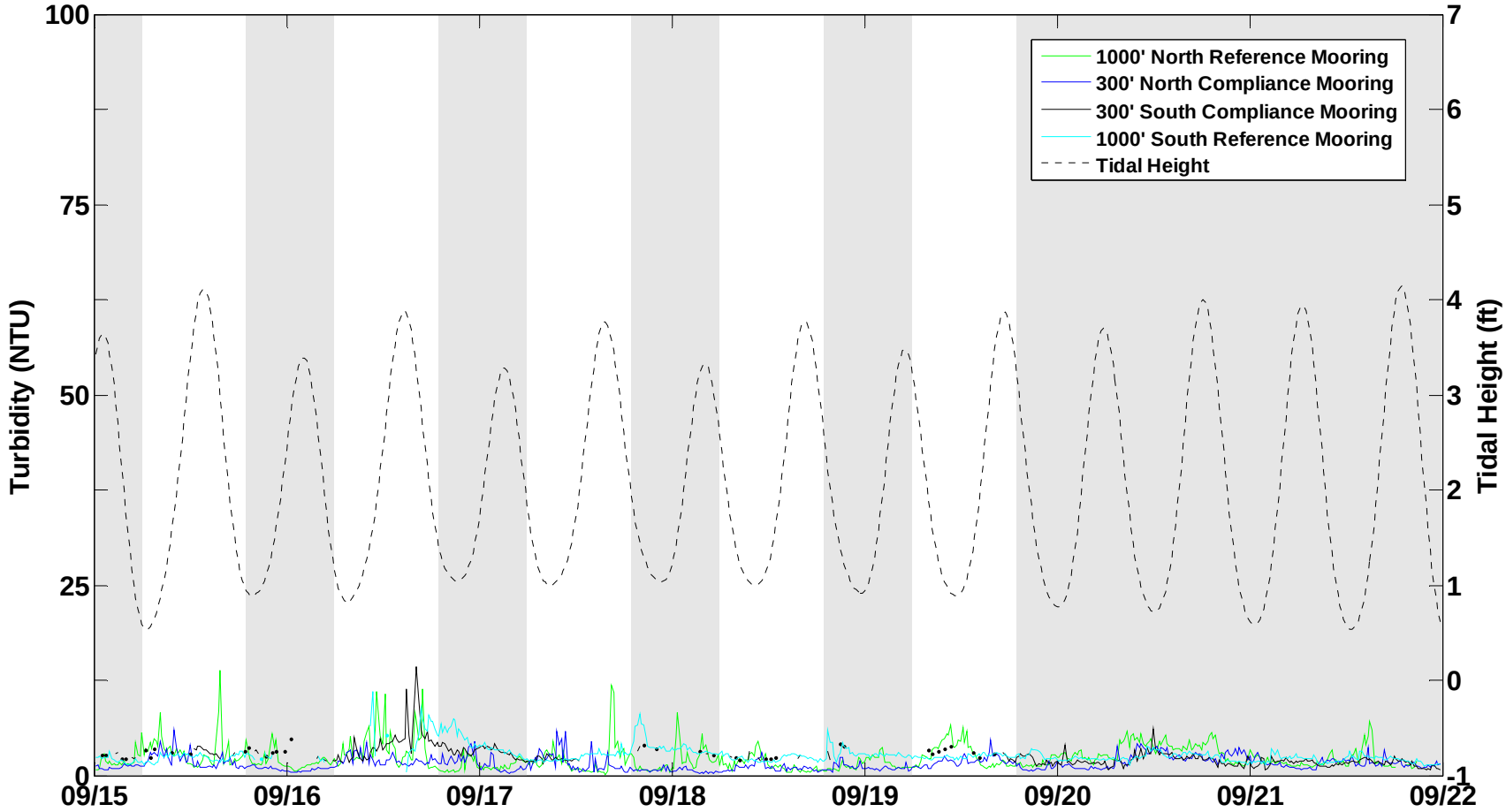

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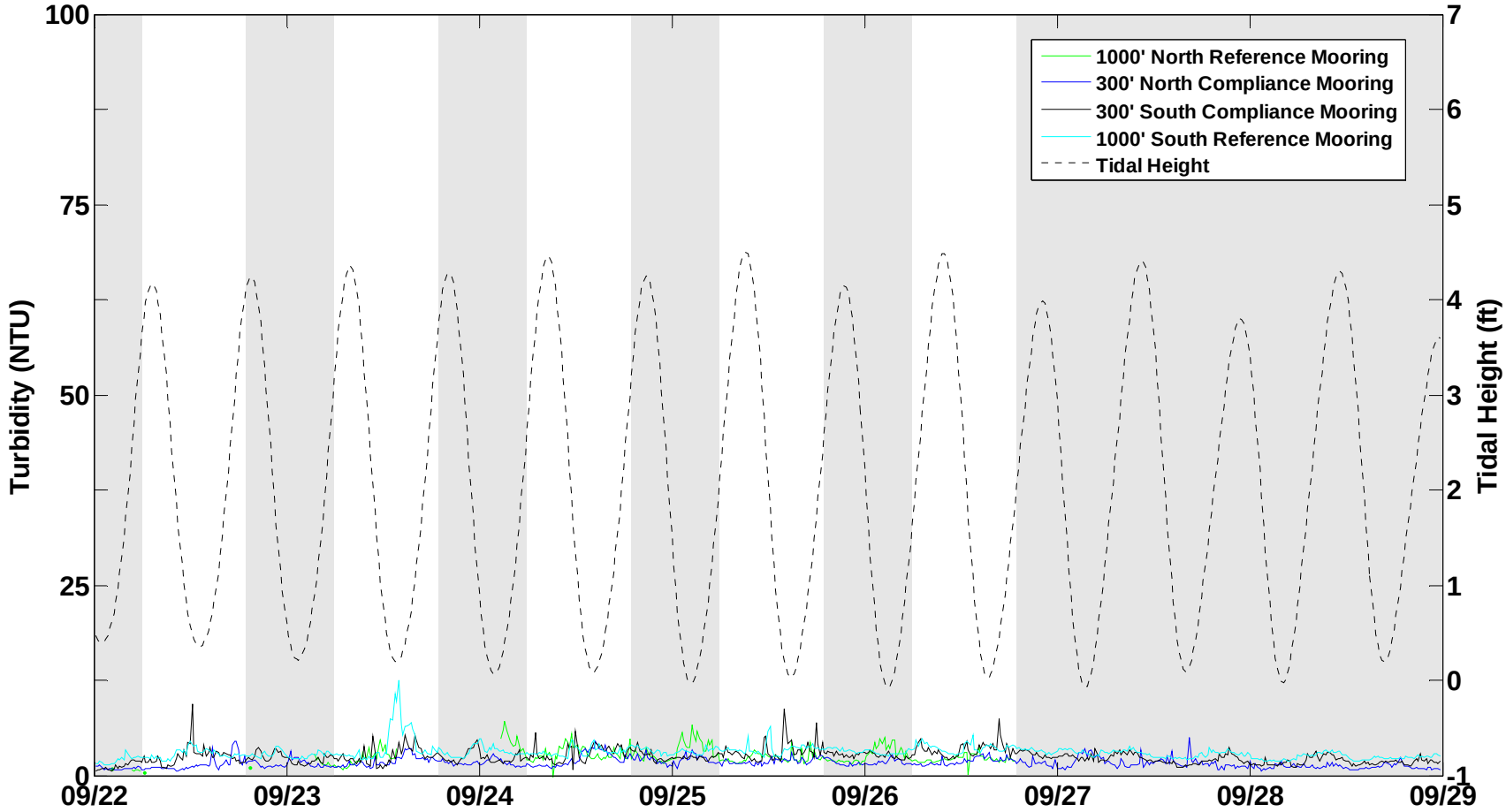

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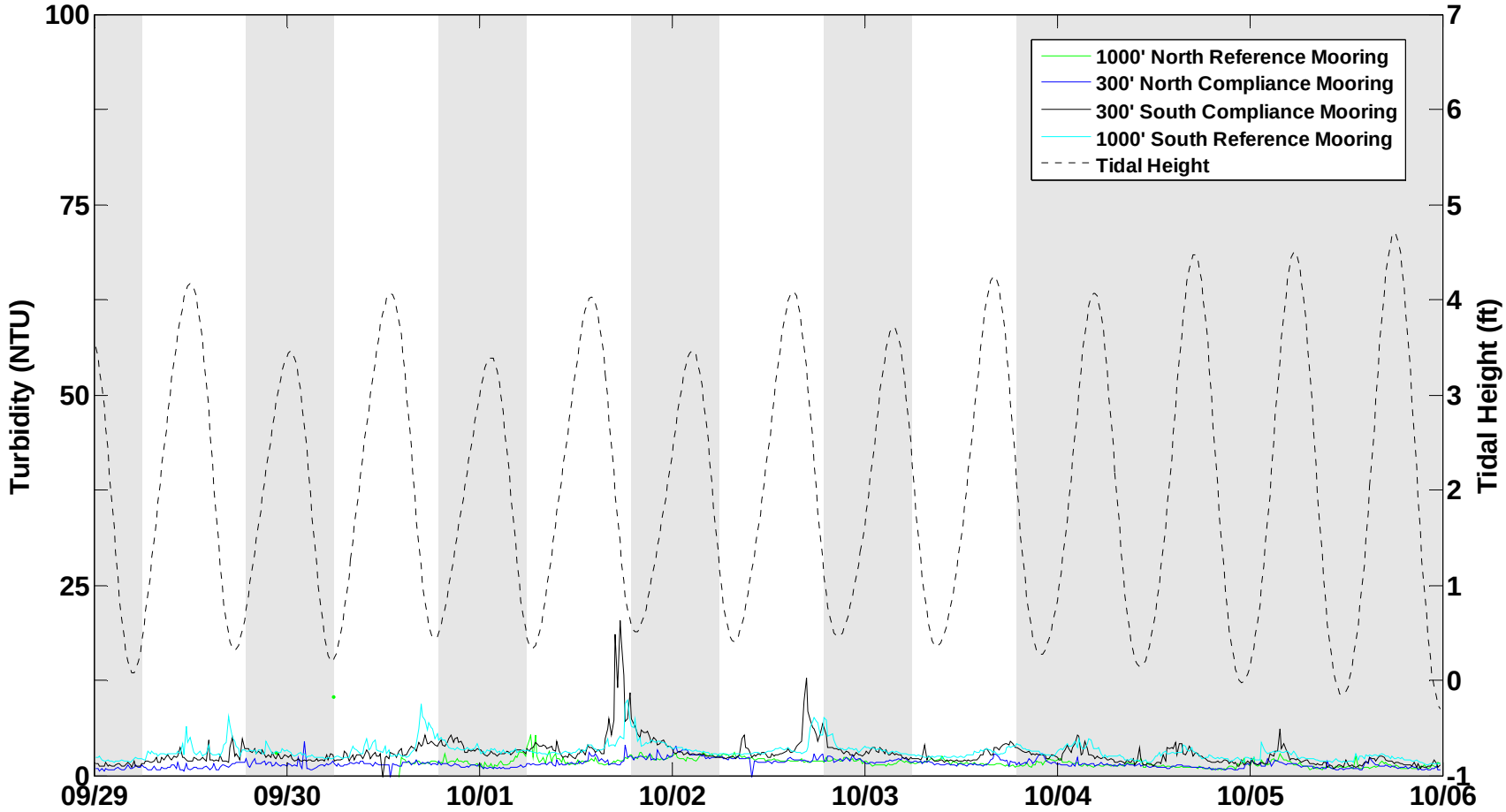

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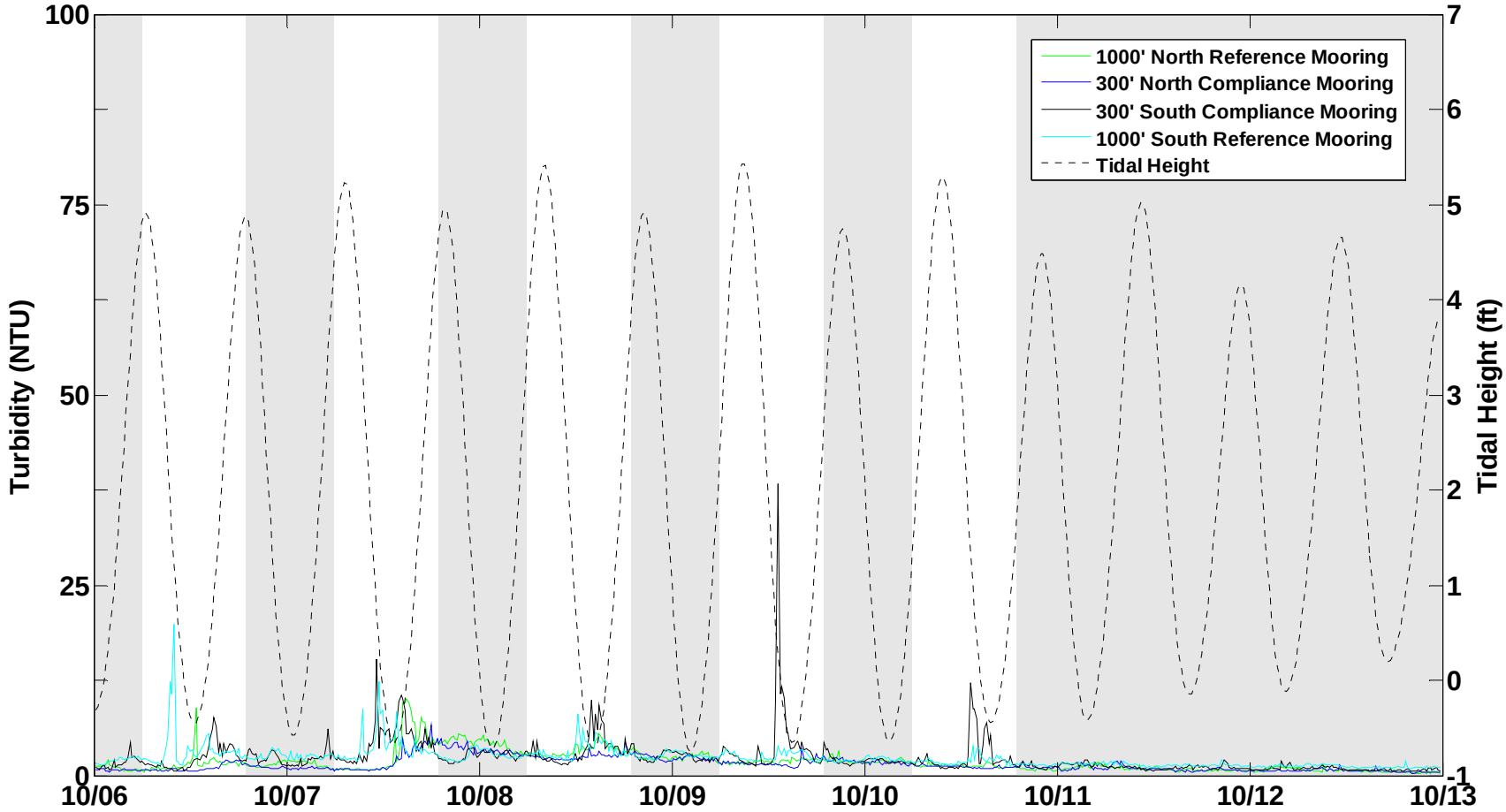

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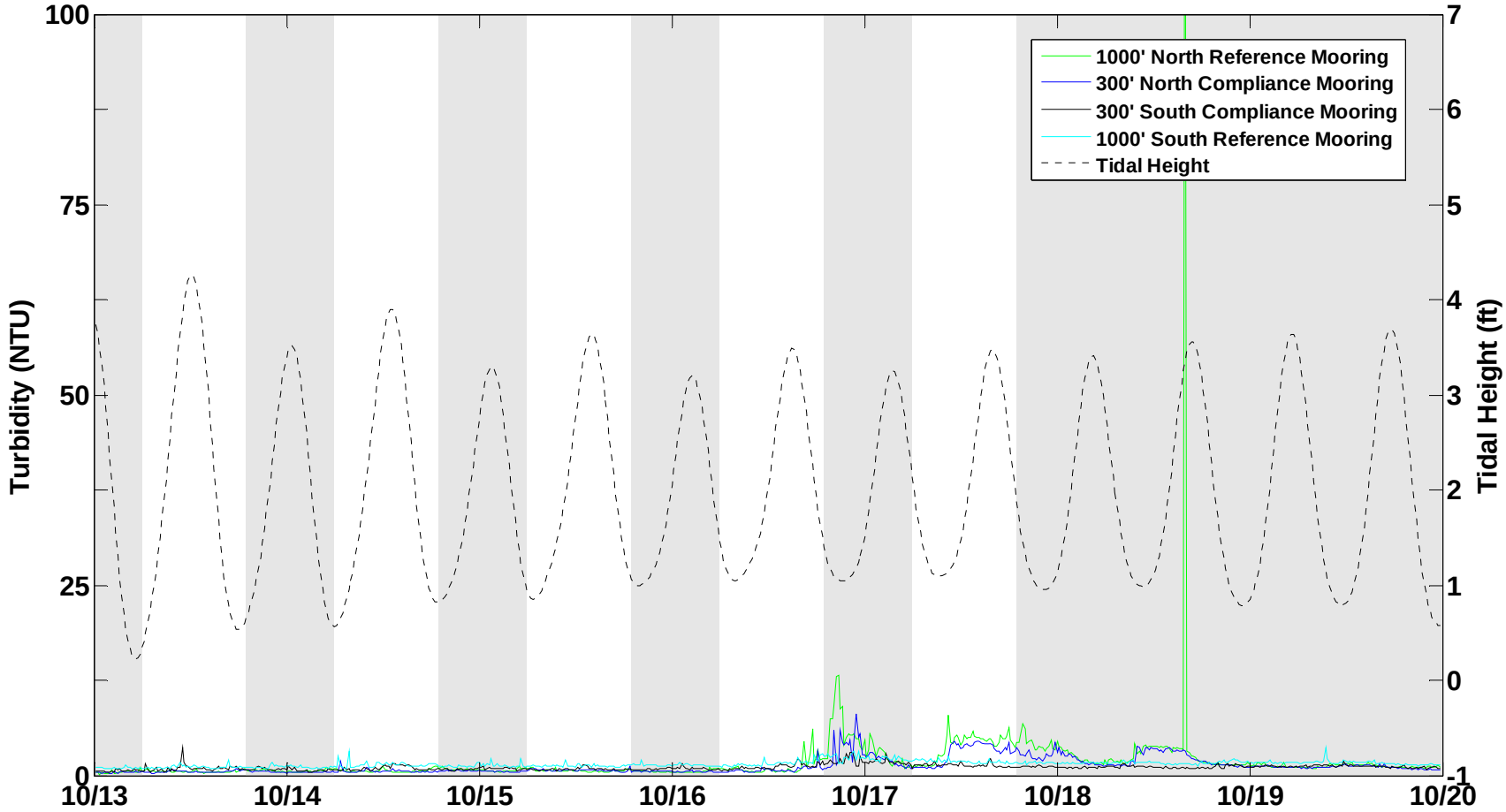

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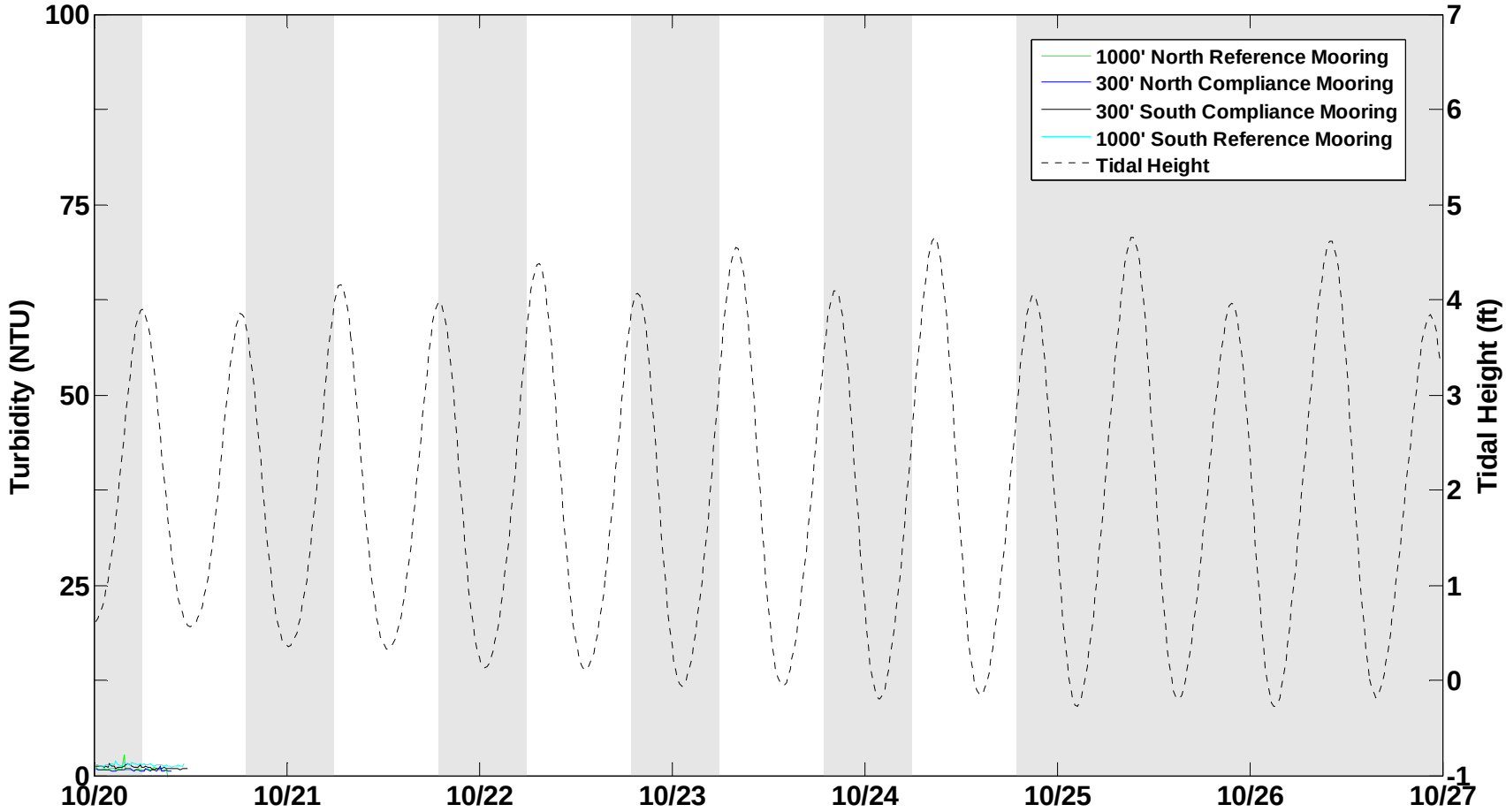

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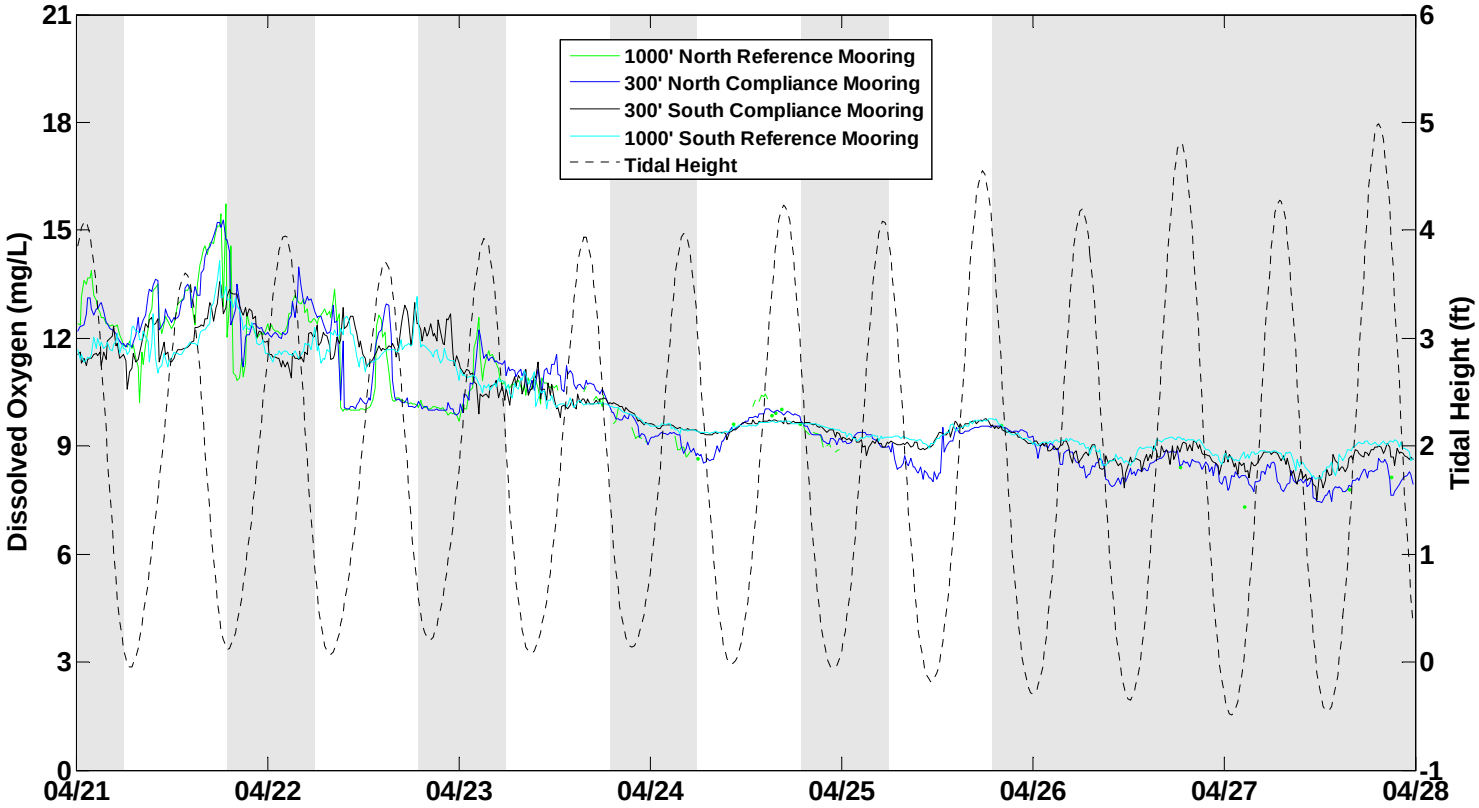

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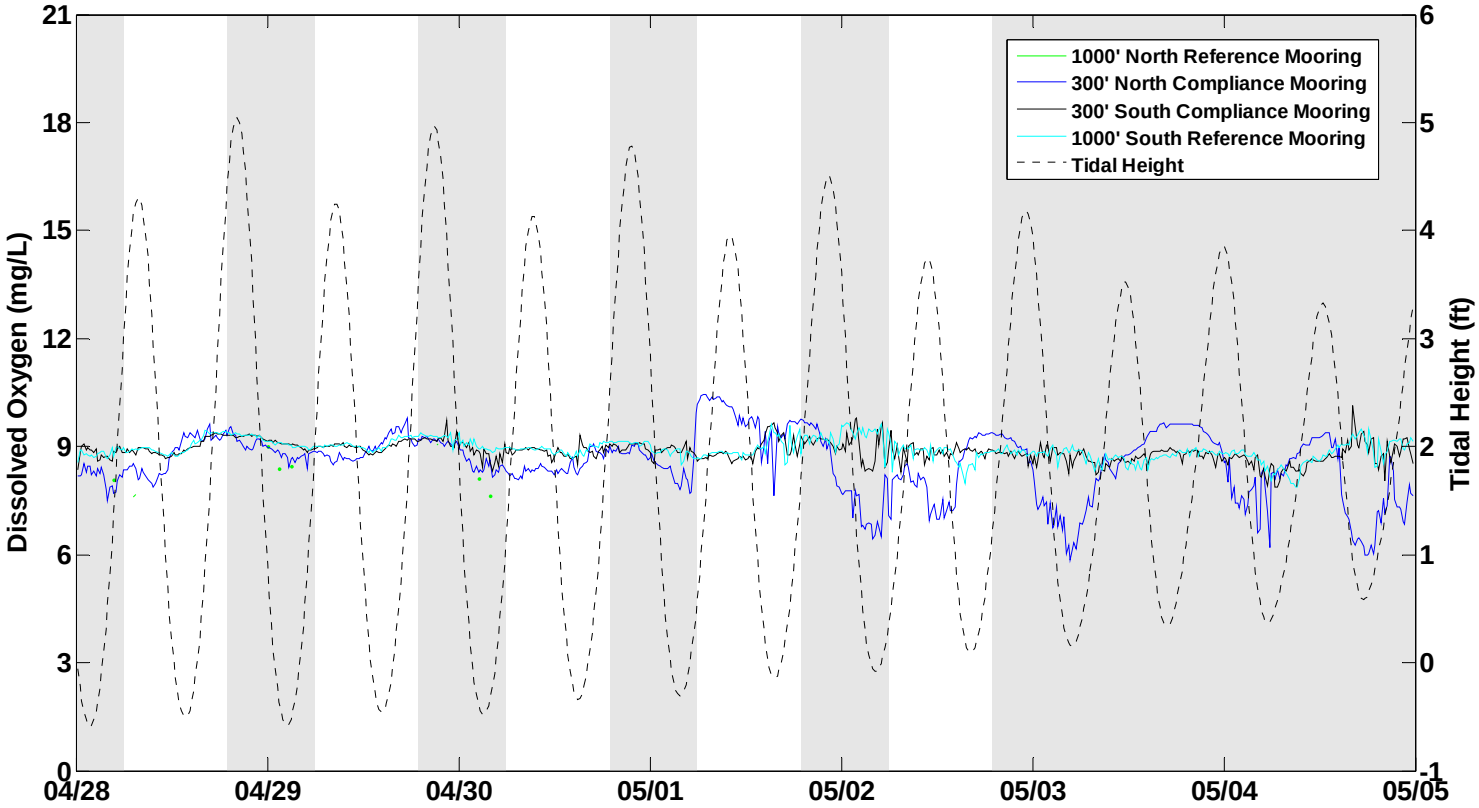

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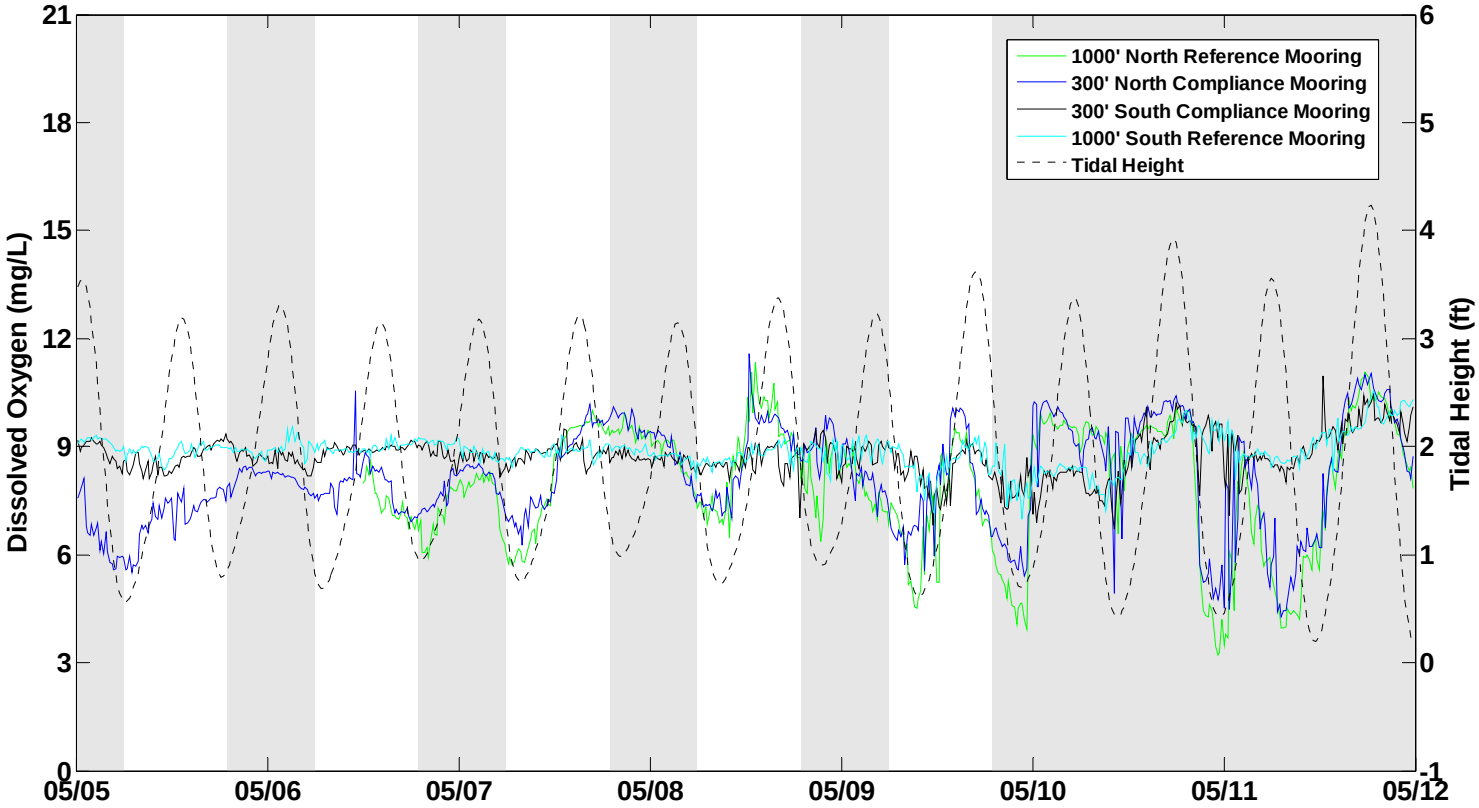

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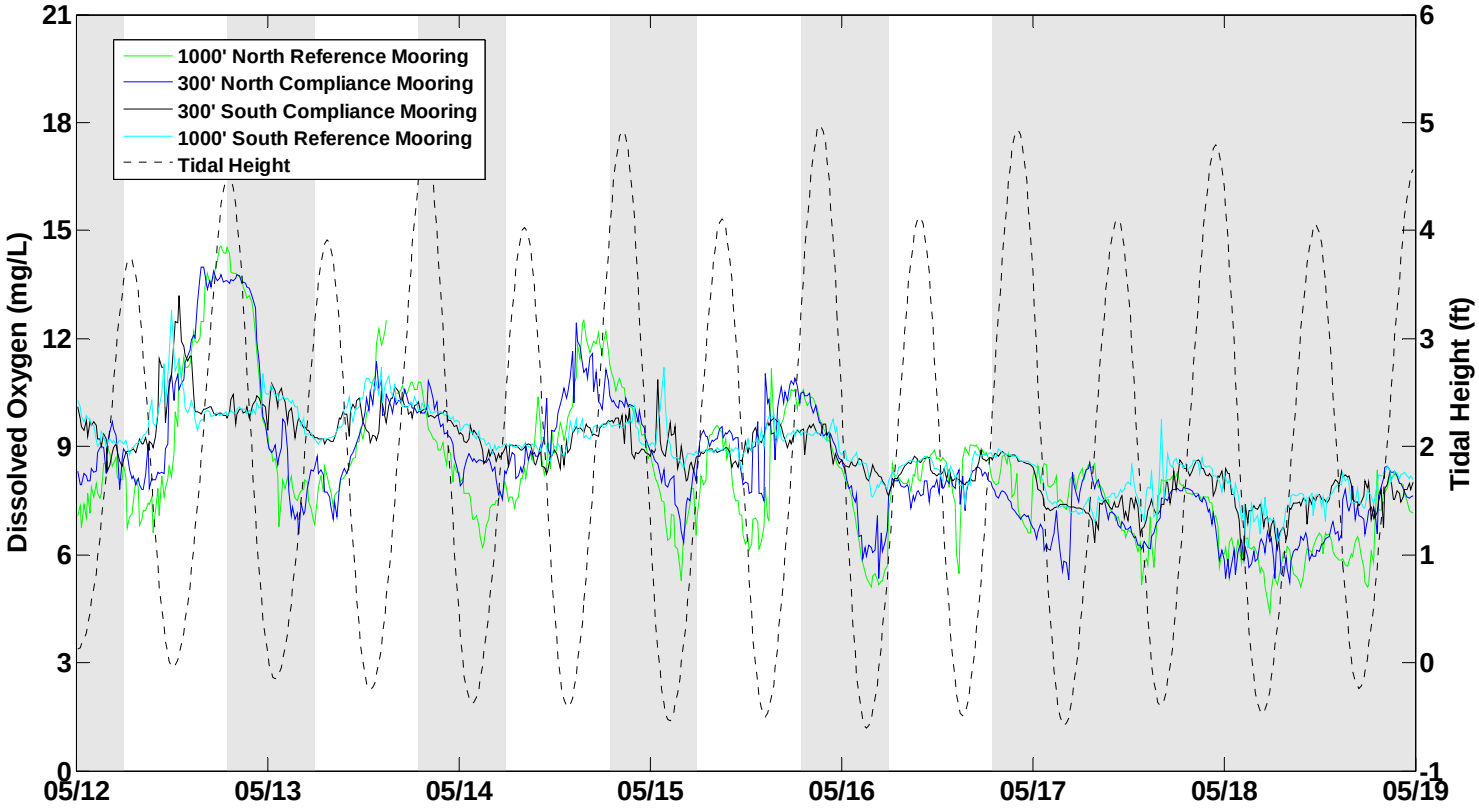

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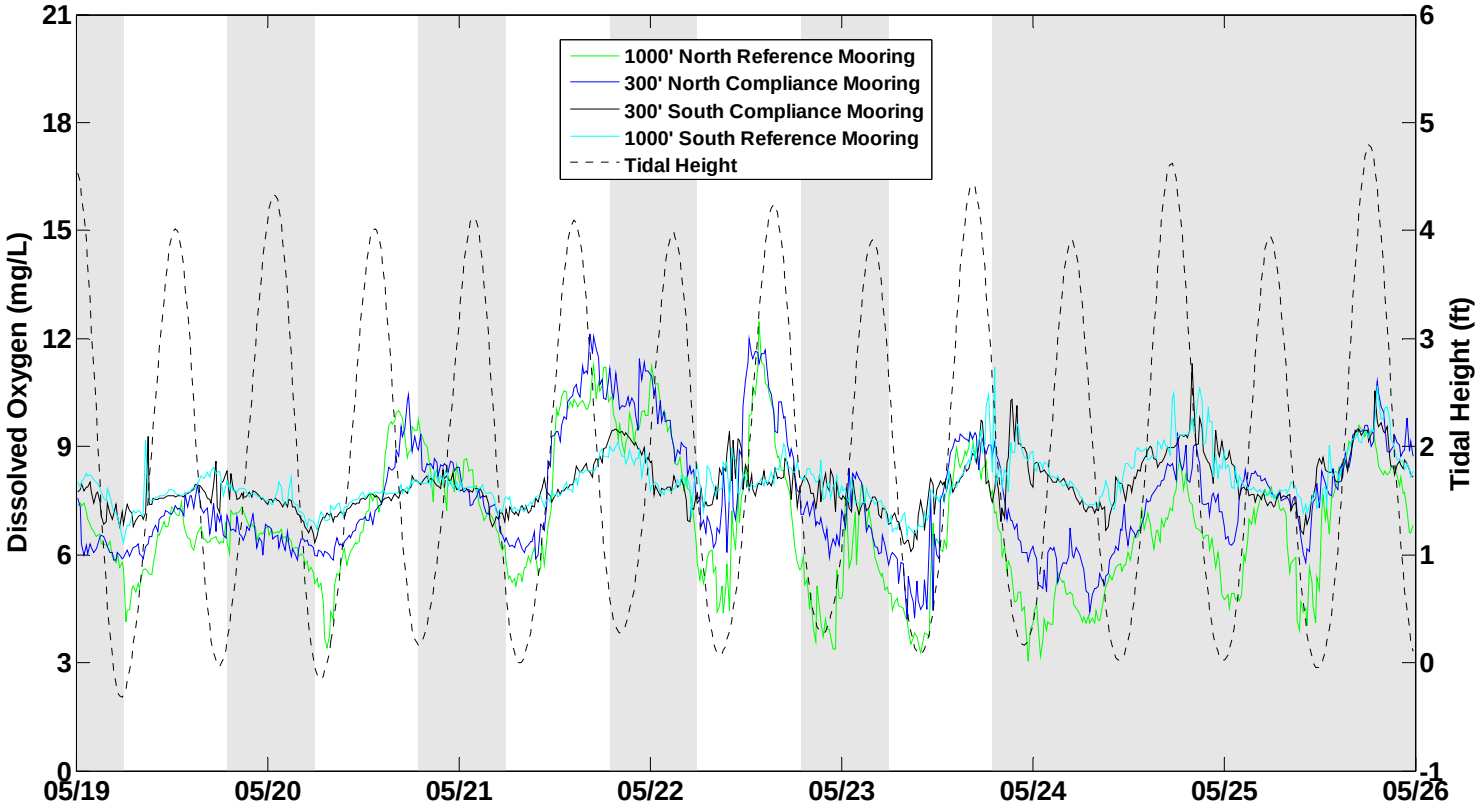

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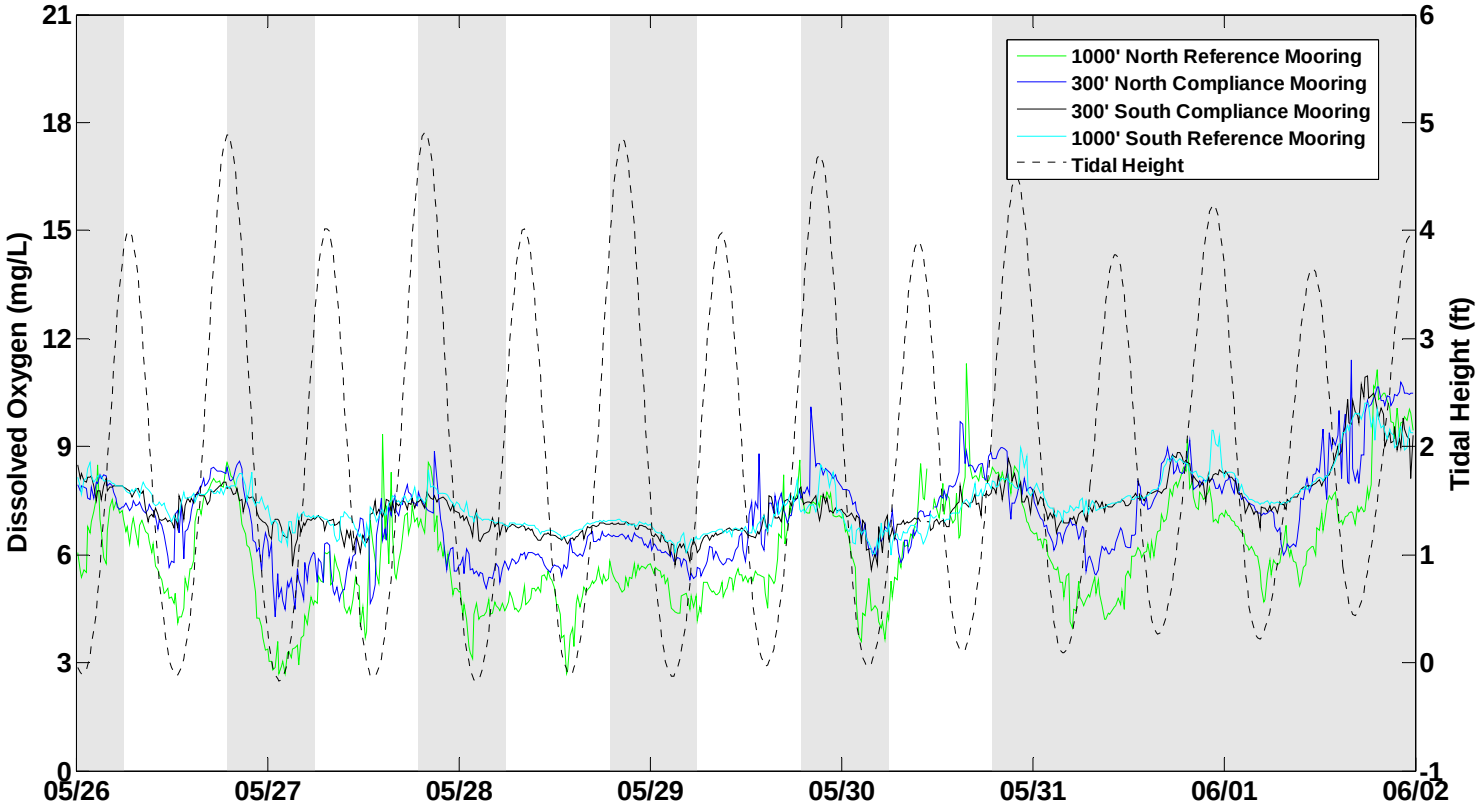

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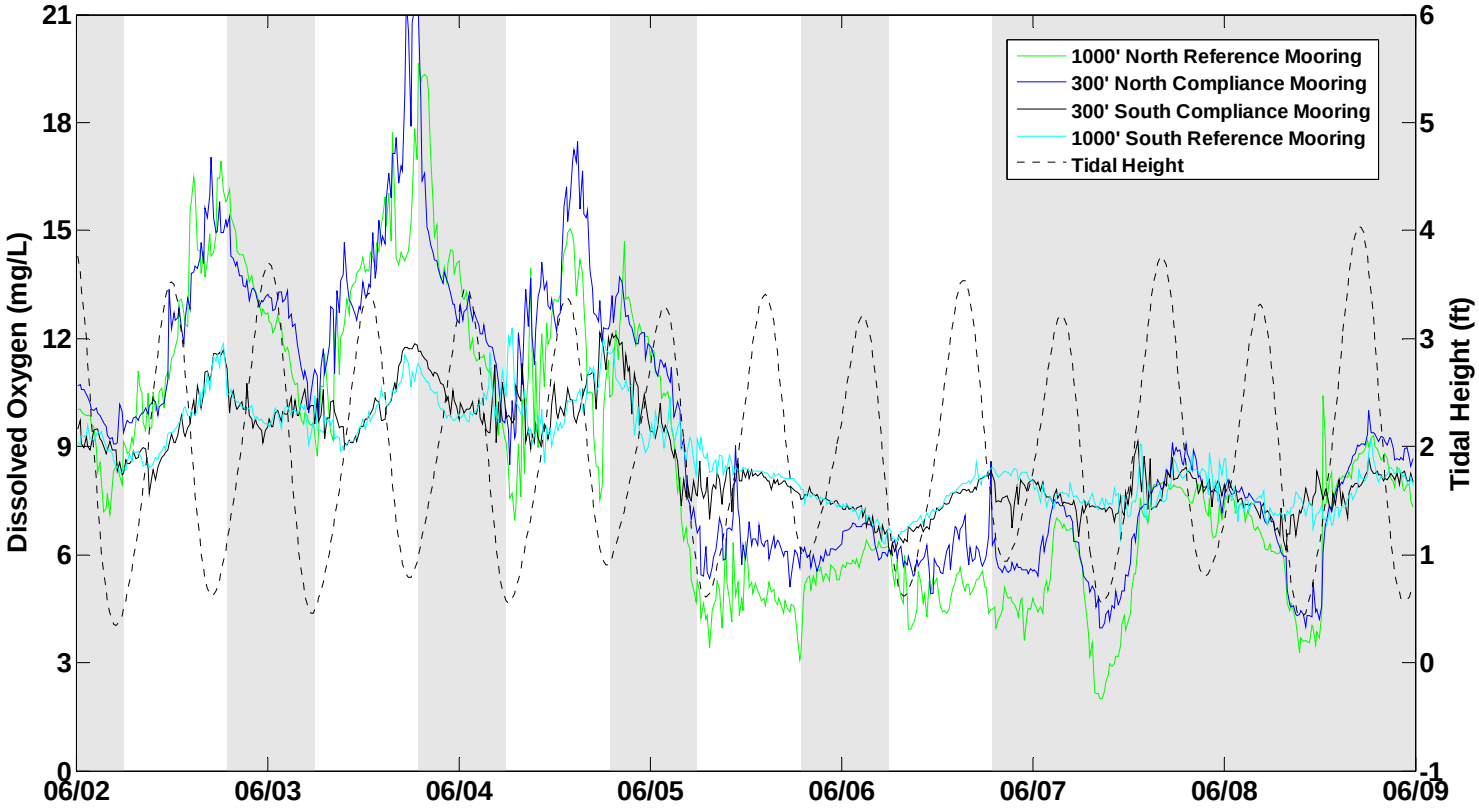

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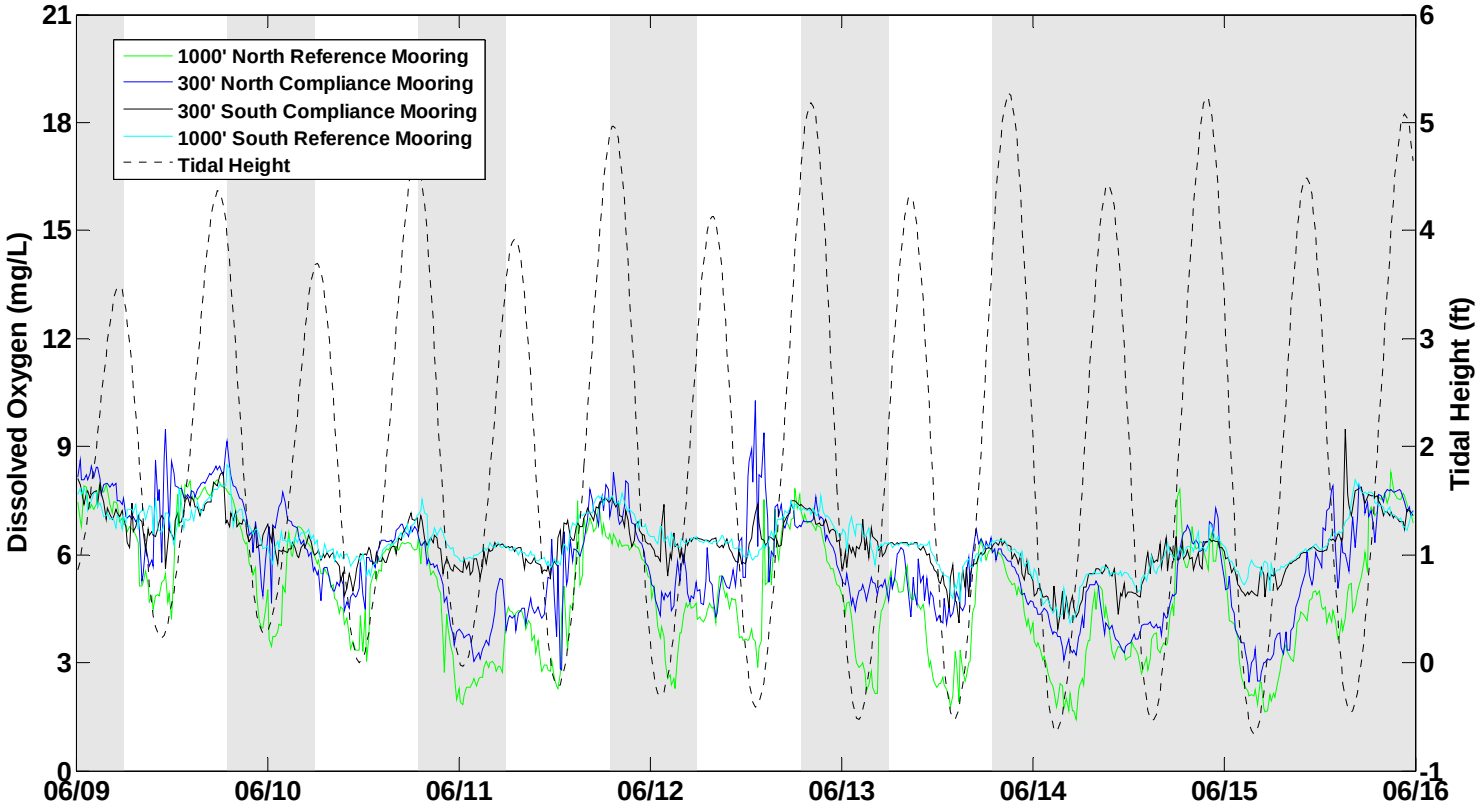

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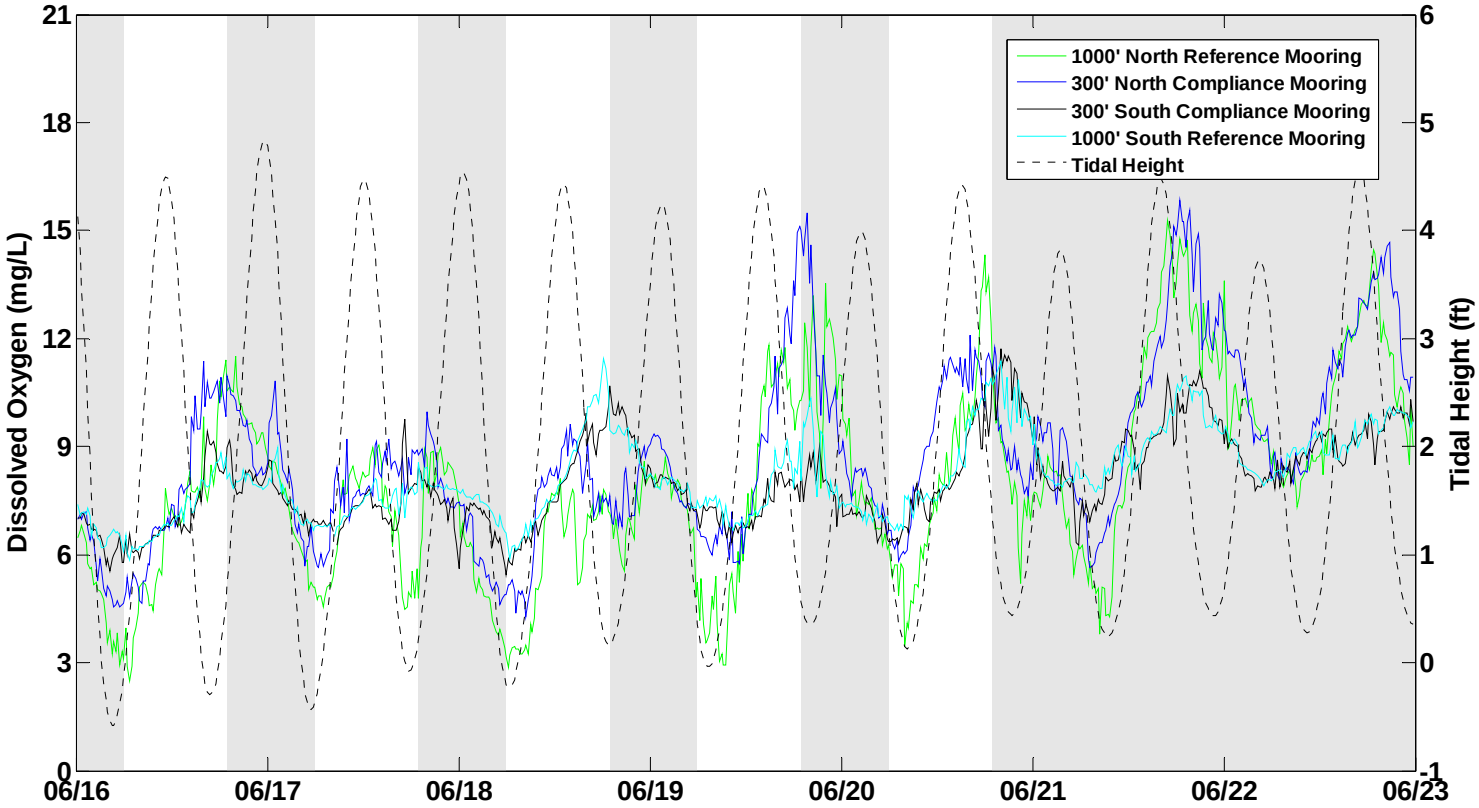

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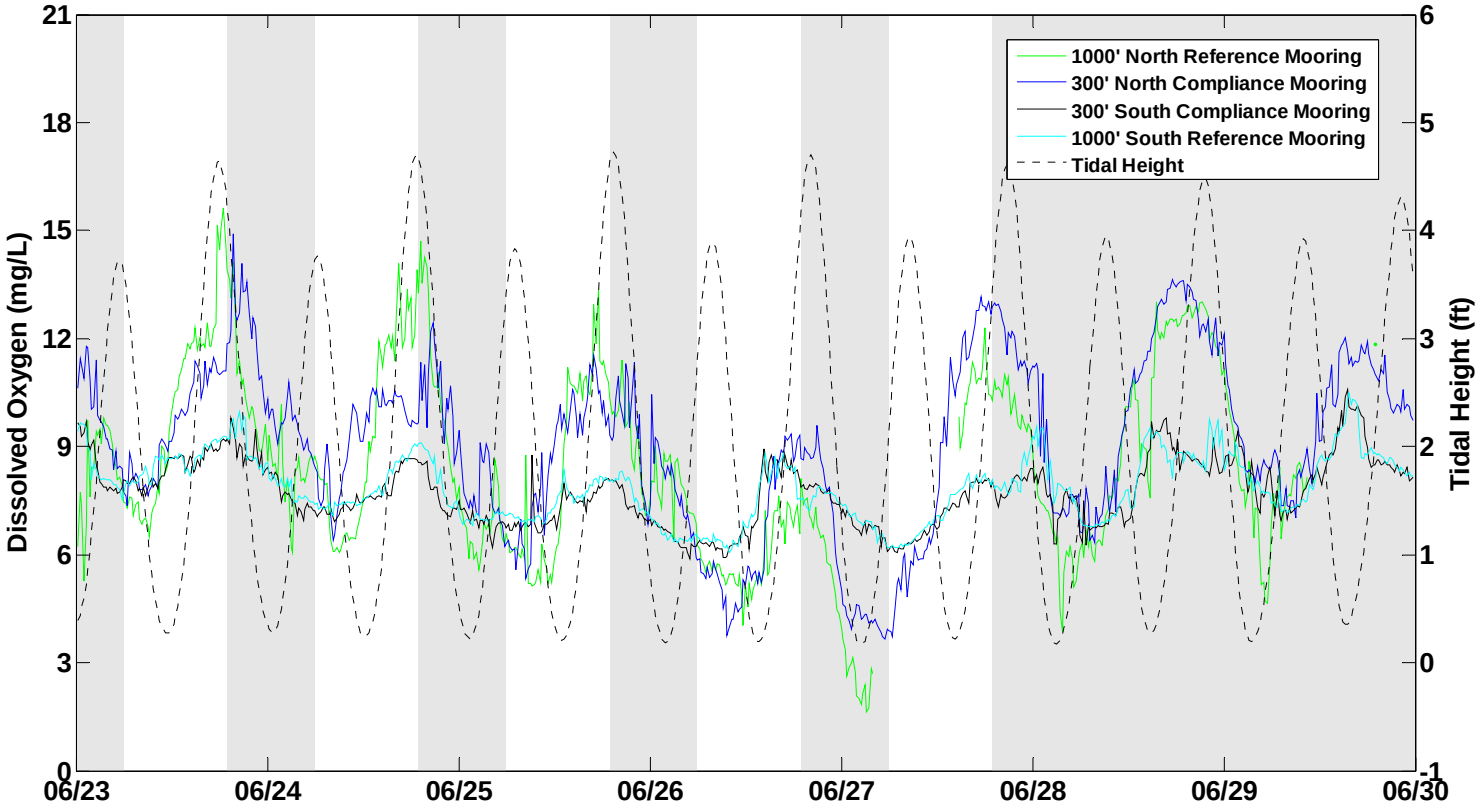

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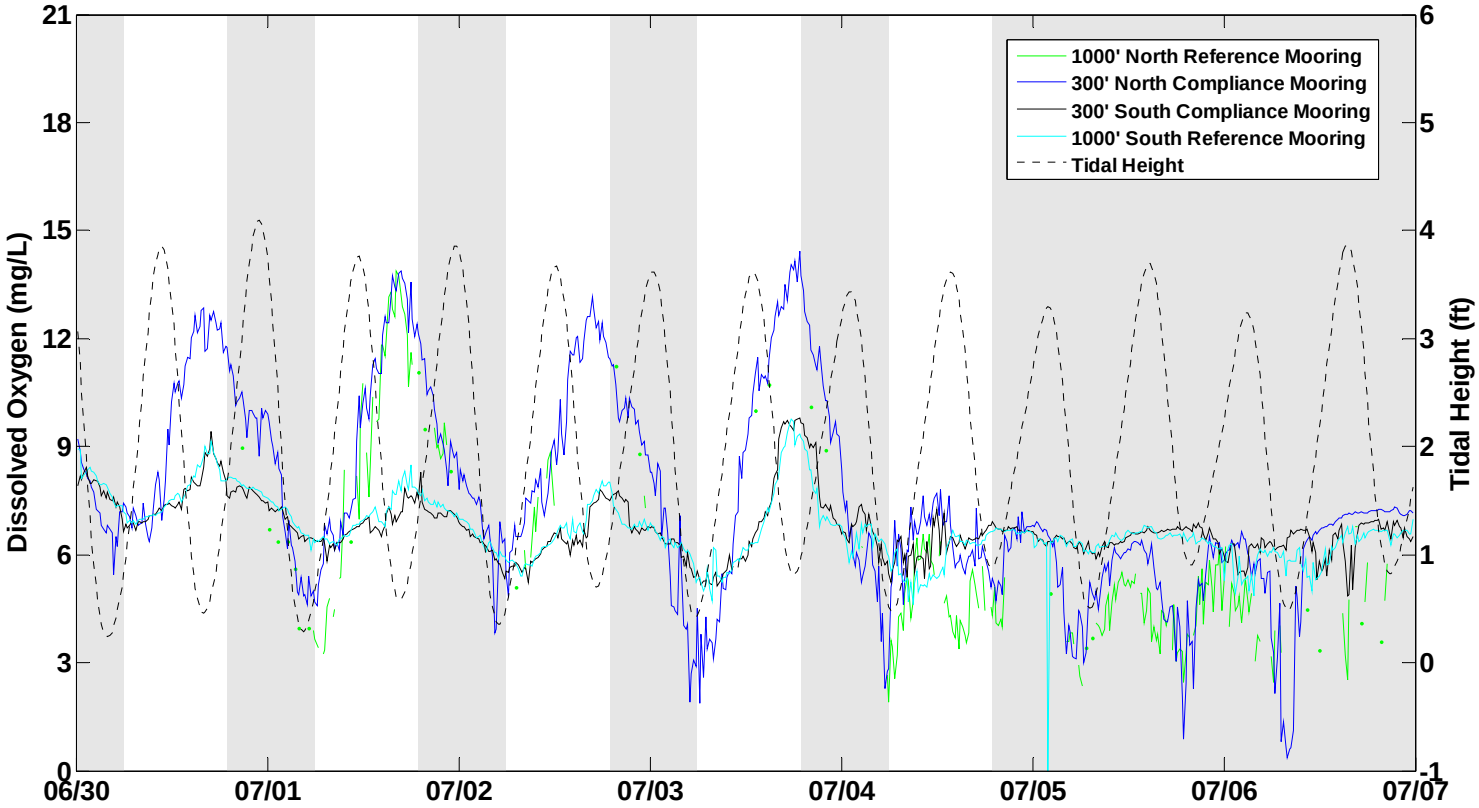

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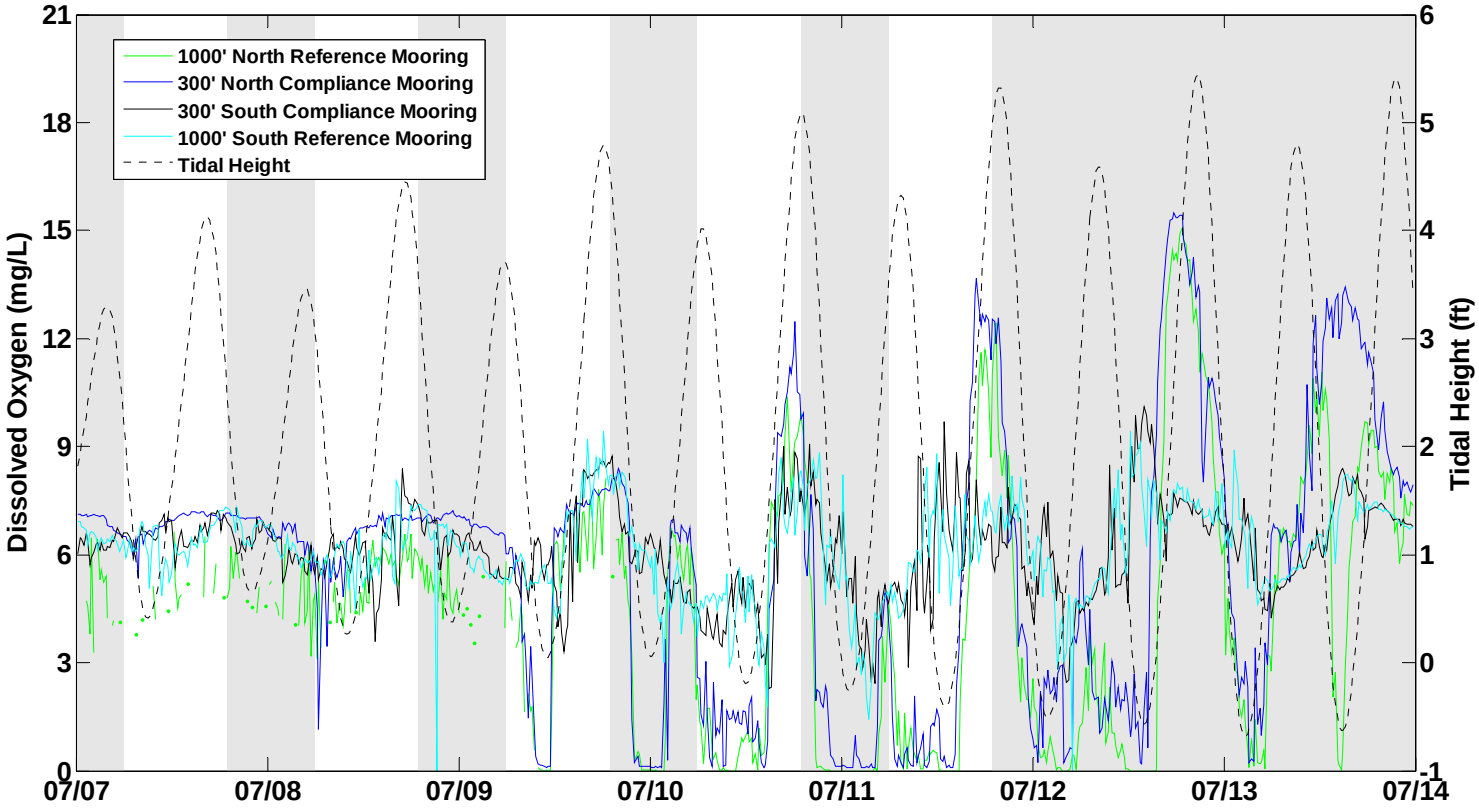

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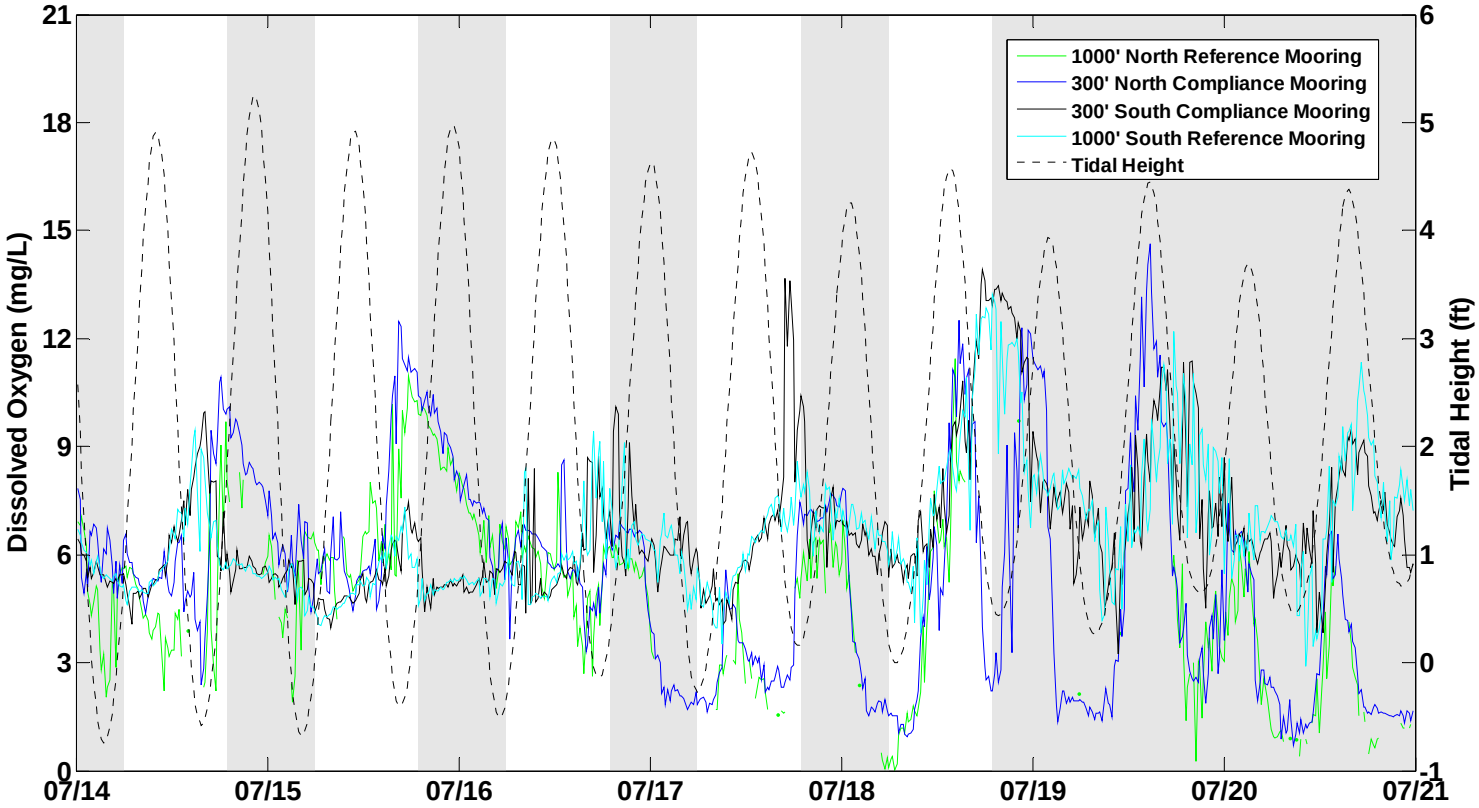

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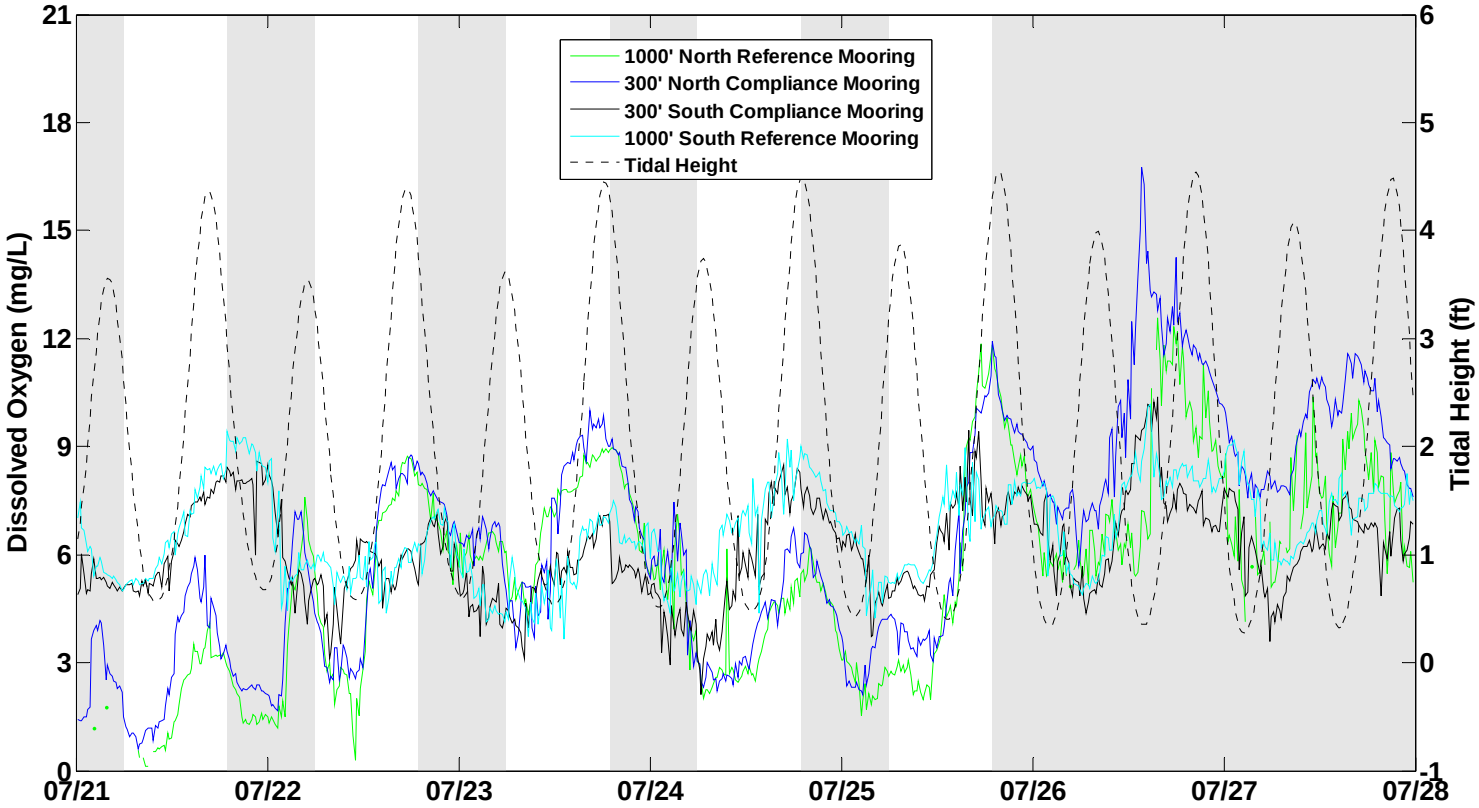

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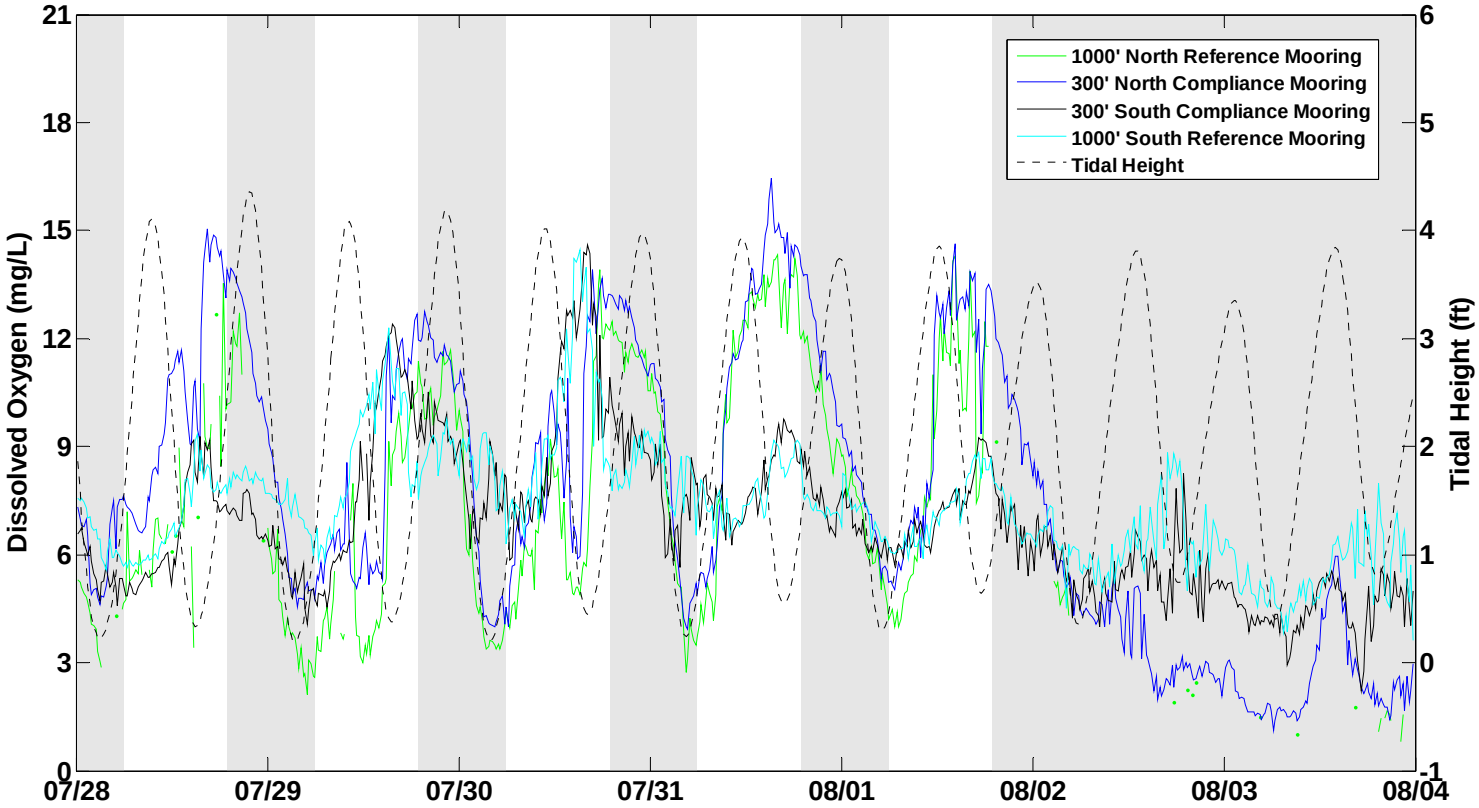

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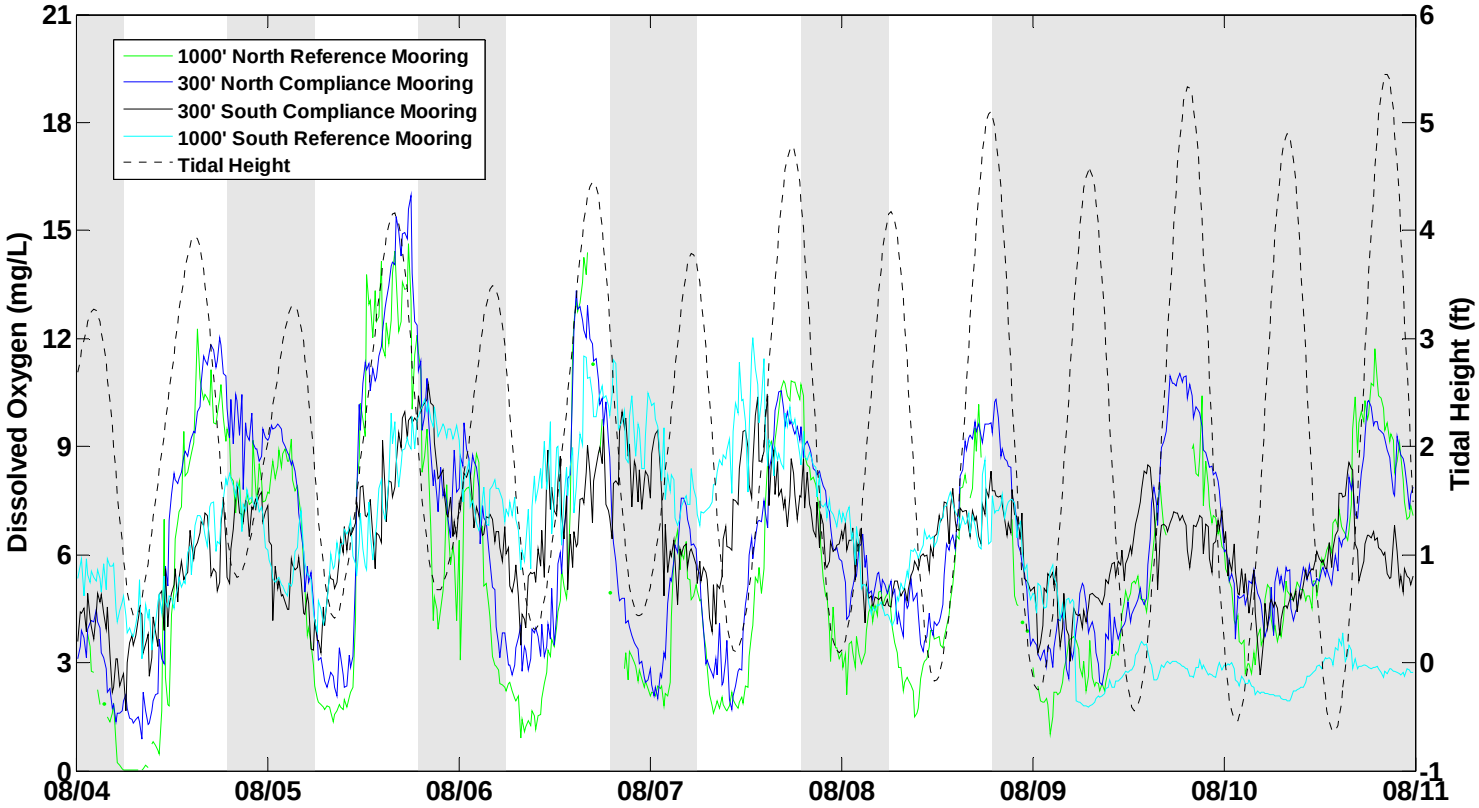

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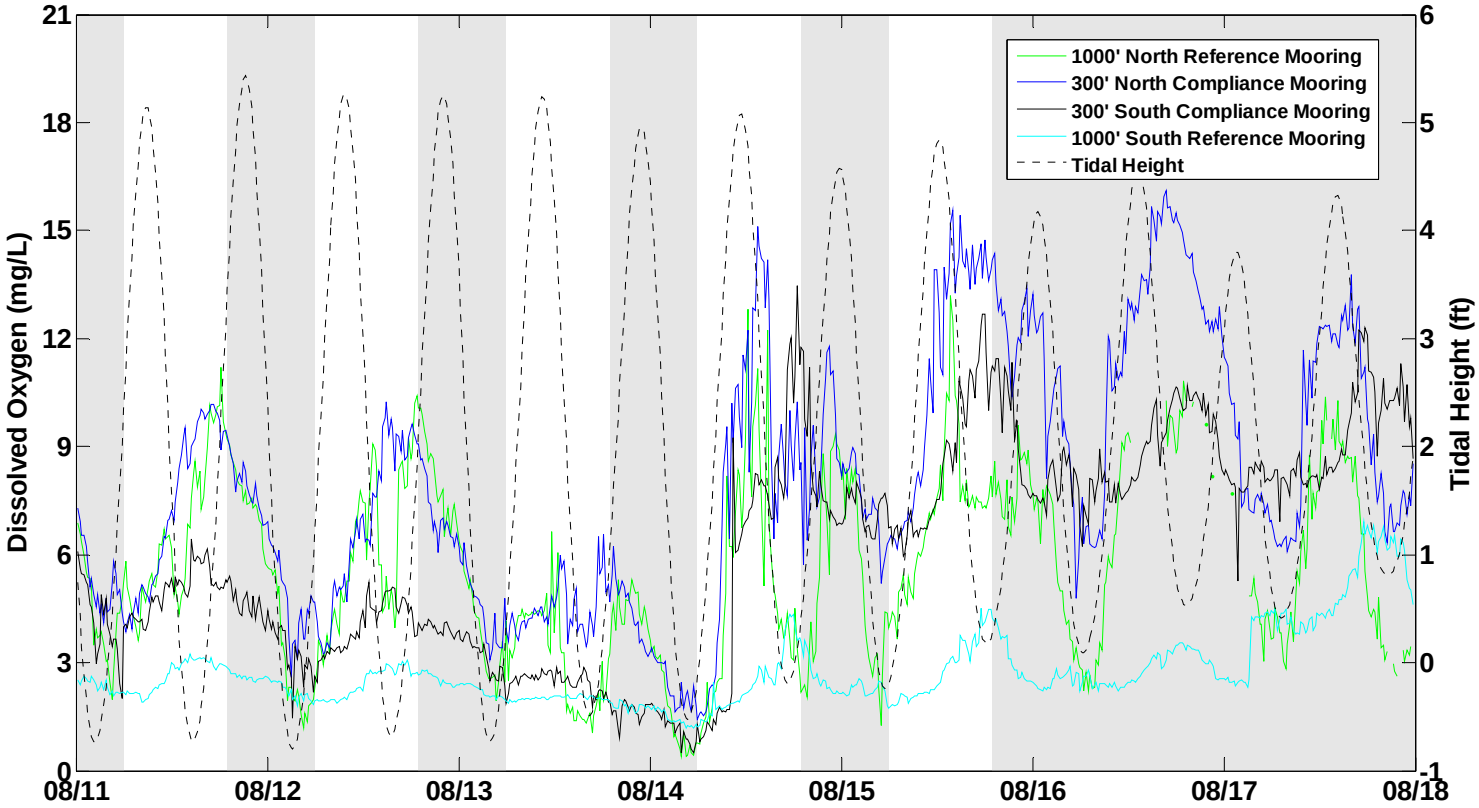

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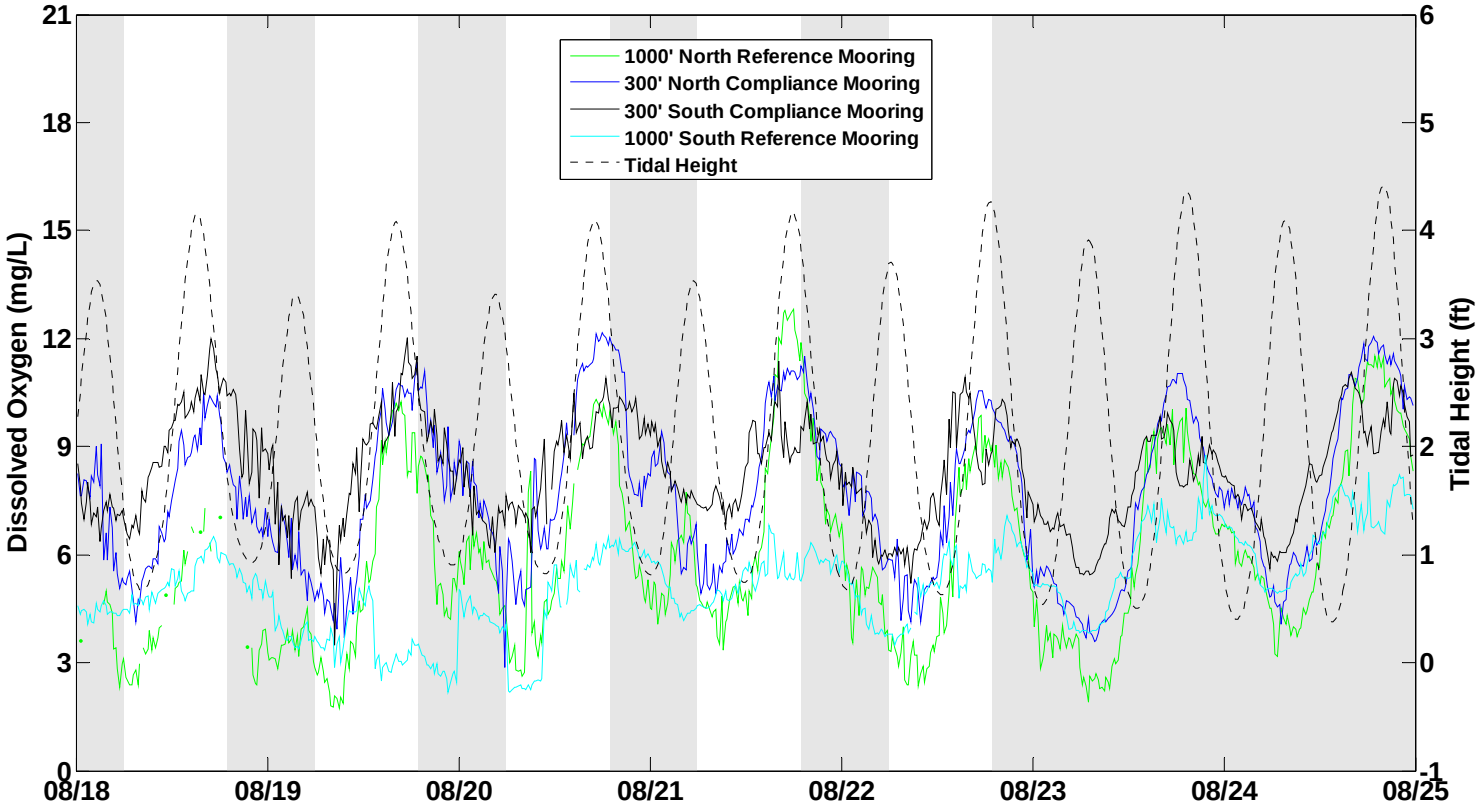
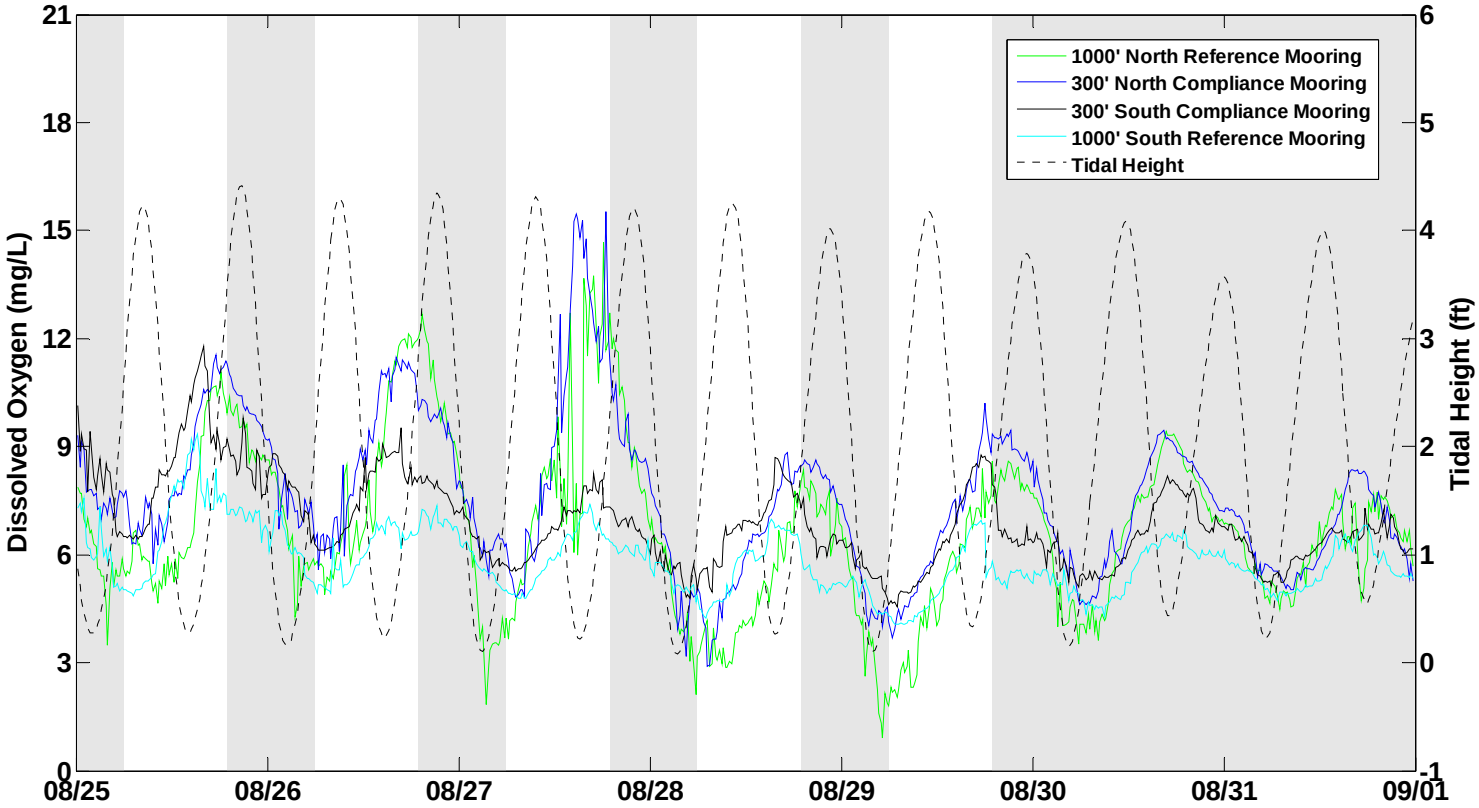
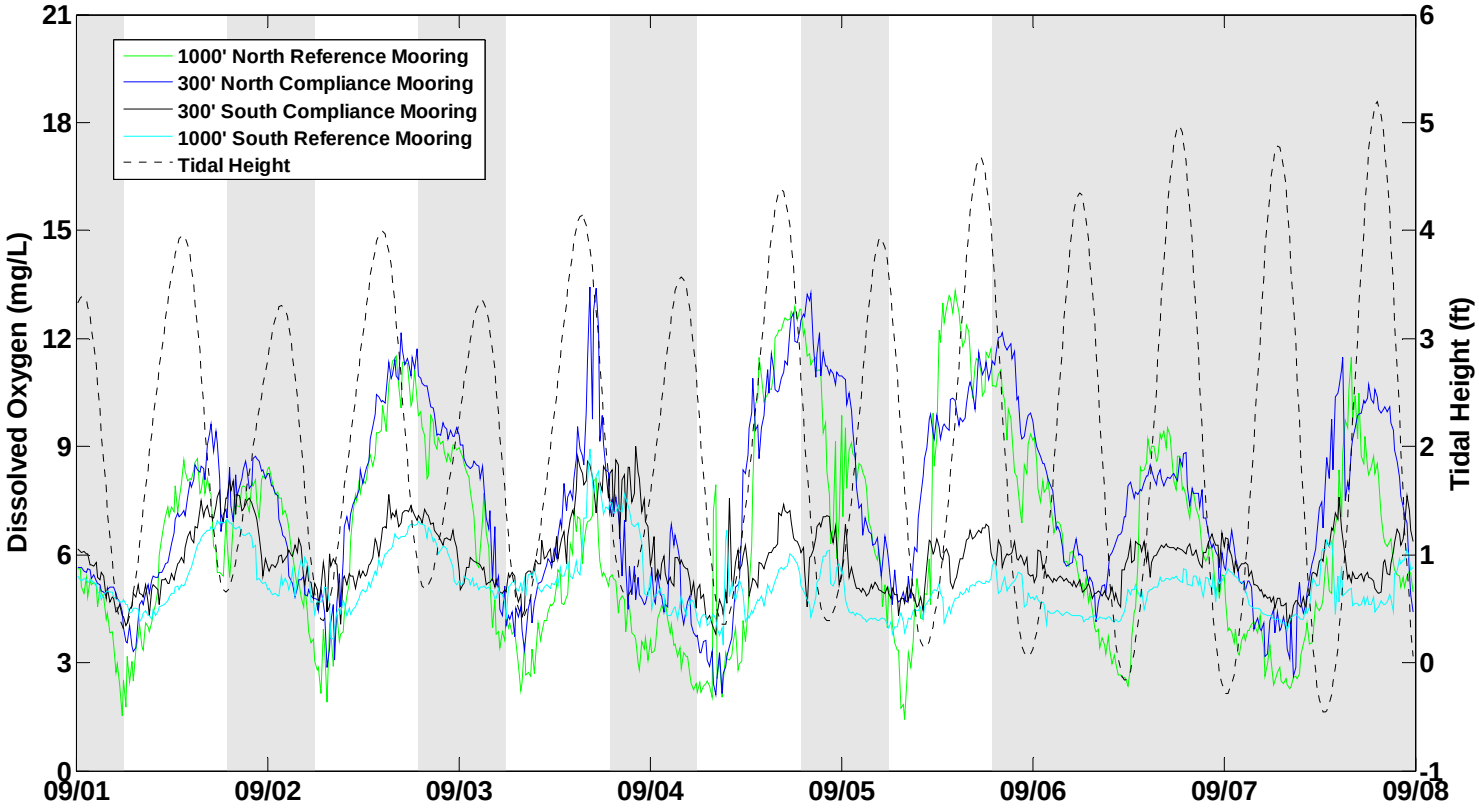


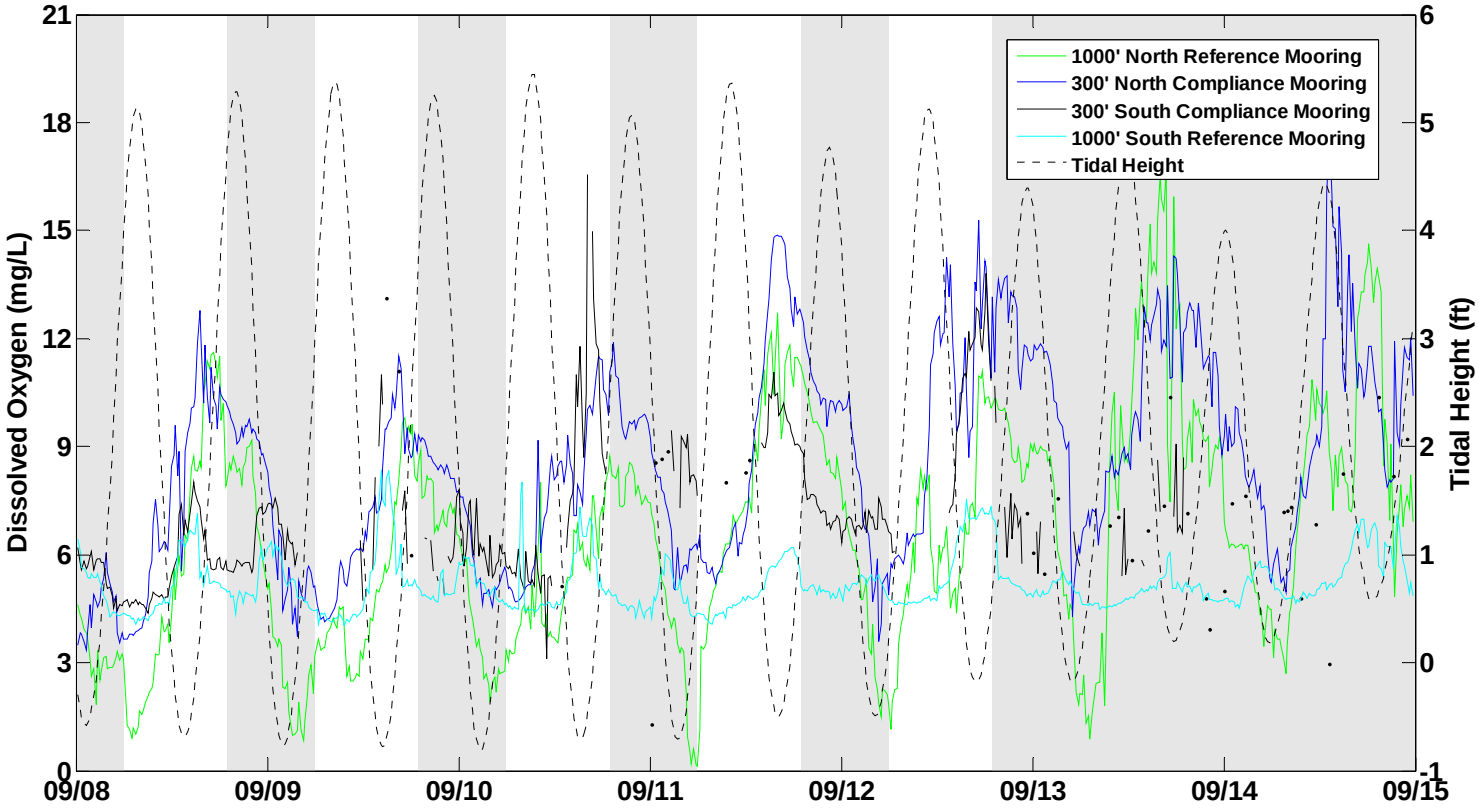
Shaded Areas Indicate Nights and Weekends, Periods of Inactivity in the Dredging Operations



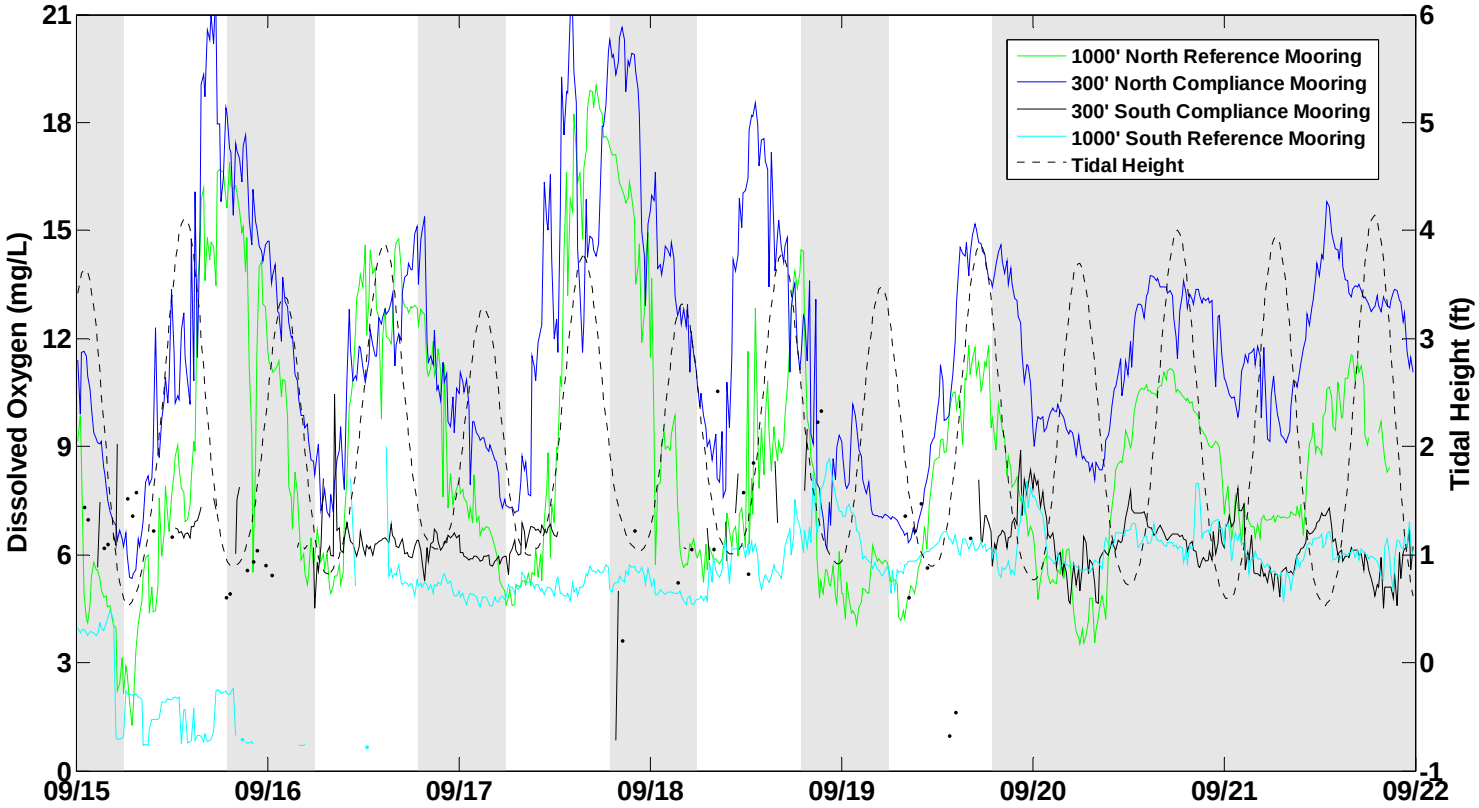
Shaded Areas Indicate Nights and Weekends, Periods of Inactivity in the Dredging Operations



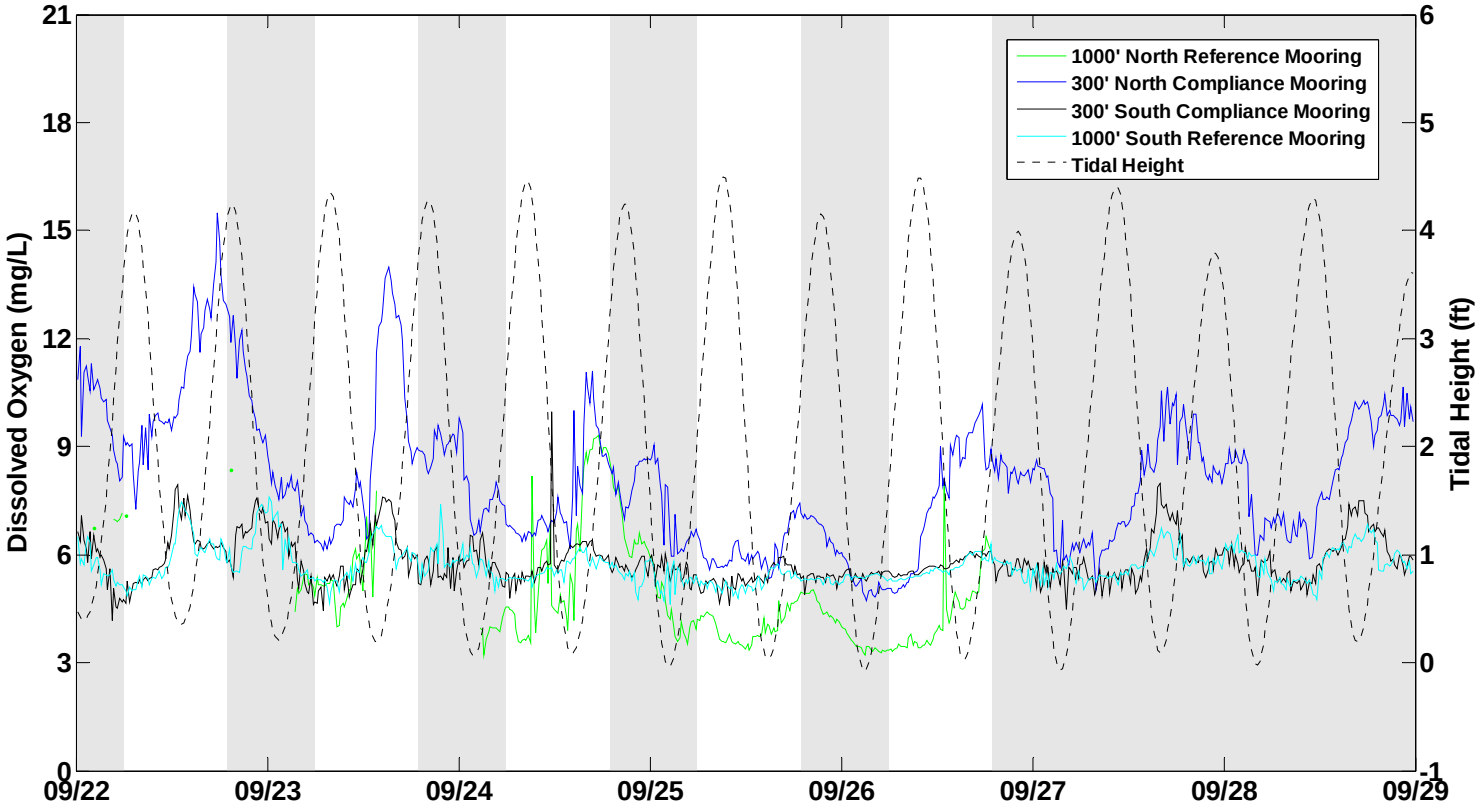
Shaded Areas Indicate Nights and Weekends, Periods of Inactivity in the Dredging Operations



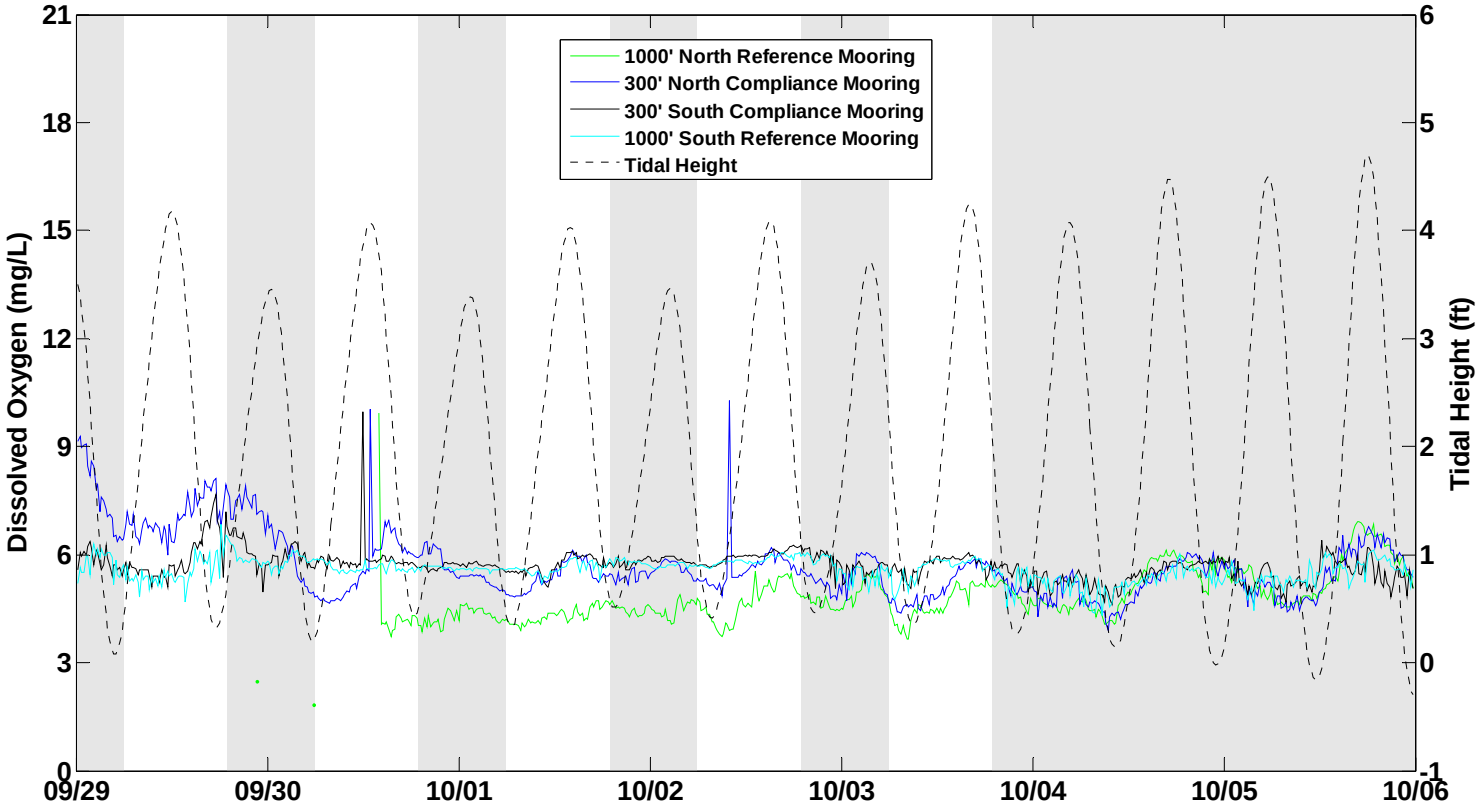
Shaded Areas Indicate Nights and Weekends, Periods of Inactivity in the Dredging Operations



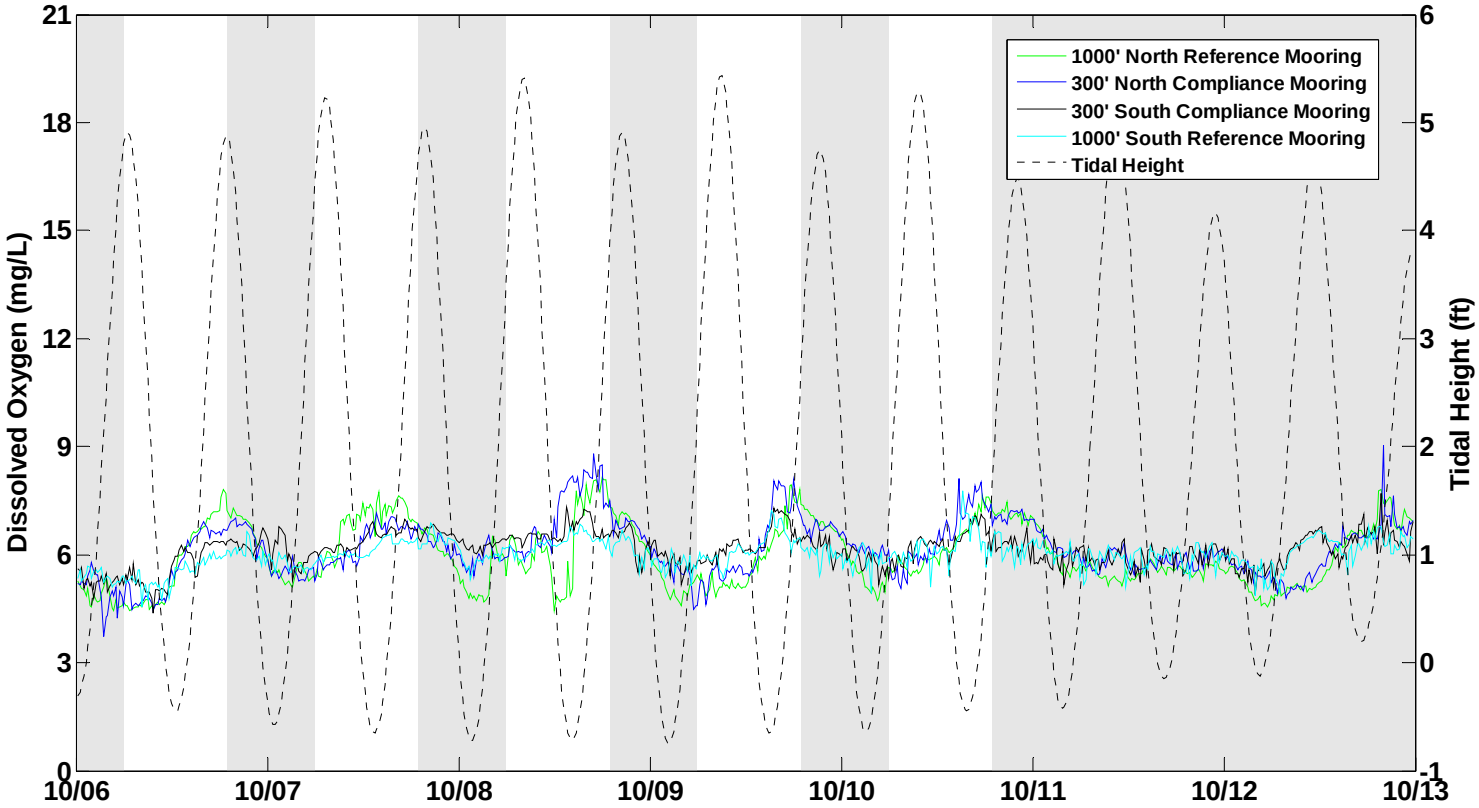
Shaded Areas Indicate Nights and Weekends, Periods of Inactivity in the Dredging Operations



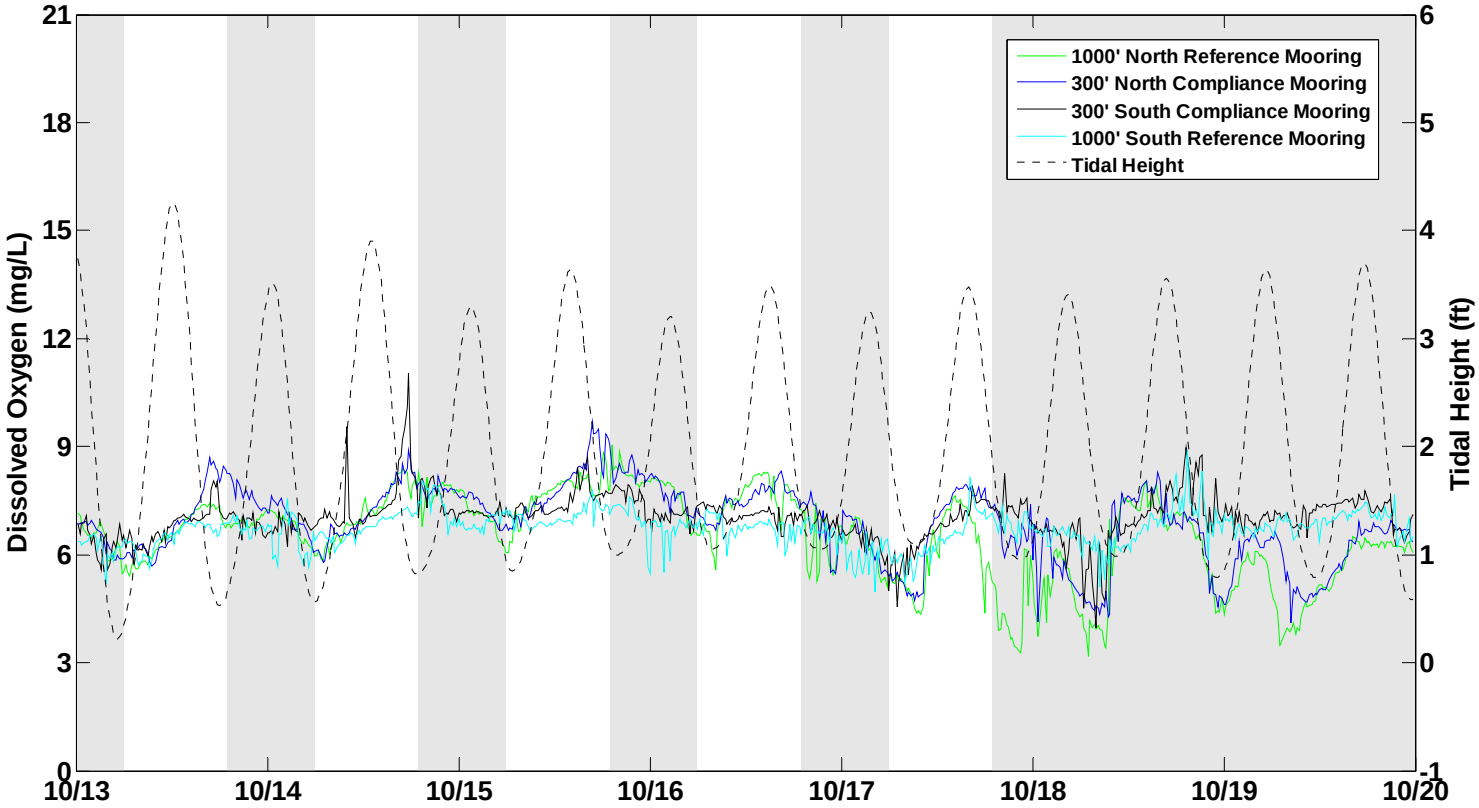
Shaded Areas Indicate Nights and Weekends, Periods of Inactivity in the Dredging Operations



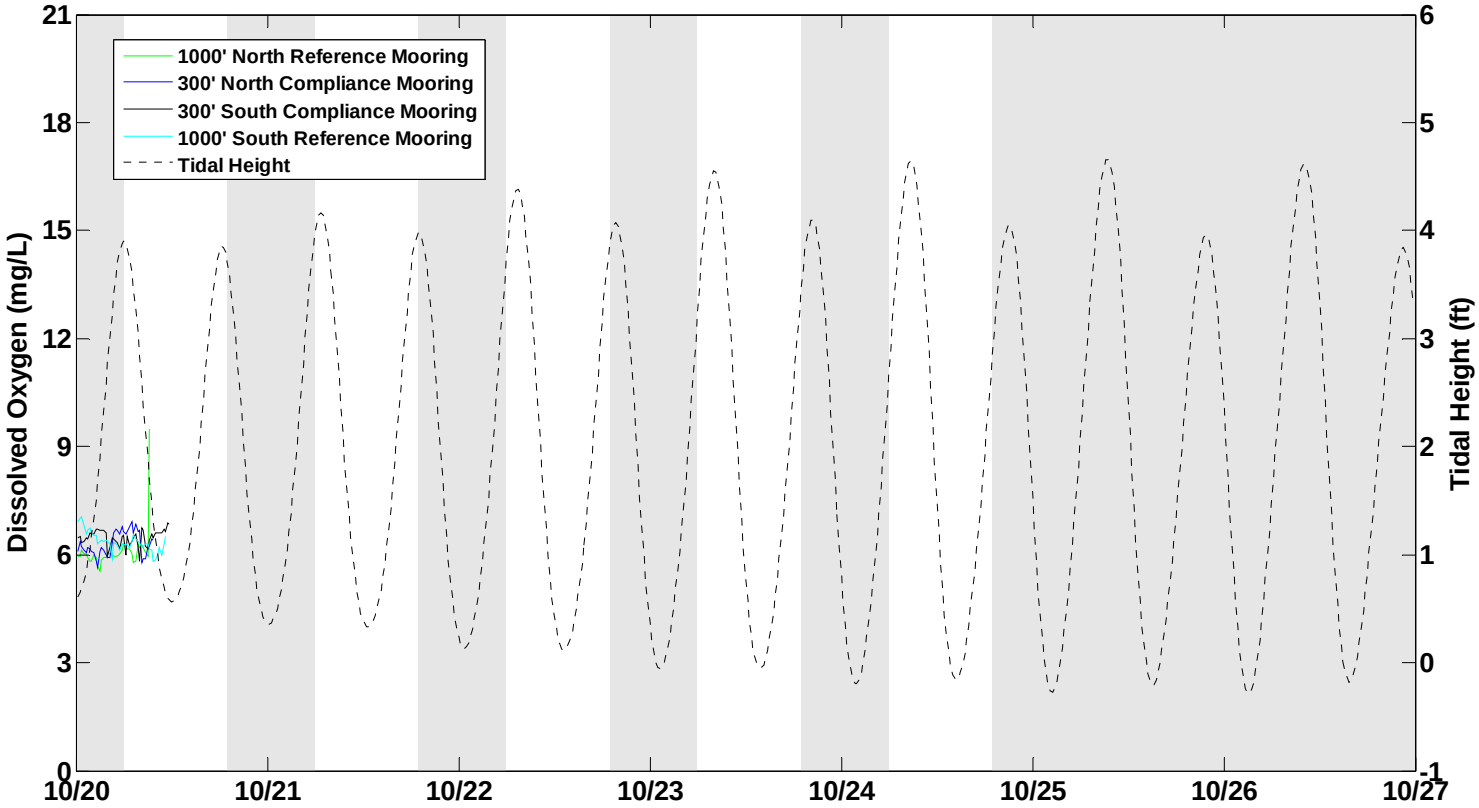
Shaded Areas Indicate Nights and Weekends, Periods of Inactivity in the Dredging Operations



Shaded Areas Indicate Nights and Weekends, Periods of Inactivity in the Dredging Operations



Shaded Areas Indicate Nights and Weekends, Periods of Inactivity in the Dredging Operations



Shaded Areas Indicate Nights and Weekends, Periods of Inactivity in the Dredging Operations

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Appendix C

TSS, Turbidity and PCB Analytical Data

(Provided on CD only)

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ALPHA ANALYTICAL

World Class Chemistry

www.alphalab.com

Lab Number: L1408516

Client: Battelle

ATTN: Deirdre Dahlen

Project Name: NEW BEDFORD HARBOR

Project Number: W912WJ-12-D-0004

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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Sample Delivery Group Information

Sample Delivery Group Form

Laboratory Job number: L1408516

Project Number: W912WJ-12-D-0004

Project Name: NEW BEDFORD HARBOR **Received:** 04/23/2014 12:05

Client Account: Battelle **Received by:** TM/BB

Samples Delivered by: COURIER **Call Tracker #**

Bill Of Laden N/A **Trackingnum**

Coc Present Present

Container Status Intact **Sample IDs** 4/apr/14 19:20 - BB 3.5 C 1463 -10B,-11B,-12B,-13B rec'd in WB 4/24/14 at 19:51 2.9C
-05A, 06A, 07A, 08A, rec'd in mansfield 4/25/14 04:00 4.8c

All Containers Accounted For? Yes

Were Extra Samples Received? No

Do Sample Labels and COC agree? Yes

Are Samples in Appropriate Containers? Yes

Are Samples Received within Holding time? Yes

pH of Samples upon Receipt 8 **Are samples Properly Preserved?** Yes

Initial pH **preserved in house with** **Final pH**

Other Issues

Chlorine Check N/A

Are VOA/VPH Vials Present? No

Aqueous: Do Vials Contain Head Space? N/A

Soils: Is MeOHCovering the Soil? N/A

Reagent H2O Preserved vials Frozen on N/A

Frozen by Client N/A

Cooler	Seal	Ice Present	Blue Ice Present	Temp. (Celsius)	Frozen upon Receipt	Delivered Direct from Site
B	Present/Intact	Yes	No	5.0 - IR Gun	No	No
A	Present/Intact	Yes	No	3.6 - IR Gun	No	No

Sample **D**elivery **G**roup Form

C	Present/Intact	Yes	No	5.8 - IR Gun	No	No

Project Manager: Elizabeth Porta **Review Date:** 04/25/2014

LIMS Chain of Custody

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
May 08 2014, 04:52 pm

Login Number: L1408516

Account: BATDUX BattelleProject: W912WJ-12-D-0004 New Bedford Harbor Water Quality Monitoring

Received: 23APR14 Due Date: 08MAY14

Sample #	Client ID	Mat	PR	Collected	Container
L1408516-01	WQ-TUR/TSS-001-0422	1	S0	22APR14 12:15	1-Plastic-A.25,1-Plastic-A1
| DPKG-FULL Package Due Date: 05/08/14					
A2-SRPROJECTMANAGER,A2-TSS-2540D,DPKG-FULL,TURB-180					
L1408516-02	WQ-TUR/TSS-002-0422	1	S0	22APR14 13:00	1-Plastic-A.25,1-Plastic-A1
| Package Due Date: 05/08/14					
A2-TSS-2540D,TURB-180					
L1408516-03	WQ-TUR/TSS-003-0422	1	S0	22APR14 15:05	1-Plastic-A.25,1-Plastic-A1
| Package Due Date: 05/08/14					
A2-TSS-2540D,TURB-180					
L1408516-04	WQ-TUR/TSS-004-0422	1	S0	22APR14 16:00	1-Plastic-A.25,1-Plastic-A1
| Package Due Date: 05/08/14					
A2-TSS-2540D,TURB-180					
L1408516-05	WQ-TUR/TSS-001-0423	1	S0	23APR14 14:38	1-Plastic-A.25,1-Plastic-A1
| Package Due Date: 05/08/14					
A2-TSS-2540D,TURB-180					
L1408516-06	WQ-TUR/TSS-002-0423	1	S0	23APR14 15:25	1-Plastic-A.25,1-Plastic-A1
| Package Due Date: 05/08/14					
A2-TSS-2540D,TURB-180					
L1408516-07	WQ-TUR/TSS-003-0423	1	S0	23APR14 16:25	1-Plastic-A.25,1-Plastic-A1
| Package Due Date: 05/08/14					
A2-TSS-2540D,TURB-180					

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
May 08 2014, 04:52 pm

Login Number: L1408516

Account: BATDUX BattelleProject: W912WJ-12-D-0004 New Bedford Harbor Water Quality Monitoring
Received: 23APR14 Due Date: 08MAY14

Sample #	Client ID	Mat	PR	Collected	Container
L1408516-08	WQ-TUR/TSS-003-0423	1	S0	23APR14 16:25	1-Plastic-A.25,1-Plastic-A1
| Package Due Date: 05/08/14					
A2-TSS-2540D,TURB-180					
L1408516-09	WQ-TUR/TSS-004-0423	1	S0	23APR14 17:30	1-Plastic-A.25,1-Plastic-A1
| Package Due Date: 05/08/14					
A2-TSS-2540D,TURB-180					
L1408516-10	WQ-TUR/TSS-001-0424	1	S0	24APR14 07:37	1-Plastic-A.25,1-Plastic-A1
| Package Due Date: 05/08/14					
A2-TSS-2540D,TURB-180					
L1408516-11	WQ-TUR/TSS-002-0424	1	S0	24APR14 08:15	1-Plastic-A.25,1-Plastic-A1
| Package Due Date: 05/08/14					
A2-TSS-2540D,TURB-180					
L1408516-12	WQ-TUR/TSS-003-0424	1	S0	24APR14 10:50	1-Plastic-A.25,1-Plastic-A1
| Package Due Date: 05/08/14					
A2-TSS-2540D,TURB-180					
L1408516-13	WQ-TUR/TSS-004-0424	1	S0	24APR14 12:30	1-Plastic-A.25,1-Plastic-A1
| Package Due Date: 05/08/14					
A2-TSS-2540D,TURB-180					

Logged By: Elizabeth Porta

Container Tracking

ALPHA ANALYTICAL LABORATORIES
Container Tracking Report

Container ID	Type	Status	Transaction Date	From Response	From Location	From Operator	To Response	To Location	To Operator
L1408516-01A	Plastic-A.25	INTACT	24-APR-14	WETCHEM	WETCHEM	John Armstrong	CUSTODY	CUSTODY	John Armstrong
L1408516-01A	Plastic-A.25	INTACT	24-APR-14	CUSTODY	WETCHEM CUSTODY	John Armstrong	WETCHEM	WETCHEM	John Armstrong
L1408516-01A	Plastic-A.25	INTACT	24-APR-14	WETCHEM	WETCHEM	Ethan Leighton	CUSTODY	WETCHEM CUSTODY	Ethan Leighton
L1408516-01A	Plastic-A.25	INTACT	23-APR-14		CUSTODY	John Armstrong	WETCHEM	WETCHEM	John Armstrong
L1408516-01A	Plastic-A.25	INTACT	23-APR-14	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Blake Buckalew	CUSTODY	CUSTODY	Blake Buckalew
L1408516-01A	Plastic-A.25	INTACT	23-APR-14	CUSTODY	CUSTODY	Blake Buckalew	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Blake Buckalew
L1408516-01A	Plastic-A.25	INTACT	23-APR-14	LOGIN	LOGIN	Elizabeth Ryan	CUSTODY	CUSTODY	Elizabeth Ryan
L1408516-01B	Plastic-A1	INTACT	29-APR-14	CUSTODY	A2-WET CHEMISTRY	John Kowalski	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	John Kowalski
L1408516-01B	Plastic-A1	INTACT	29-APR-14	CUSTODY	A2-CUSTODY-NOAA5	John Kowalski	A2-WET CHEMISTRY	A2-WET CHEMISTRY	John Kowalski
L1408516-01B	Plastic-A1	INTACT	23-APR-14	A2-CUSTODY-REFRIDGE	CUSTODY	Tanya Mueller	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	Tanya Mueller
L1408516-01B	Plastic-A1	INTACT	23-APR-14	LOGIN	LOGIN	Elizabeth Ryan	CUSTODY	CUSTODY	Elizabeth Ryan
L1408516-02A	Plastic-A.25	INTACT	24-APR-14	WETCHEM	WETCHEM	John Armstrong	CUSTODY	CUSTODY	John Armstrong
L1408516-02A	Plastic-A.25	INTACT	24-APR-14	CUSTODY	WETCHEM CUSTODY	John Armstrong	WETCHEM	WETCHEM	John Armstrong
L1408516-02A	Plastic-A.25	INTACT	24-APR-14	WETCHEM	WETCHEM	Ethan Leighton	CUSTODY	WETCHEM CUSTODY	Ethan Leighton
L1408516-02A	Plastic-A.25	INTACT	23-APR-14		CUSTODY	John Armstrong	WETCHEM	WETCHEM	John Armstrong
L1408516-02A	Plastic-A.25	INTACT	23-APR-14	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Blake Buckalew	CUSTODY	CUSTODY	Blake Buckalew
L1408516-02A	Plastic-A.25	INTACT	23-APR-14	CUSTODY	CUSTODY	Blake Buckalew	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Blake Buckalew
L1408516-02A	Plastic-A.25	INTACT	23-APR-14	LOGIN	LOGIN	Elizabeth Ryan	CUSTODY	CUSTODY	Elizabeth Ryan
L1408516-02B	Plastic-A1	INTACT	29-APR-14	CUSTODY	A2-WET CHEMISTRY	John Kowalski	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	John Kowalski
L1408516-02B	Plastic-A1	INTACT	29-APR-14	CUSTODY	A2-CUSTODY-NOAA5	John Kowalski	A2-WET CHEMISTRY	A2-WET CHEMISTRY	John Kowalski
L1408516-02B	Plastic-A1	INTACT	23-APR-14	A2-CUSTODY-REFRIDGE	CUSTODY	Tanya Mueller	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	Tanya Mueller
L1408516-02B	Plastic-A1	INTACT	23-APR-14	LOGIN	LOGIN	Elizabeth Ryan	CUSTODY	CUSTODY	Elizabeth Ryan
L1408516-03A	Plastic-A.25	INTACT	24-APR-14	WETCHEM	WETCHEM	John Armstrong	CUSTODY	CUSTODY	John Armstrong
L1408516-03A	Plastic-A.25	INTACT	24-APR-14	CUSTODY	WETCHEM CUSTODY	John Armstrong	WETCHEM	WETCHEM	John Armstrong
L1408516-03A	Plastic-A.25	INTACT	24-APR-14	WETCHEM	WETCHEM	Ethan Leighton	CUSTODY	WETCHEM CUSTODY	Ethan Leighton

Container ID	Type	Status	Transaction Date	From Response	Location	To Operator	Response	Location	Operator
L1408516-03A	Plastic-A.25	INTACT	23-APR-14		CUSTODY	John Armstrong	WETCHEM	WETCHEM	John Armstrong
L1408516-03A	Plastic-A.25	INTACT	23-APR-14	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Blake Buckalew	CUSTODY	CUSTODY	Blake Buckalew
L1408516-03A	Plastic-A.25	INTACT	23-APR-14	CUSTODY	CUSTODY	Blake Buckalew	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Blake Buckalew
L1408516-03A	Plastic-A.25	INTACT	23-APR-14	LOGIN	LOGIN	Elizabeth Ryan	CUSTODY	CUSTODY	Elizabeth Ryan
L1408516-03B	Plastic-A1	INTACT	29-APR-14	CUSTODY	A2-WET CHEMISTRY	John Kowalski	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	John Kowalski
L1408516-03B	Plastic-A1	INTACT	29-APR-14	CUSTODY	A2-CUSTODY-NOAA5	John Kowalski	A2-WET CHEMISTRY	A2-WET CHEMISTRY	John Kowalski
L1408516-03B	Plastic-A1	INTACT	23-APR-14	A2-CUSTODY-REFRIDGE	CUSTODY	Tanya Mueller	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	Tanya Mueller
L1408516-03B	Plastic-A1	INTACT	23-APR-14	LOGIN	LOGIN	Elizabeth Ryan	CUSTODY	CUSTODY	Elizabeth Ryan
L1408516-04A	Plastic-A.25	INTACT	24-APR-14	WETCHEM	WETCHEM	John Armstrong	CUSTODY	CUSTODY	John Armstrong
L1408516-04A	Plastic-A.25	INTACT	24-APR-14	CUSTODY	WETCHEM CUSTODY	John Armstrong	WETCHEM	WETCHEM	John Armstrong
L1408516-04A	Plastic-A.25	INTACT	24-APR-14	WETCHEM	WETCHEM	Ethan Leighton	CUSTODY	WETCHEM CUSTODY	Ethan Leighton
L1408516-04A	Plastic-A.25	INTACT	23-APR-14		CUSTODY	John Armstrong	WETCHEM	WETCHEM	John Armstrong
L1408516-04A	Plastic-A.25	INTACT	23-APR-14	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Blake Buckalew	CUSTODY	CUSTODY	Blake Buckalew
L1408516-04A	Plastic-A.25	INTACT	23-APR-14	CUSTODY	CUSTODY	Blake Buckalew	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Blake Buckalew
L1408516-04A	Plastic-A.25	INTACT	23-APR-14	LOGIN	LOGIN	Elizabeth Ryan	CUSTODY	CUSTODY	Elizabeth Ryan
L1408516-04B	Plastic-A1	INTACT	29-APR-14	CUSTODY	A2-WET CHEMISTRY	John Kowalski	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	John Kowalski
L1408516-04B	Plastic-A1	INTACT	29-APR-14	CUSTODY	A2-CUSTODY-NOAA5	John Kowalski	A2-WET CHEMISTRY	A2-WET CHEMISTRY	John Kowalski
L1408516-04B	Plastic-A1	INTACT	23-APR-14	A2-CUSTODY-REFRIDGE	CUSTODY	Tanya Mueller	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	Tanya Mueller
L1408516-04B	Plastic-A1	INTACT	23-APR-14	LOGIN	LOGIN	Elizabeth Ryan	CUSTODY	CUSTODY	Elizabeth Ryan
L1408516-05A	Plastic-A.25	INTACT	29-APR-14	CUSTODY	A2-WET CHEMISTRY	John Kowalski	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	John Kowalski
L1408516-05A	Plastic-A.25	INTACT	29-APR-14	CUSTODY	A2-CUSTODY-NOAA5	John Kowalski	A2-WET CHEMISTRY	A2-WET CHEMISTRY	John Kowalski
L1408516-05A	Plastic-A.25	INTACT	25-APR-14	A2-CUSTODY-REFRIDGE	TRANSFER - MANSFIELD	Tanya Mueller	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	Tanya Mueller
L1408516-05A	Plastic-A.25	INTACT	24-APR-14	CUSTODY	WETCHEM CUSTODY	Richard Scott	TRANSFER - MANSFIELD	TRANSFER - MANSFIELD	Richard Scott
L1408516-05A	Plastic-A.25	INTACT	24-APR-14	CUSTODY	A2-CUSTODY-REFRIDGE	Graham Phillips	WETCHEM CUSTODY	WETCHEM CUSTODY	Graham Phillips
L1408516-05A	Plastic-A.25	INTACT	24-APR-14	A2-LOGIN	A2-LOGIN	Elizabeth Ryan	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Elizabeth Ryan

Container ID	Type	Status	Transaction Date	From Response	Location	Operator	To Response	Location	Operator
L1408516-05B	Plastic-A1	INTACT	25-APR-14	WETCHEM	WETCHEM	John Armstrong	CUSTODY	WETCHEM CUSTODY	John Armstrong
L1408516-05B	Plastic-A1	INTACT	25-APR-14	CUSTODY	WETCHEM CUSTODY	John Armstrong	WETCHEM	WETCHEM	John Armstrong
L1408516-05B	Plastic-A1	INTACT	24-APR-14	WETCHEM	WETCHEM	Ethan Leighton	CUSTODY	WETCHEM CUSTODY	Ethan Leighton
L1408516-05B	Plastic-A1	INTACT	24-APR-14	CUSTODY	A2-CUSTODY-REFRIDGE	John Armstrong	WETCHEM	WETCHEM	John Armstrong
L1408516-05B	Plastic-A1	INTACT	24-APR-14	A2-LOGIN	A2-LOGIN	Elizabeth Ryan	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Elizabeth Ryan
L1408516-06A	Plastic-A.25	INTACT	29-APR-14	CUSTODY	A2-WET CHEMISTRY	John Kowalski	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	John Kowalski
L1408516-06A	Plastic-A.25	INTACT	29-APR-14	CUSTODY	A2-CUSTODY-NOAA5	John Kowalski	A2-WET CHEMISTRY	A2-WET CHEMISTRY	John Kowalski
L1408516-06A	Plastic-A.25	INTACT	25-APR-14	A2-CUSTODY-REFRIDGE	TRANSFER - MANSFIELD	Tanya Mueller	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	Tanya Mueller
L1408516-06A	Plastic-A.25	INTACT	24-APR-14	CUSTODY	WETCHEM CUSTODY	Richard Scott	TRANSFER - MANSFIELD	TRANSFER - MANSFIELD	Richard Scott
L1408516-06A	Plastic-A.25	INTACT	24-APR-14	CUSTODY	A2-CUSTODY-REFRIDGE	Graham Phillips	WETCHEM CUSTODY	WETCHEM CUSTODY	Graham Phillips
L1408516-06A	Plastic-A.25	INTACT	24-APR-14	A2-LOGIN	A2-LOGIN	Elizabeth Ryan	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Elizabeth Ryan
L1408516-06B	Plastic-A1	INTACT	24-APR-14	WETCHEM	WETCHEM	Ethan Leighton	CUSTODY	WETCHEM CUSTODY	Ethan Leighton
L1408516-06B	Plastic-A1	INTACT	24-APR-14	CUSTODY	A2-CUSTODY-REFRIDGE	John Armstrong	WETCHEM	WETCHEM	John Armstrong
L1408516-06B	Plastic-A1	INTACT	24-APR-14	A2-LOGIN	A2-LOGIN	Elizabeth Ryan	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Elizabeth Ryan
L1408516-07A	Plastic-A.25	INTACT	29-APR-14	CUSTODY	A2-WET CHEMISTRY	John Kowalski	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	John Kowalski
L1408516-07A	Plastic-A.25	INTACT	29-APR-14	CUSTODY	A2-CUSTODY-NOAA5	John Kowalski	A2-WET CHEMISTRY	A2-WET CHEMISTRY	John Kowalski
L1408516-07A	Plastic-A.25	INTACT	25-APR-14	A2-CUSTODY-REFRIDGE	TRANSFER - MANSFIELD	Tanya Mueller	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	Tanya Mueller
L1408516-07A	Plastic-A.25	INTACT	24-APR-14	CUSTODY	WETCHEM CUSTODY	Richard Scott	TRANSFER - MANSFIELD	TRANSFER - MANSFIELD	Richard Scott
L1408516-07A	Plastic-A.25	INTACT	24-APR-14	CUSTODY	A2-CUSTODY-REFRIDGE	Graham Phillips	WETCHEM CUSTODY	WETCHEM CUSTODY	Graham Phillips
L1408516-07A	Plastic-A.25	INTACT	24-APR-14	A2-LOGIN	A2-LOGIN	Elizabeth Ryan	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Elizabeth Ryan
L1408516-07B	Plastic-A1	INTACT	24-APR-14	WETCHEM	WETCHEM	Ethan Leighton	CUSTODY	WETCHEM CUSTODY	Ethan Leighton
L1408516-07B	Plastic-A1	INTACT	24-APR-14	CUSTODY	A2-CUSTODY-REFRIDGE	John Armstrong	WETCHEM	WETCHEM	John Armstrong
L1408516-07B	Plastic-A1	INTACT	24-APR-14	A2-LOGIN	A2-LOGIN	Elizabeth Ryan	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Elizabeth Ryan
L1408516-08A	Plastic-A.25	INTACT	29-APR-14	CUSTODY	A2-WET CHEMISTRY	John Kowalski	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	John Kowalski
L1408516-08A	Plastic-A.25	INTACT	29-APR-14	CUSTODY	A2-CUSTODY-NOAA5	John Kowalski	A2-WET CHEMISTRY	A2-WET CHEMISTRY	John Kowalski

Container ID	Type	Status	Transaction Date	From Response	Location	To Operator	Response	Location	Operator
L1408516-08A	Plastic-A.25	INTACT	25-APR-14	A2-CUSTODY-REFRIDGE	TRANSFER - MANSFIELD	Tanya Mueller	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	Tanya Mueller
L1408516-08A	Plastic-A.25	INTACT	24-APR-14	CUSTODY	WETCHEM CUSTODY	Richard Scott	TRANSFER - MANSFIELD	TRANSFER - MANSFIELD	Richard Scott
L1408516-08A	Plastic-A.25	INTACT	24-APR-14	CUSTODY	A2-CUSTODY-REFRIDGE	Graham Phillips	WETCHEM CUSTODY	WETCHEM CUSTODY	Graham Phillips
L1408516-08A	Plastic-A.25	INTACT	24-APR-14	A2-LOGIN	A2-LOGIN	Elizabeth Ryan	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Elizabeth Ryan
L1408516-08B	Plastic-A1	INTACT	24-APR-14	WETCHEM	WETCHEM	Ethan Leighton	CUSTODY	WETCHEM CUSTODY	Ethan Leighton
L1408516-08B	Plastic-A1	INTACT	24-APR-14	CUSTODY	A2-CUSTODY-REFRIDGE	John Armstrong	WETCHEM	WETCHEM	John Armstrong
L1408516-08B	Plastic-A1	INTACT	24-APR-14	A2-LOGIN	A2-LOGIN	Elizabeth Ryan	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Elizabeth Ryan
L1408516-09A	Plastic-A.25	INTACT	29-APR-14	CUSTODY	A2-WET CHEMISTRY	John Kowalski	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	John Kowalski
L1408516-09A	Plastic-A.25	INTACT	29-APR-14	CUSTODY	A2-CUSTODY-NOAA5	John Kowalski	A2-WET CHEMISTRY	A2-WET CHEMISTRY	John Kowalski
L1408516-09A	Plastic-A.25	INTACT	25-APR-14	A2-CUSTODY-REFRIDGE	TRANSFER - MANSFIELD	Tanya Mueller	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	Tanya Mueller
L1408516-09A	Plastic-A.25	INTACT	24-APR-14	CUSTODY	WETCHEM CUSTODY	Richard Scott	TRANSFER - MANSFIELD	TRANSFER - MANSFIELD	Richard Scott
L1408516-09A	Plastic-A.25	INTACT	24-APR-14	CUSTODY	A2-CUSTODY-REFRIDGE	Graham Phillips	WETCHEM CUSTODY	WETCHEM CUSTODY	Graham Phillips
L1408516-09A	Plastic-A.25	INTACT	24-APR-14	A2-LOGIN	A2-LOGIN	Elizabeth Ryan	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Elizabeth Ryan
L1408516-09B	Plastic-A1	INTACT	24-APR-14	WETCHEM	WETCHEM	Ethan Leighton	CUSTODY	WETCHEM CUSTODY	Ethan Leighton
L1408516-09B	Plastic-A1	INTACT	24-APR-14	CUSTODY	A2-CUSTODY-REFRIDGE	John Armstrong	WETCHEM	WETCHEM	John Armstrong
L1408516-09B	Plastic-A1	INTACT	24-APR-14	A2-LOGIN	A2-LOGIN	Elizabeth Ryan	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Elizabeth Ryan
L1408516-10A	Plastic-A.25	INTACT	29-APR-14	CUSTODY	A2-WET CHEMISTRY	John Kowalski	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	John Kowalski
L1408516-10A	Plastic-A.25	INTACT	29-APR-14	CUSTODY	A2-CUSTODY-NOAA5	John Kowalski	A2-WET CHEMISTRY	A2-WET CHEMISTRY	John Kowalski
L1408516-10A	Plastic-A.25	INTACT	24-APR-14	A2-CUSTODY-REFRIDGE	TRANSFER - WESTBORO	Tanya Mueller	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	Tanya Mueller
L1408516-10A	Plastic-A.25	INTACT	24-APR-14	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Tanya Mueller	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Tanya Mueller
L1408516-10A	Plastic-A.25	INTACT	24-APR-14	A2-LOGIN	A2-LOGIN	Tanya Mueller	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Tanya Mueller
L1408516-10B	Plastic-A1	INTACT	24-APR-14	WETCHEM	WETCHEM	Ethan Leighton	CUSTODY	WETCHEM CUSTODY	Ethan Leighton
L1408516-10B	Plastic-A1	INTACT	24-APR-14	CUSTODY	CUSTODY	Ethan Leighton	WETCHEM	WETCHEM	Ethan Leighton
L1408516-10B	Plastic-A1	INTACT	24-APR-14	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Elizabeth Ryan	CUSTODY	CUSTODY	Elizabeth Ryan
L1408516-10B	Plastic-A1	INTACT	24-APR-14	A2-CUSTODY-REFRIDGE	A2-CUSTODY-NOAA5	Tanya Mueller	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Tanya Mueller

Container ID	Type	Status	Transaction Date	From Response	From Location	From Operator	To Response	To Location	To Operator
L1408516-10B	Plastic-A1	INTACT	24-APR-14	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Tanya Mueller	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	Tanya Mueller
L1408516-10B	Plastic-A1	INTACT	24-APR-14	A2-LOGIN	A2-LOGIN	Tanya Mueller	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Tanya Mueller
L1408516-11A	Plastic-A.25	INTACT	29-APR-14	CUSTODY	A2-WET CHEMISTRY	John Kowalski	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	John Kowalski
L1408516-11A	Plastic-A.25	INTACT	29-APR-14	CUSTODY	A2-CUSTODY-NOAA5	John Kowalski	A2-WET CHEMISTRY	A2-WET CHEMISTRY	John Kowalski
L1408516-11A	Plastic-A.25	INTACT	24-APR-14	A2-CUSTODY-REFRIDGE	TRANSFER - WESTBORO	Tanya Mueller	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	Tanya Mueller
L1408516-11A	Plastic-A.25	INTACT	24-APR-14	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Tanya Mueller	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Tanya Mueller
L1408516-11A	Plastic-A.25	INTACT	24-APR-14	A2-LOGIN	A2-LOGIN	Tanya Mueller	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Tanya Mueller
L1408516-11B	Plastic-A1	INTACT	24-APR-14	WETCHEM	WETCHEM	Ethan Leighton	CUSTODY	WETCHEM CUSTODY	Ethan Leighton
L1408516-11B	Plastic-A1	INTACT	24-APR-14	CUSTODY	CUSTODY	Ethan Leighton	WETCHEM	WETCHEM	Ethan Leighton
L1408516-11B	Plastic-A1	INTACT	24-APR-14	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Elizabeth Ryan	CUSTODY	CUSTODY	Elizabeth Ryan
L1408516-11B	Plastic-A1	INTACT	24-APR-14	A2-CUSTODY-REFRIDGE	A2-CUSTODY-NOAA5	Tanya Mueller	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Tanya Mueller
L1408516-11B	Plastic-A1	INTACT	24-APR-14	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Tanya Mueller	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	Tanya Mueller
L1408516-11B	Plastic-A1	INTACT	24-APR-14	A2-LOGIN	A2-LOGIN	Tanya Mueller	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Tanya Mueller
L1408516-12A	Plastic-A.25	INTACT	29-APR-14	CUSTODY	A2-WET CHEMISTRY	John Kowalski	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	John Kowalski
L1408516-12A	Plastic-A.25	INTACT	29-APR-14	CUSTODY	A2-CUSTODY-NOAA5	John Kowalski	A2-WET CHEMISTRY	A2-WET CHEMISTRY	John Kowalski
L1408516-12A	Plastic-A.25	INTACT	24-APR-14	A2-CUSTODY-REFRIDGE	TRANSFER - WESTBORO	Tanya Mueller	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	Tanya Mueller
L1408516-12A	Plastic-A.25	INTACT	24-APR-14	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Tanya Mueller	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Tanya Mueller
L1408516-12A	Plastic-A.25	INTACT	24-APR-14	A2-LOGIN	A2-LOGIN	Tanya Mueller	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Tanya Mueller
L1408516-12B	Plastic-A1	INTACT	24-APR-14	WETCHEM	WETCHEM	Ethan Leighton	CUSTODY	WETCHEM CUSTODY	Ethan Leighton
L1408516-12B	Plastic-A1	INTACT	24-APR-14	CUSTODY	CUSTODY	Ethan Leighton	WETCHEM	WETCHEM	Ethan Leighton
L1408516-12B	Plastic-A1	INTACT	24-APR-14	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Elizabeth Ryan	CUSTODY	CUSTODY	Elizabeth Ryan
L1408516-12B	Plastic-A1	INTACT	24-APR-14	A2-CUSTODY-REFRIDGE	A2-CUSTODY-NOAA5	Tanya Mueller	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Tanya Mueller
L1408516-12B	Plastic-A1	INTACT	24-APR-14	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Tanya Mueller	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	Tanya Mueller
L1408516-12B	Plastic-A1	INTACT	24-APR-14	A2-LOGIN	A2-LOGIN	Tanya Mueller	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Tanya Mueller
L1408516-13A	Plastic-A.25	INTACT	29-APR-14	CUSTODY	A2-WET CHEMISTRY	John Kowalski	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	John Kowalski

Container ID	Type	Status	Transaction Date	From Response	Location	Operator	To Response	Location	Operator
L1408516-13A	Plastic-A.25	INTACT	29-APR-14	CUSTODY	A2-CUSTODY-NOAA5	John Kowalski	A2-WET CHEMISTRY	A2-WET CHEMISTRY	John Kowalski
L1408516-13A	Plastic-A.25	INTACT	24-APR-14	A2-CUSTODY-REFRIDGE	TRANSFER - WESTBORO	Tanya Mueller	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	Tanya Mueller
L1408516-13A	Plastic-A.25	INTACT	24-APR-14	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Tanya Mueller	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Tanya Mueller
L1408516-13A	Plastic-A.25	INTACT	24-APR-14	A2-LOGIN	A2-LOGIN	Tanya Mueller	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Tanya Mueller
L1408516-13B	Plastic-A1	INTACT	24-APR-14	WETCHEM	WETCHEM	Ethan Leighton	CUSTODY	WETCHEM	CUSTODY Ethan Leighton
L1408516-13B	Plastic-A1	INTACT	24-APR-14	CUSTODY	CUSTODY	Ethan Leighton	WETCHEM	WETCHEM	Ethan Leighton
L1408516-13B	Plastic-A1	INTACT	24-APR-14	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Elizabeth Ryan	CUSTODY	CUSTODY	Elizabeth Ryan
L1408516-13B	Plastic-A1	INTACT	24-APR-14	A2-CUSTODY-REFRIDGE	A2-CUSTODY-NOAA5	Tanya Mueller	TRANSFER - WESTBORO	TRANSFER - WESTBORO	Tanya Mueller
L1408516-13B	Plastic-A1	INTACT	24-APR-14	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Tanya Mueller	A2-CUSTODY-NOAA5	A2-CUSTODY-NOAA5	Tanya Mueller
L1408516-13B	Plastic-A1	INTACT	24-APR-14	A2-LOGIN	A2-LOGIN	Tanya Mueller	A2-CUSTODY-REFRIDGE	A2-CUSTODY-REFRIDGE	Tanya Mueller

Chain of Custody

Project:
New Bedford Harbor Water Quality Monitoring

USACE CONTRACT NO. W912WJ-12-D-0004
TASK ORDER NO. 10

L1408516

Chain of Custody

Battelle
The Business of Innovation

Project Manager: Deirdre Dahlen
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Ship to: Elizabeth Porta
Alpha Analytical, Inc.
320 Forbes Boulevard
Mansfield, MA 02048
(508) 844-4124

Sampling Firm:
Battelle
397 Washington St
Duxbury, Ma 02332

Site Contact: Alex Mansfield
Mobile: (617) 571-9962

	Date	Time	Field ID	Lab ID(s)	Matrix	Station	Analyses (Record No. of containers / Preservative)								
							Total PCB	Dissolved PCB	Turbidity	TSS	TOC	Metals	Archive	Preservative	Field Turbidity Reading (NTU)	Field Salinity Reading (PPT)
08516-01	4/22/2014	12:15	WQ-TUR-001-042214		water	Reference 1000' South			1					4°C	0.52	28
02	4/22/2014	13:00	WQ-TUR-002-042214		water	Compliance 300' North			1					4°C	1.73	27
03	4/22/2014	15:05	WQ-TUR-003-042214		water	Reference 1000' North			1					4°C	5.5	22
04	4/22/2014	16:00	WQ-TUR-004-042214		water	Compliance 300' South			1					4°C	0.8	28
01	4/22/2014	12:15	WQ-TSS-001-042214		water	Reference 1000' South				1				4°C	0.52	28
02	4/22/2014	13:00	WQ-TSS-002-042214		water	Compliance 300' North				1				4°C	1.73	27
03	4/22/2014	15:05	WQ-TSS-003-042214		water	Reference 1000' North				1				4°C	5.5	22
04	4/22/2014	16:00	WQ-TSS-004-042214		water	Compliance 300' South				1				4°C	0.8	28

Comments:
1st of 3 days of sampling for the week. QC samples will be collected later in the week.

Sampling Team:
Alex Mansfield, Mike Walsh

Rel: [signature] 4/23/14

Relinquished By (name/date/time):
[signature] 4/23/14 0840 BDO

Rec: [signature] 4/23/14 12:05

Rel: [signature] 4/23/14 1058

Rel: KRS KAD

Received (name/date/time):
MT 4-23-14 8:40 BDO

Rec: [signature] 4/23/14 15:35

Project:
New Bedford Harbor Water Quality Monitoring

L1409516

USACE CONTRACT NO. W912WJ-12-D-0004
TASK ORDER NO. 10

Chain of Custody

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The Business of Innovation

Project Manager: Deirdre Dahlen
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Alpha Analytical, Inc.
320 Forbes Boulevard
Mansfield, MA 02048
(508) 844-4124

Sampling Firm:
Battelle
397 Washington St
Duxbury, Ma 02332

Site Contact: Alex Mansfield
Mobile: (617) 571-9962

Date	Time	Field ID	Lab ID(s)	Matrix	Station	Analyses (Record No. of containers / Preservative)									
						Total PCB	Dissolved PCB	Turbidity	TSS	TOC	Metals	Archive	Preservative	Field Turbidity Reading (NTU)	Field Salinity Reading (PPT)
4/23/2014	14:38	WQ-TUR-001-042314		water	Reference 1000' South			1					4°C	4.1	17
4/23/2014	15:25	WQ-TUR-002-042314		water	Compliance 300' North			1					4°C	4.9	11
4/23/2014	16:25	WQ-TUR-003-042314		water	Reference 1000' North			1					4°C	3.5	17
4/23/2014	16:25	WQ-TUR-003-042314-REP		water	Reference 1000' North (REP)			1					4°C	3.5	17
4/23/2014	17:30	WQ-TUR-004-042314		water	Compliance 300' South			1					4°C	4.7	16
4/23/2014	14:38	WQ-TSS-001-042314		water	Reference 1000' South				1				4°C	4.1	17
4/23/2014	15:25	WQ-TSS-002-042314		water	Compliance 300' North				1				4°C	4.9	11
4/23/2014	16:25	WQ-TSS-003-042314		water	Reference 1000' North				1				4°C	3.5	17
4/23/2014	16:25	WQ-TSS-003-042314-REP		water	Reference 1000' North (REP)				1				4°C	3.5	17
4/23/2014	17:30	WQ-TSS-004-042314		water	Compliance 300' South				1				4°C	4.7	16

Comments:
2nd of 3 days of sampling for the week. This group contains the QC samples for the week.

Sampling Team:
Alex Mansfield, Mike Walsh

Rel. [signature] 4/24/14 - 1820

Relinquished By (name/date/time):
[signature] 4/23/14 1830
[signature] 4/24/14 1650

Rel. [signature] 4/24/14 1650 AS 1830

Received (name/date/time):
[signature] 4/24/14 8:30
[signature] 4/24/14 1650

Project:
New Bedford Harbor Water Quality Monitoring

USACE CONTRACT NO. W912WJ-12-D-0004
TASK ORDER NO. 10

L40 85160

Chain of Custody

Battelle
The Business of Innovation

Project Manager: Deirdre Dahlen
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(508) 844-4124

Sampling Firm:
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397 Washington St
Duxbury, Ma 02332

Site Contact: Alex Mansfield
Mobile: (617) 571-9962

	Date	Time	Field ID	Lab ID(s)	Matrix	station	Analyses (Record No. of containers / Preservative)									
							Total PCB	Dissolved PCB	Turbidity	TSS	TOC	Metals	Archive	Preservative	Field Turbidity Reading (NTU)	Field Salinity Reading (PPT)
85160.10	4/24/2014		WQ-TUR-001-042414		water	Reference 1000' North			1					4°C	1.5	12.5
11	4/24/2014		WQ-TUR-002-042414		water	Compliance 300' South			1					4°C	1.8	22.6
12	4/24/2014		WQ-TUR-003-042414		water	Reference 1000' South			1					4°C	5.5	23.8
13	4/24/2014		WQ-TUR-004-042414		water	Compliance 300' North			1					4°C	5.5	22.7
10	4/24/2014		WQ-TSS-001-042414		water	Reference 1000' North				1				4°C	1.5	12.5
11	4/24/2014		WQ-TSS-002-042414		water	Compliance 300' South				1				4°C	1.8	22.6
12	4/24/2014		WQ-TSS-003-042414		water	Reference 1000' South				1				4°C	5.5	23.8
13	4/24/2014		WQ-TSS-004-042414		water	Compliance 300' North				1				4°C	5.5	22.7

Comments:
3rd of 3 days of sampling for the week. QC samples were collected on 4/23/14

Sampling Team:
Mike Walsh, Paul Sokoloff

Relinquished By (name/date/time):
24 April 14 1445
18:33 4/24/14
4/24/14 18:33

4/24/14 19:45

Received (name/date/time):

Project:
New Bedford Harbor Water Quality Monitoring

L1408516

USACE CONTRACT NO. W912WJ-12-D-0004
TASK ORDER NO. 10

Battelle
The Business of Innovation

Chain of Custody

Project Manager: Deirdre Dahlen
Phone: (781) 952-5253

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Alpha Analytical, Inc.
320 Forbes Boulevard
Mansfield, MA 02048
(508) 844-4124

Sampling Firm:
Battelle
397 Washington St
Duxbury, Ma 02332

Site Contact: Alex Mansfield
Mobile: (617) 571-9962

Date	Time	Field ID	Lab ID(s)	Matrix	Station	Analyses (Record No. of containers / Preservative)									
						Total PCB	Dissolved PCB	Turbidity	TSS	TOC	Metals	Archive	Preservative	Field Turbidity Reading (NTU)	Field Salinity Reading (PPT)
4/23/2014	14:38	WQ-TUR-001-042314		water	Reference 1000' South			1					4°C	4.1	17
4/23/2014	15:25	WQ-TUR-002-042314		water	Compliance 300' North			1					4°C	4.9	11
4/23/2014	16:25	WQ-TUR-003-042314		water	Reference 1000' North			1					4°C	3.5	17
4/23/2014	16:25	WQ-TUR-003-042314-REP		water	Reference 1000' North (REP)			1					4°C	3.5	17
4/23/2014	17:30	WQ-TUR-004-042314		water	Compliance 300' South			1					4°C	4.7	16
4/23/2014	14:38	WQ-TSS-001-042314		water	Reference 1000' South				1				4°C	4.1	17
4/23/2014	15:25	WQ-TSS-002-042314		water	Compliance 300' North				1				4°C	4.9	11
4/23/2014	16:25	WQ-TSS-003-042314		water	Reference 1000' North				1				4°C	3.5	17
4/23/2014	16:25	WQ-TSS-003-042314-REP		water	Reference 1000' North (REP)				1				4°C	3.5	17
4/23/2014	17:30	WQ-TSS-004-042314		water	Compliance 300' South				1				4°C	4.7	16

Comments:
2nd of 3 days of sampling for the week. This group contains the QC samples for the week.

Sampling Team:
Alex Mansfield, Mike Walsh

Rel: [signature] 4/24/14 - 1820

Relinquished By (name/date/time):
[signature] 4/23/14 1830
[signature] 4/24/14 1650

Rec. [signature] 4/24/14 1650 AM 1630

Received (name/date/time):
[signature] 4/24/14 8:30
[signature] 4/24/14 1650

[signature] 4/25/14 04:00 Mansfield Lab 4/25/14 04:00 AM

Wet Chemistry

Total Suspended Solids Analysis

Sample Raw Data

ALPHA ANALYTICAL LABS

Wet Chemistry - Mansfield Lab

TOTAL SUSPENDED SOLIDS

Last Change 04/15/09 EC
File A2-TSS.xlt

SOP No.: W-006

Product: A2-TSS-2540D
Analyte: Solids, Total Suspended
Analysis Date: 4/29/2014 10:00
Technician: JK
Work group: WG686580
RDL: 5.0 mg/l

Analysis: T S S
Method: SM 2540D(M)
LCS Concentration (mg/l): 35.9

105 Degrees C

	Sample Number	Symbol	Tare Weight (gm)	Sample Volume (ml)	Net Weight(1) (gm)	Net Weight(2) (gm)	RDL MULT.	RESULT mg/l	
BLANK	WG686580-1		0.069	600	0.0689	0.0689	1	0.0	
DUP	WG686580-3		0.0586	400	0.0616	0.0616	1	7.5	L1408516-01
	L1408516-01		0.0595	600	0.0632	0.0632	1	6.2	
	L1408516-02		0.0723	600	0.0768	0.0767	1	7.3	
	L1408516-03		0.0641	300	0.0691	0.069	1	16.3	
	L1408516-04		0.0609	600	0.064	0.064	1	5.2	
	L1408516-05		0.0602	300	0.0637	0.0636	1	11.3	
	L1408516-06		0.0583	300	0.0614	0.0614	1	10.3	
	L1408516-07		0.061	300	0.0661	0.0661	1	17.0	
	L1408516-08		0.0582	400	0.0626	0.0627	1	11.0	
	L1408516-09		0.0664	400	0.0706	0.0706	1	10.5	
	L1408516-10		0.0653	400	0.0681	0.0681	1	7.0	
	L1408516-11		0.0599	400	0.0626	0.0627	1	6.8	
	L1408516-12		0.0656	300	0.0717	0.0717	1	20.3	
	L1408516-13		0.0645	200	0.0674	0.0674	1	14.5	

	Sample Number	Symbol	Tare Weight (gm)	Sample Volume (ml)	Net Weight(1) (gm)	Net Weight(2) (gm)	LCS Concentration	RESULT mg/l	% Recovery
LCS	WG686580-2		0.0662	200	0.0721	0.0722	36	29.5	82

Work Group

ALPHA ANALYTICAL LABORATORIES, INC.

Alpha WORK GROUP REPORT (wk02)

May 08 2014, 09:28 am

Work Group: WG686580 for Department: 7 Wet Chemistry

Created: 01-MAY-14 Due: Operator:

Sample	Client ID	C	Product	Matrix	Stat	UA	HOLD	DUE	PR	Location
L1408516-01	WQ-TUR/TSS-001-04221	S	A2-TSS-2540D	WATER	DONE	U	0429	0508	S0	Plastic-A.5
L1408516-02	WQ-TUR/TSS-002-04221	S	A2-TSS-2540D	WATER	DONE	U	0429	0508	S0	Plastic-A.5
L1408516-03	WQ-TUR/TSS-003-04221	S	A2-TSS-2540D	WATER	DONE	U	0429	0508	S0	Plastic-A.5
L1408516-04	WQ-TUR/TSS-004-04221	S	A2-TSS-2540D	WATER	DONE	U	0429	0508	S0	Plastic-A.5
L1408516-05	WQ-TUR/TSS-001-04231	S	A2-TSS-2540D	WATER	DONE	U	0430	0508	S0	Plastic-A.5
L1408516-06	WQ-TUR/TSS-002-04231	S	A2-TSS-2540D	WATER	DONE	U	0430	0508	S0	Plastic-A.5
L1408516-07	WQ-TUR/TSS-003-04231	S	A2-TSS-2540D	WATER	DONE	U	0430	0508	S0	Plastic-A.5
L1408516-08	WQ-TUR/TSS-003-04231	S	A2-TSS-2540D	WATER	DONE	U	0430	0508	S0	Plastic-A.5
L1408516-09	WQ-TUR/TSS-004-04231	S	A2-TSS-2540D	WATER	DONE	U	0430	0508	S0	Plastic-A.5
L1408516-10	WQ-TUR/TSS-001-04241	S	A2-TSS-2540D	WATER	DONE	U	0501	0508	S0	Plastic-A.5
L1408516-11	WQ-TUR/TSS-002-04241	S	A2-TSS-2540D	WATER	DONE	U	0501	0508	S0	Plastic-A.5
L1408516-12	WQ-TUR/TSS-003-04241	S	A2-TSS-2540D	WATER	DONE	U	0501	0508	S0	Plastic-A.5
L1408516-13	WQ-TUR/TSS-004-04241	S	A2-TSS-2540D	WATER	DONE	U	0501	0508	S0	Plastic-A.5
WG686580-1	Laboratory Method Bl	S	A2-TSS-2540D	WATER	DONE	U				
WG686580-2	Laboratory Control S	S	A2-TSS-2540D	WATER	DONE	U				
WG686580-3	Duplicate Sample	S	A2-TSS-2540D	WATER	DONE	U				

Comments:

WG686580-3 L1408516-01

Turbidity Analysis

Sample Raw Data

ALPHA ANALYTICAL LABS

WET CHEMISTRY DEPARTMENT

TURBIDITY WORKSHEET

Last Change 05/02/01 GFF
File Tubidity.xlt

Sample Number: _____
Analysis: TURBIDITY
Instrument: HACH AN2100
Method: EPA 180.1
LCS Conc. (NTU): 20

Product: TURB-180
Analyte: Turbidity,
Analysis Date: 4/23/2014 21:18
Technician: ja/el
Work group: wg684959
MDL: 0.20 NTU

	Sample Number	Comment	Reading	MDL Multiplier	RESULT NTU	
	L1400004-57		3.41	1	3.41	Use for L1408525-01
	L1408516-01		1.80	1	1.80	
	L1408516-02		1.89	1	1.89	
	L1408516-03		4.98	1	4.98	
	L1408516-04		1.85	1	1.85	
BLANK	WG684959-1		0.10	1	0.10	
				1		
DUP	WG684959-3		3.38	1	3.38	L1400004-57
				1		
				1		
				1		
				1		
				1		
				1		
				1		
				1		
				1		
				1		
				1		
				1		
				1		

	Sample Number	Comment	Reading	Spike Conc.	RESULT NTU	% Recovery
LCS	WG684959-2		21.10	20	21.10	106

ALPHA ANALYTICAL LABS

WET CHEMISTRY DEPARTMENT

TURBIDITY WORKSHEET

Last Change 05/02/01 GFF
File Tubidity.xlt

Sample Number: _____
Analysis: TURBIDITY
Instrument: HACH AN2100
Method: EPA 180.1
LCS Conc. (NTU): 10

Product: TURB-180
Analyte: Turbidity,
Analysis Date: 4/24/2014 22:26
Technician: ja
Work group: wg684979
MDL: 0.20 NTU

	Sample Number	Comment	Reading	MDL Multiplier	RESULT NTU	
	L1408516-05		4.48	1	4.48	
	L1408516-06		3.16	1	3.16	
	L1408516-07		2.59	1	2.59	
	L1408516-08		2.94	1	2.94	
	L1408516-09		4.04	1	4.04	
	L1408516-10		2.26	1	2.26	
	L1408516-11		2.36	1	2.36	
	L1408516-12		4.33	1	4.33	
	L1408516-13		1.98	1	1.98	
BLANK	WG684979-1		0.11	1	0.11	
				1		
DUP	WG684979-3		4.69	1	4.69	L1408516-05
				1		
				1		
				1		
				1		
				1		
				1		
				1		
				1		
				1		

	Sample Number	Comment	Reading	Spike Conc.	RESULT NTU	% Recovery
LCS	WG684979-2		10.70	10	10.70	107

Work Group

ALPHA ANALYTICAL LABORATORIES, INC.

Alpha WORK GROUP REPORT (wk02)

May 06 2014, 04:58 pm

Work Group: WG684959 for Department: 7 Wet Chemistry

Created: 24-APR-14 Due: Operator: el

Sample	Client ID	C	Product	Matrix	Stat	UA	HOLD	DUE	PR	Location
L1400004-57	DUMMY 57	S	TURB-180	WATER	DONE	U	0403	0429	NC	
L1408516-01	WQ-TUR/TSS-001-04221	S	TURB-180	WATER	DONE	U	0424	0508	S0	Plastic-A.5
L1408516-02	WQ-TUR/TSS-002-04221	S	TURB-180	WATER	DONE	U	0424	0508	S0	Plastic-A.5
L1408516-03	WQ-TUR/TSS-003-04221	S	TURB-180	WATER	DONE	U	0424	0508	S0	Plastic-A.5
L1408516-04	WQ-TUR/TSS-004-04221	S	TURB-180	WATER	DONE	U	0424	0508	S0	Plastic-A.5
WG684959-1	Laboratory Method Bl	S	TURB-180	WATER	DONE	U				
WG684959-2	Laboratory Control S	S	TURB-180	WATER	DONE	U				
WG684959-3	Duplicate Sample	S	TURB-180	WATER	DONE	U				

Comments:

L1400004-57	Use for L1408525-01
WG684959-3	L1400004-57

ALPHA ANALYTICAL LABORATORIES, INC.

Alpha WORK GROUP REPORT (wk02)

May 06 2014, 04:58 pm

Work Group: WG684979 for Department: 7 Wet Chemistry

Created: 24-APR-14 Due: Operator: JA

Sample	Client ID	C	Product	Matrix	Stat	UA	HOLD	DUE	PR	Location
L1408516-05	WQ-TUR/TSS-001-04231	S	TURB-180	WATER	DONE	U	0425	0508	S0	Plastic-A.5
L1408516-06	WQ-TUR/TSS-002-04231	S	TURB-180	WATER	DONE	U	0425	0508	S0	Plastic-A.5
L1408516-07	WQ-TUR/TSS-003-04231	S	TURB-180	WATER	DONE	U	0425	0508	S0	Plastic-A.5
L1408516-08	WQ-TUR/TSS-003-04231	S	TURB-180	WATER	DONE	U	0425	0508	S0	Plastic-A.5
L1408516-09	WQ-TUR/TSS-004-04231	S	TURB-180	WATER	DONE	U	0425	0508	S0	Plastic-A.5
L1408516-10	WQ-TUR/TSS-001-04241	S	TURB-180	WATER	DONE	U	0426	0508	S0	Plastic-A.5
L1408516-11	WQ-TUR/TSS-002-04241	S	TURB-180	WATER	DONE	U	0426	0508	S0	Plastic-A.5
L1408516-12	WQ-TUR/TSS-003-04241	S	TURB-180	WATER	DONE	U	0426	0508	S0	Plastic-A.5
L1408516-13	WQ-TUR/TSS-004-04241	S	TURB-180	WATER	DONE	U	0426	0508	S0	Plastic-A.5
WG684979-1	Laboratory Method Bl	S	TURB-180	WATER	DONE	U				
WG684979-2	Laboratory Control S	S	TURB-180	WATER	DONE	U				
WG684979-3	Duplicate Sample	S	TURB-180	WATER	DONE	U				

Comments:

WG684979-3 L1408516-05

Sample Preparation

Sample	Method	Dil	Ready	
Blank	2130	1X	0.094	4/23/14
Std 1.29			1.35	2:02
17.1			17.7	EL
153			157	
08479-1-D		2X	31.8	
-1		2X	32.4 ~~33.4~~ EL	
-2		2X	28.3	
-3		2X	22.3	
-4-D	180	2X	18.3	
-4		2X	19.3	
LCS(10) ~~1429~~ 1426		1X	10.9	
Blank		1X	0.108	
BLANK	180	4	0.101	04/23/14
STD 1.29			1.35	2100
17.1			17.6	DA/EL
153			157	
08525-1 DUP			3.38 ~~1.93~~	
08516-1			~~3.41~~ ~~1.79~~ ~~1.80~~	
08516-2			~~1.80~~ 1.69	
-3			~~1.89~~ 4.98	
-4			~~4.98~~ 1.85	
08525-1			3.41	
LCS(20) WC 11-49			~~1.85~~ 21.1	
BLANK			~~2~~ 0.102	
			~~0.102~~	
~~BLANK~~				
STD 1.29				
17.1				
153				
08508-07-DUP				
-1				
-2				
-3				
-4				
-5				
~~-6~~				
-7				

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Signed Date Signed Date

Project

Continued from Page

SAMPLE	METHOD	DIL	READING	
BLANK	2180	1x	0.106	04/24/14
STD 129		1x	1.36	1843
171		1x	17.6	JA/EL
153		1x	157	
085580-7DUP		1x	1.91	
-1		1x	0.284	
-2		1x	JA ~~6~~ 1.77	
-3		2x	36.2	
-4		1x	26.1	
-5		1x	6.46	
-6		1x	1.93	
-7		1x	1.70	
LCS (10) WC-1149		1x	10.9	
BLANK		1x	0.107	
BLANK	180	1x	0.109	04/24/14
STD 129		1x	1.34	2226
171		1x	175	JA/EL
153		1x	157	
085516-5		1x	JA ~~3.53~~ 4.48	
-6		1x	3.16	
-7		1x	259	
-8		1x	2.94	
-9		1x	4.04	
-10		1x	2.26	
-11		1x	2.36	
-12		1x	4.33	
-13		1x	JA ~~6.12~~ 1.98	
LCS (10) WC-1149		1x	10.4	
BLANK		1x	0.104	
085516-5 DUP		1x	468	
LCS (10) WC-1149		1x	10.7	
BLANK		1x	0.106	

SA

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Read and Understood By

Signed Date Signed Date

Alpha Report

ANALYTICAL REPORT

Lab Number:	L1408516
Client:	Battelle Duxbury Operations 397 Washington Street Duxbury, MA 02332
ATTN:	Deirdre Dahlen
Phone:	(781) 952-5253
Project Name:	NEW BEDFORD HARBOR
Project Number:	W912WJ-12-D-0004
Report Date:	05/06/14

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NEW BEDFORD HARBOR
Project Number: W912WJ-12-D-0004

Lab Number: L1408516
Report Date: 05/06/14

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1408516-01	WQ-TUR/TSS-001-042214	Not Specified	04/22/14 12:15
L1408516-02	WQ-TUR/TSS-002-042214	Not Specified	04/22/14 13:00
L1408516-03	WQ-TUR/TSS-003-042214	Not Specified	04/22/14 15:05
L1408516-04	WQ-TUR/TSS-004-042214	Not Specified	04/22/14 16:00
L1408516-05	WQ-TUR/TSS-001-042314	Not Specified	04/23/14 14:38
L1408516-06	WQ-TUR/TSS-002-042314	Not Specified	04/23/14 15:25
L1408516-07	WQ-TUR/TSS-003-042314	Not Specified	04/23/14 16:25
L1408516-08	WQ-TUR/TSS-003-042314-REP	Not Specified	04/23/14 16:25
L1408516-09	WQ-TUR/TSS-004-042314	Not Specified	04/23/14 17:30
L1408516-10	WQ-TUR/TSS-001-042414	Not Specified	04/24/14 07:37
L1408516-11	WQ-TUR/TSS-002-042414	Not Specified	04/24/14 08:15
L1408516-12	WQ-TUR/TSS-003-042414	Not Specified	04/24/14 10:50
L1408516-13	WQ-TUR/TSS-004-042414	Not Specified	04/24/14 12:30

Project Name: NEW BEDFORD HARBOR
Project Number: W912WJ-12-D-0004

Lab Number: L1408516
Report Date: 05/06/14

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: NEW BEDFORD HARBOR **Lab Number:** L1408516
Project Number: W912WJ-12-D-0004 **Report Date:** 05/06/14

Case Narrative (continued)

Total Suspended Solids

The WG686580-3 Laboratory Duplicate RPD, performed on L1408516-01, is outside the acceptance criteria for Solids, Total Suspended (19%). The elevated RPD has been attributed to the non-homogeneous nature of the sample utilized for the laboratory duplicate.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Elizabeth Porta

Title: Technical Director/Representative Date: 05/06/14

INORGANICS
&
MISCELLANEOUS

Project Name: NEW BEDFORD HARBOR
Project Number: W912WJ-12-D-0004

Lab Number: L1408516
Report Date: 05/06/14

SAMPLE RESULTS

Lab ID: L1408516-01
Client ID: WQ-TUR/TSS-001-042214
Sample Location: Not Specified
Matrix: Water

Date Collected: 04/22/14 12:15
Date Received: 04/23/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	1.8		NTU	0.20	0.20	1	-	04/23/14 21:18	44,180.1	JA
General Chemistry - Mansfield Lab										
Solids, Total Suspended	6.20		mg/l	1.00	NA	1	-	04/29/14 10:00	30,2540D	JK

Project Name: NEW BEDFORD HARBOR
Project Number: W912WJ-12-D-0004

Lab Number: L1408516
Report Date: 05/06/14

SAMPLE RESULTS

Lab ID: L1408516-02
Client ID: WQ-TUR/TSS-002-042214
Sample Location: Not Specified
Matrix: Water

Date Collected: 04/22/14 13:00
Date Received: 04/23/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	1.9		NTU	0.20	0.20	1	-	04/23/14 21:18	44,180.1	JA
General Chemistry - Mansfield Lab										
Solids, Total Suspended	7.30		mg/l	1.00	NA	1	-	04/29/14 10:00	30,2540D	JK

Project Name: NEW BEDFORD HARBOR
Project Number: W912WJ-12-D-0004

Lab Number: L1408516
Report Date: 05/06/14

SAMPLE RESULTS

Lab ID: L1408516-03
Client ID: WQ-TUR/TSS-003-042214
Sample Location: Not Specified
Matrix: Water

Date Collected: 04/22/14 15:05
Date Received: 04/23/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	5.0		NTU	0.20	0.20	1	-	04/23/14 21:18	44,180.1	JA
General Chemistry - Mansfield Lab										
Solids, Total Suspended	16.3		mg/l	1.00	NA	1	-	04/29/14 10:00	30,2540D	JK

Project Name: NEW BEDFORD HARBOR
Project Number: W912WJ-12-D-0004

Lab Number: L1408516
Report Date: 05/06/14

SAMPLE RESULTS

Lab ID: L1408516-04
Client ID: WQ-TUR/TSS-004-042214
Sample Location: Not Specified
Matrix: Water

Date Collected: 04/22/14 16:00
Date Received: 04/23/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	1.8		NTU	0.20	0.20	1	-	04/23/14 21:18	44,180.1	JA
General Chemistry - Mansfield Lab										
Solids, Total Suspended	5.20		mg/l	1.00	NA	1	-	04/29/14 10:00	30,2540D	JK

Project Name: NEW BEDFORD HARBOR
Project Number: W912WJ-12-D-0004

Lab Number: L1408516
Report Date: 05/06/14

SAMPLE RESULTS

Lab ID: L1408516-05
Client ID: WQ-TUR/TSS-001-042314
Sample Location: Not Specified
Matrix: Water

Date Collected: 04/23/14 14:38
Date Received: 04/24/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	4.5		NTU	0.20	0.20	1	-	04/24/14 22:26	44,180.1	JA
General Chemistry - Mansfield Lab										
Solids, Total Suspended	11.3		mg/l	1.00	NA	1	-	04/29/14 10:00	30,2540D	JK

Project Name: NEW BEDFORD HARBOR
Project Number: W912WJ-12-D-0004

Lab Number: L1408516
Report Date: 05/06/14

SAMPLE RESULTS

Lab ID: L1408516-06
Client ID: WQ-TUR/TSS-002-042314
Sample Location: Not Specified
Matrix: Water

Date Collected: 04/23/14 15:25
Date Received: 04/24/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	3.2		NTU	0.20	0.20	1	-	04/24/14 22:26	44,180.1	JA
General Chemistry - Mansfield Lab										
Solids, Total Suspended	10.3		mg/l	1.00	NA	1	-	04/29/14 10:00	30,2540D	JK

Project Name: NEW BEDFORD HARBOR
Project Number: W912WJ-12-D-0004

Lab Number: L1408516
Report Date: 05/06/14

SAMPLE RESULTS

Lab ID: L1408516-07
Client ID: WQ-TUR/TSS-003-042314
Sample Location: Not Specified
Matrix: Water

Date Collected: 04/23/14 16:25
Date Received: 04/24/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	2.6		NTU	0.20	0.20	1	-	04/24/14 22:26	44,180.1	JA
General Chemistry - Mansfield Lab										
Solids, Total Suspended	17.0		mg/l	1.00	NA	1	-	04/29/14 10:00	30,2540D	JK

Project Name: NEW BEDFORD HARBOR
Project Number: W912WJ-12-D-0004
Lab Number: L1408516
Report Date: 05/06/14

SAMPLE RESULTS

Lab ID: L1408516-08
Client ID: WQ-TUR/TSS-003-042314-REP
Sample Location: Not Specified
Matrix: Water
Date Collected: 04/23/14 16:25
Date Received: 04/24/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	2.9		NTU	0.20	0.20	1	-	04/24/14 22:26	44,180.1	JA
General Chemistry - Mansfield Lab										
Solids, Total Suspended	11.0		mg/l	1.00	NA	1	-	04/29/14 10:00	30,2540D	JK

Project Name: NEW BEDFORD HARBOR
Project Number: W912WJ-12-D-0004

Lab Number: L1408516
Report Date: 05/06/14

SAMPLE RESULTS

Lab ID: L1408516-09
Client ID: WQ-TUR/TSS-004-042314
Sample Location: Not Specified
Matrix: Water

Date Collected: 04/23/14 17:30
Date Received: 04/24/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	4.0		NTU	0.20	0.20	1	-	04/24/14 22:26	44,180.1	JA
General Chemistry - Mansfield Lab										
Solids, Total Suspended	10.5		mg/l	1.00	NA	1	-	04/29/14 10:00	30,2540D	JK

Project Name: NEW BEDFORD HARBOR
Project Number: W912WJ-12-D-0004

Lab Number: L1408516
Report Date: 05/06/14

SAMPLE RESULTS

Lab ID: L1408516-10
Client ID: WQ-TUR/TSS-001-042414
Sample Location: Not Specified
Matrix: Water

Date Collected: 04/24/14 07:37
Date Received: 04/24/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	2.3		NTU	0.20	0.20	1	-	04/24/14 22:26	44,180.1	JA
General Chemistry - Mansfield Lab										
Solids, Total Suspended	7.00		mg/l	1.00	NA	1	-	04/29/14 10:00	30,2540D	JK

Project Name: NEW BEDFORD HARBOR
Project Number: W912WJ-12-D-0004

Lab Number: L1408516
Report Date: 05/06/14

SAMPLE RESULTS

Lab ID: L1408516-11
Client ID: WQ-TUR/TSS-002-042414
Sample Location: Not Specified
Matrix: Water

Date Collected: 04/24/14 08:15
Date Received: 04/24/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	2.4		NTU	0.20	0.20	1	-	04/24/14 22:26	44,180.1	JA
General Chemistry - Mansfield Lab										
Solids, Total Suspended	6.80		mg/l	1.00	NA	1	-	04/29/14 10:00	30,2540D	JK

Project Name: NEW BEDFORD HARBOR
Project Number: W912WJ-12-D-0004

Lab Number: L1408516
Report Date: 05/06/14

SAMPLE RESULTS

Lab ID: L1408516-12
Client ID: WQ-TUR/TSS-003-042414
Sample Location: Not Specified
Matrix: Water

Date Collected: 04/24/14 10:50
Date Received: 04/24/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	4.3		NTU	0.20	0.20	1	-	04/24/14 22:26	44,180.1	JA
General Chemistry - Mansfield Lab										
Solids, Total Suspended	20.3		mg/l	1.00	NA	1	-	04/29/14 10:00	30,2540D	JK

Project Name: NEW BEDFORD HARBOR
Project Number: W912WJ-12-D-0004

Lab Number: L1408516
Report Date: 05/06/14

SAMPLE RESULTS

Lab ID: L1408516-13
Client ID: WQ-TUR/TSS-004-042414
Sample Location: Not Specified
Matrix: Water

Date Collected: 04/24/14 12:30
Date Received: 04/24/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	2.0		NTU	0.20	0.20	1	-	04/24/14 22:26	44,180.1	JA
General Chemistry - Mansfield Lab										
Solids, Total Suspended	14.5		mg/l	1.00	NA	1	-	04/29/14 10:00	30,2540D	JK

Project Name: NEW BEDFORD HARBOR
Project Number: W912WJ-12-D-0004
Lab Number: L1408516
Report Date: 05/06/14

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG684959-1										
Turbidity	ND		NTU	0.20	0.20	1	-	04/23/14 21:18	44,180.1	JA
General Chemistry - Westborough Lab for sample(s): 05-13 Batch: WG684979-1										
Turbidity	ND		NTU	0.20	0.20	1	-	04/24/14 22:26	44,180.1	JA
General Chemistry - Mansfield Lab for sample(s): 01-13 Batch: WG686580-1										
Solids, Total Suspended	ND		mg/l	1.00	NA	1	-	04/29/14 10:00	30,2540D	JK

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEW BEDFORD HARBOR

Project Number: W912WJ-12-D-0004

Lab Number: L1408516

Report Date: 05/06/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG684959-2								
Turbidity	106		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 05-13 Batch: WG684979-2								
Turbidity	107		-		90-110	-		
General Chemistry - Mansfield Lab Associated sample(s): 01-13 Batch: WG686580-2								
Solids, Total Suspended	82		-		80-120	-		5

Lab Duplicate Analysis
Batch Quality Control

Project Name: NEW BEDFORD HARBOR
Project Number: W912WJ-12-D-000

Lab Number: L1408516
Report Date: 05/06/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG684959-3 QC Sample: L1400004-57 Client ID: DUP Sample						
Turbidity	3.4	3.4	NTU	0		13
General Chemistry - Westborough Lab Associated sample(s): 05-13 QC Batch ID: WG684979-3 QC Sample: L1408516-05 Client ID: WQ-TUR/TSS-001-042314						
Turbidity	4.5	4.7	NTU	4		13
General Chemistry - Mansfield Lab Associated sample(s): 01-13 QC Batch ID: WG686580-3 QC Sample: L1408516-01 Client ID: WQ-TUR/TSS-001-042214						
Solids, Total Suspended	6.20	7.50	mg/l	**19**	Q	5

Project Name: NEW BEDFORD HARBOR
Project Number: W912WJ-12-D-0004

Lab Number: L1408516
Report Date: 05/06/14

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information Custody Seal

Cooler	
B	Present/Intact
C	Present/Intact
A	Present/Intact

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1408516-01A	Plastic 250ml unpreserved	A	8	3.6	Y	Absent	A2-TSS-2540D(7)
L1408516-01B	Plastic 1000ml unpreserved	A	8	3.6	Y	Absent	TURB-180(2)
L1408516-02A	Plastic 250ml unpreserved	A	8	3.6	Y	Absent	A2-TSS-2540D(7)
L1408516-02B	Plastic 1000ml unpreserved	A	8	3.6	Y	Absent	TURB-180(2)
L1408516-03A	Plastic 250ml unpreserved	A	8	3.6	Y	Absent	A2-TSS-2540D(7)
L1408516-03B	Plastic 1000ml unpreserved	A	8	3.6	Y	Absent	TURB-180(2)
L1408516-04A	Plastic 250ml unpreserved	A	8	3.6	Y	Absent	A2-TSS-2540D(7)
L1408516-04B	Plastic 1000ml unpreserved	A	8	3.6	Y	Absent	TURB-180(2)
L1408516-05A	Plastic 250ml unpreserved	C	8	5.8	Y	Absent	A2-TSS-2540D(7)
L1408516-05B	Plastic 1000ml unpreserved	C	8	5.8	Y	Absent	TURB-180(2)
L1408516-06A	Plastic 250ml unpreserved	C	8	5.8	Y	Absent	A2-TSS-2540D(7)
L1408516-06B	Plastic 1000ml unpreserved	C	8	5.8	Y	Absent	TURB-180(2)
L1408516-07A	Plastic 250ml unpreserved	C	8	5.8	Y	Absent	A2-TSS-2540D(7)
L1408516-07B	Plastic 1000ml unpreserved	C	8	5.8	Y	Absent	TURB-180(2)
L1408516-08A	Plastic 250ml unpreserved	C	8	5.8	Y	Absent	A2-TSS-2540D(7)
L1408516-08B	Plastic 1000ml unpreserved	C	8	5.8	Y	Absent	TURB-180(2)
L1408516-09A	Plastic 250ml unpreserved	C	8	5.8	Y	Absent	A2-TSS-2540D(7)
L1408516-09B	Plastic 1000ml unpreserved	C	8	5.8	Y	Absent	TURB-180(2)
L1408516-10A	Plastic 250ml unpreserved	B	8	5.0	Y	Absent	A2-TSS-2540D(7)
L1408516-10B	Plastic 1000ml unpreserved	B	8	5.0	Y	Absent	TURB-180(2)
L1408516-11A	Plastic 250ml unpreserved	B	8	5.0	Y	Absent	A2-TSS-2540D(7)
L1408516-11B	Plastic 1000ml unpreserved	B	8	5.0	Y	Absent	TURB-180(2)
L1408516-12A	Plastic 250ml unpreserved	B	8	5.0	Y	Absent	A2-TSS-2540D(7)
L1408516-12B	Plastic 1000ml unpreserved	B	8	5.0	Y	Absent	TURB-180(2)

*Values in parentheses indicate holding time in days

Project Name: NEW BEDFORD HARBOR
Project Number: W912WJ-12-D-0004

Lab Number: L1408516
Report Date: 05/06/14

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1408516-13A	Plastic 250ml unpreserved	B	8	5.0	Y	Absent	A2-TSS-2540D(7)
L1408516-13B	Plastic 1000ml unpreserved	B	8	5.0	Y	Absent	TURB-180(2)

*Values in parentheses indicate holding time in days

Project Name:	NEW BEDFORD HARBOR	**Lab Number:**	L1408516
Project Number:	W912WJ-12-D-0004	**Report Date:**	05/06/14

GLOSSARY

Acronyms

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NI - Not Ignitable.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

Report Format: DU Report with 'J' Qualifiers

Project Name:	NEW BEDFORD HARBOR	**Lab Number:**	L1408516
Project Number:	W912WJ-12-D-0004	**Report Date:**	05/06/14

Data Qualifiers

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	NEW BEDFORD HARBOR	**Lab Number:**	L1408516
Project Number:	W912WJ-12-D-0004	**Report Date:**	05/06/14

REFERENCES

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

Last revised April 15, 2014

The following analytes are not included in our NELAP Scope of Accreditation:

Westborough Facility
EPA 524.2: Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether.
EPA 8260C: 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate, Azobenzene.
EPA 8330A/B: PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.
EPA 8270D: 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 625: 4-Chloroaniline, 4-Methylphenol.
SM4500: Soil: Total Phosphorus, TKN, NO2, NO3.
EPA 9071: Total Petroleum Hydrocarbons, Oil & Grease.

Mansfield Facility
EPA 8270D: Biphenyl.
EPA 2540D: TSS
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:

Drinking Water
EPA 200.8: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl; **EPA 200.7**: Ba,Be,Ca,Cd,Cr,Cu,Na; **EPA 245.1:** Mercury;
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.**

Non-Potable Water
EPA 200.8: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn;
EPA 200.7: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn;
EPA 245.1, SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC, SM426C, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF**.

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

Project:
New Bedford Harbor Water Quality Monitoring

USACE CONTRACT NO. W912WJ-12-D-0004
TASK ORDER NO. 10

L1408516

Chain of Custody

Battelle
The Business of Innovation

Project Manager: Deirdre Dahlen
Phone: (781) 952-5253

Ship to:Elizabeth Porta
Alpha Analytical, Inc.
320 Forbes Boulevard
Mansfield, MA 02048
(508) 844-4124

Sampling Firm:
Battelle
397 Washington St
Duxbury, Ma 02332

Site Contact: Alex Mansfield
Mobile: (617) 571-9962

	Date	Time	Field ID	Lab ID(s)	Matrix	Station	Analyses (Record No. of containers / Preservative)								
							Total PCB	Dissolved PCB	Turbidity	TSS	TOC	Metals	Archive	Preservative	Field Turbidity Reading (NTU)	Field Salinity Reading (PPT)
08516-01	4/22/2014	12:15	WQ-TUR-001-042214		water	Reference 1000' South			1					4°C	0.52	28
02	4/22/2014	13:00	WQ-TUR-002-042214		water	Compliance 300' North			1					4°C	1.73	27
03	4/22/2014	15:05	WQ-TUR-003-042214		water	Reference 1000' North			1					4°C	5.5	22
04	4/22/2014	16:00	WQ-TUR-004-042214		water	Compliance 300' South			1					4°C	0.8	28
01	4/22/2014	12:15	WQ-TSS-001-042214		water	Reference 1000' South				1				4°C	0.52	28
02	4/22/2014	13:00	WQ-TSS-002-042214		water	Compliance 300' North				1				4°C	1.73	27
03	4/22/2014	15:05	WQ-TSS-003-042214		water	Reference 1000' North				1				4°C	5.5	22
04	4/22/2014	16:00	WQ-TSS-004-042214		water	Compliance 300' South				1				4°C	0.8	28

Comments:
1st of 3 days of sampling for the week. QC samples will be collected later in the week.

Sampling Team:
Alex Mansfield, Mike Walsh

Rel: [signature] 4/23/14

Relinquished By (name/date/time):
[signature] 4/23/14 0840 BDO

Rec: [signature] 4/23/14 12:05

Rel: [signature] 4/23/14 1058

Rel: KRS ADahlen (KAD)

Received (name/date/time):
MT 4-23-14 8:40 BDO

Rec: [signature] 4/23/14 15:35

Project:
New Bedford Harbor Water Quality Monitoring

L1405516

USACE CONTRACT NO. W912WJ-12-D-0004
TASK ORDER NO. 10

Chain of Custody

Battelle
The Business of Innovation

Project Manager: Deirdre Dahlen
Phone: (781) 952-5253

Ship to:Elizabeth Porta
Alpha Analytical, Inc.
320 Forbes Boulevard
Mansfield, MA 02048
(508) 844-4124

Sampling Firm:
Battelle
397 Washington St
Duxbury, Ma 02332

Site Contact: Alex Mansfield
Mobile: (617) 571-9962

Date	Time	Field ID	Lab ID(s)	Matrix	Station	Analyses (Record No. of containers / Preservative)									
						Total PCB	Dissolved PCB	Turbidity	TSS	TOC	Metals	Archive	Preservative	Field Turbidity Reading (NTU)	Field Salinity Reading (PPT)
4/23/2014	14:38	WQ-TUR-001-042314		water	Reference 1000' South			1					4°C	4.1	17
4/23/2014	15:25	WQ-TUR-002-042314		water	Compliance 300' North			1					4°C	4.9	11
4/23/2014	16:25	WQ-TUR-003-042314		water	Reference 1000' North			1					4°C	3.5	17
4/23/2014	16:25	WQ-TUR-003-042314-REP		water	Reference 1000' North (REP)			1					4°C	3.5	17
4/23/2014	17:30	WQ-TUR-004-042314		water	Compliance 300' South			1					4°C	4.7	16
4/23/2014	14:38	WQ-TSS-001-042314		water	Reference 1000' South				1				4°C	4.1	17
4/23/2014	15:25	WQ-TSS-002-042314		water	Compliance 300' North				1				4°C	4.9	11
4/23/2014	16:25	WQ-TSS-003-042314		water	Reference 1000' North				1				4°C	3.5	17
4/23/2014	16:25	WQ-TSS-003-042314-REP		water	Reference 1000' North (REP)				1				4°C	3.5	17
4/23/2014	17:30	WQ-TSS-004-042314		water	Compliance 300' South				1				4°C	4.7	16

Comments:
2nd of 3 days of sampling for the week. This group contains the QC samples for the week.

Sampling Team:
Alex Mansfield, Mike Walsh

Rel: [signature] 4/24/14 - 1820

Relinquished By (name/date/time):
[signature] 4/23/14 1830
[signature] 4/24/14 1650

Page: 1 of 1

Rec. Anchorage 4/24/14 1650 AS
1830

Received (name/date/time):
AMA / 4/24/14 8:30
HAL 4/24/14 1650

Project:
New Bedford Harbor Water Quality Monitoring

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	Date	Time	Field ID	Lab ID(s)	Matrix	station	Analyses (Record No. of containers / Preservative)									
							Total PCB	Dissolved PCB	Turbidity	TSS	TOC	Metals	Archive	Preservative	Field Turbidity Reading (NTU)	Field Salinity Reading (PPT)
85516.10	4/24/2014		WQ-TUR-001-042414		water	Reference 1000' North			1					4°C	1.5	12.5
11	4/24/2014		WQ-TUR-002-042414		water	Compliance 300' South			1					4°C	1.8	22.6
12	4/24/2014		WQ-TUR-003-042414		water	Reference 1000' South			1					4°C	5.5	23.8
13	4/24/2014		WQ-TUR-004-042414		water	Compliance 300' North			1					4°C	5.5	22.7
10	4/24/2014		WQ-TSS-001-042414		water	Reference 1000' North				1				4°C	1.5	12.5
11	4/24/2014		WQ-TSS-002-042414		water	Compliance 300' South				1				4°C	1.8	22.6
12	4/24/2014		WQ-TSS-003-042414		water	Reference 1000' South				1				4°C	5.5	23.8
13	4/24/2014		WQ-TSS-004-042414		water	Compliance 300' North				1				4°C	5.5	22.7

Comments:
3rd of 3 days of sampling for the week. QC samples were collected on 4/23/14

Sampling Team:
Mike Walsh, Paul Sokoloff

Relinquished By (name/date/time):
24 April 14 1445
18:33 4/24/14
4/24/14 18:33

4/24/14 19:45

Received (name/date/time):

Project:
New Bedford Harbor Water Quality Monitoring

L1408516

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4/23/2014	16:25	WQ-TUR-003-042314		water	Reference 1000' North			1					4°C	3.5	17
4/23/2014	16:25	WQ-TUR-003-042314-REP		water	Reference 1000' North (REP)			1					4°C	3.5	17
4/23/2014	17:30	WQ-TUR-004-042314		water	Compliance 300' South			1					4°C	4.7	16
4/23/2014	14:38	WQ-TSS-001-042314		water	Reference 1000' South				1				4°C	4.1	17
4/23/2014	15:25	WQ-TSS-002-042314		water	Compliance 300' North				1				4°C	4.9	11
4/23/2014	16:25	WQ-TSS-003-042314		water	Reference 1000' North				1				4°C	3.5	17
4/23/2014	16:25	WQ-TSS-003-042314-REP		water	Reference 1000' North (REP)				1				4°C	3.5	17
4/23/2014	17:30	WQ-TSS-004-042314		water	Compliance 300' South				1				4°C	4.7	16

Comments:
2nd of 3 days of sampling for the week. This group contains the QC samples for the week.

Sampling Team:
Alex Mansfield, Mike Walsh

Rel: [signature] 4/24/14 - 1820

Relinquished By (name/date/time):
[signature] 4/23/14 1830
[signature] 4/24/14 1650

Rec. [signature] 4/24/14 1650 AM 1630

Received (name/date/time):
[signature] 4/24/14 8:30
[signature] 4/24/14 1650

[signature] 4/25/14 04:00 Mansfield Lab 4/25/14 04:00 AM

USACE/NAE New Bedford Harbor Task Order 10
Project No 100043429
Pesticide / PCB by GC/ECD

WATER

Batch 14-0175

Package DP-14-0242

Submitted to:
USACE/NAE
696 Virginia Road
Concord, MA 01742 USA

Submitted by:
Battelle Duxbury Operations
397 Washington Street
Duxbury, MA 02332

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USACE/NAE New Bedford Harbor Task Order 10
Project No 100043429
Pesticide / PCB by GC/ECD

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Batch 14-0175

Package DP-14-0242

Submitted to:
USACE/NAE
696 Virginia Road
Concord, MA 01742 USA

Submitted by:
Battelle Duxbury Operations
397 Washington Street
Duxbury, MA 02332

Analyst Approval: Rich Restucci 2014.05.09 11:00:48 -04'00'

QC Chemist Approval: Carla Devine 2014.05.14 11:46:37 -04'00'

Project Manager Approval: Carole McCarthy 2014.05.16 09:26:15 -04'00'

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2014 Signature Page

Name (print)	Name (signature)	Initials
Matt Schumitz		MJS
Ellyn M Webb	Ellyn M Webb	EMW
Carla Devine	Carla Devine	CRD
Roxanne M. Brackett	Roxanne M. Brackett	RMB
Robert Lizotte, Jr.		BL
Lauren M Griffith	Lauren M Griffith	LMG
Kevin M. McInerney		KMC
Michael Moore		
Rich Restucci		RR
Stephanie Hart		SAH
Kerry Davis	Kerry Davis	KPD
Katherine Goodrow Robinson	Katherine Goodrow Robinson	KGR
Sam Guimaraes		SAG
Emily Fraser	Emily Fraser	EF
Denise Schumitz	Denise Schumitz	DMS
Jonathan Thorn		JRT
Christie Usher	Christie Usher	CU
Caitlyn Farragher	Caitlyn Farragher	CNF
Mark J. Benotti		
Cwimiaa H Brown		CB
Dawn Trapp	Dawn B Trapp	DBT
Curtis S. Peven McCarthy		CSPM
Weidong Li	Weidong	W.L
Jeannine Seyfert	Jeannine	
FRANCO PALA	Franco Pala	

USACE/NAE New Bedford Harbor Task Order 10
Project No 100043429
Pesticide / PCB by GC/ECD

WATER

Batch 14-0175

Package DP-14-0242

1	***Work Plan*** Laboratory Work Plan, Addendums To Work Plan, Memos From Project Manager, Special Instructions, Chain-of-Custody Reports.	1
2	***Tables*** Analytical Data Tables, Qualifier Definitions.	30
3	***Miscellaneous Documentation*** Case Narrative, Miscellaneous Documentation Form, Quality Control Summary, Example Calculations, Internal Standard Recovery Report, Retention Time Window Report.	39
4	***Sample Preparation Records*** Sample Preparation Records, Dilution Worksheets, Standard Preparation Records, Certificates Of Analysis, GPC Check Report.	48
5	***Analytical Calibrations*** Analytical Sequence, Analytical Method, Tune Report, Initial Calibration, Pesticide Degradation Report, RF Summary, Calibration Verifications, Independent Calibration Verification Check.	67
6	***Analytical Data*** Raw Data Quantification Reports.	98
7	***Chromatograms*** Sample And Standard Chromatograms.	N/A
8	***Unused Data***	N/A

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WORK/QUALITY ASSURANCE PROJECT PLAN

1.0 GENERAL PROJECT INFORMATION

Project Title:	USACE-NAE New Bedford Harbor Task Order 10 - Waters
Project Number:	100043429
Client:	USACE/NAE 696 Virginia Road Concord, MA 01742 USA
Client Contact Information:	Peter Hugh Engineering Technical Lead (978) 318-8452(V) NA NA
Effective Date of QAPP:	4/29/2014
Version Number:	100043429(L)-01
Project Manager:	Peven-McCarthy, Carole
Laboratory Task Manager:	Peven-McCarthy, Carole
Deliverable Due Date:	5/7/2014

2.0 SCOPE OF WORK

Overview:	Water samples (total and dissolved) will be analyzed for PCB congeners. Please charge 100043429-14LABBATWAT
Matrix:	Water

2.1 TECHNICAL APPROACH

2.1.1 Sample Receipt, Storage, and Handling

The list of samples for this project plan are presented in Attachment 1.

Storage Directions:	Store refrigerated until extraction.
Sub_Sampling:	None
Procedures:	NA
Contact:	NA
Comment:	NA
Archiving:	Sample should be consumed during extraction.
Disposal:	N/A

2.1.2 Sample Preparation

Week 1 Dredging: 12 total waters for PCB 18 Congeners (12 dissolved, 12 total):

4 samples on Tuesday 4/22
4 samples on Wednesday 4/23
4 samples on Thursday 4/24

NOTE: Filtration must occur within 24 hr of sampling

We will also receive water for MS/MSD, field replicate, and equipment blank.

Samples Expected:	Samples Per Batch:	Batches Expected:
24	20	2

Batch quality control samples are defined in Table 1.

Target samples are presented in Attachment 1.

Table 1: Quality Control Samples

Type:	*Description:*	*Count:*	*Rgt:*	*Reference:*	*Comment:*
PB	Laboratory control reagent blank.	1 per batch	--	NA	
LCS	Laboratory Control Sample	1 per batch	No	NA	
LCSD	Laboratory Control Sample Duplicate	1 per batch	No	NA	
MS	Spiked field sample for determining method accuracy in the presence of matrix.	1 per batch	--	NA	
MSD	Spiked field sample for determining method accuracy and precision in the presence of matrix.	1 per batch	--	NA	

2.1.3 Extraction/Preparation

2.1.3.1 Extraction

SOP No.-Rev:	**5-200-10**
SOP Title:	*Water Extraction for Trace Level Semi-Volatile Organic Contaminant Analysis*
Sample Size:	1 L
SIS and LCS/MS Compounds:	Defined in Table 2.
Deviations:	N/A
Comments:	We will receive 4 1-L bottles of each water (one extra liter will be collected of each sample for contingency). One will be extracted for "total" PCB analysis and one will be vacuum filtered for "dissolved" PCB analysis. Use 0.45 um 47 mm cellulose filters, Milli-Q water rinsed and baked. Do not solvent clean filters. Measure volume of both water samples. Field/equipment blanks will be filtered to create dissolved and total samples. We will create two batches - one with filtered samples and one with total samples. Each batch will have all the required QC, treated the same as the samples. NOTE: For equipment blank received 5/6/2014, the sample will be extracted with a PB and an LCS, and analyzed for the full congener list by GC/MS.

Table 2: SIS and LCS/MS Spiking Level

Standard Type	Standard Contents	Spike Amount (ng)	Volume (uL)	Comment
PCB Surrogate	HW93 SIS	~ 50 ng	50 uL	NA
ECD LCS/MS Solution	HX10 LCS/MS	~ 38 - 150 ng	75 uL	NA

2.1.3.2 Cleanup

1)	SOP No.-Rev:	**5-329-06**
	SOP Title:	*Alumina Cleanup of Environmental Sample Extracts*
	Deviations:	NA
	Comments:	NA

2)	SOP No.-Rev:	**5-328-04**
	SOP Title:	*Removal (cleanup) of Sulfur from Environmental Sample Extracts*
	Deviations:	NA
	Comments:	NA
3)	SOP No.-Rev:	**5-191-10**
	SOP Title:	*Size Exclusion HPLC Cleanup of Environmental Sample Extracts*
	Deviations:	NA
	Comments:	If deemed necessary by sample prep task leader. If HPLC fractionation performed, decrease PIV to 250 uL and spike with 25 uL internal standard.

RIS spiking levels are presented in Table 3.

Extract PIV (uL): 500

Table 3: RIS Spiking Level

Standard Type	Standard Contents	Spike Amount (ng)	Volume (uL)	Comment
PCB IS	HX16 RIS	~ 50 ng	50 uL	Spike 25 uL if HPLC required (not 50 uL)

2.1.4 Instrumental Analysis

The list of analytes along with data quality criteria are presented in Attachment 2.

1)	SOP_No-Rev:	**5-128-13**
	SOP_Title:	*Identification and Quantification of Polychlorinated Biphenyls (By Congener and Aroclor) and Chlorinated Pesticides by Gas Chromatography/Electron Capture Detection*
	Deviations:	ECD calibration: quadratic, not forced
	Comments:	Total PCB not required. PCB congener results must be reported using dual column confirmation by SW-846 Method 8082. The highest concentration from the two columns will be reported. If there is a 40% or greater difference between the two column results, the reported result (highest concentration) will be flagged as estimated (qualified with a “P” by the laboratory in the electronic data deliverable [EDD]).

2)	SOP_No-Rev:	**5-315-10**
	SOP_Title:	*Identification and Quantification of Polychlorinated Biphenyl Congeners (PCBs),PCB Homologues, and Chlorinated Pesticides by Gas Chromatography / Mass Specroscopy in the Selected Ion Monitoring (SIM) Mode*
	Deviations:	NA
	Comments:	For field blank (5/6/2014) only.

2.2. DELIVERABLES

Deliverables Due:	5/7/2014
LIMS Reports:	*Yes*
Histograms:	*No*
Excel Tables:	*Yes*
EICs:	*No*
Chromatograms:	*No*
EDDs:	*Yes*
Comments:	Required 14 day TAT. Assumes first samples arrive on April 18 and last on the 23rd. New Bedford Harbor EDD required. Full data package (pdf) required for external validation. Detailed quant reports are not required.

3.0 QUALITY

The Method Quality Objectives are defined in Attachment 3.

4.0 ORGANIZATION AND COMMUNICATION

4.1 ORGANIZATION

The project team is defined in Table 4. Supervisors may make substitutions with Project Manager concurrence.

Table 4: Project Team and Roles

Staff Member	Role	Comment
Carole S. Peven-McCarthy	Project Manager	NA
Dawn B. Trapp	Sample Preparation	NA
Lauren M. Griffith	GC/MS Analysis	NA
Richard P. Restucci Jr	GC/ECD Analysis	NA

Staff Member	Role	Comment
Matt D. Schumitz	Sample Custody	NA
Carla R. Devine	Quality Control Officer	NA

4.2 COMMUNICATION

A kick-off meeting will be held to discuss project scope and goals.

5.0 SCHEDULE

The project schedule is presented in Table 5.

Table 5. Schedule of Laboratory Activities

Activity:	Start Date:	End Date:	TAT (days):	Comment:
Sample Receipt	04/18/2014	04/23/2014	5	NA
Sample Preparation	04/18/2014	04/29/2014	11	NA
Instrument Analysis	04/29/2014	05/05/2014	6	NA
Quality Control Review	05/05/2014	05/06/2014	1	NA
Final Data Reporting	05/07/2014	05/07/2014	0	NA

6.0 BUDGET

The labor budget for the analytical task is presented in Table 6.

Table 6. Labor Budget (Laboratory Analytical Task)

Labor Activity:	Hours/ Batch:	Batches:	Total Hours:	Comment:
Sample Receipt	1	2	2	NA
Sample Preparation	24	2	48	Pre-processing = filtering
Extraction	*18*			
glassware	*4*			
Sample pre-processing	*2*			
Instrument Analysis	23	2	46	NA
GC/ECD	*18*			
Quality Control Review	2	2	4	NA

Labor Activity:	Hours/ Batch:	Batches:	Total Hours:	Comment:
Final Data Reporting	1	2	2	NA

7.0 STAFF DEVELOPMENT

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 1: Target Samples

Shipment: **SHP-140423-01**

Status: Approved

Description: New Bedfor Harbor Water Qaulity Monitoring

Range: M2921-M2928

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	M2921	WQ-TPC-001-042214	04/22/2014 12:15 pm	WATER	R0003 (Upper Cold Room)			
2	M2922	WQ-TPC-002-042214	04/22/2014 1:00 pm	WATER	R0003 (Upper Cold Room)			
3	M2923	WQ-TPC-003-042214	04/22/2014 3:05 pm	WATER	R0003 (Upper Cold Room)			
4	M2924	WQ-TPC-004-042214	04/22/2014 4:00 pm	WATER	R0003 (Upper Cold Room)			
5	M2925	WQ-DPC-001-042214	04/22/2014 12:15 pm	WATER	R0003 (Upper Cold Room)			
6	M2926	WQ-DPC-002-042214	04/22/2014 1:00 pm	WATER	R0003 (Upper Cold Room)			
7	M2927	WQ-DPC-003-042214	04/22/2014 3:05 pm	WATER	R0003 (Upper Cold Room)			
8	M2928	WQ-DPC-004-042214	04/22/2014 4:00 pm	WATER	R0003 (Upper Cold Room)			

Shipment: **SHP-140424-01**

Status: Pending

Description: New Bedford Harbor Water Qaultiy Monitoring

Range: M3113-M3124

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	M3113	WQ-TPC-001-042314	04/23/2014 2:38 pm	WATER	R0003 (Upper Cold Room)			
2	M3114	WQ-TPC-002-042314	04/23/2014 3:25 pm	WATER	R0003 (Upper Cold Room)			
3	M3115	WQ-TPC-003-042314	04/23/2014 4:25 pm	WATER	R0003 (Upper Cold Room)			MS-MSD
4	M3116	WQ-TPC-003-042314-REP	04/23/2014 4:25 pm	WATER	R0003 (Upper Cold Room)			
5	M3117	WQ-TPC-003-042314-EB	04/23/2014 4:25 pm	WATER	R0003 (Upper Cold Room)			
6	M3118	WQ-TPC-004-042314	04/23/2014 5:30 pm	WATER	R0003 (Upper Cold Room)			
7	M3119	WQ-DPC-001-042314	04/23/2014 2:38 pm	WATER	R0003 (Upper Cold Room)			
8	M3120	WQ-DPC-002-042314	04/23/2014 3:25 pm	WATER	R0003 (Upper Cold Room)			
9	M3121	WQ-DPC-003-042314	04/23/2014 4:25 pm	WATER	R0003 (Upper Cold Room)			MS-MSD
10	M3122	WQ-DPC-003-042314-REP	04/23/2014 4:25 pm	WATER	R0003 (Upper Cold Room)			

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Shipment: **SHP-140424-01**

Status: Pending

Description: New Bedford Harbor Water Qaultiy Monitoring

Range: M3113-M3124

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
11	M3123	WQ-DPC-003-042314-EB	04/23/2014 4:25 pm	WATER	R0003 (Upper Cold Room)			
12	M3124	WQ-DPC-004-042314	04/23/2014 5:30 pm	WATER	R0003 (Upper Cold Room)			

Shipment: **SHP-140424-04**

Status: Approved

Description: New Bedford Harbor Water Qaultiy Monitoring

Range: M3179-M3186

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	M3179	WQ-TPC-001-042414	04/24/2014 7:37 am	WATER	R0003 (Upper Cold Room)			
2	M3180	WQ-TPC-002-042414	04/24/2014 8:15 am	WATER	R0003 (Upper Cold Room)			
3	M3181	WQ-TPC-003-042414	04/24/2014 10:50 am	WATER	R0003 (Upper Cold Room)			
4	M3182	WQ-TPC-004-042414	04/24/2014 12:30 pm	WATER	R0003 (Upper Cold Room)			
5	M3183	WQ-DPC-001-042414	04/24/2014 7:37 am	WATER	R0003 (Upper Cold Room)			
6	M3184	WQ-DPC-002-042414	04/24/2014 8:15 am	WATER	R0003 (Upper Cold Room)			
7	M3185	WQ-DPC-003-042414	04/24/2014 10:50 am	WATER	R0003 (Upper Cold Room)			
8	M3186	WQ-DPC-004-042414	04/24/2014 12:30 pm	WATER	R0003 (Upper Cold Room)			

Shipment: **SHP-140506-01**

Status: Pending

Description: New Bedford Harbor - Lower Harbor

Range: M3373-M3373

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	M3373	W-14Y-EB	05/02/2014 10:05 am	W	R0003 (Upper Cold Room)			

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 2: Test Codes

Project Test Code Name:	Master_128
SOP Reference:	5-128 - Identification and Quantification of Polychlorinated Biphenyls (By Congener and Aroclor) and Chlorinated Pesticides by Gas Chromatography/Electron Capture Detection
Description:	Pesticide / PCB by GC/ECD
Matrix:	L - Liquid Samples, like water or sea water, prepared and anlyzed under the same class of detection limits.
Detection Limit Study:	5-128-2013-ssMDL-SF
Instrument:	ECD
MQO Criteria	USACE/NBH
Standard Report:	Standard Result Report

Method Specific Reporting

Result Units:	ug/L	***Unit Conversion:***	ng->ug	***Sample:***	7	***DL_Flag:***	U
Weight Basis:	LIQUID	***Result Format:***	Significant Figure	***Frozen:***	40	***RL_Flag:***	J
Standard Basis:	RIS	***# of Figures/Digits:***	3	***Extract:***	40	***PB_Flag:***	B
Oil Weight Basis:	No	***Oil Weight Source:***	Oil Weight			***DIL_Flag:***	D
U-Value Substition:	U-Flag=NED	***Histograms:***	No			***HT_Flag:***	T
ECD_Reporting:	Yes						

Holding Times (days)

Data Flags

ECD_Result:	Higher	***ECD_Flag***	p
RPD_Limit (<%):	40	***ECD_Manual_Flag:***	m

No:	Analyte:	Report Name:	Type	RIS	SIS	Hidden:	Graph:
1	Cl2(8)	Cl2(8)	T	Cl5(96)	Cl3(34)	No	No
2	Cl3(18)	Cl3(18)	T	Cl5(96)	Cl3(34)	No	No
3	Cl3(28)	Cl3(28)	T	Cl5(96)	Cl3(34)	No	No
4	Cl4(44)	Cl4(44)	T	Cl5(96)	Cl3(34)	No	No
5	Cl4(52)	Cl4(52)	T	Cl5(96)	Cl3(34)	No	No
6	Cl4(66)	Cl4(66)	T	Cl5(96)	Cl3(34)	No	No
7	Cl5(101)	Cl5(101)	T	Cl5(96)	Cl3(34)	No	No
8	Cl5(105)	Cl5(105)	T	Cl6(161)	Cl6(152)	No	No
9	Cl5(118)	Cl5(118)	T	Cl6(161)	Cl6(152)	No	No
10	Cl6(128)	Cl6(128)	T	Cl6(161)	Cl6(152)	No	No
11	Cl6(138)	Cl6(138)	T	Cl6(161)	Cl6(152)	No	No
12	Cl6(153)	Cl6(153)	T	Cl6(161)	Cl6(152)	No	No
13	Cl7(170)	Cl7(170)	T	Cl6(161)	Cl6(152)	No	No
14	Cl7(180)	Cl7(180)	T	Cl6(161)	Cl6(152)	No	No
15	Cl7(187)	Cl7(187)	T	Cl6(161)	Cl6(152)	No	No
16	Cl8(195)	Cl8(195)	T	Cl6(161)	Cl6(152)	No	No

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Attachment 2: Test Codes

Project Test Code Name: Master_128

No:	Analyte:	Report Name:	Type	RIS	SIS	Hidden:	Graph:
17	Cl9(206)	Cl9(206)	T	Cl6(161)	Cl6(152)	No	No
18	Cl10(209)	Cl10(209)	T	Cl6(161)	Cl6(152)	No	No
1	Cl3(34)	Cl3(34)	SIS	Cl5(96)		No	No
2	Cl6(152)	Cl6(152)	SIS	Cl6(161)		No	No

Total Analytes: 20

Subtract Peaks:

None

Sum Peaks:

None

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 2: Test Codes

Project Test Code Name: Master_128

ICAL Acceptance Criteria:

Curve Fit:	Limit Mean(%):	Mean Qual:	Limit Ind.:	Ind. Qual:	Min Points:	Points Qual:	Comments:
Linear	NA	NA	0.995	N	5	N	y = Bx + C
Average RF	15	N	25	N	5	N	y = Bx
Linear (0,0)	NA	NA	0.995	N	5	N	y = Bx + 0
Quadratic	NA	NA	0.995	N	6	N	y = Ax^2 + Bx + C
Quadratic (0,0)	NA	NA	0.995	N	6	N	y = Ax^2 + Bx + 0

Continuing Calibration Verification Criteria:

CCV Name: 5-128

Frequency Hrs:	Mean PD(%):	Individual PD(%):	RIS/SIS RT Window (min):	Area Limit Low(%):	Area Limit High(%):	Comment:
24 (N)	15 (N)	20 (N)	0.25 (N)	-50	100 (N)	NA

Independent Calibration Verification:

ICC Name: 5-128

Mean PD Limit(%):	Ind. PD Limit(%):	RIS/SIS Window Limit (Secs):	Area Limit High(%):	Area Limit Low(%):	Comment:
20 (N)	20 (N)	0.25 (N)	-50	100 (N)	NA

Mass Discrimination Criteria:

None

Degredation Check Criteria:

Degredation Check Name: 5-128

DDT Breakdown Limit (%):	Endrin Breakdown Limit(%):	Total Breakdown Limit(%):	Comment:
20 (N)	20 (N)	20 (N)	

Attachment 2: Test Codes

Project Test Code Name: Master_315

SOP Reference: 5-315 - Identification and Quantification of Polychlorinated Biphenyl Congeners (PCBs),PCB Homologues, and Chlorinated Pesticides by Gas Chromatography / Mass Specroscopy in the Selected Ion Monitoring (SIM) Mode

Description: Pesticide/PCB by GC/MS SIM

Matrix: L - Liquid Samples, like water or sea water, prepared and anlyzed under the same class of detection limits.

Detection Limit Study: 5-315-2013-ssMDL-SF

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Attachment 2: Test Codes

Project Test Code Name: Master_315

Instrument: GCMS

MQO Criteria USACE/NBH

Standard Report: Standard Result Report

Method Specific Reporting				Holding Times (days)		Data Flags	
Result Units:	ug/L	***Unit Conversion:***	ng->ug	***Sample:***	7	***DL_Flag:***	U
Weight Basis:	LIQUID	***Result Format:***	Significant Figures	***Frozen:***	40	***RL_Flag:***	J
Standard Basis:	RIS	***# of Figures/Digits:***	3	***Extract:***	40	***PB_Flag:***	B
Oil Weight Basis:	No	***Oil Weight Source:***	Oil Weight			***DIL_Flag:***	D
U-Value Substition:	U-Flag=NE	***Histograms:***	No			***HT_Flag:***	T
ECD_Reporting:	No						

No:	Analyte:	Report Name:	Type	RIS	SIS	Hidden:	Graph:
1	Cl1(1)	Cl1(1)	T	Cl5(96)	Cl3(34)	No	No
2	Cl1(3)	Cl1(3)	T	Cl5(96)	Cl3(34)	No	No
3	Cl2(4)	Cl2(4)	T	Cl5(96)	Cl3(34)	No	No
4	Cl2(5)	Cl2(5)	T	Cl5(96)	Cl3(34)	No	No
5	Cl2(6)	Cl2(6)	T	Cl5(96)	Cl3(34)	No	No
6	Cl2(7)	Cl2(7)	T	Cl5(96)	Cl3(34)	No	No
7	Cl2(8)	Cl2(8)	T	Cl5(96)	Cl3(34)	No	No
8	Cl2(9)	Cl2(9)	T	Cl5(96)	Cl3(34)	No	No
9	Cl2(11)	Cl2(11)	T	Cl5(96)	Cl3(34)	No	No
10	Cl2(12)	Cl2(12)	T	Cl5(96)	Cl3(34)	No	No
11	Cl2(13)	Cl2(13)	T	Cl5(96)	Cl3(34)	No	No
12	Cl2(15)	Cl2(15)	T	Cl5(96)	Cl3(34)	No	No
13	Cl3(16)	Cl3(16)	T	Cl5(96)	Cl3(34)	No	No
14	Cl3(17)	Cl3(17)	T	Cl5(96)	Cl3(34)	No	No
15	Cl3(18)	Cl3(18)	T	Cl5(96)	Cl3(34)	No	No
16	Cl3(19)	Cl3(19)	T	Cl5(96)	Cl3(34)	No	No
17	Cl3(22)	Cl3(22)	T	Cl5(96)	Cl3(34)	No	No
18	Cl3(24)	Cl3(24)	T	Cl5(96)	Cl3(34)	No	No
19	Cl3(25)	Cl3(25)	T	Cl5(96)	Cl3(34)	No	No
20	Cl3(26)	Cl3(26)	T	Cl5(96)	Cl3(34)	No	No
21	Cl3(27)	Cl3(27)	T	Cl5(96)	Cl3(34)	No	No
22	Cl3(28)	Cl3(28)	T	Cl5(96)	Cl3(34)	No	No
23	Cl3(29)	Cl3(29)	T	Cl5(96)	Cl3(34)	No	No
24	Cl3(30)	Cl3(30)	T	Cl5(96)	Cl3(34)	No	No
25	Cl3(31)	Cl3(31)	T	Cl5(96)	Cl3(34)	No	No
26	Cl3(32)	Cl3(32)	T	Cl5(96)	Cl3(34)	No	No
27	Cl3(33)	Cl3(33)	T	Cl5(96)	Cl3(34)	No	No
28	Cl3(37)	Cl3(37)	T	Cl5(96)	Cl3(34)	No	No

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Attachment 2: Test Codes

Project Test Code Name: Master_315

No:	Analyte:	Report Name:	Type	RIS	SIS	Hidden:	Graph:
29	Cl4(40)	Cl4(40)	T	Cl5(96)	Cl3(34)	No	No
30	Cl4(41)	Cl4(41)	T	Cl5(96)	Cl3(34)	No	No
31	Cl4(42)	Cl4(42)	T	Cl5(96)	Cl3(34)	No	No
32	Cl4(43)	Cl4(43)	T	Cl5(96)	Cl3(34)	No	No
33	Cl4(44)	Cl4(44)	T	Cl5(96)	Cl3(34)	No	No
34	Cl4(45)	Cl4(45)	T	Cl5(96)	Cl3(34)	No	No
35	Cl4(46)	Cl4(46)	T	Cl5(96)	Cl3(34)	No	No
36	Cl4(47)	Cl4(47)	T	Cl5(96)	Cl3(34)	No	No
37	Cl4(48)	Cl4(48)	T	Cl5(96)	Cl3(34)	No	No
38	Cl4(49)	Cl4(49)	T	Cl5(96)	Cl3(34)	No	No
39	Cl4(50)	Cl4(50)	T	Cl5(96)	Cl3(34)	No	No
40	Cl4(51)	Cl4(51)	T	Cl5(96)	Cl3(34)	No	No
41	Cl4(52)	Cl4(52)	T	Cl5(96)	Cl3(34)	No	No
42	Cl4(53)	Cl4(53)	T	Cl5(96)	Cl3(34)	No	No
43	Cl4(54)	Cl4(54)	T	Cl5(96)	Cl3(34)	No	No
44	Cl4(56)	Cl4(56)	T	Cl5(96)	Cl3(34)	No	No
45	Cl4(60)	Cl4(60)	T	Cl6(161)	Cl6(152)	No	No
46	Cl4(63)	Cl4(63)	T	Cl5(96)	Cl3(34)	No	No
47	Cl4(64)	Cl4(64)	T	Cl5(96)	Cl3(34)	No	No
48	Cl4(66)	Cl4(66)	T	Cl5(96)	Cl3(34)	No	No
49	Cl4(67)	Cl4(67)	T	Cl5(96)	Cl3(34)	No	No
50	Cl4(70)	Cl4(70)	T	Cl5(96)	Cl3(34)	No	No
51	Cl4(71)	Cl4(71)	T	Cl5(96)	Cl3(34)	No	No
52	Cl4(74)	Cl4(74)	T	Cl5(96)	Cl3(34)	No	No
53	Cl4(75)	Cl4(75)	T	Cl5(96)	Cl3(34)	No	No
54	Cl4(77)	Cl4(77)	T	Cl6(161)	Cl6(152)	No	No
55	Cl4(80)	Cl4(80)	T	Cl5(96)	Cl3(34)	No	No
56	Cl4(81)	Cl4(81)	T	Cl6(161)	Cl6(152)	No	No
57	Cl5(82)	Cl5(82)	T	Cl6(161)	Cl6(152)	No	No
58	Cl5(83)	Cl5(83)	T	Cl6(161)	Cl6(152)	No	No
59	Cl5(84)	Cl5(84)	T	Cl5(96)	Cl3(34)	No	No
60	Cl5(85)	Cl5(85)	T	Cl6(161)	Cl6(152)	No	No
61	Cl5(87)	Cl5(87)	T	Cl6(161)	Cl6(152)	No	No
62	Cl5(91)	Cl5(91)	T	Cl5(96)	Cl3(34)	No	No
63	Cl5(92)	Cl5(92)	T	Cl5(96)	Cl3(34)	No	No
64	Cl5(95)	Cl5(95)	T	Cl5(96)	Cl3(34)	No	No
65	Cl5(97)	Cl5(97)	T	Cl6(161)	Cl6(152)	No	No
66	Cl5(99)	Cl5(99)	T	Cl6(161)	Cl6(152)	No	No
67	Cl5(100)	Cl5(100)	T	Cl5(96)	Cl3(34)	No	No
68	Cl5(101)	Cl5(101)	T	Cl5(96)	Cl3(34)	No	No
69	Cl5(104)	Cl5(104)	T	Cl5(96)	Cl3(34)	No	No
70	Cl5(105)	Cl5(105)	T	Cl6(161)	Cl6(152)	No	No
71	Cl5(110)	Cl5(110)	T	Cl6(161)	Cl6(152)	No	No
72	Cl5(114)	Cl5(114)	T	Cl6(161)	Cl6(152)	No	No
73	Cl5(115)	Cl5(115)	T	Cl6(161)	Cl6(152)	No	No
74	Cl5(118)	Cl5(118)	T	Cl6(161)	Cl6(152)	No	No

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Attachment 2: Test Codes

Project Test Code Name: Master_315

No:	Analyte:	Report Name:	Type	RIS	SIS	Hidden:	Graph:
75	Cl5(123)	Cl5(123)	T	Cl6(161)	Cl6(152)	No	No
76	Cl5(124)	Cl5(124)	T	Cl6(161)	Cl6(152)	No	No
77	Cl5(125)	Cl5(125)	T	Cl6(161)	Cl6(152)	No	No
78	Cl5(126)	Cl5(126)	T	Cl6(161)	Cl6(152)	No	No
79	Cl5(127)	Cl5(127)	T	Cl6(161)	Cl6(152)	No	No
80	Cl6(128)	Cl6(128)	T	Cl6(161)	Cl6(152)	No	No
81	Cl6(130)	Cl6(130)	T	Cl6(161)	Cl6(152)	No	No
82	Cl6(131)	Cl6(131)	T	Cl6(161)	Cl6(152)	No	No
83	Cl6(134)	Cl6(134)	T	Cl6(161)	Cl6(152)	No	No
84	Cl6(135)	Cl6(135)	T	Cl6(161)	Cl6(152)	No	No
85	Cl6(136)	Cl6(136)	T	Cl6(161)	Cl6(152)	No	No
86	Cl6(137)	Cl6(137)	T	Cl6(161)	Cl6(152)	No	No
87	Cl6(138)	Cl6(138)	T	Cl6(161)	Cl6(152)	No	No
88	Cl6(139)	Cl6(139)	T	Cl6(161)	Cl6(152)	No	No
89	Cl6(140)	Cl6(140)	T	Cl6(161)	Cl6(152)	No	No
90	Cl6(141)	Cl6(141)	T	Cl6(161)	Cl6(152)	No	No
91	Cl6(144)	Cl6(144)	T	Cl6(161)	Cl6(152)	No	No
92	Cl6(146)	Cl6(146)	T	Cl6(161)	Cl6(152)	No	No
93	Cl6(149)	Cl6(149)	T	Cl6(161)	Cl6(152)	No	No
94	Cl6(151)	Cl6(151)	T	Cl6(161)	Cl6(152)	No	No
95	Cl6(153)	Cl6(153)	T	Cl6(161)	Cl6(152)	No	No
96	Cl6(154)	Cl6(154)	T	Cl6(161)	Cl6(152)	No	No
97	Cl6(155)	Cl6(155)	T	Cl5(96)	Cl3(34)	No	No
98	Cl6(156)	Cl6(156)	T	Cl6(161)	Cl6(152)	No	No
99	Cl6(157)	Cl6(157)	T	Cl6(161)	Cl6(152)	No	No
100	Cl6(158)	Cl6(158)	T	Cl6(161)	Cl6(152)	No	No
101	Cl6(163)	Cl6(163)	T	Cl6(161)	Cl6(152)	No	No
102	Cl6(164)	Cl6(164)	T	Cl6(161)	Cl6(152)	No	No
103	Cl6(166)	Cl6(166)	T	Cl6(161)	Cl6(152)	No	No
104	Cl6(167)	Cl6(167)	T	Cl6(161)	Cl6(152)	No	No
105	Cl6(169)	Cl6(169)	T	Cl6(161)	Cl6(152)	No	No
106	Cl7(170)	Cl7(170)	T	Cl6(161)	Cl6(152)	No	No
107	Cl7(171)	Cl7(171)	T	Cl6(161)	Cl6(152)	No	No
108	Cl7(172)	Cl7(172)	T	Cl6(161)	Cl6(152)	No	No
109	Cl7(173)	Cl7(173)	T	Cl6(161)	Cl6(152)	No	No
110	Cl7(174)	Cl7(174)	T	Cl6(161)	Cl6(152)	No	No
111	Cl7(175)	Cl7(175)	T	Cl6(161)	Cl6(152)	No	No
112	Cl7(176)	Cl7(176)	T	Cl6(161)	Cl6(152)	No	No
113	Cl7(177)	Cl7(177)	T	Cl6(161)	Cl6(152)	No	No
114	Cl7(178)	Cl7(178)	T	Cl6(161)	Cl6(152)	No	No
115	Cl7(179)	Cl7(179)	T	Cl6(161)	Cl6(152)	No	No
116	Cl7(180)	Cl7(180)	T	Cl6(161)	Cl6(152)	No	No
117	Cl7(183)	Cl7(183)	T	Cl6(161)	Cl6(152)	No	No
118	Cl7(184)	Cl7(184)	T	Cl6(161)	Cl6(152)	No	No
119	Cl7(185)	Cl7(185)	T	Cl6(161)	Cl6(152)	No	No
120	Cl7(187)	Cl7(187)	T	Cl6(161)	Cl6(152)	No	No

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Attachment 2: Test Codes

Project Test Code Name: Master_315

No:	Analyte:	Report Name:	Type	RIS	SIS	Hidden:	Graph:
121	Cl7(188)	Cl7(188)	T	Cl6(161)	Cl6(152)	No	No
122	Cl7(189)	Cl7(189)	T	Cl6(161)	Cl6(152)	No	No
123	Cl7(190)	Cl7(190)	T	Cl6(161)	Cl6(152)	No	No
124	Cl7(191)	Cl7(191)	T	Cl6(161)	Cl6(152)	No	No
125	Cl7(193)	Cl7(193)	T	Cl6(161)	Cl6(152)	No	No
126	Cl8(194)	Cl8(194)	T	Cl6(161)	Cl6(152)	No	No
127	Cl8(195)	Cl8(195)	T	Cl6(161)	Cl6(152)	No	No
128	Cl8(197)	Cl8(197)	T	Cl6(161)	Cl6(152)	No	No
129	Cl8(198)	Cl8(198)	T	Cl6(161)	Cl6(152)	No	No
130	Cl8(199)	Cl8(199)	T	Cl6(161)	Cl6(152)	No	No
131	Cl8(200)	Cl8(200)	T	Cl6(161)	Cl6(152)	No	No
132	Cl8(201)	Cl8(201)	T	Cl6(161)	Cl6(152)	No	No
133	Cl8(202)	Cl8(202)	T	Cl6(161)	Cl6(152)	No	No
134	Cl8(203)	Cl8(203)	T	Cl6(161)	Cl6(152)	No	No
135	Cl8(205)	Cl8(205)	T	Cl6(161)	Cl6(152)	No	No
136	Cl9(206)	Cl9(206)	T	Cl6(161)	Cl6(152)	No	No
137	Cl9(207)	Cl9(207)	T	Cl6(161)	Cl6(152)	No	No
138	Cl9(208)	Cl9(208)	T	Cl6(161)	Cl6(152)	No	No
139	Cl10(209)	Cl10(209)	T	Cl6(161)	Cl6(152)	No	No
1	Cl3(34)	Cl3(34)	SIS	Cl5(96)		No	No
2	Cl6(152)	Cl6(152)	SIS	Cl6(161)		No	No

Total Analytes: 141

Subtract Peaks:

None

Sum Peaks:

None

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Attachment 2: Test Codes

Project Test Code Name: Master_315

ICAL Acceptance Criteria:

Curve Fit:	Limit Mean(%):	Mean Qual:	Limit Ind.:	Ind. Qual:	Min Points:	Points Qual:	Comments:
Linear	NA	NA	0.995	N	5	N	y = Bx + C
Average RF	15	N	25	N	5	N	y = Bx
Linear (0,0)	NA	NA	0.995	N	5	N	y = Bx + 0
Quadratic	NA	NA	0.995	N	6	N	y = Ax^2 + Bx + C
Quadratic (0,0)	NA	NA	0.995	N	6	N	y = Ax^2 + Bx + 0

Continuing Calibration Verification Criteria:

CCV Name: 5-315

Frequency Hrs:	Mean PD(%):	Individual PD(%):	RIS/SIS RT Window (min):	Area Limit Low(%):	Area Limit High(%):	Comment:
24 (N)	15 (N)	25 (N)	0.25 (N)	-50	100 (N)	NA

Independent Calibration Verification:

ICC Name: 5-315

Mean PD Limit(%):	Ind. PD Limit(%):	RIS/SIS Window Limit (Secs):	Area Limit High(%):	Area Limit Low(%):	Comment:
25 (N)	25 (N)	0.25 (N)	-50	100 (N)	NA

Mass Discrimination Criteria:

None

Degredation Check Criteria:

Degredation Check Name: 5-315

DDT Breakdown Limit (%):	Endrin Breakdown Limit(%):	Total Breakdown Limit(%):	Comment:
20 (N)	20 (N)	20 (N)	

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Attachment 3: Method Quality Objectives

MQO Application	***USACE/NBH***		
MQO:	**Acceptance Criteria**	**Qual:**	**Corrective Action:**
Procedural Blank	Samples must be greater than five times the blank concentration (>5xPB).	B	Review with Project Manager; re-analyze or justify results in project records.
PB Measurement Quality Objective	Organic results in the Procedural Blank are less than the ssRL (<ssRL)	N	
Laboratory Control Sample	Recovery values 40-120%.	N	Review with project manager; re-analyze or justify reporting the results in project records.
Matrix Spike Recovery	Organics 40-120%. Analyte concentration in MS must be greater than five times reported background concentration.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
	Organics Results in the Target is less than 5 times the Original	n	
Matrix Spike/Spike Duplicate Precision	Organics results less than 30% Relative Percent Difference (RPD). Spike must be >5x background concentration.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
	Organics Results in the Target is less than 5 times the Original	n	
Standard Reference Material Accuracy	Organics Percent Difference less than 30% from a range of certified values on average. Analyte concentration must be greater than five times the Method Detection Limit (>5xMDL).	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
	Organics Results in the Target is less than 5 times the MDL	n	
Analytical Duplicate Precision	Organics results less than 30% Relative Percent Difference (RPD). Concentration must be >10X the MDL.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
	Organics Results in the Original is less than 10 times the MDL	n	
Analytical Triplicate Precision	Organics results less than 30% Relative Standard Deviation (RSD). Concentration must be >10X the MDL.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
	Organics Results in the Original is less than 10 times the MDL	n	

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Attachment 3: Method Quality Objectives

MQO Application	***USACE/NBH***		
MQO:	**Acceptance Criteria**	**Qual:**	**Corrective Action:**
Surrogate Compound Recovery	Recovery results between 30% and 150%.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
Control Oil	RPD < 30% for at least 90% of analytes	N n	Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented.
Instrument Calibration	5-128-13: R-squared greater than or equal to 0.995 Mean RSD less than or equal to 15%, Individual RSD less than or equal to 25%	N	Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented.
	5-315-10: R-squared greater than or equal to 0.995 Mean RSD less than or equal to 15%, Individual RSD less than or equal to 25%	N	Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented.
Independent Calibration Check Solution	5-128-13: Individual PD less than or equal to 20%. Mean Percent Difference less than or equal to 20%.	N	Review with Project Manager; re-analyze or justify in project records.
	5-315-10: Individual PD less than or equal to 25%. Mean Percent Difference less than or equal to 25%.	N	Review with Project Manager; re-analyze or justify in project records.
Continuing Calibration Verification	5-128-13: Individual PD less than or equal to 20%. Mean Percent Difference less than or equal to 15%.	N	
	5-315-10: Individual PD less than or equal to 25%. Mean Percent Difference less than or equal to 15%.	N	

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ShpNo SHP-140423-01

Battelle Project No:

Sample Receipt Form

Approved: ☐ **Authorized** ☐

Project Number: W912WJ-12-D-0004 **Client:** USACE

Received by: Schumitz, Matt **Date/Time Received:** Wednesday, April 23, 2014 12:00 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Hand Delivered **Tracking Number:** Mike Walsh

COC Forms: ☑ **Shipped with samples** ☐ **No Forms**

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal Condition	Container Condition	Temp C	Smps
1 of 1	Cooler		Custody Seals	Intact	Intact	1.0	8

Samples

Sample Labels:
☑ Sample labels agree with COC forms
☐ Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:
☐ Tape ☐ Custody Seals ☐ Other Seals (See sample Log)
☑ Seals intact for each shipping container
☐ Seals broken (See sample log for impacted samples)

Condition of Samples:
☑ Sample containers intact
☐ Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 1 Temperature Blank used ☐ Yes ☑ No
(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☐ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA
If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☐ No ☑ NA
If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA
Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☐ Yes ☐ No ☑ Unknown /Lot No.: Unknown

Storage Location: Chem South: Refrigerator - R0003 (Upper Cold **BDO IDs Assigned:** M2921 - M2928

Samples logged in by: Schumitz, Matt **Date/Time:** 04/23/2014 12:00 AM

Approved By: **Approved On:**

Authorized By: **Authorized On:**

Battelle
The Business of Innovation

ShpNo SHP-140423-01

Battelle Project No: 100043429

Sample Receipt Form Details

Approved: ☑ Authorized ☐

Project Number: W912WJ-12-D-0004 **Client:** USACE

Received by: Schumitz, Matt **Date/Time Received:** Wednesday, April 23, 2014 12:00 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
M2921	WQ-TPC-001-042214	04/22/14 12:15	04/23/14 8:59	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M2922	WQ-TPC-002-042214	04/22/14 13:00	04/23/14 9:00	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M2923	WQ-TPC-003-042214	04/22/14 15:05	04/23/14 9:00	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M2924	WQ-TPC-004-042214	04/22/14 16:00	04/23/14 9:01	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M2925	WQ-DPC-001-042214	04/22/14 12:15	04/23/14 9:01	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M2926	WQ-DPC-002-042214	04/22/14 13:00	04/23/14 9:01	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M2927	WQ-DPC-003-042214	04/22/14 15:05	04/23/14 9:01	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M2928	WQ-DPC-004-042214	04/22/14 16:00	04/23/14 9:02	2	WQ	1	NA	NA	NA	R0003 (Upper C			

Total Samples: 8

Battelle
The Business of Innovation

Chain of Custody

Project Manager: Deirdre Dahlen
Phone: (781) 952-5253

Ship to:
Battelle Sample Receiving
397 Washington St
Duxbury, Ma 02332

Sampling Firm:
Battelle
397 Washington St
Duxbury, Ma 02332

Site Contact: Alex Mansfield
Mobile: (617) 571-9962

Date	Time	Field ID	Lab ID(s)	Matrix	station	Analyses (Record No. of containers / Preservative)									
						Total PCB	Dissolved PCB	Turbidity	TSS	TOC	Metals	Archive	Preservative	Field Turbidity Reading (NTU)	Field Salinity Reading (PPT)
4/22/2014	12:15	WQ-TPC-001-042214	M2921	water	Reference 1000' South	2							4°C	0.52	28
4/22/2014	13:00	WQ-TPC-002-042214	M2922	water	Compliance 300' North	2							4°C	1.73	27
4/22/2014	15:05	WQ-TPC-003-042214	M2923	water	Reference 1000' North	2							4°C	5.5	22
4/22/2014	16:00	WQ-TPC-004-042214	M2924	water	Compliance 300' South	2							4°C	0.8	28
4/22/2014	12:15	WQ-DPC-001-042214	M2925	water	Reference 1000' South		2						4°C	0.52	28
4/22/2014	13:00	WQ-DPC-002-042214	M2926	water	Compliance 300' North		2						4°C	1.73	27
4/22/2014	15:05	WQ-DPC-003-042214	M2927	water	Reference 1000' North		2						4°C	5.5	22
4/22/2014	16:00	WQ-DPC-004-042214	M2928	water	Compliance 300' South		2						4°C	0.8	28

Comments:
1st of 3 days of sampling for the week. QC samples will be collected later in the week.

Sampling Team:
Alex Mansfield, Mike Walsh

Relinquished By (name/date/time):
Mike Walsh 4/23/14 084 BDO

Received (name/date/time):
MB 4/23/14 8:40

Battelle
The Business of Innovation

ShpNo SHP-140424-01

Battelle Project No: 100043429

Sample Receipt Form

Approved: ☑ **Authorized** ☐

Project Number: W912WJ-12-D-0004 **Client:** USACE

Received by: Schumitz, Matt **Date/Time Received:** Thursday, April 24, 2014 12:00 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Hand Delivered **Tracking Number:** Mike Walsh

COC Forms: ☑ **Shipped with samples** ☐ **No Forms**

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal Condition	Container Condition	Temp C	Smps
1 of 1	Cooler					1.0	12

Samples

Sample Labels:
☑ Sample labels agree with COC forms
☐ Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:
☐ Tape ☐ Custody Seals ☐ Other Seals (See sample Log)
☑ Seals intact for each shipping container
☐ Seals broken (See sample log for impacted samples)

Condition of Samples:
☑ Sample containers intact
☐ Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 1 Temperature Blank used ☐ Yes ☑ No
(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☐ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA
If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☐ No ☑ NA
If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA
Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☐ Yes ☐ No ☑ Unknown /Lot No.: UnKnown

Storage Location: Chem South: Refrigerator - R0003 (Upper Cold **BDO IDs Assigned:** M3113 - M3124

Samples logged in by: Schumitz, Matt **Date/Time:** 04/24/2014 12:00 AM

Approved By: Davis, Kerry **Approved On:** 5/20/2014 3:50:00 PM

Authorized By: **Authorized On:**

Battelle
The Business of Innovation

ShpNo: SHP-140424-01

Battelle Project No: 100043429

Report Corrective Actions

Corrective Action No: 1 **of** 1

Authorized ☐ Approved: ☐

COC Client: USACE

COC Project: New Bedford Harbor Water Qaultiy Monitoring

COC Date: 4/24/2014 9:59:

	Description of Problem:	Explanation:
Client Id	Either label or C-O-C cannot be verified	The MS-MSD samples were logged in as extra bottles under the parent ID as opposed to 2 separate samples as the COC has them listed.

Documentation of project manager notification

Sample Custodian Schumitz, Matt **Date:** 4/24/2014 10:10:00 A

Laboratory Manager: Lizotte Jr, Robert **Date:** 5/6/2014 8:25:00 AM

Project Manager Peven-McCarthy, Carole **Date:** 5/6/2014 7:56:00 AM

Documentation of client notification (should be completed by project manager within 24 hrs):

On _____ **I contacted** _____ **at**

Results of communication with client (Describe any corrective action directed by the client):

Appropriate.

Date this form was received back to the custodian: _____

Reference Number: _____

Battelle
The Business of Innovation

ShpNo SHP-140424-01

Battelle Project No: 100043429

Sample Receipt Form Details

Approved: ☐ Authorized ☐

Project Number: W912WJ-12-D-0004 **Client:** USACE

Received by: Schumitz, Matt **Date/Time Received:** Thursday, April 24, 2014 12:00 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
M3113	WQ-TPC-001-042314	04/23/14 14:38	04/24/14 10:02	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3114	WQ-TPC-002-042314	04/23/14 15:25	04/24/14 10:03	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3115	WQ-TPC-003-042314	04/23/14 16:25	04/24/14 10:03	4	WQ	1	NA	NA	NA	R0003 (Upper C			MS-MSD
M3116	WQ-TPC-003-042314-REP	04/23/14 16:25	04/24/14 10:03	1	WQ	1	NA	NA	NA	R0003 (Upper C			
M3117	WQ-TPC-003-042314-EB	04/23/14 16:25	04/24/14 10:03	2	BLK	1	NA	NA	NA	R0003 (Upper C			
M3118	WQ-TPC-004-042314	04/23/14 17:30	04/24/14 10:04	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3119	WQ-DPC-001-042314	04/23/14 14:38	04/24/14 10:04	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3120	WQ-DPC-002-042314	04/23/14 15:25	04/24/14 10:05	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3121	WQ-DPC-003-042314	04/23/14 16:25	04/24/14 10:05	4	WQ	1	NA	NA	NA	R0003 (Upper C			MS-MSD
M3122	WQ-DPC-003-042314-REP	04/23/14 16:25	04/24/14 10:05	1	WQ	1	NA	NA	NA	R0003 (Upper C			
M3123	WQ-DPC-003-042314-EB	04/23/14 16:25	04/24/14 10:05	2	BLK	1	NA	NA	NA	R0003 (Upper C			
M3124	WQ-DPC-004-042314	04/23/14 17:30	04/24/14 10:06	2	WQ	1	NA	NA	NA	R0003 (Upper C			

Total Samples: 12

Battelle
The Business of Innovation

Chain of Custody

Project Manager: Deirdre Dahlen
Phone: (781) 952-5253

Ship to:
Battelle Sample Receiving
397 Washington St
Duxbury, Ma 02332

Sampling Firm:
Battelle
397 Washington St
Duxbury, Ma 02332

Site Contact: Alex Mansfield
Mobile: (617) 571-9962

Date	Time	Field ID	Lab ID(s)	Matrix	station	Analyses (Record No. of containers / Preservative)									
						Total PCB	Dissolved PCB	Turbidity	TSS	TOC	Metals	Archive	Preservative	Field Turbidity Reading (NTU)	Field Salinity Reading (PPT)
4/23/2014	14:38	WQ-TPC-001-042314	M3113	water	Reference 1000' South	2							4°C	4.1	17
4/23/2014	15:25	WQ-TPC-002-042314	M3114	water	Compliance 300' North	2							4°C	4.9	11
4/23/2014	16:25	WQ-TPC-003-042314	M3115	water	Reference 1000' North	2							4°C	3.5	17
4/23/2014	16:25	WQ-TPC-003-042314-REP	M3116	water	eference 1000' North (REP	1							4°C	3.5	17
4/23/2014	16:25	WQ-TPC-003-042314-MS	M3115 *	water	Reference 1000' North (MS	1							4°C	3.5	17
4/23/2014	16:25	WQ-TPC-003-042314-MSD	M3115 *	water	eference 1000' North (MSD	1							4°C	3.5	17
4/23/2014	16:25	WQ-TPC-003-042314-EB	M3117	water	Reference 1000' North (EB	2							4°C	NA	NA
4/23/2014	17:30	WQ-TPC-004-042314	M3118	water	Compliance 300' South	2							4°C	4.7	16
4/23/2014	14:38	WQ-DPC-001-042314	M3119	water	Reference 1000' South		2						4°C	4.1	17
4/23/2014	15:25	WQ-DPC-002-042314	M3120	water	Compliance 300' North		2						4°C	4.9	11
4/23/2014	16:25	WQ-DPC-003-042314	M3121	water	Reference 1000' North		2						4°C	3.5	17
4/23/2014	16:25	WQ-DPC-003-042314-REP	M3122	water	eference 1000' North (REP)		1						4°C	3.5	17
4/23/2014	16:25	WQ-DPC-003-042314-MS	M3121 *	water	Reference 1000' North (MS)		1						4°C	3.5	17
4/23/2014	16:25	WQ-DPC-003-042314-MSD	M3121 *	water	eference 1000' North (MSD)		1						4°C	3.5	17
4/23/2014	16:25	WQ-DPC-003-042314-EB	M3123	water	Reference 1000' North (EB)		2						4°C	NA	NA
4/23/2014	17:30	WQ-DPC-004-042314	M3124	water	Compliance 300' South		2						4°C	4.7	16

Comments:
1st of 3 days of sampling for the week. QC samples will be collected later in the week.

* The MS/MSD samples were logged in as bottles for the parent ID

Sampling Team:
Alex Mansfield, Mike Walsh

Relinquished By (name/date/time): 4/23/14 18:30

Page: 1 of 1

Received (name/date/time): 4-24-14 830

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The Business of Innovation

ShpNo SHP-140424-04

Battelle Project No:

Sample Receipt Form

Approved: ☐ **Authorized** ☐

Project Number: W912WJ-12-D-0004 **Client:** USACE

Received by: Schumitz, Matt **Date/Time Received:** Thursday, April 24, 2014 12:00 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Hand Delivered **Tracking Number:** Mike Walsh

COC Forms: ☑ **Shipped with samples** ☐ **No Forms**

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal Condition	Container Condition	Temp C	Smps
1 of 1	Cooler				Intact	1.0	8

Samples

Sample Labels:
☑ Sample labels agree with COC forms
☐ Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:
☐ Tape ☐ Custody Seals ☐ Other Seals (See sample Log)
☑ Seals intact for each shipping container
☐ Seals broken (See sample log for impacted samples)

Condition of Samples:
☑ Sample containers intact
☐ Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 1 Temperature Blank used ☐ Yes ☑ No

(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☐ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA

If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☐ No ☑ NA

If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA

Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☐ Yes ☐ No ☑ Unknown /Lot No.: Unknown

Storage Location: Chem South: Refrigerator - R0003 (Upper Cold **BDO IDs Assigned:** M3179 - M3186

Samples logged in by: Schumitz, Matt **Date/Time:** 04/24/2014 12:00 AM

Approved By: **Approved On:**

Authorized By: **Authorized On:**

Battelle
The Business of Innovation

ShpNo SHP-140424-04

Battelle Project No: 100043429

Sample Receipt Form Details

Approved: ☑ Authorized ☐

Project Number: W912WJ-12-D-0004 **Client:** USACE

Received by: Schumitz, Matt **Date/Time Received:** Thursday, April 24, 2014 12:00 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
M3179	WQ-TPC-001-042414	04/24/14 7:37	04/24/14 15:21	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3180	WQ-TPC-002-042414	04/24/14 8:15	04/24/14 15:21	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3181	WQ-TPC-003-042414	04/24/14 10:50	04/24/14 15:21	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3182	WQ-TPC-004-042414	04/24/14 12:30	04/24/14 15:21	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3183	WQ-DPC-001-042414	04/24/14 7:37	04/24/14 15:21	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3184	WQ-DPC-002-042414	04/24/14 8:15	04/24/14 15:22	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3185	WQ-DPC-003-042414	04/24/14 10:50	04/24/14 15:22	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3186	WQ-DPC-004-042414	04/24/14 12:30	04/24/14 15:22	2	WQ	1	NA	NA	NA	R0003 (Upper C			

Total Samples: 8

Battelle
The Business of Innovation

Chain of Custody

Project Manager: Deirdre Dahlen
Phone: (781) 952-5253

Ship to:
Battelle Sample Receiving
397 Washington St
Duxbury, Ma 02332

Sampling Firm:
Battelle
397 Washington St
Duxbury, Ma 02332

Site Contact: Alex Mansfield
Mobile: (617) 571-9962

Date	Time	Field ID	Lab ID(s)	Matrix	station	Analyses (Record No. of containers / Preservative)									
						Total PCB	Dissolved PCB	Turbidity	TSS	TOC	Metals	Archive	Preservative	Field Turbidity Reading (NTU)	Field Salinity Reading (PPT)
4/24/2014	0737	WQ-TPC-001-042414	M3179	water	Reference 1000' North	2							4°C	1.6	17.8
4/24/2014	0815	WQ-TPC-002-042414	M3180	water	Compliance 300' South	2							4°C	1.8	22.6
4/24/2014	1050	WQ-TPC-003-042414	M3181	water	Reference 1000' South	2							4°C	5.5	23.8
4/24/2014	1230	WQ-TPC-004-042414	M3182	water	Compliance 300' North	2							4°C	5.5	22.7
4/24/2014	0737	WQ-DPC-001-042414	M3183	water	Reference 1000' North		2						4°C	1.6	17.8
4/24/2014	0815	WQ-DPC-002-042414	M3184	water	Compliance 300' South		2						4°C	1.8	22.6
4/24/2014	1050	WQ-DPC-003-042414	M3185	water	Reference 1000' South		2						4°C	5.5	23.8
4/24/2014	1230	WQ-DPC-004-042414	M3186	water	Compliance 300' North		2						4°C	5.5	22.7

Comments:
3rd of 3 days of sampling for the week. QC samples were collected on 4/23/14

Sampling Team:
Mike Walsh, Paul Sokoloff

Relinquished By (name/date/time):
Mike Walsh 4/24/14 1513 BDO

Received (name/date/time):
MA 4-24-14 1513

Battelle
The Business of Innovation

Project Client: USACE/NAE
Project Name: USACE-NAE New Bedford Harbor Task Order 10 - Waters
Project Number: 100043429

Client ID	Procedural Blank
Battelle ID	CC125PB-P
Sample Type	PB
Collection Date	04/29/2014
Extraction Date	04/29/2014
Analysis Date	05/07/2014
Analytical Instrument	ECD
% Moisture	NA
% Lipid	NA
Matrix	WATER
Sample Size	1.06
Size Unit-Basis	L_LIQUID
Units	UG/L_LIQUID

Cl2(8)	0.00113 U
Cl3(18)	0.00114 U
Cl3(28)	0.00114 U
Cl4(44)	0.00114 U
Cl4(52)	0.00113 U
Cl4(66)	0.00113 U
Cl5(101)	0.00113 U
Cl5(105)	0.00114 U
Cl5(118)	0.00114 U
Cl6(128)	0.00114 U
Cl6(138)	0.00114 U
Cl6(153)	0.00114 U
Cl7(170)	0.00114 U
Cl7(180)	0.00114 U
Cl7(187)	0.00114 U
Cl8(195)	0.00114 U
Cl9(206)	0.00113 U
Cl10(209)	0.00114 U

Surrogate Recoveries (%)	
Cl3(34)	77
Cl6(152)	79

Battelle
The Business of Innovation

Project Client: USACE/NAE
Project Name: USACE-NAE New Bedford Harbor Task Order 10 - Waters
Project Number: 100043429

Client ID	Laboratory Control Sample				Laboratory Control Sample Duplicate					
Battelle ID	CC126LCS-P				CC127LCSD-P					
Sample Type	LCS				LCSD					
Collection Date	04/29/2014				04/29/2014					
Extraction Date	04/29/2014				04/29/2014					
Analysis Date	05/07/2014				05/07/2014					
Analytical Instrument	ECD				ECD					
% Moisture	NA				NA					
% Lipid	NA				NA					
Matrix	WATER				WATER					
Sample Size	1.06				1.06					
Size Unit-Basis	L_LIQUID				L_LIQUID					
Units	UG/L_LIQUID	**Target**	**% REC**	**Qual**	UG/L_LIQUID	**Target**	**% REC**	**Qual**	**RPD**	**Qual**
Cl2(8)	0.0262	0.04	74		0.0268	0.04	76		2.7	
Cl3(18)	0.0321	0.04	91		0.0327	0.04	92		1.1	
Cl3(28)	0.0286	0.04	81		0.0295	0.04	83		2.4	
Cl4(44)	0.0300	0.04	85		0.0307	0.04	87		2.3	
Cl4(52)	0.0291	0.04	82		0.0299	0.04	85		3.6	
Cl4(66)	0.0294	0.04	83		0.0310	0.04	88		5.8	
Cl5(101)	0.0356	0.04	101		0.0382	0.04	108		6.7	
Cl5(105)	0.0309	0.04	87		0.0311	0.04	88		1.1	
Cl5(118)	0.0322	0.04	91		0.0330	0.04	93		2.2	
Cl6(128)	0.0304	0.04	86		0.0315	0.04	89		3.4	
Cl6(138)	0.0307	0.04	87		0.0315	0.04	89		2.3	
Cl6(153)	0.0312	0.04	88		0.0292	0.04	83		5.8	
Cl7(170)	0.0300	0.04	85		0.0313	0.04	88		3.5	
Cl7(180)	0.0316	0.04	89		0.0325	0.04	92		3.3	
Cl7(187)	0.0310	0.04	88		0.0317	0.04	90		2.2	
Cl8(195)	0.0306	0.04	86		0.0318	0.04	90		4.5	
Cl9(206)	0.0301	0.04	85		0.0314	0.04	89		4.6	
Cl10(209)	0.0312	0.04	88		0.0324	0.04	92		4.4	
Surrogate Recoveries (%)										
Cl3(34)	72				75					
Cl6(152)	76				76					

Battelle
The Business of Innovation

Project Client: USACE/NAE
Project Name: USACE-NAE New Bedford Harbor Task Order 10 - Waters
Project Number: 100043429

Client ID	WQ-TPC-001-042214	WQ-TPC-002-042214	WQ-TPC-003-042214	WQ-TPC-004-042214
Battelle ID	M2921-P	M2922-P	M2923-P	M2924-P
Sample Type	SA	SA	SA	SA
Collection Date	04/22/2014	04/22/2014	04/22/2014	04/22/2014
Extraction Date	04/29/2014	04/29/2014	04/29/2014	04/29/2014
Analysis Date	05/07/2014	05/07/2014	05/07/2014	05/07/2014
Analytical Instrument	ECD	ECD	ECD	ECD
% Moisture	NA	NA	NA	NA
% Lipid	NA	NA	NA	NA
Matrix	WQ	WQ	WQ	WQ
Sample Size	1.05	1.05	1.06	1.05
Size Unit-Basis	L_LIQUID	L_LIQUID	L_LIQUID	L_LIQUID
Units	UG/L_LIQUID	UG/L_LIQUID	UG/L_LIQUID	UG/L_LIQUID
Cl2(8)	0.00574	0.0322	0.0335	0.0125
Cl3(18)	0.0207	0.0635	0.0549	0.0266
Cl3(28)	0.0150	0.0583	0.0548	0.0284
Cl4(44)	0.00209	0.0250	0.0284	0.0115
Cl4(52)	0.0169	0.0624	0.0541	0.0277
Cl4(66)	0.00114 U	0.0224	0.0280	0.0140
Cl5(101)	0.00183	0.0149	0.0272	0.0114
Cl5(105)	0.00115 U	0.00115 U	0.00114 U	0.00115 U
Cl5(118)	0.00115 U	0.00823	0.0237	0.00796
Cl6(128)	0.00115 U	0.00115 U	0.00114 U	0.00115 U
Cl6(138)	0.00115 U	0.00658 p	0.0166 p	0.00267 p
Cl6(153)	0.00250	0.0113	0.0215	0.00754
Cl7(170)	0.00115 U	0.00115 U	0.00114 U	0.00115 U
Cl7(180)	0.00115 U	0.00115 U	0.00114 U	0.00115 U
Cl7(187)	0.00115 U	0.00115 U	0.00114 U	0.00115 U
Cl8(195)	0.00115 U	0.00115 U	0.00114 U	0.00115 U
Cl9(206)	0.00114 U	0.00114 U	0.00113 U	0.00114 U
Cl10(209)	0.00115 U	0.00115 U	0.00114 U	0.00115 U
Surrogate Recoveries (%)				
Cl3(34)	70	73	74	72
Cl6(152)	78	74	77	75

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Project Client: USACE/NAE
Project Name: USACE-NAE New Bedford Harbor Task Order 10 - Waters
Project Number: 100043429

Client ID	WQ-TPC-001-042314	WQ-TPC-002-042314	WQ-TPC-003-042314	WQ-TPC-003-042314-REP
Battelle ID	M3113-P	M3114-P	M3115-P	M3116-P
Sample Type	SA	SA	SA	SA
Collection Date	04/23/2014	04/23/2014	04/23/2014	04/23/2014
Extraction Date	04/29/2014	04/29/2014	04/29/2014	04/29/2014
Analysis Date	05/08/2014	05/08/2014	05/07/2014	05/08/2014
Analytical Instrument	ECD	ECD	ECD	ECD
% Moisture	NA	NA	NA	NA
% Lipid	NA	NA	NA	NA
Matrix	WQ	WQ	WQ	WQ
Sample Size	1.05	1.07	1.04	1.06
Size Unit-Basis	L_LIQUID	L_LIQUID	L_LIQUID	L_LIQUID
Units	UG/L_LIQUID	UG/L_LIQUID	UG/L_LIQUID	UG/L_LIQUID

Cl2(8)	0.0262		0.0265		0.0330		0.0406	
Cl3(18)	0.0509		0.0472		0.0523		0.0609	
Cl3(28)	0.0576		0.0535		0.0580		0.0680	
Cl4(44)	0.0268		0.0166		0.0265		0.0331	
Cl4(52)	0.0507		0.0409		0.0550		0.0672	
Cl4(66)	0.0261		0.0164		0.0284		0.0292	
Cl5(101)	0.0257		0.0109		0.0233		0.0308	
Cl5(105)	0.00115	U	0.00113	U	0.00116	U	0.00114	U
Cl5(118)	0.0185		0.00627		0.0166		0.0206	
Cl6(128)	0.00115	U	0.00113	U	0.00116	U	0.00114	U
Cl6(138)	0.0163	p	0.00496	p	0.0114	p	0.0162	p
Cl6(153)	0.0182		0.00632		0.0162		0.0207	
Cl7(170)	0.00248	p	0.00587	p	0.00116	U	0.00270	p
Cl7(180)	0.00115	U	0.00113	U	0.00116	U	0.00114	U
Cl7(187)	0.00115	U	0.00113	U	0.00116	U	0.00114	U
Cl8(195)	0.00115	U	0.00113	U	0.00116	U	0.00114	U
Cl9(206)	0.00114	U	0.00112	U	0.00115	U	0.00113	U
Cl10(209)	0.00115	U	0.00113	U	0.00116	U	0.00114	U
Surrogate Recoveries (%)								
Cl3(34)	79		80		77		79	
Cl6(152)	77		80		79		74	

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Project Client: USACE/NAE
Project Name: USACE-NAE New Bedford Harbor Task Order 10 - Waters
Project Number: 100043429

Client ID	WQ-TPC-003-042314-EB		WQ-TPC-004-042314		WQ-TPC-001-042414		WQ-TPC-002-042414	
Battelle ID	M3117-P		M3118-P		M3179-P		M3180-P	
Sample Type	SA		SA		SA		SA	
Collection Date	04/23/2014		04/23/2014		04/24/2014		04/24/2014	
Extraction Date	04/29/2014		04/29/2014		04/29/2014		04/29/2014	
Analysis Date	05/08/2014		05/08/2014		05/08/2014		05/08/2014	
Analytical Instrument	ECD		ECD		ECD		ECD	
% Moisture	NA		NA		NA		NA	
% Lipid	NA		NA		NA		NA	
Matrix	BLK		WQ		WQ		WQ	
Sample Size	1.06		1.06		1.07		1.06	
Size Unit-Basis	L_LIQUID		L_LIQUID		L_LIQUID		L_LIQUID	
Units	UG/L_LIQUID		UG/L_LIQUID		UG/L_LIQUID		UG/L_LIQUID	
Cl2(8)	0.00113	U	0.0158		0.0269		0.0220	
Cl3(18)	0.00114	U	0.0323		0.0489		0.0396	
Cl3(28)	0.00114	U	0.0354		0.0453		0.0409	
Cl4(44)	0.00114	U	0.0161		0.0179		0.0178	
Cl4(52)	0.00113	U	0.0333		0.0464		0.0417	
Cl4(66)	0.00113	U	0.0163		0.0172		0.0184	
Cl5(101)	0.00113	U	0.0130		0.0133		0.0143	
Cl5(105)	0.00114	U	0.00114	U	0.00113	U	0.00114	U
Cl5(118)	0.00114	U	0.00923		0.00660		0.00873	
Cl6(128)	0.00114	U	0.00114	U	0.00113	U	0.00114	U
Cl6(138)	0.00114	U	0.00522	p	0.00290	p	0.00619	p
Cl6(153)	0.00114	U	0.00889		0.00887		0.0104	
Cl7(170)	0.00114	U	0.00114	U	0.00113	U	0.00114	U
Cl7(180)	0.00114	U	0.00114	U	0.00113	U	0.00114	U
Cl7(187)	0.00114	U	0.00114	U	0.00113	U	0.00114	U
Cl8(195)	0.00114	U	0.00114	U	0.00113	U	0.00114	U
Cl9(206)	0.00113	U	0.00113	U	0.00112	U	0.00113	U
Cl10(209)	0.00114	U	0.00114	U	0.00113	U	0.00114	U
Surrogate Recoveries (%)								
Cl3(34)	76		78		76		73	
Cl6(152)	75		80		75		73	

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Project Client: USACE/NAE
Project Name: USACE-NAE New Bedford Harbor Task Order 10 - Waters
Project Number: 100043429

Client ID	WQ-TPC-003-042414		WQ-TPC-004-042414	
Battelle ID	M3181-P		M3182-P	
Sample Type	SA		SA	
Collection Date	04/24/2014		04/24/2014	
Extraction Date	04/29/2014		04/29/2014	
Analysis Date	05/08/2014		05/08/2014	
Analytical Instrument	ECD		ECD	
% Moisture	NA		NA	
% Lipid	NA		NA	
Matrix	WQ		WQ	
Sample Size	1.06		1.04	
Size Unit-Basis	L_LIQUID		L_LIQUID	
Units	UG/L_LIQUID		UG/L_LIQUID	
Cl2(8)	0.0285		0.0358	
Cl3(18)	0.0511		0.0714	
Cl3(28)	0.0605		0.0675	
Cl4(44)	0.0344		0.0329	
Cl4(52)	0.0698		0.0807	
Cl4(66)	0.0416		0.0317	
Cl5(101)	0.0370		0.0239	
Cl5(105)	0.00055	J	0.00116	U
Cl5(118)	0.0290		0.0147	
Cl6(128)	0.00114		0.00116	U
Cl6(138)	0.0236	p	0.0126	p
Cl6(153)	0.0300		0.0202	
Cl7(170)	0.00408	p	0.00116	U
Cl7(180)	0.00414		0.00116	U
Cl7(187)	0.00183		0.00116	U
Cl8(195)	0.00114	U	0.00116	U
Cl9(206)	0.00113	U	0.00115	U
Cl10(209)	0.00114	U	0.00116	U
Surrogate Recoveries (%)				
Cl3(34)	78		83	
Cl6(152)	71		79	

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Project Client: USACE/NAE
Project Name: USACE-NAE New Bedford Harbor Task Order 10 - Waters
Project Number: 100043429

Client ID	WQ-TPC-003-042314	WQ-TPC-003-042314		
Battelle ID	M3115-P	M3115MS-P		
Sample Type	SA	MS		
Collection Date	04/23/2014	04/23/2014		
Extraction Date	04/29/2014	04/29/2014		
Analysis Date	05/07/2014	05/07/2014		
Analytical Instrument	ECD	ECD		
% Moisture	NA	NA		
% Lipid	NA	NA		
Matrix	WQ	WQ		
Sample Size	1.04	0.52		
Size Unit-Basis	L_LIQUID	L_LIQUID		
Units	UG/L_LIQUID	UG/L_LIQUID	**Target**	**% REC** **Qual**
Cl2(8)	0.0330	0.0725	0.07	55
Cl3(18)	0.0523	0.112	0.07	83
Cl3(28)	0.0580	0.127	0.07	96
Cl4(44)	0.0265	0.0829	0.07	78
Cl4(52)	0.0550	0.105	0.07	69
Cl4(66)	0.0284	0.0855	0.07	79
Cl5(101)	0.0233	0.0938	0.07	98
Cl5(105)	0.00116 U	0.0712	0.07	99
Cl5(118)	0.0166	0.0754	0.07	82
Cl6(128)	0.00116 U	0.0694	0.07	96
Cl6(138)	0.0114 p	0.0727	0.07	85
Cl6(153)	0.0162	0.0819	0.07	91
Cl7(170)	0.00116 U	0.0720	0.07	100
Cl7(180)	0.00116 U	0.0725	0.07	101
Cl7(187)	0.00116 U	0.0707	0.07	98
Cl8(195)	0.00116 U	0.0733	0.07	102
Cl9(206)	0.00115 U	0.0712	0.07	99
Cl10(209)	0.00116 U	0.0741	0.07	103
Surrogate Recoveries (%)				
Cl3(34)	77	79		
Cl6(152)	79	84		

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Project Client: USACE/NAE
Project Name: USACE-NAE New Bedford Harbor Task Order 10 - Waters
Project Number: 100043429

Client ID	WQ-TPC-003-042314
Battelle ID	M3115MSD-P
Sample Type	MSD
Collection Date	04/23/2014
Extraction Date	04/29/2014
Analysis Date	05/08/2014
Analytical Instrument	ECD
% Moisture	NA
% Lipid	NA
Matrix	WQ
Sample Size	0.52
Size Unit-Basis	L_LIQUID
Units	UG/L_LIQUID

		Target	% REC	Qual	RPD	Qual
Cl2(8)	0.0694	0.07	50		9.5	
Cl3(18)	0.108	0.07	77		7.5	
Cl3(28)	0.121	0.07	87		9.8	
Cl4(44)	0.0812	0.07	76		2.6	
Cl4(52)	0.101	0.07	64		7.5	
Cl4(66)	0.0840	0.07	77		2.6	
Cl5(101)	0.0950	0.07	99		1.0	
Cl5(105)	0.0701	0.07	97		2.0	
Cl5(118)	0.0814	0.07	90		9.3	
Cl6(128)	0.0694	0.07	96		0.0	
Cl6(138)	0.0734	0.07	86		1.2	
Cl6(153)	0.0749	0.07	81		11.6	
Cl7(170)	0.0727	0.07	101		1.0	
Cl7(180)	0.0726	0.07	101		0.0	
Cl7(187)	0.0703	0.07	97		1.0	
Cl8(195)	0.0745	0.07	103		1.0	
Cl9(206)	0.0732	0.07	101		2.0	
Cl10(209)	0.0766	0.07	106		2.9	

Surrogate Recoveries (%)	
Cl3(34)	80
Cl6(152)	83

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Glossary of Data Qualifiers

Flag:	Application:
B	Analyte concentration found in the sample at a concentration <5x the level found in the procedural blank.
D	Dilution Run. Initial run outside linear range of instrument.
E	Estimate, result is greater than the highest concentration level in the calibration.
H	Surrogate diluted out. Used when surrogate recovery is affected by excessive dilution of the sample extract.
J	Analyte detected below the sample-specific Reporting Limit (RL).
m	Confirmation column manually over-ridden by analyst, dual column quantitative analysis only.
ME	Significant Matrix Interference - Estimated value.
MI	Significant Matrix Interference - value could not be determined or estimated.
n	Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO), but meets the contingency criteria.
N	Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO)
NA	Not applicable
p	Dual column value exceeds RPD criteria, dual column quantitative analysis only.
T	Holding Time (HT) exceeded.
U	Analyte not detected at 3:1 signal:noise ratio.

QA/QC Summary
Batch 14-0175

Project:	USACE/NAE – New Bedford Harbor Task Order 10
Parameters:	PCBs – Whole Water
Laboratory:	Battelle, Duxbury, MA
Matrix:	WQ, BLK
Data Set:	DP-14-0242
Analytical SOP:	5-128
Method Reference:	EPA 8081B/8082A modified

Sample Custody

Collection Date	Receipt Date	Temp (°C)
4/22-24/2014	4/22, 4/23, 24/2014 (hand delivered after collection)	1.0 – ambient (hand delivered)

Corrective Actions	Confusion related to label of samples intended for MS/MSD. Samples logged in with the same sample ID.
Sample Storage	The water samples were stored refrigerated until extraction.
Related samples	NA

METHOD SUMMARIES

Sample Preparation	Whole water samples were extracted for PCB analysis according to Battelle SOP 5-200, *Water Extraction for Trace Level Semi-Volatile Organic Contaminant Analysis.* Approximately 1 liter of water was spiked with surrogates and extracted three times with dichloromethane using separatory funnel techniques. The combined extract was dried over anhydrous sodium sulfate, concentrated, processed through alumina cleanup columns, and concentrated. The final concentrated extract was cleaned with activated copper, solvent exchanged into hexane and fortified with internal standard (IS) compounds prior to analysis by GC/ECD.
Prep Comments	MS/MSD samples were taken from one bottle to match procedures followed in batch 14-0176.

Analysis	PCBs were analyzed by gas chromatography electron capture detection (GC/ECD). An initial calibration consisting of target analytes was analyzed prior to sample analysis to demonstrate the linear range. Calibration verification was performed at the beginning and end of each 24-hr period in which samples were analyzed. Concentrations of target compounds were calculated versus internal standards using the average response factors (RF) generated from the initial calibration.

QA/QC Summary
Batch 14-0175

Holding Times	Extraction Date(s)		Analysis Date(s)	
	4/29/2014		5/7-8/2014	

Procedural Blank (PB)	A PB was prepared with this analytical batch to ensure the sample extraction and analysis methods are free of contamination.
Blank value <SSRL Samples >5X PB	No exceedences noted.
	No comments.

Laboratory Control Spike (LCS)/ Laboratory Control Spike Duplicate (LCSD)	A LCS/LCSD pair was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy. The relative percent difference (RPD) was calculated to measure data quality in terms of precision.
40-120% recovery <30% RPD	No exceedences noted.
	No comments.

Surrogate Recovery	Surrogate compounds were added prior to extraction. The surrogate recoveries are calculated to measure extraction efficiency.
30-150% recovery	No exceedences noted.
	No comments.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)	A matrix spike/matrix spike duplicate pair was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy. The relative percent difference (RPD) was calculated to measure data quality in terms of precision.
40-120% recovery; Concentration in MS must be >5x background; <30% RPD	No exceedences noted.
	No comments.

Initial Calibration (ICAL)	The GC/ECD was calibrated with six-level quadratic calibration curve for all compounds using an instrument response factor (RF).
$R^2 \geq 0.995$	No exceedences noted.
	No comments.

QA/QC Summary
Batch 14-0175

Independent Calibration Check (ICC)	The independent check was run after each initial calibration to verify the calibration. This standard is from a different source than the ICAL.
≤ 20% difference individual and mean	No exceedences noted.
	No comments.

Continuing Calibration Verification (CCV)	Continuing calibration standards were run every 24 hours to ensure that initial calibration is still valid.
≤ 20% difference individual; ≤15% difference mean	No exceedences noted.
	No comments.

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Report Project Data Set MQOs

Project Title: USACE/NAE New Bedford Harbor Task

Data Set Number: DP-14-0242

Project Number: 100043429

Prep Batch Number: 14-0175

Test Code (Matrix Type): Master_128(L)

QC_PARAMETER:	Exceed:	Contg.:	JUSTIFICATION:
Procedural Blank	0	0	None
PB Measurement Quality Objective	0	0	None
Laboratory Control Sample	0	0	None
Matrix Spike Recovery	0	0	None
Matrix Spike/Spike Duplicate Precision	0	0	None
Standard Reference Material Accuracy	NA	NA	NA
Analytical Duplicate Precision	NA	NA	NA
Analytical Triplicate Precision	NA	NA	NA
Surrogate Compound Recovery	0	0	None
Control Oil	NA	NA	NA
Instrument Calibration	0	0	None
Independent Calibration Check Solution	0	0	None
Continuing Calibration Verification	0	0	None

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BATTELLE - DUXBURY OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM

Project Title:	USACE/NAE New Bedford Harbor Task	**Data Set Number:**	DP-14-0242
Project Number:	100043429	**Prep Batch Number:**	14-0175
Entered By:	Richard Restucci Jr	**Entered On:**	05/09/2014
Test Code (Matrix Type):	Master_128(L)		

Integrations by Rich Restucci.
RR 5/9/14

In the LCS/LCSD/MS/MSD, PCBs 118,152, and 138 coelute with non-target pesticides. As such, vertical integrations are performed inside these peaks in the LCS/LSCD/MS/MSD to accurately represent the detected PCB.
RR 5/9/14

Several samples exhibit p qualifiers for PCBs 138 and 170. Possible phthalate contamination from the matrix slightly elevates the detections of these two PCBs on the primary column. As the peaks are Gaussian in nature, ME qualifiers are not added to the data tables.
RR 5/9/14

Task Leader Approval:		Kevin McInerney 2014.05.09 13:51:09 -04'00'
SupervisorApproval:		
PM Approval:		Carole McCarthy 2014.05.12 09:01:06 -04'00'

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Internal Standard Area Report

PROJECT NAME: USACE/NAE New Bedford Harbor Task Order 10

PROJECT NO: 100043429

BATCH: 14-0175

METHOD: ML04120.M

SIGNAL: 1

SEQUENCE:	FILE:	LEVEL:	TYPE:	PEAK:		AREA:
SL0420.S	L8567.D	IB46	CS	Cl5(96)		2300641
SL0420.S	L8568.D	IB47	CS	Cl5(96)		2339370
SL0420.S	L8569.D	IB48	CS	Cl5(96)		2607683
SL0420.S	L8570.D	IB49	CS	Cl5(96)		2482307
SL0420.S	L8571.D	IB50	CS	Cl5(96)		2766489
SL0420.S	L8572.D	IB51	CS	Cl5(96)		2820205
					L3	2607683
					(+)	5215367
					(-)	1303842

SEQUENCE:	FILE:	LEVEL:	TYPE:	PEAK:	AREA:	FLAG:
SL0420.S	L8573.D	IB52 ICC	ICC	Cl5(96)	2425799	
SL0420.S	L8574.D	CC125PB-P(0)	PB	Cl5(96)	2199990	
SL0420.S	L8575.D	CC126LCS-P(0)	LCS	Cl5(96)	2609526	
SL0420.S	L8576.D	CC127LCSD-P(0)	LCSD	Cl5(96)	2698982	
SL0420.S	L8577.D	M2921-P(0)	SA	Cl5(96)	2624354	
SL0420.S	L8578.D	M2922-P(0)	SA	Cl5(96)	2631845	
SL0420.S	L8579.D	M2923-P(0)	SA	Cl5(96)	2738253	
SL0420.S	L8580.D	M2924-P(0)	SA	Cl5(96)	2487320	
SL0420.S	L8581.D	M3115-P(0)	SA	Cl5(96)	2206203	
SL0420.S	L8582.D	M3115MS-P(0)	MS	Cl5(96)	1979349	
SL0420.S	L8583.D	M3115MSD-P(0)	MSD	Cl5(96)	2023262	
SL0420.S	L8584.D	IB49	CCV	Cl5(96)	2341027	
SL0420.S	L8585.D	M3114-P(0)	SA	Cl5(96)	2331432	
SL0420.S	L8586.D	M3113-P(0)	SA	Cl5(96)	2341183	
SL0420.S	L8587.D	M3116-P(0)	SA	Cl5(96)	2442687	
SL0420.S	L8588.D	M3117-P(0)	SA	Cl5(96)	2392263	
SL0420.S	L8589.D	M3118-P(0)	SA	Cl5(96)	2083118	
SL0420.S	L8590.D	M3179-P(0)	SA	Cl5(96)	2180598	
SL0420.S	L8591.D	M3180-P(0)	SA	Cl5(96)	2557188	
SL0420.S	L8592.D	M3181-P(0)	SA	Cl5(96)	2276825	
SL0420.S	L8593.D	M3182-P(0)	SA	Cl5(96)	2200122	
SL0420.S	L8594.D	IB50	CCV	Cl5(96)	3073267	

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Internal Standard Area Report

PROJECT NAME: USACE/NAE New Bedford Harbor Task Order 10

PROJECT NO: 100043429

BATCH: 14-0175

METHOD: ML04120.M

SIGNAL: 1

SEQUENCE:	FILE:	LEVEL:	TYPE:	PEAK:		AREA:
SL0420.S	L8567.D	IB46	CS	Cl6(161)		5950732
SL0420.S	L8568.D	IB47	CS	Cl6(161)		5550684
SL0420.S	L8569.D	IB48	CS	Cl6(161)		6865343
SL0420.S	L8570.D	IB49	CS	Cl6(161)		6241647
SL0420.S	L8571.D	IB50	CS	Cl6(161)		7131681
SL0420.S	L8572.D	IB51	CS	Cl6(161)		7033894
					L3	6865343
					(+)	13730686
					(-)	3432672

SEQUENCE:	FILE:	LEVEL:	TYPE:	PEAK:	AREA:	FLAG:
SL0420.S	L8573.D	IB52 ICC	ICC	Cl6(161)	5822463	
SL0420.S	L8574.D	CC125PB-P(0)	PB	Cl6(161)	5401133	
SL0420.S	L8575.D	CC126LCS-P(0)	LCS	Cl6(161)	7009031	
SL0420.S	L8576.D	CC127LCSD-P(0)	LCSD	Cl6(161)	7352926	
SL0420.S	L8577.D	M2921-P(0)	SA	Cl6(161)	7144243	
SL0420.S	L8578.D	M2922-P(0)	SA	Cl6(161)	7818738	
SL0420.S	L8579.D	M2923-P(0)	SA	Cl6(161)	8190279	
SL0420.S	L8580.D	M2924-P(0)	SA	Cl6(161)	7806018	
SL0420.S	L8581.D	M3115-P(0)	SA	Cl6(161)	6734091	
SL0420.S	L8582.D	M3115MS-P(0)	MS	Cl6(161)	6114347	
SL0420.S	L8583.D	M3115MSD-P(0)	MSD	Cl6(161)	6283290	
SL0420.S	L8584.D	IB49	CCV	Cl6(161)	5990508	
SL0420.S	L8585.D	M3114-P(0)	SA	Cl6(161)	7361384	
SL0420.S	L8586.D	M3113-P(0)	SA	Cl6(161)	7430785	
SL0420.S	L8587.D	M3116-P(0)	SA	Cl6(161)	7950453	
SL0420.S	L8588.D	M3117-P(0)	SA	Cl6(161)	7563513	
SL0420.S	L8589.D	M3118-P(0)	SA	Cl6(161)	6244609	
SL0420.S	L8590.D	M3179-P(0)	SA	Cl6(161)	6770885	
SL0420.S	L8591.D	M3180-P(0)	SA	Cl6(161)	8110755	
SL0420.S	L8592.D	M3181-P(0)	SA	Cl6(161)	7372280	
SL0420.S	L8593.D	M3182-P(0)	SA	Cl6(161)	7071596	
SL0420.S	L8594.D	IB50	CCV	Cl6(161)	8272447	

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Internal Standard Area Report

PROJECT NAME: USACE/NAE New Bedford Harbor Task Order 10

PROJECT NO: 100043429

BATCH: 14-0175

METHOD: ML04120.M

SIGNAL: 2

SEQUENCE:	FILE:	LEVEL:	TYPE:	PEAK:		AREA:
SL0420.S	L8567.D	IB46	CS	Cl5(96)		47365727
SL0420.S	L8568.D	IB47	CS	Cl5(96)		47167173
SL0420.S	L8569.D	IB48	CS	Cl5(96)		50037700
SL0420.S	L8570.D	IB49	CS	Cl5(96)		53105050
SL0420.S	L8571.D	IB50	CS	Cl5(96)		55654763
SL0420.S	L8572.D	IB51	CS	Cl5(96)		60670986
					L3	50037700
					(+)	100075400
					(-)	25018850

SEQUENCE:	FILE:	LEVEL:	TYPE:	PEAK:	AREA:	FLAG:
SL0420.S	L8573.D	IB52 ICC	ICC	Cl5(96)	50573337	
SL0420.S	L8574.D	CC125PB-P(0)	PB	Cl5(96)	49309237	
SL0420.S	L8575.D	CC126LCS-P(0)	LCS	Cl5(96)	52947181	
SL0420.S	L8576.D	CC127LCSD-P(0)	LCSD	Cl5(96)	58134996	
SL0420.S	L8577.D	M2921-P(0)	SA	Cl5(96)	52815621	
SL0420.S	L8578.D	M2922-P(0)	SA	Cl5(96)	49400616	
SL0420.S	L8579.D	M2923-P(0)	SA	Cl5(96)	48018587	
SL0420.S	L8580.D	M2924-P(0)	SA	Cl5(96)	54041825	
SL0420.S	L8581.D	M3115-P(0)	SA	Cl5(96)	44405489	
SL0420.S	L8582.D	M3115MS-P(0)	MS	Cl5(96)	46123280	
SL0420.S	L8583.D	M3115MSD-P(0)	MSD	Cl5(96)	43655018	
SL0420.S	L8584.D	IB49	CCV	Cl5(96)	59822365	
SL0420.S	L8585.D	M3114-P(0)	SA	Cl5(96)	45176775	
SL0420.S	L8586.D	M3113-P(0)	SA	Cl5(96)	49082788	
SL0420.S	L8587.D	M3116-P(0)	SA	Cl5(96)	48220260	
SL0420.S	L8588.D	M3117-P(0)	SA	Cl5(96)	46515529	
SL0420.S	L8589.D	M3118-P(0)	SA	Cl5(96)	45496936	
SL0420.S	L8590.D	M3179-P(0)	SA	Cl5(96)	42720231	
SL0420.S	L8591.D	M3180-P(0)	SA	Cl5(96)	48633921	
SL0420.S	L8592.D	M3181-P(0)	SA	Cl5(96)	47485665	
SL0420.S	L8593.D	M3182-P(0)	SA	Cl5(96)	45211694	
SL0420.S	L8594.D	IB50	CCV	Cl5(96)	62433194	

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Internal Standard Area Report

PROJECT NAME: USACE/NAE New Bedford Harbor Task Order 10

PROJECT NO: 100043429

BATCH: 14-0175

METHOD: ML04120.M

SIGNAL: 2

SEQUENCE:	FILE:	LEVEL:	TYPE:	PEAK:	AREA:
SL0420.S	L8567.D	IB46	CS	Cl6(161)	107862247
SL0420.S	L8568.D	IB47	CS	Cl6(161)	100488678
SL0420.S	L8569.D	IB48	CS	Cl6(161)	107859739
SL0420.S	L8570.D	IB49	CS	Cl6(161)	114619254
SL0420.S	L8571.D	IB50	CS	Cl6(161)	114428740
SL0420.S	L8572.D	IB51	CS	Cl6(161)	128584089

L3	107859739
(+)	215719478
(-)	53929869

SEQUENCE:	FILE:	LEVEL:	TYPE:	PEAK:	AREA:	FLAG:
SL0420.S	L8573.D	IB52 ICC	ICC	Cl6(161)	112233070	
SL0420.S	L8574.D	CC125PB-P(0)	PB	Cl6(161)	112455949	
SL0420.S	L8575.D	CC126LCS-P(0)	LCS	Cl6(161)	109259605	
SL0420.S	L8576.D	CC127LCSD-P(0)	LCSD	Cl6(161)	128762818	
SL0420.S	L8577.D	M2921-P(0)	SA	Cl6(161)	125574624	
SL0420.S	L8578.D	M2922-P(0)	SA	Cl6(161)	122176283	
SL0420.S	L8579.D	M2923-P(0)	SA	Cl6(161)	117001552	
SL0420.S	L8580.D	M2924-P(0)	SA	Cl6(161)	136185820	
SL0420.S	L8581.D	M3115-P(0)	SA	Cl6(161)	110231283	
SL0420.S	L8582.D	M3115MS-P(0)	MS	Cl6(161)	106293357	
SL0420.S	L8583.D	M3115MSD-P(0)	MSD	Cl6(161)	99228324	
SL0420.S	L8584.D	IB49	CCV	Cl6(161)	136547694	
SL0420.S	L8585.D	M3114-P(0)	SA	Cl6(161)	109003772	
SL0420.S	L8586.D	M3113-P(0)	SA	Cl6(161)	125761421	
SL0420.S	L8587.D	M3116-P(0)	SA	Cl6(161)	123220214	
SL0420.S	L8588.D	M3117-P(0)	SA	Cl6(161)	118672638	
SL0420.S	L8589.D	M3118-P(0)	SA	Cl6(161)	114826330	
SL0420.S	L8590.D	M3179-P(0)	SA	Cl6(161)	105907036	
SL0420.S	L8591.D	M3180-P(0)	SA	Cl6(161)	123753943	
SL0420.S	L8592.D	M3181-P(0)	SA	Cl6(161)	118875145	
SL0420.S	L8593.D	M3182-P(0)	SA	Cl6(161)	115830561	
SL0420.S	L8594.D	IB50	CCV	Cl6(161)	147989879	

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BATTELLE - DUXBURY OPERATIONS
SAMPLE PREPARATION RECORDS

Project Title(s)	Project No.(s)
USACE/NAE New Bedford Harbor Task Order 10	100043429

14-0175

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

SOP Numbers (see workplan for modifications)

ExtractionSOP No.	5-200
CleanupSOP No.	5-191
CleanupSOP No.	5-328

This Batch Contains The Following Samples:

CC125PB-P	M2924-P	M3116-P	M3182-P
CC126LCS-P	M3113-P	M3117-P	
CC127LCSD-P	M3114-P	M3118-P	
M2921-P	M3115-P	M3179-P	
M2922-P	M3115MS-P	M3180-P	
M2923-P	M3115MSD-P	M3181-P	

Laboratory Preparation Records
COMPLETE AND VALIDATED

Prep Task Leader: Stephanie Hart

Approved By:	Date	Initials
Dawn Trapp	05/06/2014	DBT

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BATTELLE - DUXBURY OPERATIONS
SAMPLE CUSTODY LOG

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

Project No.(s)
100043429

14-0175

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Requested On/By:	04/29/2014 SAH	**Purpose:**	Sample Preparation
Relinquished On/By:	04/29/2014 MDS	**Last Activity:**	Transfer

Accepted On/By:	04/29/2014 SAH	**Returned On/To:**	
Stored In Facility:	Organics I	**Returned To Facility:**	
Stored Until	04/29/2014		
Stored Comment:	NA	**Returned Comment:**	NA

No.	BDO-ID:	Ctrs	*	Condition:	Custody Comment:
1	M2921	1	C	Consumed	NA
2	M2922	1	C	Consumed	NA
3	M2923	1	C	Consumed	NA
4	M2924	1	C	Consumed	NA
5	M3113	1	C	Consumed	NA
6	M3114	1	C	Consumed	NA
7	M3115	1	C	Consumed	NA
8	M3116	1	C	Consumed	NA
9	M3117	1	C	Consumed	NA
10	M3118	1	C	Consumed	NA
11	M3179	1	C	Consumed	NA
12	M3180	1	C	Consumed	NA
13	M3181	1	C	Consumed	NA
14	M3182	1	C	Consumed	NA

Total Samples 14 * "C" = Consumed Container

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BATTELLE - DUXBURY OPERATIONS
SAMPLE IDENTIFICATION PAGE

Project Title(s)	Project No.(s)
USACE/NAE New Bedford Harbor Task Order 10	100043429

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USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Sample ID	Description
CC125PB-P	Procedural Blank
CC126LCS-P	Laboratory Control Sample
CC127LCSD-P	Laboratory Control Sample Duplicate
M2921-P	WQ-TPC-001-042214
M2922-P	WQ-TPC-002-042214
M2923-P	WQ-TPC-003-042214
M2924-P	WQ-TPC-004-042214
M3113-P	WQ-TPC-001-042314
M3114-P	WQ-TPC-002-042314
M3115-P	WQ-TPC-003-042314
M3115MS-P	Matrix Spike of WQ-TPC-003-042314
M3115MSD-P	Matrix Spike Duplicate of WQ-TPC-003-042314
M3116-P	WQ-TPC-003-042314-REP
M3117-P	WQ-TPC-003-042314-EB
M3118-P	WQ-TPC-004-042314
M3179-P	WQ-TPC-001-042414
M3180-P	WQ-TPC-002-042414
M3181-P	WQ-TPC-003-042414
M3182-P	WQ-TPC-004-042414

Samples Assigned By Stephanie Hart Date : April 29, 2014

Comments:

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BATTELLE - DUXBURY OPERATIONS
LIQUID SAMPLE ID FORM

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

Project No.(s)
100043429

14-0175

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Sample ID	Description	Volume (mL)	Bottles	*	Date Initials
CC125PB-P	Procedural Blank	1060.0	NA	--	04/29/14 SAH
CC126LCS-P	Laboratory Control Sample	1060.0	NA	--	04/29/14 SAH
CC127LCSD-P	Laboratory Control Sample Duplicate	1060.0	NA	--	04/29/14 SAH
M2921-P	WQ-TPC-001-042214	1050.0	1	C	04/29/14 SAH
M2922-P	WQ-TPC-002-042214	1050.0	1	C	04/29/14 SAH
M2923-P	WQ-TPC-003-042214	1060.0	1	C	04/29/14 SAH
M2924-P	WQ-TPC-004-042214	1050.0	1	C	04/29/14 SAH
M3113-P	WQ-TPC-001-042314	1050.0	1	C	04/29/14 SAH
M3114-P	WQ-TPC-002-042314	1070.0	1	C	04/29/14 SAH
M3115-P	WQ-TPC-003-042314	1040.0	1	C	04/29/14 SAH
M3115MS-P	Matrix Spike	520.0	3	C	04/29/14 SAH
M3115MSD-P	Matrix Spike Duplicate	520.0	3	C	04/29/14 SAH
M3116-P	WQ-TPC-003-042314-REP	1060.0	1	C	04/29/14 SAH
M3117-P	WQ-TPC-003-042314-EB	1060.0	1	C	04/29/14 SAH
M3118-P	WQ-TPC-004-042314	1060.0	1	C	04/29/14 SAH
M3179-P	WQ-TPC-001-042414	1070.0	1	C	04/29/14 SAH
M3180-P	WQ-TPC-002-042414	1060.0	1	C	04/29/14 SAH
M3181-P	WQ-TPC-003-042414	1060.0	1	C	04/29/14 SAH
M3182-P	WQ-TPC-004-042414	1040.0	1	C	04/29/14 SAH

Comments:

Samples Assigned By Stephanie Hart Date : April 29, 2014

* - "C" = Sample is Consumed

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BATTELLE - DUXBURY OPERATIONS
SURROGATE SPIKE FORM

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

Project No.(s)
100043429

14-0175

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Sample ID	Standard ID	Type	Vial No.	Vol Added (uL)	Date Spiked/ Spiked By	Witn'd By	Comment
CC125PB-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
CC126LCS-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
CC126LCS-P	HX10	LCS/MS	4	75	04/29/14 SAH	EMW	NA
CC127LCSD-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
CC127LCSD-P	HX10	LCS/MS	4	75	04/29/14 SAH	EMW	NA
M2921-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M2922-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M2923-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M2924-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3113-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3114-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3115-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3115MS-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3115MS-P	HX10	LCS/MS	4	75	04/29/14 SAH	EMW	NA
M3115MSD-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3115MSD-P	HX10	LCS/MS	4	75	04/29/14 SAH	EMW	NA
M3116-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3117-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3118-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3179-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3180-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3181-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3182-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA

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BATTELLE - DUXBURY OPERATIONS
SURROGATE SPIKE FORM

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

Project No.(s)
100043429

14-0175

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Sample ID	Standard ID	Type	Vial No.	Vol Added (uL)	Date Spiked/ Spiked By	Witn'd By	Comment

Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
HW93	Pipette	I0793912B
HX10	Pipette	I0793912B

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BATTELLE - DUXBURY OPERATIONS
SAMPLE EXTRACTION FORM

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

Project No.(s)
100043429

14-0175

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Sample ID	First Extraction	Second Extraction	Third Extraction	Turbo °C	Turbo PSI	KD °C	Comment
CC125PB-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
CC126LCS-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
CC127LCSD-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M2921-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M2922-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M2923-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M2924-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3113-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3114-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3115-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3115MS-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3115MSD-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3116-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3117-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3118-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3179-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3180-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3181-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3182-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA

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BATTELLE - DUXBURY OPERATIONS
SAMPLE EXTRACTION FORM

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

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100043429

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USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Sample ID	First Extraction	Second Extraction	Third Extraction	Turbo °C	Turbo PSI	KD °C	Comment

Reagents:

Name	Expires	Lot No	Procedure	Comments
Sodium Sulfate	05/05/14	0000065658	Muffled at 400 °C for more than 4 hours. Expiration date was changed once sodium sulfate was consumed in prep.	

Solvents:

Name	Lot No	Comments
DCM Cycletainer	0000066569	
DCM Cycletainer	0000064589	
Hexane	0000059693	

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BATTELLE - DUXBURY OPERATIONS
COLUMN FRACTIONATION FORM

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

Project No.(s)
100043429

14-0175

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Extract Id	Date	Init.	Sample Specific Comments
CC125PB-P(0)	05/01/14	RMB	NA
CC126LCS-P(0)	05/01/14	RMB	NA
CC127LCSD-P(0)	05/01/14	RMB	NA
M2921-P(0)	05/01/14	RMB	NA
M2922-P(0)	05/01/14	RMB	NA
M2923-P(0)	05/01/14	RMB	NA
M2924-P(0)	05/01/14	RMB	NA
M3113-P(0)	05/01/14	RMB	NA
M3114-P(0)	05/01/14	RMB	NA
M3115-P(0)	05/01/14	RMB	NA
M3115MS-P(0)	05/01/14	RMB	NA
M3115MSD-P(0)	05/01/14	RMB	NA
M3116-P(0)	05/01/14	RMB	NA
M3117-P(0)	05/01/14	RMB	NA
M3118-P(0)	05/01/14	RMB	NA
M3179-P(0)	05/01/14	RMB	NA
M3180-P(0)	05/01/14	RMB	NA

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BATTELLE - DUXBURY OPERATIONS
COLUMN FRACTIONATION FORM

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

Project No.(s)
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14-0175

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Extract Id	Date	Init.	Sample Specific Comments
M3181-P(0)	05/01/14	RMB	NA
M3182-P(0)	05/01/14	RMB	NA

Column Diameter: 13 mm **Procedure Comment:**

Elution Volume: 50 mL

Solvents

Name	Lot No
DCM Cycletainer	0000064589

Reagents

Weight g	Name	Expires	Lot No	Procedure
10.00	6% Deactivated Alumina	05/01/14	MKBQ1135V	Alumina shaken for 2 hours with 6 mL Milli-Q water / 100 g alumina

Fractions

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BATTELLE - DUXBURY OPERATIONS
EXTRACT CLEANUP FORM

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

Project No.(s)
100043429

14-0175

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Extract Id	Date	Init.	Comments
CC125PB-P(0)	05/01/14	RMB	NA
CC126LCS-P(0)	05/01/14	RMB	NA
CC127LCSD-P(0)	05/01/14	RMB	NA
M2921-P(0)	05/01/14	RMB	NA
M2922-P(0)	05/01/14	RMB	NA
M2923-P(0)	05/01/14	RMB	NA
M2924-P(0)	05/01/14	RMB	NA
M3113-P(0)	05/01/14	RMB	NA
M3114-P(0)	05/01/14	RMB	NA
M3115-P(0)	05/01/14	RMB	NA
M3115MS-P(0)	05/01/14	RMB	NA
M3115MSD-P(0)	05/01/14	RMB	NA
M3116-P(0)	05/01/14	RMB	NA
M3117-P(0)	05/01/14	RMB	NA
M3118-P(0)	05/01/14	RMB	NA
M3179-P(0)	05/01/14	RMB	NA
M3180-P(0)	05/01/14	RMB	NA
M3181-P(0)	05/01/14	RMB	NA

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BATTELLE - DUXBURY OPERATIONS
EXTRACT CLEANUP FORM

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

Project No.(s)
100043429

14-0175

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Extract Id	Date	Init.	Comments
M3182-P(0)	05/01/14	RMB	NA

Cleanup:
Copper Cleanup

Reagents:

Name	Expires	Lot No	Procedure
Activated Copper	05/01/14	0000067838	Activated according to Cleanup SOP (5-328)

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BATTELLE - DUXBURY OPERATIONS
INTERNAL STANDARD SPIKING FORM

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

Project No.(s)
100043429

14-0175

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

(N/A Fraction)

Extract Id	Extr. Vol. (uL)	Added (uL)	Std. Id	Accm. (uL)	Vial No.	Pre Inj. Vol. (uL)^	Final Dilution *	Date Spiked/ Spiked By	Witn'd By
CC125PB-P(0)	450	50	HX16	50	2	500	1.000	05/01/14 RMB	DMS
CC126LCS-P(0)	450	50	HX16	50	2	500	1.000	05/01/14 RMB	DMS
CC127LCSD-P(0)	450	50	HX16	50	2	500	1.000	05/01/14 RMB	DMS
M2921-P(0)	450	50	HX16	50	2	500	1.000	05/01/14 RMB	DMS
M2922-P(0)	450	50	HX16	50	2	500	1.000	05/01/14 RMB	DMS
M2923-P(0)	450	50	HX16	50	2	500	1.000	05/01/14 RMB	DMS
M2924-P(0)	450	50	HX16	50	2	500	1.000	05/01/14 RMB	DMS
M3113-P(0)	450	50	HX16	50	2	500	1.000	05/01/14 RMB	DMS
M3114-P(0)	450	50	HX16	50	2	500	1.000	05/01/14 RMB	DMS
M3115-P(0)	450	50	HX16	50	2	500	1.000	05/01/14 RMB	DMS
M3115MS-P(0)	450	50	HX16	50	2	500	1.000	05/01/14 RMB	DMS
M3115MSD-P(0)	450	50	HX16	50	2	500	1.000	05/01/14 RMB	DMS
M3116-P(0)	450	50	HX16	50	2	500	1.000	05/01/14 RMB	DMS
M3117-P(0)	450	50	HX16	50	2	500	1.000	05/01/14 RMB	DMS
M3118-P(0)	450	50	HX16	50	2	500	1.000	05/01/14 RMB	DMS
M3179-P(0)	450	50	HX16	50	2	500	1.000	05/01/14 RMB	DMS
M3180-P(0)	450	50	HX16	50	2	500	1.000	05/01/14 RMB	DMS
M3181-P(0)	450	50	HX16	50	2	500	1.000	05/01/14 RMB	DMS
M3182-P(0)	450	50	HX16	50	2	500	1.000	05/01/14 RMB	DMS

* - Final Dilution is any HPLC, dilutions, or other manipulation

^ - Pre Injection Volume (PIV) includes any RIS spikes.

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BATTELLE - DUXBURY OPERATIONS
INTERNAL STANDARD SPIKING FORM

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

Project No.(s)
100043429

14-0175

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

(N/A Fraction)

Extract Id	Extr. Vol. (uL)	Added (uL)	Std. Id	Accm. (uL)	Vial No.	Pre Inj. Vol. (uL)^	Final Dilution *	Date Spiked/ Spiked By	Witn'd By

Syringes/Pipettes Used:

* - Final Dilution is any HPLC, dilutions, or other manipulation

^ - Pre Injection Volume (PIV) includes any RIS spikes.

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BATTELLE - DUXBURY OPERATIONS
PREPARATION EXTRACT SPLIT FORM

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

Project No.(s)
100043429

14-0175

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Extract		*	Extract Date	Source		Initial Extract Vol (uL)	Extract Split	Extract Split	Total Dilution	Date/Initials
Name	#			Name	#					
CC125PB-P	0	--	4/29/2014 11:05:00 AM	NA		NA	NA	1.000	1.000	04/29/14 SAH
CC126LCS-P	0	--	4/29/2014 11:05:00 AM	NA		NA	NA	1.000	1.000	04/29/14 SAH
CC127LCSD-P	0	--	4/29/2014 11:05:00 AM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M2921-P	0	--	4/29/2014 11:05:00 AM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M2922-P	0	--	4/29/2014 11:05:00 AM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M2923-P	0	--	4/29/2014 11:05:00 AM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M2924-P	0	--	4/29/2014 11:05:00 AM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3113-P	0	--	4/29/2014 11:05:00 AM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3114-P	0	--	4/29/2014 11:05:00 AM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3115-P	0	--	4/29/2014 11:05:00 AM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3115MS-P	0	--	4/29/2014 11:05:00 AM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3115MSD-P	0	--	4/29/2014 11:05:00 AM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3116-P	0	--	4/29/2014 11:05:00 AM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3117-P	0	--	4/29/2014 11:05:00 AM	NA		NA	NA	1.000	1.000	04/29/14 SAH

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] * [Aliquot Weight (mg)]
Dilution Factor = [Sample Volume (uL) / Aliqot Volume (uL))] * Prior Dilution Factor
* - "C" = Extract is Consumed

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BATTELLE - DUXBURY OPERATIONS
PREPARATION EXTRACT SPLIT FORM

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

Project No.(s)
100043429

14-0175

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Extract		*	Extract Date	Source		Initial Extract Vol (uL)	Extract Split	Extract Split	Total Dilution	Date/Initials
Name	#			Name	#					
M3118-P	0	--	4/29/2014 11:05:00 AM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3179-P	0	--	4/29/2014 11:05:00 AM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3180-P	0	--	4/29/2014 11:05:00 AM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3181-P	0	--	4/29/2014 11:05:00 AM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3182-P	0	--	4/29/2014 11:05:00 AM	NA		NA	NA	1.000	1.000	04/29/14 SAH

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] * [Aliquot Weight (mg)]
Dilution Factor = [Sample Volume (uL) / Aliqot Volume (uL))] * Prior Dilution Factor
* - "C" = Extract is Consumed

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BATTELLE - DUXBURY OPERATIONS
SAMPLE SPECIFIC COMMENTS

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

Project No.(s)
100043429

14-0175

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Sample ID:	Comment:	Date/Initials:
CC125PB-P	NA	NA
CC126LCS-P	NA	NA
CC127LCSD-P	NA	NA
M2921-P	NA	NA
M2922-P	NA	NA
M2923-P	NA	NA
M2924-P	NA	NA
M3113-P	NA	NA
M3114-P	NA	NA
M3115-P	NA	NA
M3115MS-P	NA	NA
M3115MSD-P	NA	NA
M3116-P	NA	NA
M3117-P	NA	NA
M3118-P	NA	NA
M3179-P	NA	NA
M3180-P	NA	NA
M3181-P	NA	NA
M3182-P	NA	NA

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BATTELLE - DUXBURY OPERATIONS
EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

Project No.(s)
100043429

14-0175

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Purpose:	GC/ECD TRANSFER	**Last Activity:**	Prep->Inst
Relinquished On/By:	May 1 2014 6:59PM RMB	**Received On/By:**	May 1 2014 7:14PM RR
Relinquished From:	Organics I: NA	**Received Location:**	GC Room: NA
Relinquish Comment:	NA	**Received Comment:**	NA

No.	BDO-ID:	PIV:	DF:	Condition:	Custody Comment:
1	CC125PB-P(0)	500	1	Intact	NA
2	CC126LCS-P(0)	500	1	Intact	NA
3	CC127LCSD-P(0)	500	1	Intact	NA
4	M2921-P(0)	500	1	Intact	NA
5	M2922-P(0)	500	1	Intact	NA
6	M2923-P(0)	500	1	Intact	NA
7	M2924-P(0)	500	1	Intact	NA
8	M3113-P(0)	500	1	Intact	NA
9	M3114-P(0)	500	1	Intact	NA
10	M3115-P(0)	500	1	Intact	NA
11	M3115MS-P(0)	500	1	Intact	NA
12	M3115MSD-P(0)	500	1	Intact	NA
13	M3116-P(0)	500	1	Intact	NA
14	M3117-P(0)	500	1	Intact	NA
15	M3118-P(0)	500	1	Intact	NA
16	M3179-P(0)	500	1	Intact	NA
17	M3180-P(0)	500	1	Intact	NA
18	M3181-P(0)	500	1	Intact	NA
19	M3182-P(0)	500	1	Intact	NA

Total Extracts: 19

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BATTELLE - DUXBURY OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM

Project Title(s)	Project No.(s)
USACE/NAE New Bedford Harbor Task Order 10	100043429

14-0175

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Entered By:	Dawn Trapp	**On:**	05/06/2014

MS and MSD samples were taken from one bottle, with approval from project manager, to match batch 14-0176 where only two bottles of the applicable sample (one for background and one for MS/MSD) were filtered.

Task Leader Approval:	Dawn Trapp	**On:**	05/14/2014
SupervisorApproval:	Dawn Trapp	**On:**	05/14/2014
PM Approval:	Carole Peven-McCarthy	**On:**	05/07/2014

Directory I:\L\DATA\SL0420\ Highlighted cells reported.

Lin	BTL	File	Sample Id	Miscellaneous	Injected
1	1	L8566.D	HEXANE		5-7-2014 11:23 AM
2	2	L8567.D	IB46		5-7-2014 12:08 PM
3	3	L8568.D	IB47		5-7-2014 12:53 PM
4	4	L8569.D	IB48		5-7-2014 01:38 PM
5	5	L8570.D	IB49		5-7-2014 02:23 PM
6	6	L8571.D	IB50		5-7-2014 03:08 PM
7	7	L8572.D	IB51		5-7-2014 03:53 PM
8	8	L8573.D	IB52 ICC		5-7-2014 04:38 PM
9	9	L8574.D	CC125PB-P(0)	Procedural Blank 5-128 14	5-7-2014 05:23 PM
10	10	L8575.D	CC126LCS-P(0)	Laboratory Control Sample	5-7-2014 06:08 PM
11	11	L8576.D	CC127LCSD-P(0)	Laboratory Control Sample	5-7-2014 06:53 PM
12	12	L8577.D	M2921-P(0)	WQ-TPC-001-042214 5-128 1	5-7-2014 07:38 PM
13	13	L8578.D	M2922-P(0)	WQ-TPC-002-042214 5-128 1	5-7-2014 08:23 PM
14	14	L8579.D	M2923-P(0)	WQ-TPC-003-042214 5-128 1	5-7-2014 09:09 PM
15	15	L8580.D	M2924-P(0)	WQ-TPC-004-042214 5-128 1	5-7-2014 09:53 PM
16	16	L8581.D	M3115-P(0)	WQ-TPC-003-042314 5-128 1	5-7-2014 10:38 PM
17	17	L8582.D	M3115MS-P(0)	Matrix Spike of WQ-TPC-00	5-7-2014 11:24 PM
18	18	L8583.D	M3115MSD-P(0)	Matrix Spike Duplicate of	5-8-2014 12:09 AM
19	19	L8584.D	IB49 mid		5-8-2014 12:54 AM
20	20	L8585.D	M3114-P(0)	WQ-TPC-002-042314 5-128 1	5-8-2014 01:40 AM
21	21	L8586.D	M3113-P(0)	WQ-TPC-001-042314 5-128 1	5-8-2014 02:25 AM
22	22	L8587.D	M3116-P(0)	WQ-TPC-003-042314-REP 5-1	5-8-2014 03:10 AM
23	23	L8588.D	M3117-P(0)	WQ-TPC-003-042314-EB 5-12	5-8-2014 03:55 AM
24	24	L8589.D	M3118-P(0)	WQ-TPC-004-042314 5-128 1	5-8-2014 04:40 AM
25	25	L8590.D	M3179-P(0)	WQ-TPC-001-042414 5-128 1	5-8-2014 05:26 AM
26	26	L8591.D	M3180-P(0)	WQ-TPC-002-042414 5-128 1	5-8-2014 06:11 AM
27	27	L8592.D	M3181-P(0)	WQ-TPC-003-042414 5-128 1	5-8-2014 06:56 AM
28	28	L8593.D	M3182-P(0)	WQ-TPC-004-042414 5-128 1	5-8-2014 07:41 AM
29	29	L8594.D	IB50 mid		5-8-2014 08:27 AM

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Calibration Response Factor Report

Batch: 14-0175 **Project Test Code:** Master_128(L)

RFS validated CRD 5/14/2014

Data Set: DP-14-0242 **SOP_NO:** 5-128-13

Project Number: 100043429 **Project Name:** USACE/NAE New Bedford Harbor Task Order 10

File: ML04120.M **Responses Via** Initial Calibration **Last Updated** 5/8/2014 10:57:00 AM **Title:** NBH

Instrument: Inst. L **Operator:** RR **Path:** I:\L\DATA\ML04120.M

No:	Analyte:	Type:	Column:	MQO:	1 IB46 L8567.D	2 IB47 L8568.D	3 IB48 L8569.D	4 IB49 L8570.D	5 IB50 L8571.D	6 IB51 L8572.D	7 - -	8 - -	Levels:	Curve Fit:	(A)	(B)	(C)	Stat (r^2/RSD):	Qual:
1	Cl5(96)	I	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	Cl2(8)		1	Y	0.97468	0.73779	0.67173	0.61704	0.59697	0.91359	-	-	6	Q	0.37607	0.28039	0.04309	0.99791	
3	Cl3(18)		1	Y	1.21060	0.91264	0.83122	0.75355	0.71752	1.08860	-	-	6	Q	0.43866	0.34611	0.05394	0.99770	
4	Cl3(34)	s	1	Y	2.10752	1.24877	1.04378	0.93619	0.91635	1.39583	-	-	6	Q	0.58949	0.39892	0.07855	0.99832	
5	Cl3(28)		1	Y	2.38300	1.73666	1.62188	1.49463	1.49981	2.43518	-	-	6	Q	1.11477	0.56598	0.11172	0.99802	
6	Cl4(52)		1	Y	2.34139	1.38149	1.18304	1.03296	1.00499	1.56687	-	-	6	Q	0.68713	0.40305	0.09233	0.99800	
7	Cl4(44)		1	Y	2.25394	1.64795	1.46051	1.37097	1.37466	2.21824	-	-	6	Q	1.00907	0.52526	0.10304	0.99813	
8	Cl4(66)		1	Y	2.60403	1.88635	1.73512	1.65166	1.68913	2.71179	-	-	6	Q	1.22641	0.66559	0.11395	0.99840	
9	Cl5(101)		1	Y	2.23654	1.70754	1.50713	1.44093	1.44811	2.34117	-	-	6	Q	1.06748	0.55658	0.10412	0.99816	
10	Cl6(161)	I	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11	Cl6(152)	s	1	Y	0.77364	0.61366	0.50372	0.48837	0.48025	0.80011	-	-	6	Q	0.38059	0.16110	0.03939	0.99774	
12	Cl5(118)		1	Y	1.11571	0.82542	0.69645	0.67456	0.68414	1.12661	-	-	6	Q	0.53076	0.23782	0.05185	0.99822	
13	Cl6(153)		1	Y	0.90081	0.74533	0.57506	0.58387	0.71360	1.08284	-	-	6	Q	0.46881	0.31072	0.02903	0.99978	
14	Cl5(105)		1	Y	1.19447	0.95441	0.86388	0.81931	0.84200	1.49571	-	-	6	Q	0.77816	0.19802	0.06907	0.99776	
15	Cl6(138)		1	Y	1.22265	0.95201	0.81679	0.78399	0.80944	1.41683	-	-	6	Q	0.72655	0.20324	0.06620	0.99797	
16	Cl7(187)		1	Y	1.14985	0.85968	0.76147	0.73137	0.76403	1.34680	-	-	6	Q	0.69747	0.18344	0.06113	0.99807	
17	Cl6(128)		1	Y	1.34094	0.96593	0.89810	0.84715	0.89725	1.56598	-	-	6	Q	0.80204	0.22945	0.06856	0.99823	
18	Cl7(180)		1	Y	1.29690	0.92242	0.90668	0.84722	0.91754	1.60387	-	-	6	Q	0.82416	0.23356	0.06596	0.99838	
19	Cl7(170)		1	Y	1.30379	0.95529	0.92898	0.86672	0.94283	1.62278	-	-	6	Q	0.81824	0.26255	0.06527	0.99850	
20	Cl8(195)		1	Y	1.22614	0.91290	0.92087	0.85486	0.95178	1.61163	-	-	6	Q	0.79677	0.29019	0.05921	0.99875	
21	Cl9(206)		1	Y	1.11868	0.84016	0.87967	0.80193	0.90040	1.42460	-	-	6	Q	0.63868	0.36873	0.04577	0.99910	
22	Cl10(209)		1	Y	0.85535	0.64541	0.66715	0.60197	0.67136	1.03672	-	-	6	Q	0.44567	0.29752	0.03357	0.99915	
23	Signal		2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24	Cl5(96)	I	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25	Cl2(8)		2	Y	0.93255	0.74882	0.65504	0.60459	0.56059	0.79150	-	-	6	Q	0.27157	0.32914	0.03843	0.99779	
26	Cl3(18)		2	Y	1.33774	0.99752	0.86347	0.76951	0.69894	0.99083	-	-	6	Q	0.34405	0.39935	0.05577	0.99737	
27	Cl3(34)	s	2	Y	2.29637	1.33473	1.07681	0.97266	0.85994	1.27296	-	-	6	Q	0.49723	0.41762	0.08675	0.99704	
28	Cl3(28)		2	Y	2.50341	1.81349	1.60982	1.42899	1.43774	2.23244	-	-	6	Q	0.96073	0.61335	0.10964	0.99825	
29	Cl4(52)		2	Y	1.91834	1.35670	1.15436	1.11260	1.01968	1.53516	-	-	6	Q	0.60643	0.50813	0.07920	0.99744	
30	Cl4(44)		2	Y	2.51009	1.77099	1.51582	1.40222	1.30277	2.00679	-	-	6	Q	0.83290	0.59208	0.10991	0.99740	

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Calibration Response Factor Report

Batch: 14-0175 **Project Test Code:** Master_128(L)

Data Set: DP-14-0242 **SOP_NO:** 5-128-13

Project Number: 100043429 **Project Name:** USACE/NAE New Bedford Harbor Task Order 10

File: ML04120.M **Responses Via** Initial Calibration **Last Updated** 5/8/2014 10:57:00 AM **Title:** NBH

Instrument: Inst. L **Operator:** RR **Path:** I:\L\DATA\ML04120.M

No:	Analyte:	Type:	Column:	MQO:	1 IB46 L8567.D	2 IB47 L8568.D	3 IB48 L8569.D	4 IB49 L8570.D	5 IB50 L8571.D	6 IB51 L8572.D	7 - -	8 - -	Levels:	Curve Fit:	(A)	(B)	(C)	Stat (r^2/RSD):	Qual:
31	Cl4(66)		2	Y	2.60202	1.95253	1.69943	1.55838	1.48897	2.42813	-	-	6	Q	1.11461	0.55045	0.12910	0.99735	
32	Cl5(101)		2	Y	2.42554	1.83872	1.61213	1.57047	1.42330	2.10389	-	-	6	Q	0.78882	0.76686	0.10182	0.99730	
33	Cl6(161)	I	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
34	Cl6(152)	s	2	Y	0.88076	0.77184	0.62023	0.57662	0.55240	0.82338	-	-	6	Q	0.32341	0.27509	0.04138	0.99789	
35	Cl5(118)		2	Y	1.02526	0.86113	0.73721	0.66534	0.67834	1.05423	-	-	6	Q	0.45416	0.29082	0.04886	0.99835	
36	Cl6(153)		2	Y	1.77231	1.07775	0.86168	0.74300	0.74946	1.11918	-	-	6	Q	0.46318	0.33102	0.06569	0.99865	
37	Cl5(105)		2	Y	1.38100	1.05180	0.92387	0.87821	0.86286	1.43167	-	-	6	Q	0.67522	0.29948	0.06895	0.99771	
38	Cl6(138)		2	Y	1.38965	1.04842	0.85649	0.81009	0.78123	1.28491	-	-	6	Q	0.59989	0.27352	0.06833	0.99754	
39	Cl7(187)		2	Y	1.36219	0.99184	0.85513	0.76477	0.75992	1.22381	-	-	6	Q	0.55834	0.28248	0.06407	0.99792	
40	Cl6(128)		2	Y	1.65519	1.19193	1.05507	0.95846	0.95590	1.58974	-	-	6	Q	0.75859	0.31461	0.08100	0.99780	
41	Cl7(180)		2	Y	1.40826	1.11332	0.94566	0.85775	0.85088	1.40401	-	-	6	Q	0.66205	0.28973	0.07281	0.99772	
42	Cl7(170)		2	Y	1.68357	1.14388	0.99761	0.92635	0.94582	1.55640	-	-	6	Q	0.73665	0.32087	0.07523	0.99825	
43	Cl8(195)		2	Y	1.68828	1.14653	0.99219	0.92250	0.93207	1.54275	-	-	6	Q	0.73513	0.30862	0.07664	0.99811	
44	Cl9(206)		2	Y	1.62697	1.09201	0.94822	0.87576	0.89058	1.40813	-	-	6	Q	0.62848	0.35415	0.06711	0.99845	
45	Cl10(209)		2	Y	1.34961	0.90794	0.76819	0.69701	0.70587	1.07877	-	-	6	Q	0.45575	0.31016	0.05335	0.99857	

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Calibration Response Factor Report

Batch:	14-0175	**Project Test Code:**	Master_128(L)
Data Set:	DP-14-0242	**SOP_NO:**	5-128-13
Project Number:	100043429	**Project Name:**	USACE/NAE New Bedford Harbor Task Order 10

File:	ML04120.M	**Responses Via**	Initial Calibration	**Last Updated**	5/8/2014 10:57:00 AM	**Title:**	NBH
Instrument:	Inst. L	**Operator:**	RR	**Path:**	I:\L\DATA\ML04120.M		

No:	Analyte:	Type:	Column:	MQO:	1	2	3	4	5	6	7	8	Levels:	Curve Fit:	(A)	(B)	(C)	Stat (r^2/RSD):	Qual:
					IB46	IB47	IB48	IB49	IB50	IB51	-	-							
					L8567.D	L8568.D	L8569.D	L8570.D	L8571.D	L8572.D	-	-							

MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences.

Mean RSD: -
Count RSD: -

Calibration Curve Definitions:

Curve Fit:	Name:	Description:	Evaluate:
L	Linear	y = Bx + C	r-squared
RF	Average RF	y = Bx	RSD
L0	Linear (0,0)	y = Bx + 0	r-squared
Q	Quadratic	y = Ax^2 + Bx + C	r-squared
Q0	Quadratic (0,0)	y = Ax^2 + Bx + 0	r-squared

Calibration Curve Accpetance Criteria:

Curve Fit:	Limit Mean(%):	Mean Qual:	Limit Ind.:	Ind. Qual:	Min Points:	Points Qual:	Comments:
Linear	NA	NA	0.995	N	5	N	y = Bx + C
Average RF	15	N	25	N	5	N	y = Bx
Linear (0,0)	NA	NA	0.995	N	5	N	y = Bx + 0
Quadratic	NA	NA	0.995	N	6	N	y = Ax^2 + Bx + C
Quadratic (0,0)	NA	NA	0.995	N	6	N	y = Ax^2 + Bx + 0

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Calibration Response Factor Report

Batch:	14-0175	**Project Test Code:**	Master_128(L)
Data Set:	DP-14-0242	**SOP_NO:**	5-128-13
Project Number:	100043429	**Project Name:**	USACE/NAE New Bedford Harbor Task Order 10

Method: I:\L\DATA\ML04120.M
Title: NBH
Last Update: Thu May 08 10:57 2014
Response via: Initial Calibration
Instrument: Inst. L
Operator: RR

No:	ID:	Path\File:	Update Time:	Quant Time:	Acquisition Time:
1	IB46	I:\L\DATA\SL0420\L8567.D	May 08 10:55 2014	May 08 10:29 2014	07 May 2014 12:08 PM
2	IB47	I:\L\DATA\SL0420\L8568.D	May 08 10:55 2014	May 08 10:29 2014	07 May 2014 12:53 PM
3	IB48	I:\L\DATA\SL0420\L8569.D	May 08 10:55 2014	May 08 10:29 2014	07 May 2014 1:39 PM
4	IB49	I:\L\DATA\SL0420\L8570.D	May 08 10:55 2014	May 08 10:30 2014	07 May 2014 2:24 PM
5	IB50	I:\L\DATA\SL0420\L8571.D	May 08 10:57 2014	May 08 10:30 2014	07 May 2014 3:09 PM
6	IB51	I:\L\DATA\SL0420\L8572.D	May 08 10:55 2014	May 08 10:30 2014	07 May 2014 3:54 PM

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ICC Summary Report

Batch:	14-0175	**Data Set:**	DP-14-0242
Project Test Code:	Master_128(L)	**SOP_NO:**	5-128-13
Project Name:	USACE/NAE New Bedford Harbor Task Order 10	**Project Number:**	100043429

Project Name:	USACE/NAE New Bedford Harbor Task Order 10			**Project No:**	100043429
Batch:	14-0175	**Matrix:**	WATER		
Calibration File:	ML04120.M	**Last Updated:**	5/8/2014 10:57:00 AM		

						L8573.D	
					IB52		
					Acq'd:	05/07/2014 16:38	
No:	**Analyte:**	**Type:**	**Col:**	**MQO:**	**(ug/mL)**	**(ug/mL)**	**% Diff**
1	CI5(96)	I	1	-			
2	CI2(8)		1	Y	0.04000	0.04412	10.3
3	CI3(18)		1	Y	0.04000	0.04412	10.3
4	CI3(34)	s	1	Y	0.04000	0.04565	14.3
5	CI3(28)		1	Y	0.04000	0.04563	14.0
6	CI4(52)		1	Y	0.04000	0.04680	17.0
7	CI4(44)		1	Y	0.04000	0.04566	14.3
8	CI4(66)		1	Y	0.04000	0.04536	13.5
9	CI5(101)		1	Y	0.04000	0.04589	14.8
10	CI6(161)	I	1	-			
11	CI6(152)	s	1	Y	0.04020	0.04760	18.5
12	CI5(118)		1	Y	0.04000	0.04730	18.3
13	CI6(153)		1	Y	0.04000	0.04258	6.5
14	CI5(105)		1	Y	0.04000	0.04527	13.3
15	CI6(138)		1	Y	0.04000	0.04791	19.8
16	CI7(187)		1	Y	0.04000	0.04759	19.0
17	CI6(128)		1	Y	0.04000	0.04709	17.8
18	CI7(180)		1	Y	0.04000	0.04637	16.0
19	CI7(170)		1	Y	0.04000	0.04512	12.8
20	CI8(195)		1	Y	0.04000	0.04542	13.5
21	CI9(206)		1	Y	0.04000	0.04317	8.0
22	CI10(209)		1	Y	0.04000	0.04513	12.8
24	CI5(96)	I	2	-			
25	CI2(8)		2	Y	0.04000	0.04525	13.3
26	CI3(18)		2	Y	0.04000	0.04707	17.8
27	CI3(34)	s	2	Y	0.04000	0.04773	19.3
28	CI3(28)		2	Y	0.04000	0.04609	15.3
29	CI4(52)		2	Y	0.04000	0.04565	14.3
30	CI4(44)		2	Y	0.04000	0.04775	19.5
31	CI4(66)		2	Y	0.04000	0.04709	17.8
32	CI5(101)		2	Y	0.04000	0.04442	11.0
33	CI6(161)	I	2	-			
34	CI6(152)	s	2	Y	0.04020	0.04691	16.8
35	CI5(118)		2	Y	0.04000	0.04732	18.3
36	CI6(153)		2	Y	0.04000	0.04346	8.8
37	CI5(105)		2	Y	0.04000	0.04621	15.5
38	CI6(138)		2	Y	0.04000	0.04588	14.8
39	CI7(187)		2	Y	0.04000	0.04570	14.3
40	CI6(128)		2	Y	0.04000	0.04554	13.8
41	CI7(180)		2	Y	0.04000	0.04786	19.8
42	CI7(170)		2	Y	0.04000	0.04506	12.8
43	CI8(195)		2	Y	0.04000	0.04625	15.8
44	CI9(206)		2	Y	0.04000	0.04503	12.5

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ICC Summary Report

Batch:	14-0175	**Data Set:**	DP-14-0242
Project Test Code:	Master_128(L)	**SOP_NO:**	5-128-13
Project Name:	USACE/NAE New Bedford Harbor Task Order 10	**Project Number:**	100043429

Project Name:	USACE/NAE New Bedford Harbor Task Order 10			**Project No:**	100043429
Batch:	14-0175	**Matrix:**	WATER		
Calibration File:	ML04120.M	**Last Updated:**	5/8/2014 10:57:00 AM		

					L8573.D		
					IB52		
					Acq'd:	05/07/2014 16:38	
No:	**Analyte:**	**Type:**	**Col:**	**MQO:**	**(ug/mL)**	**(ug/mL)**	**% Diff**
45	Cl10(209)		2	**Y**	0.04000	0.04724	18.0

MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences.

Mean PD: **14.86**
Follow ICAL: **PASS**

ICC Acceptance Criteria:

Mean PD(%):	20	**Qual:**	N
Individual PD(%):	20	**Qual:**	N

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CCV Summary Report

Batch: 14-0175 **Data Set:** DP-14-0242
Project Test Code: Master_128(L) **SOP_NO:** 5-128-13
Project Name: USACE/NAE New Bedford Harbor Task Order 10 **Project Number:** 100043429

Matrix: WATER
Calibration File: ML04120.M **Last Updated:** 5/8/2014 10:57:00 AM

						L8584.D IB49 mid 05/08/2014 00:54	
No:	Analyte:	Type:	Col:	MQO:	CAL	MID	% Diff
1	CI5(96)	I	1	-			
2	CI2(8)		1	Y	0.04008	0.04063	1.4
3	CI3(18)		1	Y	0.04016	0.03969	-1.2
4	CI3(34)	s	1	Y	0.04000	0.04136	3.4
5	CI3(28)		1	Y	0.04016	0.04251	5.9
6	CI4(52)		1	Y	0.04004	0.04165	4.0
7	CI4(44)		1	Y	0.04016	0.04325	7.7
8	CI4(66)		1	Y	0.04008	0.04272	6.6
9	CI5(101)		1	Y	0.04008	0.04348	8.5
10	CI6(161)	I	1	-			
11	CI6(152)	s	1	Y	0.04016	0.04496	12.0
12	CI5(118)		1	Y	0.04016	0.04303	7.1
13	CI6(153)		1	Y	0.04016	0.04411	9.8
14	CI5(105)		1	Y	0.04012	0.04503	12.2
15	CI6(138)		1	Y	0.04016	0.04511	12.3
16	CI7(187)		1	Y	0.04016	0.04578	14.0
17	CI6(128)		1	Y	0.04016	0.04469	11.3
18	CI7(180)		1	Y	0.04016	0.04424	10.2
19	CI7(170)		1	Y	0.04016	0.04361	8.6
20	CI8(195)		1	Y	0.04016	0.04257	6.0
21	CI9(206)		1	Y	0.04008	0.03994	-0.3
22	CI10(209)		1	Y	0.04016	0.03937	-2.0
24	CI5(96)	I	2	-			
25	CI2(8)		2	Y	0.04008	0.04290	7.0
26	CI3(18)		2	Y	0.04016	0.04248	5.8
27	CI3(34)	s	2	Y	0.04000	0.04452	11.3
28	CI3(28)		2	Y	0.04016	0.04322	7.6
29	CI4(52)		2	Y	0.04004	0.04359	8.9
30	CI4(44)		2	Y	0.04016	0.04543	13.1
31	CI4(66)		2	Y	0.04008	0.04548	13.5
32	CI5(101)		2	Y	0.04008	0.04427	10.5
33	CI6(161)	I	2	-			
34	CI6(152)	s	2	Y	0.04016	0.04267	6.2
35	CI5(118)		2	Y	0.04016	0.04343	8.1
36	CI6(153)		2	Y	0.04016	0.04185	4.2
37	CI5(105)		2	Y	0.04012	0.04516	12.6
38	CI6(138)		2	Y	0.04016	0.04412	9.9
39	CI7(187)		2	Y	0.04016	0.04432	10.4
40	CI6(128)		2	Y	0.04016	0.04508	12.3
41	CI7(180)		2	Y	0.04016	0.04486	11.7
42	CI7(170)		2	Y	0.04016	0.04541	13.1
43	CI8(195)		2	Y	0.04016	0.04540	13.0
44	CI9(206)		2	Y	0.04008	0.04489	12.0

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CCV Summary Report

Batch:	14-0175	**Data Set:**	DP-14-0242
Project Test Code:	Master_128(L)	**SOP_NO:**	5-128-13
Project Name:	USACE/NAE New Bedford Harbor Task Order 10	**Project Number:**	100043429

Matrix: WATER

Calibration File: ML04120.M **Last Updated:** 5/8/2014 10:57:00 AM

L8584.D
IB49 mid
05/08/2014 00:54

No:	Analyte:	Type:	Col:	MQO:	CAL	MID	% Diff
45	Cl10(209)		2	Y	0.04016	0.04435	10.4

MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences.

Mean PD: **8.7**
Time Check: **< 24**

CCV Acceptance Criteria:

Frequency Hours:	24	**Qual:**	N
Mean PD(%):	15	**Qual:**	N
Individual PD(%):	20	**Qual:**	N

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CCV Summary Report

Batch: 14-0175 **Data Set:** DP-14-0242
Project Test Code: Master_128(L) **SOP_NO:** 5-128-13
Project Name: USACE/NAE New Bedford Harbor Task Order 10 **Project Number:** 100043429

Matrix: WATER
Calibration File: ML04120.M **Last Updated:** 5/8/2014 10:57:00 AM

L8594.D
IB50 mid
05/08/2014 08:27

No:	Analyte:	Type:	Col:	MQO:	CAL	MID	% Diff
1	Cl5(96)	I	1	-			
2	Cl2(8)		1	Y	0.08016	0.07283	-9.1
3	Cl3(18)		1	Y	0.08032	0.07251	-9.7
4	Cl3(34)	s	1	Y	0.08000	0.07281	-9.0
5	Cl3(28)		1	Y	0.08032	0.07335	-8.7
6	Cl4(52)		1	Y	0.08008	0.07347	-8.3
7	Cl4(44)		1	Y	0.08032	0.07447	-7.3
8	Cl4(66)		1	Y	0.08016	0.07440	-7.2
9	Cl5(101)		1	Y	0.08016	0.07483	-6.6
10	Cl6(161)	I	1	-			
11	Cl6(152)	s	1	Y	0.08032	0.07333	-8.7
12	Cl5(118)		1	Y	0.08032	0.07398	-7.9
13	Cl6(153)		1	Y	0.08032	0.07490	-6.7
14	Cl5(105)		1	Y	0.08024	0.07778	-3.1
15	Cl6(138)		1	Y	0.08032	0.07559	-5.9
16	Cl7(187)		1	Y	0.08032	0.07717	-3.9
17	Cl6(128)		1	Y	0.08032	0.07693	-4.2
18	Cl7(180)		1	Y	0.08032	0.07852	-2.2
19	Cl7(170)		1	Y	0.08032	0.07913	-1.5
20	Cl8(195)		1	Y	0.08032	0.07974	-0.7
21	Cl9(206)		1	Y	0.08016	0.07753	-3.3
22	Cl10(209)		1	Y	0.08032	0.07708	-4.0
24	Cl5(96)	I	2	-			
25	Cl2(8)		2	Y	0.08016	0.07757	-3.2
26	Cl3(18)		2	Y	0.08032	0.07598	-5.4
27	Cl3(34)	s	2	Y	0.08000	0.07843	-2.0
28	Cl3(28)		2	Y	0.08032	0.07817	-2.7
29	Cl4(52)		2	Y	0.08008	0.07616	-4.9
30	Cl4(44)		2	Y	0.08032	0.07845	-2.3
31	Cl4(66)		2	Y	0.08016	0.07963	-0.7
32	Cl5(101)		2	Y	0.08016	0.07615	-5.0
33	Cl6(161)	I	2	-			
34	Cl6(152)	s	2	Y	0.08032	0.07296	-9.2
35	Cl5(118)		2	Y	0.08032	0.07482	-6.8
36	Cl6(153)		2	Y	0.08032	0.07244	-9.8
37	Cl5(105)		2	Y	0.08024	0.07668	-4.4
38	Cl6(138)		2	Y	0.08032	0.07431	-7.5
39	Cl7(187)		2	Y	0.08032	0.07451	-7.2
40	Cl6(128)		2	Y	0.08032	0.07588	-5.5
41	Cl7(180)		2	Y	0.08032	0.07728	-3.8
42	Cl7(170)		2	Y	0.08032	0.07672	-4.5
43	Cl8(195)		2	Y	0.08032	0.07710	-4.0
44	Cl9(206)		2	Y	0.08016	0.07490	-6.6

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CCV Summary Report

Batch:	14-0175	**Data Set:**	DP-14-0242
Project Test Code:	Master_128(L)	**SOP_NO:**	5-128-13
Project Name:	USACE/NAE New Bedford Harbor Task Order 10	**Project Number:**	100043429

Matrix: WATER

Calibration File: ML04120.M **Last Updated:** 5/8/2014 10:57:00 AM

L8594.D
IB50 mid
05/08/2014 08:27

No:	Analyte:	Type:	Col:	MQO:	CAL	MID	% Diff
45	Cl10(209)		2	**Y**	0.08032	0.07424	-7.6

MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences.

Mean PD: **5.5**
Time Check: **< 24**

CCV Acceptance Criteria:

Frequency Hours:	24	**Qual:**	N
Mean PD(%):	15	**Qual:**	N
Individual PD(%):	20	**Qual:**	N

Calibration Amounts List Report INST. L

Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:51 2014
Response via : Initial Calibration
RIS/SIS Mult : 1.000
Total Cpnds : 45

IB46 =L8567.D IB47 =L8568.D IB48 =L8569.D IB49 =L8570.D
IB50 =L8571.D IB51 =L8572.D

		Compound	IB46	IB47	IB48	IB49	IB50	IB51
1	I	Cl5(96)	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000
2		Cl2(8)	0.00240	0.01042	0.02004	0.04008	0.08016	0.16032
3		Cl3(18)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
4	s	Cl3(34)	0.00240	0.01040	0.02000	0.04000	0.08000	0.16000
5		Cl3(28)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
6		Cl4(52)	0.00240	0.01041	0.02002	0.04004	0.08008	0.16016
7		Cl4(44)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
8		Cl4(66)	0.00240	0.01042	0.02004	0.04008	0.08016	0.16032
9		Cl5(101)	0.00240	0.01042	0.02004	0.04008	0.08016	0.16032
10	I	Cl6(161)	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000
11	s	Cl6(152)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
12		Cl5(118)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
13		Cl6(153)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
14		Cl5(105)	0.00241	0.01043	0.02006	0.04012	0.08024	0.16048
15		Cl6(138)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
16		Cl7(187)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
17		Cl6(128)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
18		Cl7(180)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
19		Cl7(170)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
20		Cl8(195)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
21		Cl9(206)	0.00240	0.01042	0.02004	0.04008	0.08016	0.16032
22		Cl10(209)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
23		Signal #2	-----	-----	-----	-----	-----	-----
24	I	Cl5(96) #2	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000
25		Cl2(8) #2	0.00240	0.01042	0.02004	0.04008	0.08016	0.16032
26		Cl3(18) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
27	s	Cl3(34) #2	0.00240	0.01040	0.02000	0.04000	0.08000	0.16000
28		Cl3(28) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
29		Cl4(52) #2	0.00240	0.01041	0.02002	0.04004	0.08008	0.16016
30		Cl4(44) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
31		Cl4(66) #2	0.00240	0.01042	0.02004	0.04008	0.08016	0.16032
32		Cl5(101) #2	0.00240	0.01042	0.02004	0.04008	0.08016	0.16032
33	I	Cl6(161) #2	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000
34	s	Cl6(152) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
35		Cl5(118) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
36		Cl6(153) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
37		Cl5(105) #2	0.00241	0.01043	0.02006	0.04012	0.08024	0.16048
38		Cl6(138) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
39		Cl7(187) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
40		Cl6(128) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
41		Cl7(180) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
42		Cl7(170) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
43		Cl8(195) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
44		Cl9(206) #2	0.00240	0.01042	0.02004	0.04008	0.08016	0.16032
45		Cl10(209) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064

Standards Loaded From LIMS

Solution ID : IB46 - ECD PCB curve L1
Last Updated : 5/2/2014 11:12:01 AM
Create Date : May 2 2014 12:00AM RR
Expire Date : 5/2/2015
Approval Date: Not Approved
Override Date: No Override

Solution ID : IB47 - ECD PCB Curve L2
Last Updated : 5/2/2014 11:12:01 AM
Create Date : May 2 2014 12:00AM RR
Expire Date : 5/2/2015

Approval Date: Not Approved
Override Date: No Override

Solution ID : IB48 - ECD PCB Curve L3
Last Updated : 5/2/2014 11:36:01 AM
Create Date : May 2 2014 12:00AM RR
Expire Date : 5/2/2015
Approval Date: Not Approved
Override Date: No Override

Solution ID : IB49 - ECD PCB Curve L4
Last Updated : 5/7/2014 9:21:04 AM
Create Date : May 2 2014 12:00AM RR
Expire Date : 1/10/2015
Approval Date: Not Approved
Override Date: No Override

Solution ID : IB50 - ECD PCB Curve L5
Last Updated : 5/2/2014 11:36:02 AM
Create Date : May 2 2014 12:00AM RR
Expire Date : 5/2/2015
Approval Date: Not Approved
Override Date: No Override

Solution ID : IB51 - ECD PCB Curve L6
Last Updated : 5/2/2014 11:36:02 AM
Create Date : May 2 2014 12:00AM RR
Expire Date : 1/10/2015
Approval Date: Not Approved
Override Date: No Override

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8567.D\ECD1A.CH Vial: 2
Signal #2 : I:\L\DATA\SL0420\L8567.D\ECD2B.CH
Acq On : 07 May 2014 12:08 pm Operator: RR
Sample : IB46 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 10:29:53 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 10:29:38 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2300641	0.10000	ng
10) I	Cl6(161)	25.57	5950732m	0.10000	ng
24) I	Cl5(96) #2	18.94	47365727m	0.10000	ng
33) I	Cl6(161) #2	25.32	107862247m	0.10000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	116368m	BelowCal	ng
Spiked Amount	0.0024		Recovery	=	0.00%
11) s	Cl6(152)	22.81	110950m	BelowCal	ng
Spiked Amount	0.0024		Recovery	=	0.00%
27) s	Cl3(34) #2	14.97	2610459m	BelowCal	ng
Spiked Amount	0.0024		Recovery	=	0.00%
34) s	Cl6(152) #2	22.01	2289506m	BelowCal	ng
Spiked Amount	0.0024		Recovery	=	0.00%
	Target Compounds				
2)	Cl2(8)	12.26	53817m	BelowCal	ng
3)	Cl3(18)	14.26	67122m	BelowCal	ng
5)	Cl3(28)	16.41	132127m	BelowCal	ng
6)	Cl4(52)	18.07	129281m	BelowCal	ng
7)	Cl4(44)	18.96	124971m	BelowCal	ng
8)	Cl4(66)	20.89	143782m	BelowCal	ng
9)	Cl5(101)	22.01	123492m	BelowCal	ng
12)	Cl5(118)	24.74	160007m	BelowCal	ng
13)	Cl6(153)	25.75	129188m	BelowCal	ng
14)	Cl5(105)	25.83	171302m	BelowCal	ng
15)	Cl6(138)	26.77	175344m	BelowCal	ng
16)	Cl7(187)	27.34	164904m	BelowCal	ng
17)	Cl6(128)	27.60	192308m	BelowCal	ng
18)	Cl7(180)	28.77	185992m	BelowCal	ng
19)	Cl7(170)	29.46	186980m	BelowCal	ng
20)	Cl8(195)	30.43	175844m	BelowCal	ng
21)	Cl9(206)	31.61	159768m	BelowCal	ng
22)	Cl10(209)	32.18	122667m	BelowCal	ng
25)	Cl2(8) #2	11.66	1060103m	BelowCal	ng
26)	Cl3(18) #2	13.51	1527047m	BelowCal	ng
28)	Cl3(28) #2	16.23	2857682m	BelowCal	ng
29)	Cl4(52) #2	17.61	2180724m	BelowCal	ng
30)	Cl4(44) #2	18.40	2865305m	BelowCal	ng
31)	Cl4(66) #2	20.77	2957914m	BelowCal	ng
32)	Cl5(101) #2	21.64	2757302m	BelowCal	ng
35)	Cl5(118) #2	24.77	2665153m	BelowCal	ng
36)	Cl6(153) #2	25.50	4607085m	BelowCal	ng
37)	Cl5(105) #2	25.82	3589882m	BelowCal	ng
38)	Cl6(138) #2	26.53	3612372m	BelowCal	ng
39)	Cl7(187) #2	26.96	3540982m	BelowCal	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8567.D\ECD1A.CH Vial: 2
Signal #2 : I:\L\DATA\SL0420\L8567.D\ECD2B.CH
Acq On : 07 May 2014 12:08 pm Operator: RR
Sample : IB46 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 10:29:53 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 10:29:38 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.39	4302622m	BelowCal	ng
41)	Cl7(180) #2	28.57	3660750m	BelowCal	ng
42)	Cl7(170) #2	29.23	4376409m	BelowCal	ng
43)	Cl8(195) #2	30.14	4388652m	BelowCal	ng
44)	Cl9(206) #2	31.27	4211727m	BelowCal	ng
45)	Cl10(209) #2	31.72	3508295m	BelowCal	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8568.D\ECD1A.CH Vial: 3
Signal #2 : I:\L\DATA\SL0420\L8568.D\ECD2B.CH
Acq On : 07 May 2014 12:53 pm Operator: RR
Sample : IB47 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 10:29:56 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 10:29:52 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2339370	0.10000	ng
10) I	Cl6(161)	25.57	5550684	0.10000	ng
24) I	Cl5(96) #2	18.94	47167173m	0.10000	ng
33) I	Cl6(161) #2	25.32	100488678m	0.10000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	303819	0.00983	ng
Spiked Amount	0.0104		Recovery	= 94.52%	
11) s	Cl6(152)	22.82	355610	0.01036	ng
Spiked Amount	0.0104		Recovery	= 99.23%	
27) s	Cl3(34) #2	14.97	6547349m	0.01120	ng
Spiked Amount	0.0104		Recovery	= 107.69%	
34) s	Cl6(152) #2	22.01	8097412m	0.01200	ng
Spiked Amount	0.0104		Recovery	= 114.94%	
	Target Compounds				
2)	Cl2(8)	12.26	179846	0.00935	ng
3)	Cl3(18)	14.26	222894	0.00901	ng
5)	Cl3(28)	16.42	424144	0.01054	ng
6)	Cl4(52)	18.07	336431	0.00943	ng
7)	Cl4(44)	18.96	402480	0.01120	ng
8)	Cl4(66)	20.89	459820	0.01101	ng
9)	Cl5(101)	22.02	416234	0.01178	ng
12)	Cl5(118)	24.74	478326	0.01048	ng
13)	Cl6(153)	25.75	431912m	0.00773	ng
14)	Cl5(105)	25.83	552544	0.01078	ng
15)	Cl6(138)	26.76	551681	0.01182	ng
16)	Cl7(187)	27.34	498176m	0.01082	ng
17)	Cl6(128)	27.60	559746m	0.01025	ng
18)	Cl7(180)	28.77	534532m	0.00927	ng
19)	Cl7(170)	29.46	553583m	0.00942	ng
20)	Cl8(195)	30.43	529017m	0.00783	ng
21)	Cl9(206)	31.60	485936m	0.00589	ng
22)	Cl10(209)	32.18	374007m	0.00661	ng
25)	Cl2(8) #2	11.66	3680293m	0.01012	ng
26)	Cl3(18) #2	13.51	4912034m	0.00978	ng
28)	Cl3(28) #2	16.23	8930099m	0.00949	ng
29)	Cl4(52) #2	17.61	6661559m	0.01045	ng
30)	Cl4(44) #2	18.40	8720787m	0.01134	ng
31)	Cl4(66) #2	20.77	9596311m	0.01018	ng
32)	Cl5(101) #2	21.64	9036998m	0.01037	ng
35)	Cl5(118) #2	24.77	9034093m	0.00987	ng
36)	Cl6(153) #2	25.50	11306721m	0.01366	ng
37)	Cl5(105) #2	25.82	11023910m	0.00876	ng
38)	Cl6(138) #2	26.53	10998990m	0.01292	ng
39)	Cl7(187) #2	26.96	10405401m	0.01179	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8568.D\ECD1A.CH Vial: 3
Signal #2 : I:\L\DATA\SL0420\L8568.D\ECD2B.CH
Acq On : 07 May 2014 12:53 pm Operator: RR
Sample : IB47 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 10:29:56 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 10:29:52 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	12504576m	0.01025	ng
41)	Cl7(180) #2	28.57	11679849m	0.00935	ng
42)	Cl7(170) #2	29.23	12000422m	0.00858	ng
43)	Cl8(195) #2	30.14	12028309m	0.00796	ng
44)	Cl9(206) #2	31.28	11434382m	0.00541	ng
45)	Cl10(209) #2	31.72	9525163m	0.00664	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8569.D\ECD1A.CH Vial: 4
Signal #2 : I:\L\DATA\SL0420\L8569.D\ECD2B.CH
Acq On : 5-7-2014 01:38:33 PM Operator: RR
Sample : IB48 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 10:29:59 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2607683m	0.10000	ng
10) I	Cl6(161)	25.57	6865343m	0.10000	ng
24) I	Cl5(96) #2	18.94	50037700m	0.10000	ng
33) I	Cl6(161) #2	25.32	107859739m	0.10000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	544371	0.02365	ng
Spiked Amount	0.0200		Recovery	= 118.25%	
11) s	Cl6(152)	22.81	694407m	0.02294	ng
Spiked Amount	0.0201		Recovery	= 114.24%	
27) s	Cl3(34) #2	14.97	10776209m	0.02267	ng
Spiked Amount	0.0200		Recovery	= 113.35%	
34) s	Cl6(152) #2	22.02 T	13433064m	0.02411	ng
Spiked Amount	0.0201		Recovery	= 120.07%	
	Target Compounds				
2)	Cl2(8)	12.26	351033	0.02222	ng
3)	Cl3(18)	14.26	435245	0.02178	ng
5)	Cl3(28)	16.41	849256	0.02469	ng
6)	Cl4(52)	18.07	617616	0.02373	ng
7)	Cl4(44)	18.96	764759m	0.02415	ng
8)	Cl4(66)	20.90	906740m	0.02412	ng
9)	Cl5(101)	22.02	787595m	0.02379	ng
12)	Cl5(118)	24.74	960103m	0.02387	ng
13)	Cl6(153)	25.75	792762m	0.01858	ng
14)	Cl5(105)	25.83	1189719m	0.02590	ng
15)	Cl6(138)	26.76	1125989m	0.02450	ng
16)	Cl7(187)	27.34	1049728m	0.02508	ng
17)	Cl6(128)	27.60	1238091m	0.02563	ng
18)	Cl7(180)	28.77	1249919m	0.02740	ng
19)	Cl7(170)	29.46	1280662m	0.02759	ng
20)	Cl8(195)	30.43	1269471m	0.02808	ng
21)	Cl9(206)	31.61	1210267m	0.02827	ng
22)	Cl10(209)	32.18	919714m	0.02832	ng
25)	Cl2(8) #2	11.66	6568473m	0.02022	ng
26)	Cl3(18) #2	13.51	8675815m	0.01994	ng
28)	Cl3(28) #2	16.23	16174817m	0.02264	ng
29)	Cl4(52) #2	17.60	11563827m	0.02155	ng
30)	Cl4(44) #2	18.39	15230281m	0.02414	ng
31)	Cl4(66) #2	20.77	17041125m	0.02411	ng
32)	Cl5(101) #2	21.64	16165761m	0.02365	ng
35)	Cl5(118) #2	24.77	15966721m	0.02335	ng
36)	Cl6(153) #2	25.50	18662530m	0.02570	ng
37)	Cl5(105) #2	25.83 T	19989572m	0.02415	ng
38)	Cl6(138) #2	26.53	18550147m	0.02626	ng
39)	Cl7(187) #2	26.96	18520637m	0.02640	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8569.D\ECD1A.CH Vial: 4
Signal #2 : I:\L\DATA\SL0420\L8569.D\ECD2B.CH
Acq On : 5-7-2014 01:38:33 PM Operator: RR
Sample : IB48 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 10:29:59 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	22850860m	0.02523	ng
41)	Cl7(180) #2	28.57	20481390m	0.02410	ng
42)	Cl7(170) #2	29.23	21606551m	0.02433	ng
43)	Cl8(195) #2	30.14	21488977m	0.02423	ng
44)	Cl9(206) #2	31.27	20495920m	0.02303	ng
45)	Cl10(209) #2	31.72	16637690m	0.02205	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8570.D\ECD1A.CH Vial: 5
Signal #2 : I:\L\DATA\SL0420\L8570.D\ECD2B.CH
Acq On : 5-7-2014 02:23:47 PM Operator: RR
Sample : IB49 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 10:30:02 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 10:29:58 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2482307m	0.10000	ng
10) I	Cl6(161)	25.57	6241647m	0.10000	ng
24) I	Cl5(96) #2	18.94	53105050m	0.10000	ng
33) I	Cl6(161) #2	25.32	114619254m	0.10000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	929569	0.04500	ng
Spiked Amount	0.0400		Recovery	= 112.50%	
11) s	Cl6(152)	22.82	1224181	0.04541	ng
Spiked Amount	0.0402		Recovery	= 113.07%	
27) s	Cl3(34) #2	14.97	20661240m	0.04397	ng
Spiked Amount	0.0400		Recovery	= 109.93%	
34) s	Cl6(152) #2	22.02	26542474m	0.04587	ng
Spiked Amount	0.0402		Recovery	= 114.22%	
	Target Compounds				
2)	Cl2(8)	12.26	613894	0.04215	ng
3)	Cl3(18)	14.27	751212	0.04135	ng
5)	Cl3(28)	16.42	1489984	0.04426	ng
6)	Cl4(52)	18.07	1026675	0.04384	ng
7)	Cl4(44)	18.96	1366710	0.04457	ng
8)	Cl4(66)	20.90	1643249	0.04424	ng
9)	Cl5(101)	22.02	1433594	0.04407	ng
12)	Cl5(118)	24.74	1690883m	0.04554	ng
13)	Cl6(153)	25.76	1463562m	0.04069	ng
14)	Cl5(105)	25.84	2051673m	0.04591	ng
15)	Cl6(138)	26.76	1965183	0.04467	ng
16)	Cl7(187)	27.34	1833289	0.04578	ng
17)	Cl6(128)	27.60	2123498	0.04535	ng
18)	Cl7(180)	28.77	2123689	0.04701	ng
19)	Cl7(170)	29.46	2172564m	0.04728	ng
20)	Cl8(195)	30.43	2142843m	0.04775	ng
21)	Cl9(206)	31.61	2006162m	0.04793	ng
22)	Cl10(209)	32.18	1508919m	0.04802	ng
25)	Cl2(8) #2	11.67	12868504m	0.03899	ng
26)	Cl3(18) #2	13.51	16411324m	0.03796	ng
28)	Cl3(28) #2	16.23	30476083m	0.04139	ng
29)	Cl4(52) #2	17.61	23657475m	0.04319	ng
30)	Cl4(44) #2	18.40	29905178m	0.04566	ng
31)	Cl4(66) #2	20.77	33169337m	0.04527	ng
32)	Cl5(101) #2	21.64	33426588m	0.04775	ng
35)	Cl5(118) #2	24.77	30626537m	0.04314	ng
36)	Cl6(153) #2	25.50	34200916m	0.04472	ng
37)	Cl5(105) #2	25.83	40384549m	0.04575	ng
38)	Cl6(138) #2	26.53	37289146m	0.04838	ng
39)	Cl7(187) #2	26.95	35203416m	0.04680	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8570.D\ECD1A.CH Vial: 5
Signal #2 : I:\L\DATA\SL0420\L8570.D\ECD2B.CH
Acq On : 5-7-2014 02:23:47 PM Operator: RR
Sample : IB49 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 10:30:02 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 10:29:58 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	44118967m	0.04543	ng
41)	Cl7(180) #2	28.57	39483146m	0.04436	ng
42)	Cl7(170) #2	29.23	42640930m	0.04542	ng
43)	Cl8(195) #2	30.14	42463662m	0.04572	ng
44)	Cl9(206) #2	31.27	40231778m	0.04499	ng
45)	Cl10(209) #2	31.72	32084187m	0.04341	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8571.D\ECD1A.CH Vial: 6
Signal #2 : I:\L\DATA\SL0420\L8571.D\ECD2B.CH
Acq On : 5-7-2014 03:08:47 PM Operator: RR
Sample : IB50 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 10:30:05 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 10:30:01 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2766489m	0.10000	ng
10) I	Cl6(161)	25.57	7131681m	0.10000	ng
24) I	Cl5(96) #2	18.94	55654763m	0.10000	ng
33) I	Cl6(161) #2	25.32	114428740m	0.10000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	2028067	0.07779	ng
Spiked Amount	0.0800		Recovery	= 97.24%	
11) s	Cl6(152)	22.82	2750931	0.07616	ng
Spiked Amount	0.0803		Recovery	= 94.82%	
27) s	Cl3(34) #2	14.97	38287746m	0.07268	ng
Spiked Amount	0.0800		Recovery	= 90.85%	
34) s	Cl6(152) #2	22.02	50770402m	0.07653	ng
Spiked Amount	0.0803		Recovery	= 95.28%	
	Target Compounds				
2)	Cl2(8)	12.26	1323854m	0.07311	ng
3)	Cl3(18)	14.27	1594353	0.07181	ng
5)	Cl3(28)	16.42	3332646m	0.07491	ng
6)	Cl4(52)	18.07	2226453	0.07580	ng
7)	Cl4(44)	18.96	3054547	0.07599	ng
8)	Cl4(66)	20.89	3745836m	0.07572	ng
9)	Cl5(101)	22.01	3211348m	0.07515	ng
12)	Cl5(118)	24.74	3918859m	0.07619	ng
13)	Cl6(153)	25.76	4087600m	0.07882	ng
14)	Cl5(105)	25.84	4818329m	0.07524	ng
15)	Cl6(138)	26.77	4636630	0.07482	ng
16)	Cl7(187)	27.34	4376483	0.07679	ng
17)	Cl6(128)	27.60	5139588	0.07619	ng
18)	Cl7(180)	28.77	5255825	0.07852	ng
19)	Cl7(170)	29.46	5400668m	0.07909	ng
20)	Cl8(195)	30.44	5451942m	0.08060	ng
21)	Cl9(206)	31.61	5147369m	0.08200	ng
22)	Cl10(209)	32.18	3845656m	0.08252	ng
25)	Cl2(8) #2	11.66	25009451m	0.06859	ng
26)	Cl3(18) #2	13.51	31243878m	0.06691	ng
28)	Cl3(28) #2	16.23	64269715m	0.07299	ng
29)	Cl4(52) #2	17.61	45445262m	0.07236	ng
30)	Cl4(44) #2	18.40	58236243m	0.07572	ng
31)	Cl4(66) #2	20.78	66427367m	0.07571	ng
32)	Cl5(101) #2	21.65	63497483m	0.07818	ng
35)	Cl5(118) #2	24.77	62346035m	0.07513	ng
36)	Cl6(153) #2	25.51	68882156m	0.07769	ng
37)	Cl5(105) #2	25.82	79225397m	0.07504	ng
38)	Cl6(138) #2	26.53	71802500m	0.07798	ng
39)	Cl7(187) #2	26.96	69843768m	0.07847	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8571.D\ECD1A.CH Vial: 6
Signal #2 : I:\L\DATA\SL0420\L8571.D\ECD2B.CH
Acq On : 5-7-2014 03:08:47 PM Operator: RR
Sample : IB50 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 10:30:05 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 10:30:01 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	87856313m	0.07604	ng
41)	Cl7(180) #2	28.57	78203522m	0.07411	ng
42)	Cl7(170) #2	29.23	86929882m	0.07663	ng
43)	Cl8(195) #2	30.14	85666109m	0.07661	ng
44)	Cl9(206) #2	31.27	81689181m	0.07678	ng
45)	Cl10(209) #2	31.72	64876200m	0.07585	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8572.D\ECD1A.CH Vial: 7
Signal #2 : I:\L\DATA\SL0420\L8572.D\ECD2B.CH
Acq On : 5-7-2014 03:53:45 PM Operator: RR
Sample : IB51 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 10:30:08 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 10:30:04 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.		Response	Conc	Units
	Internal Standards					
1) I	Cl5(96)	19.68		2820205m	0.10000	ng
10) I	Cl6(161)	25.57		7033894m	0.10000	ng
24) I	Cl5(96) #2	18.94		60670986m	0.10000	ng
33) I	Cl6(161) #2	25.32		128584089m	0.10000	ng
	System Monitoring Compounds					
4) s	Cl3(34)	15.58		6298444	0.16210	ng
Spiked Amount	0.1600			Recovery	= 101.31%	
11) s	Cl6(152)	22.82		9040657	0.16240	ng
Spiked Amount	0.1606			Recovery	= 101.10%	
27) s	Cl3(34) #2	14.97		123571204m	0.15911	ng
Spiked Amount	0.1600			Recovery	= 99.44%	
34) s	Cl6(152) #2	22.02		170075330m	0.15569	ng
Spiked Amount	0.1606			Recovery	= 96.92%	
	Target Compounds					
2)	Cl2(8)	12.26		4130673	0.15814	ng
3)	Cl3(18)	14.27		4931774m	0.15720	ng
5)	Cl3(28)	16.42		11032286	0.15794	ng
6)	Cl4(52)	18.07		7077296	0.16101	ng
7)	Cl4(44)	18.96		10049460	0.16106	ng
8)	Cl4(66)	20.90		12260954	0.15867	ng
9)	Cl5(101)	22.02		10585247	0.16022	ng
12)	Cl5(118)	24.74		12729833m	0.15712	ng
13)	Cl6(153)	25.77		12235255m	0.15420	ng
14)	Cl5(105)	25.84		16883541	0.15737	ng
15)	Cl6(138)	26.77		16009166	0.15870	ng
16)	Cl7(187)	27.34		15217867	0.16191	ng
17)	Cl6(128)	27.60		17694394	0.15852	ng
18)	Cl7(180)	28.77		18122520	0.15996	ng
19)	Cl7(170)	29.46		18336243	0.15947	ng
20)	Cl8(195)	30.43		18210253m	0.15990	ng
21)	Cl9(206)	31.61		16064829m	0.15759	ng
22)	Cl10(209)	32.18		11714140m	0.15765	ng
25)	Cl2(8) #2	11.66	e	76987878m	0.15433	ng
26)	Cl3(18) #2	13.51	e	96568170m	0.15510	ng
28)	Cl3(28) #2	16.23		217578094m	0.15486	ng
29)	Cl4(52) #2	17.61	e	149172332m	0.15834	ng
30)	Cl4(44) #2	18.40	e	195585845m	0.16210	ng
31)	Cl4(66) #2	20.77	e	236178411m	0.16345	ng
32)	Cl5(101) #2	21.64	e	204640661m	0.16524	ng
35)	Cl5(118) #2	24.77	e	217759218m	0.15482	ng
36)	Cl6(153) #2	25.51	e	231175648m	0.15790	ng
37)	Cl5(105) #2	25.82	e	295426682m	0.15545	ng
38)	Cl6(138) #2	26.53	e	265407001m	0.16084	ng
39)	Cl7(187) #2	26.96	e	252786797m	0.16264	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8572.D\ECD1A.CH Vial: 7
Signal #2 : I:\L\DATA\SL0420\L8572.D\ECD2B.CH
Acq On : 5-7-2014 03:53:45 PM Operator: RR
Sample : IB51 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 10:30:08 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 10:30:04 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.		Response	Conc	Units
40)	Cl6(128) #2	27.40	e	328372782m	0.15963	ng
41)	Cl7(180) #2	28.57	e	290009542m	0.15409	ng
42)	Cl7(170) #2	29.23	e	321485389m	0.15734	ng
43)	Cl8(195) #2	30.14	e	318666636m	0.15755	ng
44)	Cl9(206) #2	31.28	e	290279544m	0.15491	ng
45)	Cl10(209) #2	31.72	e	222828585m	0.15391	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8573.D\ECD1A.CH Vial: 8
Signal #2 : I:\L\DATA\SL0420\L8573.D\ECD2B.CH
Acq On : 5-7-2014 04:38:40 PM Operator: RR
Sample : IB52 ICC Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 10:57:51 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 10:57:45 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
	Internal Standards					
1) I	Cl5(96)	19.68	2425799	0.10000	ng	
10) I	Cl6(161)	25.57	5822463m	0.10000	ng	
24) I	Cl5(96) #2	18.94	50573337m	0.10000	ng	
33) I	Cl6(161) #2	25.32	112233070m	0.10000	ng	
	System Monitoring Compounds					
4) s	Cl3(34)	15.58	930526m	0.04566	ng	14.1
Spiked Amount	0.0400		Recovery	= 114.15%		
11) s	Cl6(152)	22.82	1178024m	0.04760	ng	18.5
Spiked Amount	0.0402		Recovery	= 118.53%		
27) s	Cl3(34) #2	14.97	20197804m	0.04773	ng	19.3
Spiked Amount	0.0400		Recovery	= 119.32%		
34) s	Cl6(152) #2	22.02	27117992m	0.04692	ng	16.8
Spiked Amount	0.0402		Recovery	= 116.83%		
	Target Compounds					
2)	Cl2(8)	12.26	582306m	0.04413	ng	10.3
3)	Cl3(18)	14.27	708435m	0.04412	ng	10.3
5)	Cl3(28)	16.42	1460579m	0.04563	ng	14.1
6)	Cl4(52)	18.07	1046766m	0.04681	ng	17.0
7)	Cl4(44)	18.96	1342398m	0.04567	ng	14.2
8)	Cl4(66)	20.90	1621004	0.04536	ng	13.4
9)	Cl5(101)	22.02	1417701	0.04590	ng	14.8
12)	Cl5(118)	24.74	1648618m	0.04731	ng	18.3
13)	Cl6(153)	25.75	1434342m	0.04258	ng	6.4
14)	Cl5(105)	25.83	1853152m	0.04528	ng	13.2
15)	Cl6(138)	26.76	1923584m	0.04791	ng	19.8
16)	Cl7(187)	27.34	1784262m	0.04760	ng	19.0
17)	Cl6(128)	27.60	2064004	0.04709	ng	17.7
18)	Cl7(180)	28.77	2046414	0.04637	ng	15.9
19)	Cl7(170)	29.46	2040209m	0.04513	ng	12.8
20)	Cl8(195)	30.43	2069577m	0.04543	ng	13.6
21)	Cl9(206)	31.61	1886622m	0.04318	ng	8.0
22)	Cl10(209)	32.18	1506068m	0.04514	ng	12.8
25)	Cl2(8) #2	11.66	12290224m	0.04526	ng	13.2
26)	Cl3(18) #2	13.51	16185393m	0.04708	ng	17.7
28)	Cl3(28) #2	16.23	30164260m	0.04609	ng	15.2
29)	Cl4(52) #2	17.61	22132867m	0.04566	ng	14.1
30)	Cl4(44) #2	18.40	29466569m	0.04776	ng	19.4
31)	Cl4(66) #2	20.77	32138720m	0.04709	ng	17.7
32)	Cl5(101) #2	21.65	30250096m	0.04442	ng	11.1
35)	Cl5(118) #2	24.77	32342642m	0.04732	ng	18.3
36)	Cl6(153) #2	25.51	33343305m	0.04347	ng	8.7
37)	Cl5(105) #2	25.82	39456405m	0.04621	ng	15.5
38)	Cl6(138) #2	26.53	35928217m	0.04588	ng	14.7
39)	Cl7(187) #2	26.96	34771516m	0.04571	ng	14.3

(f)=RT Delta > 1/2 Window (m)=manual int.-------
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8573.D\ECD1A.CH Vial: 8
Signal #2 : I:\L\DATA\SL0420\L8573.D\ECD2B.CH
Acq On : 5-7-2014 04:38:40 PM Operator: RR
Sample : IB52 ICC Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 10:57:51 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 10:57:45 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
40)	Cl6(128) #2	27.40	42838533m	0.04555	ng	13.9
41)	Cl7(180) #2	28.57	40757161m	0.04786	ng	19.6
42)	Cl7(170) #2	29.23	41464757m	0.04507	ng	12.7
43)	Cl8(195) #2	30.14	42277073m	0.04626	ng	15.7
44)	Cl9(206) #2	31.27	39737367m	0.04503	ng	12.6
45)	Cl10(209) #2	31.72	33847463m	0.04724	ng	18.1

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8584.D\ECD1A.CH Vial: 19
Signal #2 : I:\L\DATA\SL0420\L8584.D\ECD2B.CH
Acq On : 08 May 2014 12:54 am Operator: RR
Sample : IB49 mid Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:07:12 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:07:07 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2341027	0.10000	ng
10) I	Cl6(161)	25.57	5990508m	0.10000	ng
24) I	Cl5(96) #2	18.94	59822365m	0.10000	ng
33) I	Cl6(161) #2	25.32	136547694m	0.10000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	806221	0.04136	ng
Spiked Amount	0.0400		Recovery	= 103.40%	
11) s	Cl6(152)	22.82	1130644	0.04496	ng
Spiked Amount	0.0402		Recovery	= 111.95%	
27) s	Cl3(34) #2	14.96	22207727m	0.04452	ng
Spiked Amount	0.0400		Recovery	= 111.30%	
34) s	Cl6(152) #2	22.02	29718918m	0.04267	ng
Spiked Amount	0.0402		Recovery	= 106.25%	
	Target Compounds				
2)	Cl2(8)	12.26	512931	0.04063	ng
3)	Cl3(18)	14.26	609563	0.03969	ng
5)	Cl3(28)	16.42	1296344	0.04251	ng
6)	Cl4(52)	18.07	888259	0.04165	ng
7)	Cl4(44)	18.96	1214813	0.04325	ng
8)	Cl4(66)	20.90	1456337	0.04272	ng
9)	Cl5(101)	22.02	1282784	0.04348	ng
12)	Cl5(118)	24.74	1512197m	0.04303	ng
13)	Cl6(153)	25.75	1541485m	0.04411	ng
14)	Cl5(105)	25.83	1893010	0.04503	ng
15)	Cl6(138)	26.76	1831308	0.04511	ng
16)	Cl7(187)	27.34	1744869	0.04578	ng
17)	Cl6(128)	27.60	1984570	0.04469	ng
18)	Cl7(180)	28.77	1980154	0.04424	ng
19)	Cl7(170)	29.46	2009114m	0.04361	ng
20)	Cl8(195)	30.43	1959979m	0.04257	ng
21)	Cl9(206)	31.61	1766705m	0.03994	ng
22)	Cl10(209)	32.18	1316548m	0.03937	ng
25)	Cl2(8) #2	11.66	13736027m	0.04290	ng
26)	Cl3(18) #2	13.51	17199327m	0.04248	ng
28)	Cl3(28) #2	16.23	33153255m	0.04322	ng
29)	Cl4(52) #2	17.60	24878712m	0.04359	ng
30)	Cl4(44) #2	18.40	32951284m	0.04543	ng
31)	Cl4(66) #2	20.78	36490013m	0.04548	ng
32)	Cl5(101) #2	21.64	35645591m	0.04427	ng
35)	Cl5(118) #2	24.77	35611186m	0.04343	ng
36)	Cl6(153) #2	25.50	38962828m	0.04185	ng
37)	Cl5(105) #2	25.83	46683302m	0.04516	ng
38)	Cl6(138) #2	26.54	41748376m	0.04412	ng
39)	Cl7(187) #2	26.96	40818474m	0.04432	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8584.D\ECD1A.CH Vial: 19
Signal #2 : I:\L\DATA\SL0420\L8584.D\ECD2B.CH
Acq On : 08 May 2014 12:54 am Operator: RR
Sample : IB49 mid Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:07:12 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:07:07 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	51473260m	0.04508	ng
41)	Cl7(180) #2	28.57	45882729m	0.04486	ng
42)	Cl7(170) #2	29.23	50904229m	0.04541	ng
43)	Cl8(195) #2	30.14	50291249m	0.04540	ng
44)	Cl9(206) #2	31.27	48164145m	0.04489	ng
45)	Cl10(209) #2	31.72	38309720m	0.04435	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8594.D\ECD1A.CH Vial: 29
Signal #2 : I:\L\DATA\SL0420\L8594.D\ECD2B.CH
Acq On : 5-8-2014 08:27:09 AM Operator: RR
Sample : IB50 mid Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:10:58 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:10:43 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1)	I Cl5(96)	19.68	3073267	0.10000	ng
10)	I Cl6(161)	25.57	8272447m	0.10000	ng
24)	I Cl5(96) #2	18.94	62433194m	0.10000	ng
33)	I Cl6(161) #2	25.32	147989879m	0.10000	ng
	System Monitoring Compounds				
4)	s Cl3(34)	15.58	2094548	0.07281	ng
	Spiked Amount 0.0800		Recovery	= 91.01%	
11)	s Cl6(152)	22.82	2996132	0.07333	ng
	Spiked Amount 0.0803		Recovery	= 91.30%	
27)	s Cl3(34) #2	14.97	44960161m	0.07843	ng
	Spiked Amount 0.0800		Recovery	= 98.04%	
34)	s Cl6(152) #2	22.02	61302366m	0.07296	ng
	Spiked Amount 0.0803		Recovery	= 90.84%	
	Target Compounds				
2)	Cl2(8)	12.26	1373025	0.07283	ng
3)	Cl3(18)	14.27	1645983	0.07251	ng
5)	Cl3(28)	16.42	3462436	0.07335	ng
6)	Cl4(52)	18.07	2333678	0.07347	ng
7)	Cl4(44)	18.96	3238328	0.07447	ng
8)	Cl4(66)	20.90	3958150	0.07440	ng
9)	Cl5(101)	22.02	3437042	0.07483	ng
12)	Cl5(118)	24.74	4287405m	0.07398	ng
13)	Cl6(153)	25.75	4341181m	0.07490	ng
14)	Cl5(105)	25.84	5739495m	0.07778	ng
15)	Cl6(138)	26.77	5253134	0.07559	ng
16)	Cl7(187)	27.34	5112818	0.07717	ng
17)	Cl6(128)	27.60	5953596	0.07693	ng
18)	Cl7(180)	28.77	6266642	0.07852	ng
19)	Cl7(170)	29.46	6496337	0.07913	ng
20)	Cl8(195)	30.43	6594784m	0.07974	ng
21)	Cl9(206)	31.61	5919398m	0.07753	ng
22)	Cl10(209)	32.18	4365221m	0.07708	ng
25)	Cl2(8) #2	11.66	28540709m	0.07757	ng
26)	Cl3(18) #2	13.51	34823682m	0.07598	ng
28)	Cl3(28) #2	16.23	73435343m	0.07817	ng
29)	Cl4(52) #2	17.61	51063793m	0.07616	ng
30)	Cl4(44) #2	18.40	67863105m	0.07845	ng
31)	Cl4(66) #2	20.77	79551040m	0.07963	ng
32)	Cl5(101) #2	21.65	71369156m	0.07615	ng
35)	Cl5(118) #2	24.77	77057532m	0.07482	ng
36)	Cl6(153) #2	25.51	81184148m	0.07244	ng
37)	Cl5(105) #2	25.83	102940890m	0.07668	ng
38)	Cl6(138) #2	26.53	89216119m	0.07431	ng
39)	Cl7(187) #2	26.96	86508904m	0.07451	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8594.D\ECD1A.CH Vial: 29
Signal #2 : I:\L\DATA\SL0420\L8594.D\ECD2B.CH
Acq On : 5-8-2014 08:27:09 AM Operator: RR
Sample : IB50 mid Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:10:58 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:10:43 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	111944939m	0.07588	ng
41)	Cl7(180) #2	28.57	102429480m	0.07728	ng
42)	Cl7(170) #2	29.23	111734428m	0.07672	ng
43)	Cl8(195) #2	30.14	111232294m	0.07710	ng
44)	Cl9(206) #2	31.28	101369806m	0.07490	ng
45)	Cl10(209) #2	31.72	79148768m	0.07424	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8574.D\ECD1A.CH Vial: 9
Signal #2 : I:\L\DATA\SL0420\L8574.D\ECD2B.CH
Acq On : 5-7-2014 05:23:34 PM Operator: RR
Sample : CC125PB-P(0) Inst : INST. L
Misc : Procedural Blank 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:20:54 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:10:43 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2199990m	50.00000	ng
10) I	Cl6(161)	25.57	5401133m	50.00000	ng
24) I	Cl5(96) #2	18.94	49309237m	50.00000	ng
33) I	Cl6(161) #2	25.32	112455949m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	1472876m	35.92492	ng
Spiked Amount	50.0000		Recovery	= 71.85%	
11) s	Cl6(152)	22.82	2207818m	39.79982	ng
Spiked Amount	50.2000		Recovery	= 79.28%	
27) s	Cl3(34) #2	14.97	34920781m	38.71412	ng
Spiked Amount	50.0000		Recovery	= 77.43%	
34) s	Cl6(152) #2	22.02	51437821m	39.30061	ng
Spiked Amount	50.2000		Recovery	= 78.29%	
	Target Compounds				
2)	Cl2(8)	0.00	0d	N.D.	ng
3)	Cl3(18)	0.00	0d	N.D.	ng
5)	Cl3(28)	0.00	0d	N.D.	ng
6)	Cl4(52)	0.00	0d	N.D.	ng
7)	Cl4(44)	0.00	0d	N.D.	ng
8)	Cl4(66)	0.00	0d	N.D.	ng
9)	Cl5(101)	0.00	0d	N.D.	ng
12)	Cl5(118)	0.00	0d	N.D.	ng
13)	Cl6(153)	0.00	0d	N.D.	ng
14)	Cl5(105)	0.00	0d	N.D.	ng
15)	Cl6(138)	0.00	0d	N.D.	ng
16)	Cl7(187)	0.00	0d	N.D.	ng
17)	Cl6(128)	0.00	0d	N.D.	ng
18)	Cl7(180)	0.00	0d	N.D.	ng
19)	Cl7(170)	0.00	0d	N.D.	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	0.00	0d	N.D.	ng
26)	Cl3(18) #2	0.00	0d	N.D.	ng
28)	Cl3(28) #2	0.00	0d	N.D.	ng
29)	Cl4(52) #2	0.00	0d	N.D.	ng
30)	Cl4(44) #2	0.00	0d	N.D.	ng
31)	Cl4(66) #2	0.00	0d	N.D.	ng
32)	Cl5(101) #2	0.00	0d	N.D.	ng
35)	Cl5(118) #2	0.00	0d	N.D.	ng
36)	Cl6(153) #2	0.00	0d	N.D.	ng
37)	Cl5(105) #2	0.00	0d	N.D.	ng
38)	Cl6(138) #2	0.00	0d	N.D.	ng
39)	Cl7(187) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8574.D\ECD1A.CH Vial: 9
Signal #2 : I:\L\DATA\SL0420\L8574.D\ECD2B.CH
Acq On : 5-7-2014 05:23:34 PM Operator: RR
Sample : CC125PB-P(0) Inst : INST. L
Misc : Procedural Blank 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:20:54 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:10:43 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	0.00	0d	N.D.	ng
41)	Cl7(180) #2	0.00	0d	N.D.	ng
42)	Cl7(170) #2	0.00	0d	N.D.	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8575.D\ECD1A.CH Vial: 10
Signal #2 : I:\L\DATA\SL0420\L8575.D\ECD2B.CH
Acq On : 5-7-2014 06:08:50 PM Operator: RR
Sample : CC126LCS-P(0) Inst : INST. L
Misc : Laboratory Control Sample 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:20:58 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:20:54 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
	Internal Standards					
1) I	Cl5(96)	19.68	2609526m	50.00000	ng	
10) I	Cl6(161)	25.57	7009031m	50.00000	ng	
24) I	Cl5(96) #2	18.94	52947181m	50.00000	ng	
33) I	Cl6(161) #2	25.32	109259605m	50.00000	ng	
	System Monitoring Compounds					
4) s	Cl3(34)	15.58	1760159	36.12601	ng	72%
Spiked Amount	50.0000		Recovery	= 72.25%		
11) s	Cl6(152)	22.82	2702400	38.26336	ng	76%
Spiked Amount	50.2000		Recovery	= 76.22%		
27) s	Cl3(34) #2	14.97	34032470m	35.89247	ng	72%
Spiked Amount	50.0000		Recovery	= 71.78%		
34) s	Cl6(152) #2	22.02	44430706m	35.97023	ng	72%
Spiked Amount	50.2000		Recovery	= 71.65%		
	Target Compounds					
2)	Cl2(8)	12.27	820805	27.74970	ng	74%
3)	Cl3(18)	14.26	1046028m	28.91814	ng	77%
5)	Cl3(28)	16.42	2262090m	30.37223	ng	81%
6)	Cl4(52)	18.07	1570656m	30.82187	ng	82%
7)	Cl4(44)	18.96	2204178m	31.78340	ng	85%
8)	Cl4(66)	20.90	2626239m	31.19071	ng	83%
9)	Cl5(101)	22.02	2319965	31.77756	ng	85%
12)	Cl5(118)	24.75	2931239m	31.82285	ng	85%
13)	Cl6(153)	25.75	3086390m	33.10885	ng	88%
14)	Cl5(105)	25.84	3741312	32.79755	ng	87%
15)	Cl6(138)	26.77	3552307	32.56743	ng	87%
16)	Cl7(187)	27.34	3377954	32.81527	ng	88%
17)	Cl6(128)	27.60	3850052	32.21322	ng	86%
18)	Cl7(180)	28.77	3968557	32.50884	ng	87%
19)	Cl7(170)	29.46	3948319m	31.80343	ng	85%
20)	Cl8(195)	30.43	4090091m	32.46519	ng	87%
21)	Cl9(206)	31.61	3712648m	31.42057	ng	84%
22)	Cl10(209)	32.18	2951067m	32.82866	ng	88%
25)	Cl2(8) #2	11.67	15263444m	26.42861	ng	70%
26)	Cl3(18) #2	13.52	25812028m	34.06284	ng	91%
28)	Cl3(28) #2	16.23	41313447m	28.75919	ng	77%
29)	Cl4(52) #2	17.61	30714258m	29.08959	ng	78%
30)	Cl4(44) #2	18.40	40046905m	29.72769	ng	79%
31)	Cl4(66) #2	20.78	47507335m	30.95924	ng	83%
32)	Cl5(101) #2	21.65	59897234m	37.77068	ng	101%
35)	Cl5(118) #2	24.78	50216180m	34.16397	ng	91%
36)	Cl6(153) #2	25.50	48699020m	30.82019	ng	82%
37)	Cl5(105) #2	25.82	60353510m	32.64831	ng	87%
38)	Cl6(138) #2	26.54	54173484m	32.32186	ng	86%
39)	Cl7(187) #2	26.96	51129663m	31.71901	ng	85%

(f)=RT Delta > 1/2 Window (m)=manual int.-------
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8575.D\ECD1A.CH Vial: 10
Signal #2 : I:\L\DATA\SL0420\L8575.D\ECD2B.CH
Acq On : 5-7-2014 06:08:50 PM Operator: RR
Sample : CC126LCS-P(0) Inst : INST. L
Misc : Laboratory Control Sample 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:20:58 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:20:54 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
40)	Cl6(128) #2	27.40	65481218m	32.24222	ng	86%
41)	Cl7(180) #2	28.57	61678459m	33.51661	ng	89%
42)	Cl7(170) #2	29.23	63128690m	31.82027	ng	85%
43)	Cl8(195) #2	30.14	64027902m	32.42782	ng	86%
44)	Cl9(206) #2	31.28	59924384m	31.88157	ng	85%
45)	Cl10(209) #2	31.72	50098528m	33.10642	ng	88%

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8576.D\ECD1A.CH Vial: 11
Signal #2 : I:\L\DATA\SL0420\L8576.D\ECD2B.CH
Acq On : 5-7-2014 06:53:43 PM Operator: RR
Sample : CC127LCSD-P(0) Inst : INST. L
Misc : Laboratory Control Sample Duplicate 5-12 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:02 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:20:58 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
	Internal Standards					
1) I	Cl5(96)	19.68	2698982m	50.00000	ng	
10) I	Cl6(161)	25.57	7352926m	50.00000	ng	
24) I	Cl5(96) #2	18.94	58134996m	50.00000	ng	
33) I	Cl6(161) #2	25.32	128762818m	50.00000	ng	
	System Monitoring Compounds					
4) s	Cl3(34)	15.58	1857115m	36.66561	ng	73%
Spiked Amount	50.0000		Recovery	= 73.33%		
11) s	Cl6(152)	22.82	2822250	38.14670	ng	76%
Spiked Amount	50.2000		Recovery	= 75.99%		
27) s	Cl3(34) #2	14.97	39374463m	37.39844	ng	75%
Spiked Amount	50.0000		Recovery	= 74.80%		
34) s	Cl6(152) #2	21.99	56341891m	38.02091	ng	76%
Spiked Amount	50.2000		Recovery	= 75.74%		
	Target Compounds					
2)	Cl2(8)	12.27	874560	28.42488	ng	76%
3)	Cl3(18)	14.26	1114109m	29.61255	ng	79%
5)	Cl3(28)	16.42	2438314m	31.31390	ng	84%
6)	Cl4(52)	18.07	1686753	31.73518	ng	85%
7)	Cl4(44)	18.96	2353669m	32.53457	ng	87%
8)	Cl4(66)	20.89	2912033m	32.81301	ng	88%
9)	Cl5(101)	22.02	2488338	32.62960	ng	87%
12)	Cl5(118)	24.75	3300862m	33.47223	ng	89%
13)	Cl6(153)	25.76	2949444m	30.95728	ng	83%
14)	Cl5(105)	25.84	3885993m	32.58002	ng	87%
15)	Cl6(138)	26.77	3865253m	33.37917	ng	89%
16)	Cl7(187)	27.34	3672896	33.60680	ng	90%
17)	Cl6(128)	27.60	4253603	33.35250	ng	89%
18)	Cl7(180)	28.77	4405494	33.75125	ng	90%
19)	Cl7(170)	29.46	4410689	33.18110	ng	88%
20)	Cl8(195)	30.44	4530436m	33.67762	ng	90%
21)	Cl9(206)	31.61	4054078m	32.33598	ng	86%
22)	Cl10(209)	32.18	3199236m	33.61869	ng	90%
25)	Cl2(8) #2	11.66	17688657m	27.71165	ng	74%
26)	Cl3(18) #2	13.52	28933849m	34.64737	ng	92%
28)	Cl3(28) #2	16.23	47735613m	29.93202	ng	80%
29)	Cl4(52) #2	17.61	34343823m	29.52711	ng	79%
30)	Cl4(44) #2	18.40	48881234m	32.32546	ng	86%
31)	Cl4(66) #2	20.78	56520282m	32.85894	ng	88%
32)	Cl5(101) #2	21.65	72177513m	40.52495	ng	108%
35)	Cl5(118) #2	24.79	61250397m	35.03843	ng	93%
36)	Cl6(153) #2	25.51	57359733m	30.80631	ng	82%
37)	Cl5(105) #2	25.82	72088457m	32.96329	ng	88%
38)	Cl6(138) #2	26.54	60318876m	30.99714	ng	83%
39)	Cl7(187) #2	26.96	62767123m	32.69222	ng	87%

(f)=RT Delta > 1/2 Window (m)=manual int.-------
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8576.D\ECD1A.CH Vial: 11
Signal #2 : I:\L\DATA\SL0420\L8576.D\ECD2B.CH
Acq On : 5-7-2014 06:53:43 PM Operator: RR
Sample : CC127LCSD-P(0) Inst : INST. L
Misc : Laboratory Control Sample Duplicate 5-12 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:02 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:20:58 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
40)	Cl6(128) #2	27.40	80108919m	33.11595	ng	88%
41)	Cl7(180) #2	28.57	75609534m	34.46990	ng	92%
42)	Cl7(170) #2	29.23	78075324m	32.94042	ng	88%
43)	Cl8(195) #2	30.14	79426684m	33.63218	ng	90%
44)	Cl9(206) #2	31.28	74824681m	33.27299	ng	89%
45)	Cl10(209) #2	31.72	61956221m	34.33031	ng	92%

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8577.D\ECD1A.CH Vial: 12
Signal #2 : I:\L\DATA\SL0420\L8577.D\ECD2B.CH
Acq On : 5-7-2014 07:38:38 PM Operator: RR
Sample : M2921-P(0) Inst : INST. L
Misc : WQ-TPC-001-042214 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:05 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:01 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2624354m	50.00000	ng
10) I	Cl6(161)	25.57	7144243	50.00000	ng
24) I	Cl5(96) #2	18.95	52815621m	50.00000	ng
33) I	Cl6(161) #2	25.32	125574624m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	1671376m	34.59929	ng
Spiked Amount	50.0000		Recovery	= 69.20%	
11) s	Cl6(152)	22.82	2836759m	39.03123	ng
Spiked Amount	50.2000		Recovery	= 77.75%	
27) s	Cl3(34) #2	14.97	32700743m	34.83925	ng
Spiked Amount	50.0000		Recovery	= 69.68%	
34) s	Cl6(152) #2	22.02 T	55592713m	38.35527	ng
Spiked Amount	50.2000		Recovery	= 76.40%	
	Target Compounds				
2)	Cl2(8)	12.26	216136m	6.02777	ng
3)	Cl3(18)	14.26	502428m	14.52052	ng
5)	Cl3(28)	16.41	1048780m	15.71124	ng
6)	Cl4(52)	18.07	844495m	17.73779	ng
7)	Cl4(44)	18.96	324009m	1.81738	ng
8)	Cl4(66)	20.92	205152m	BelowCal	ng
9)	Cl5(101)	22.02	332956m	1.90486	ng
12)	Cl5(118)	24.75	296195m	BelowCal	ng
13)	Cl6(153)	25.77	333228m	2.62589	ng
14)	Cl5(105)	25.82	65158m	BelowCal	ng
15)	Cl6(138)	26.75	293379m	BelowCal	ng
16)	Cl7(187)	27.34	54974m	BelowCal	ng
17)	Cl6(128)	27.60	50228m	BelowCal	ng
18)	Cl7(180)	28.77	67594m	BelowCal	ng
19)	Cl7(170)	29.46	77232m	BelowCal	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.66	4214414m	5.74037	ng
26)	Cl3(18) #2	13.50	15549872m	21.73780	ng
28)	Cl3(28) #2	16.23	20344585m	15.21308	ng
29)	Cl4(52) #2	17.61	16443718m	16.41291	ng
30)	Cl4(44) #2	18.40	7262222m	2.19478	ng
31)	Cl4(66) #2	20.75	6597402m	BelowCal	ng
32)	Cl5(101) #2	21.64	6999645m	1.92586	ng
35)	Cl5(118) #2	24.77	5883889m	BelowCal	ng
36)	Cl6(153) #2	25.51	10167532m	2.17525	ng
37)	Cl5(105) #2	25.84	3168129m	BelowCal	ng
38)	Cl6(138) #2	26.53	2896519m	BelowCal	ng
39)	Cl7(187) #2	26.96	1041192m	BelowCal	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8577.D\ECD1A.CH Vial: 12
Signal #2 : I:\L\DATA\SL0420\L8577.D\ECD2B.CH
Acq On : 5-7-2014 07:38:38 PM Operator: RR
Sample : M2921-P(0) Inst : INST. L
Misc : WQ-TPC-001-042214 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:05 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:01 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	1172225m	BelowCal	ng
41)	Cl7(180) #2	28.57	1179995m	BelowCal	ng
42)	Cl7(170) #2	29.24	1020046m	BelowCal	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8578.D\ECD1A.CH Vial: 13
Signal #2 : I:\L\DATA\SL0420\L8578.D\ECD2B.CH
Acq On : 5-7-2014 08:23:50 PM Operator: RR
Sample : M2922-P(0) Inst : INST. L
Misc : WQ-TPC-002-042214 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:08 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:04 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2631845m	50.00000	ng
10) I	Cl6(161)	25.57	7818738	50.00000	ng
24) I	Cl5(96) #2	18.94	49400616m	50.00000	ng
33) I	Cl6(161) #2	25.32	122176283m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	1737734m	35.55364	ng
Spiked Amount	50.0000		Recovery	= 71.11%	
11) s	Cl6(152)	22.82	2881922m	37.10878	ng
Spiked Amount	50.2000		Recovery	= 73.92%	
27) s	Cl3(34) #2	14.97	32364987m	36.43740	ng
Spiked Amount	50.0000		Recovery	= 72.87%	
34) s	Cl6(152) #2	22.02	52242116m	37.36750	ng
Spiked Amount	50.2000		Recovery	= 74.44%	
	Target Compounds				
2)	Cl2(8)	12.26	1063916m	33.78467	ng
3)	Cl3(18)	14.26	2997577m	61.34756	ng
5)	Cl3(28)	16.41	6512722m	61.19977	ng
6)	Cl4(52)	18.07	4742496m	65.55563	ng
7)	Cl4(44)	18.96	1666173m	25.49046	ng
8)	Cl4(66)	20.94	1839634m	23.53572	ng
9)	Cl5(101)	22.02	1009317m	15.67422	ng
12)	Cl5(118)	24.74	676279m	5.78865	ng
13)	Cl6(153)	25.77	1010056m	11.86684	ng
14)	Cl5(105)	25.82	100745m	BelowCal	ng
15)	Cl6(138)	26.75	845491	6.90696	ng
16)	Cl7(187)	27.34	224897m	BelowCal	ng
17)	Cl6(128)	27.60	117109	BelowCal	ng
18)	Cl7(180)	28.77	187885	BelowCal	ng
19)	Cl7(170)	29.46	176069m	BelowCal	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	31.61	23214m	BelowCal	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.67	18953285m	33.70196	ng
26)	Cl3(18) #2	13.51	59245370m	66.64420	ng
28)	Cl3(28) #2	16.23	105413841m	58.35036	ng
29)	Cl4(52) #2	17.61	88163705m	65.47887	ng
30)	Cl4(44) #2	18.40	32159973m	26.27339	ng
31)	Cl4(66) #2	20.74	26701262m	20.44379	ng
32)	Cl5(101) #2	21.64	18985792m	14.24475	ng
35)	Cl5(118) #2	24.77	13764200m	8.63848	ng
36)	Cl6(153) #2	25.51	18245909m	9.89518	ng
37)	Cl5(105) #2	25.82	3603286m	BelowCal	ng
38)	Cl6(138) #2	26.53	6206031m	BelowCal	ng
39)	Cl7(187) #2	26.96	4001597m	BelowCal	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8578.D\ECD1A.CH Vial: 13
Signal #2 : I:\L\DATA\SL0420\L8578.D\ECD2B.CH
Acq On : 5-7-2014 08:23:50 PM Operator: RR
Sample : M2922-P(0) Inst : INST. L
Misc : WQ-TPC-002-042214 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:08 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:04 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	2013189m	BelowCal	ng
41)	Cl7(180) #2	28.57	3720860m	BelowCal	ng
42)	Cl7(170) #2	29.23	2382051m	BelowCal	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	31.27	812013m	BelowCal	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8579.D\ECD1A.CH Vial: 14
Signal #2 : I:\L\DATA\SL0420\L8579.D\ECD2B.CH
Acq On : 5-7-2014 09:09:01 PM Operator: RR
Sample : M2923-P(0) Inst : INST. L
Misc : WQ-TPC-003-042214 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:11 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:07 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2738253m	50.00000	ng
10) I	Cl6(161)	25.57	8190279	50.00000	ng
24) I	Cl5(96) #2	18.94	48018587m	50.00000	ng
33) I	Cl6(161) #2	25.32	117001552m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	1859030	36.30154	ng
Spiked Amount	50.0000		Recovery	= 72.60%	
11) s	Cl6(152)	22.82	3026510	37.17299	ng
Spiked Amount	50.2000		Recovery	= 74.05%	
27) s	Cl3(34) #2	14.97	31864573m	36.80542	ng
Spiked Amount	50.0000		Recovery	= 73.61%	
34) s	Cl6(152) #2	22.02	52531236m	38.76053	ng
Spiked Amount	50.2000		Recovery	= 77.21%	
	Target Compounds				
2)	Cl2(8)	12.26	1183798	35.53525	ng
3)	Cl3(18)	14.27	2464036	52.45572	ng
5)	Cl3(28)	16.40	5829811m	55.75540	ng
6)	Cl4(52)	18.07	3989553	57.30814	ng
7)	Cl4(44)	18.97	2109840	29.68344	ng
8)	Cl4(66)	20.93	1857025m	22.95956	ng
9)	Cl5(101)	22.02	2130285	28.77476	ng
12)	Cl5(118)	24.74	2440211	24.63990	ng
13)	Cl6(153)	25.77	2195455m	22.79016	ng
14)	Cl5(105)	25.81	468338m	BelowCal	ng
15)	Cl6(138)	26.76	1870662	17.64479	ng
16)	Cl7(187)	27.34	406677	BelowCal	ng
17)	Cl6(128)	27.60	370137	BelowCal	ng
18)	Cl7(180)	28.77	516711	BelowCal	ng
19)	Cl7(170)	29.46	512420	BelowCal	ng
20)	Cl8(195)	30.43	63620	BelowCal	ng
21)	Cl9(206)	31.61	49536m	BelowCal	ng
22)	Cl10(209)	32.18	11051m	BelowCal	ng
25)	Cl2(8) #2	11.66	18917329m	34.43801	ng
26)	Cl3(18) #2	13.51	47388365m	58.20476	ng
28)	Cl3(28) #2	16.23	101882173m	58.13762	ng
29)	Cl4(52) #2	17.61	66861099m	55.55355	ng
30)	Cl4(44) #2	18.40	36945135m	30.13782	ng
31)	Cl4(66) #2	20.76	40701516m	29.65409	ng
32)	Cl5(101) #2	21.64	36482933m	27.42501	ng
35)	Cl5(118) #2	24.77	36173956m	25.09162	ng
36)	Cl6(153) #2	25.51	31237564m	19.62597	ng
37)	Cl5(105) #2	25.83	8002837m	BelowCal	ng
38)	Cl6(138) #2	26.53	15357933m	8.40543	ng
39)	Cl7(187) #2	26.96	5497397m	BelowCal	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8579.D\ECD1A.CH Vial: 14
Signal #2 : I:\L\DATA\SL0420\L8579.D\ECD2B.CH
Acq On : 5-7-2014 09:09:01 PM Operator: RR
Sample : M2923-P(0) Inst : INST. L
Misc : WQ-TPC-003-042214 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:11 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:07 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	6028708m	BelowCal	ng
41)	Cl7(180) #2	28.57	8244346m	BelowCal	ng
42)	Cl7(170) #2	29.23	5279502m	BelowCal	ng
43)	Cl8(195) #2	30.14	1387551m	BelowCal	ng
44)	Cl9(206) #2	31.27	1326168m	BelowCal	ng
45)	Cl10(209) #2	31.76	390336m	BelowCal	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8580.D\ECD1A.CH Vial: 15
Signal #2 : I:\L\DATA\SL0420\L8580.D\ECD2B.CH
Acq On : 5-7-2014 09:53:59 PM Operator: RR
Sample : M2924-P(0) Inst : INST. L
Misc : WQ-TPC-004-042214 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:15 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:10 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2487320m	50.00000	ng
10) I	Cl6(161)	25.57	7806018	50.00000	ng
24) I	Cl5(96) #2	18.94	54041825m	50.00000	ng
33) I	Cl6(161) #2	25.32	136185820m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	1656317m	35.78076	ng
Spiked Amount	50.0000		Recovery	= 71.56%	
11) s	Cl6(152)	22.82	2842519m	36.80153	ng
Spiked Amount	50.2000		Recovery	= 73.31%	
27) s	Cl3(34) #2	14.97	34323953m	35.55448	ng
Spiked Amount	50.0000		Recovery	= 71.11%	
34) s	Cl6(152) #2	22.02	59134291m	37.80238	ng
Spiked Amount	50.2000		Recovery	= 75.30%	
	Target Compounds				
2)	Cl2(8)	12.26	353931m	13.09237	ng
3)	Cl3(18)	14.27	744778m	22.56157	ng
5)	Cl3(28)	16.40	2102528m	29.80716	ng
6)	Cl4(52)	18.07	1368422m	28.70353	ng
7)	Cl4(44)	18.96	703709m	11.78596	ng
8)	Cl4(66)	20.93	1030867m	14.65709	ng
9)	Cl5(101)	22.02	744374m	12.00387	ng
12)	Cl5(118)	24.74	712914m	6.44601	ng
13)	Cl6(153)	25.77	702771m	7.92189	ng
14)	Cl5(105)	25.82	99556m	BelowCal	ng
15)	Cl6(138)	26.76	623715	2.80790	ng
16)	Cl7(187)	27.34	128290m	BelowCal	ng
17)	Cl6(128)	27.60	104549m	BelowCal	ng
18)	Cl7(180)	28.77	156577m	BelowCal	ng
19)	Cl7(170)	29.46	154016m	BelowCal	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.67	6773451m	11.15069	ng
26)	Cl3(18) #2	13.51	20890354m	27.95287	ng
28)	Cl3(28) #2	16.23	41320509m	28.30081	ng
29)	Cl4(52) #2	17.61	31355122m	29.09406	ng
30)	Cl4(44) #2	18.40	16320874m	12.10182	ng
31)	Cl4(66) #2	20.76	16817526m	11.33619	ng
32)	Cl5(101) #2	21.64	17423786m	11.60974	ng
35)	Cl5(118) #2	24.77	15004616m	8.35985	ng
36)	Cl6(153) #2	25.51	14619838m	5.45900	ng
37)	Cl5(105) #2	25.83	5110164m	BelowCal	ng
38)	Cl6(138) #2	26.53	6306245m	BelowCal	ng
39)	Cl7(187) #2	26.96	2425994m	BelowCal	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8580.D\ECD1A.CH Vial: 15
Signal #2 : I:\L\DATA\SL0420\L8580.D\ECD2B.CH
Acq On : 5-7-2014 09:53:59 PM Operator: RR
Sample : M2924-P(0) Inst : INST. L
Misc : WQ-TPC-004-042214 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:15 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:10 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	2404200m	BelowCal	ng
41)	Cl7(180) #2	28.57	3209490m	BelowCal	ng
42)	Cl7(170) #2	29.23	2443016m	BelowCal	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8581.D\ECD1A.CH Vial: 16
Signal #2 : I:\L\DATA\SL0420\L8581.D\ECD2B.CH
Acq On : 07 May 2014 10:38 pm Operator: RR
Sample : M3115-P(0) Inst : INST. L
Misc : WQ-TPC-003-042314 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:18 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:14 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2206203m	50.00000	ng
10) I	Cl6(161)	25.57	6734091m	50.00000	ng
24) I	Cl5(96) #2	18.94	44405489m	50.00000	ng
33) I	Cl6(161) #2	25.32	110231283m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	1610139m	38.29285	ng
Spiked Amount	50.0000		Recovery	= 76.59%	
11) s	Cl6(152)	22.82	2624752m	38.54570	ng
Spiked Amount	50.2000		Recovery	= 76.78%	
27) s	Cl3(34) #2	14.97	30685837m	37.98713	ng
Spiked Amount	50.0000		Recovery	= 75.97%	
34) s	Cl6(152) #2	22.02 T	50581633m	39.39397	ng
Spiked Amount	50.2000		Recovery	= 78.47%	
	Target Compounds				
2)	Cl2(8)	12.26	908909m	34.27262	ng
3)	Cl3(18)	14.26	1928109m	51.42556	ng
5)	Cl3(28)	16.40	5336343m	60.34820	ng
6)	Cl4(52)	18.07	3173064m	56.83332	ng
7)	Cl4(44)	18.96	1527027m	27.34616	ng
8)	Cl4(66)	20.94	2063474m	29.54127	ng
9)	Cl5(101)	22.02	1378199m	24.23537	ng
12)	Cl5(118)	24.74	1225851m	15.97719	ng
13)	Cl6(153)	25.77	1258364m	16.84034	ng
14)	Cl5(105)	25.83	169196m	BelowCal	ng
15)	Cl6(138)	26.75	1046089m	11.86535	ng
16)	Cl7(187)	27.34	218717m	BelowCal	ng
17)	Cl6(128)	27.60	171624m	BelowCal	ng
18)	Cl7(180)	28.77	270007m	BelowCal	ng
19)	Cl7(170)	29.46	457295m	0.48746	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.67	16618401m	33.02066	ng
26)	Cl3(18) #2	13.51	39866644m	54.41134	ng
28)	Cl3(28) #2	16.23	85234469m	54.49658	ng
29)	Cl4(52) #2	17.61	64612860m	57.22373	ng
30)	Cl4(44) #2	18.40	30591498m	27.54669	ng
31)	Cl4(66) #2	20.75	30441989m	25.07707	ng
32)	Cl5(101) #2	21.64	24880000m	20.90327	ng
35)	Cl5(118) #2	24.77	22450596m	17.28482	ng
36)	Cl6(153) #2	25.50	22352347m	14.67776	ng
37)	Cl5(105) #2	25.83 T	6754484m	BelowCal	ng
38)	Cl6(138) #2	26.53	9779883m	3.26130	ng
39)	Cl7(187) #2	26.96	4152734m	BelowCal	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Signal #1 : I:\L\DATA\SL0420\L8581.D\ECD1A.CH Vial: 16
Signal #2 : I:\L\DATA\SL0420\L8581.D\ECD2B.CH
Acq On : 07 May 2014 10:38 pm Operator: RR
Sample : M3115-P(0) Inst : INST. L
Misc : WQ-TPC-003-042314 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:18 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:14 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	4258494m	BelowCal	ng
41)	Cl7(180) #2	28.57	4710954m	BelowCal	ng
42)	Cl7(170) #2	29.23	3060202m	BelowCal	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8582.D\ECD1A.CH Vial: 17
Signal #2 : I:\L\DATA\SL0420\L8582.D\ECD2B.CH
Acq On : 07 May 2014 11:24 pm Operator: RR
Sample : M3115MS-P(0) Inst : INST. L
Misc : Matrix Spike of WQ-TPC-003-042314 5-128 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:21 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:17 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	1979349m	50.00000	ng
10) I	Cl6(161)	25.57	6114347m	50.00000	ng
24) I	Cl5(96) #2	18.94	46123280m	50.00000	ng
33) I	Cl6(161) #2	25.32	106293357m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	1517496	39.69009	ng
Spiked Amount	50.0000		Recovery	= 79.38%	
11) s	Cl6(152)	22.82	2706598	41.96292	ng
Spiked Amount	50.2000		Recovery	= 83.59%	
27) s	Cl3(34) #2	14.97	33174722m	39.17806	ng
Spiked Amount	50.0000		Recovery	= 78.36%	
34) s	Cl6(152) #2	22.00	49332098m	39.72722	ng
Spiked Amount	50.2000		Recovery	= 79.14%	
	Target Compounds				
2)	Cl2(8)	12.26	926734m	37.69381	ng
3)	Cl3(18)	14.27	1609688	48.95120	ng
5)	Cl3(28)	16.41	5566417	66.15742	ng
6)	Cl4(52)	18.07	2685761m	54.73247	ng
7)	Cl4(44)	18.96	2586829m	43.12904	ng
8)	Cl4(66)	20.90	3318428	44.47822	ng
9)	Cl5(101)	22.02	2621072	41.98612	ng
12)	Cl5(118)	24.74	3455520m	39.22880	ng
13)	Cl6(153)	25.76	3874409m	42.58128	ng
14)	Cl5(105)	25.84	3670762	35.43913	ng
15)	Cl6(138)	26.77	3885885m	37.81693	ng
16)	Cl7(187)	27.34	3503670	36.76162	ng
17)	Cl6(128)	27.60	3975118	36.02108	ng
18)	Cl7(180)	28.77	4308884	37.50012	ng
19)	Cl7(170)	29.46	4409632	37.45797	ng
20)	Cl8(195)	30.43	4549150m	38.13452	ng
21)	Cl9(206)	31.61	4086777m	37.00098	ng
22)	Cl10(209)	32.18	3228308m	38.55535	ng
25)	Cl2(8) #2	11.67	19860820m	36.99300	ng
26)	Cl3(18) #2	13.52	45465028m	58.15697	ng
28)	Cl3(28) #2	16.23	83061335m	52.27127	ng
29)	Cl4(52) #2	17.61	59441697m	52.70809	ng
30)	Cl4(44) #2	18.40	55111007m	41.99786	ng
31)	Cl4(66) #2	20.78	65732882m	42.96567	ng
32)	Cl5(101) #2	21.65	73827410m	48.77740	ng
35)	Cl5(118) #2	24.79	56098737m	37.77364	ng
36)	Cl6(153) #2	25.50	60189108m	37.09695	ng
37)	Cl5(105) #2	25.82	70285519m	37.03578	ng
38)	Cl6(138) #2	26.53	65106860m	37.56877	ng
39)	Cl7(187) #2	26.96	58455041m	35.67881	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8582.D\ECD1A.CH Vial: 17
Signal #2 : I:\L\DATA\SL0420\L8582.D\ECD2B.CH
Acq On : 07 May 2014 11:24 pm Operator: RR
Sample : M3115MS-P(0) Inst : INST. L
Misc : Matrix Spike of WQ-TPC-003-042314 5-128 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:21 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:17 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	74743502m	36.08540	ng
41)	Cl7(180) #2	28.57	70936075m	37.68877	ng
42)	Cl7(170) #2	29.23	73194670m	36.01711	ng
43)	Cl8(195) #2	30.14	73838610m	36.53545	ng
44)	Cl9(206) #2	31.27	68006686m	35.67697	ng
45)	Cl10(209) #2	31.72	55848429m	36.64217	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8583.D\ECD1A.CH Vial: 18
Signal #2 : I:\L\DATA\SL0420\L8583.D\ECD2B.CH
Acq On : 08 May 2014 12:09 am Operator: RR
Sample : M3115MSD-P(0) Inst : INST. L
Misc : Matrix Spike Duplicate of WQ-TPC-003-042 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:24 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:20 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2023262m	50.00000	ng
10) I	Cl6(161)	25.57	6283290m	50.00000	ng
24) I	Cl5(96) #2	18.94	43655018m	50.00000	ng
33) I	Cl6(161) #2	25.32	99228324m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	1569315	40.02518	ng
Spiked Amount	50.0000		Recovery	= 80.05%	
11) s	Cl6(152)	22.82	2774101	41.89042	ng
Spiked Amount	50.2000		Recovery	= 83.45%	
27) s	Cl3(34) #2	14.97	31624281m	39.39289	ng
Spiked Amount	50.0000		Recovery	= 78.79%	
34) s	Cl6(152) #2	22.00	43792968m	38.26631	ng
Spiked Amount	50.2000		Recovery	= 76.23%	
	Target Compounds				
2)	Cl2(8)	12.26	875834m	35.56980	ng
3)	Cl3(18)	14.27	1560036	47.17769	ng
5)	Cl3(28)	16.41	5227347	62.83630	ng
6)	Cl4(52)	18.07	2593911	52.74190	ng
7)	Cl4(44)	18.96	2562125	42.22651	ng
8)	Cl4(66)	20.90	3302453	43.69538	ng
9)	Cl5(101)	22.02	2585809	40.99459	ng
12)	Cl5(118)	24.74	3411443m	38.18067	ng
13)	Cl6(153)	25.76	3489794m	38.94208	ng
14)	Cl5(105)	25.84	3824363	35.75702	ng
15)	Cl6(138)	26.76	4051371	38.17065	ng
16)	Cl7(187)	27.34	3571307	36.56919	ng
17)	Cl6(128)	27.60	4096269	36.08604	ng
18)	Cl7(180)	28.77	4476633	37.76297	ng
19)	Cl7(170)	29.46	4594009	37.79106	ng
20)	Cl8(195)	30.43	4787034m	38.72382	ng
21)	Cl9(206)	31.61	4379620m	38.07930	ng
22)	Cl10(209)	32.18	3476830m	39.82802	ng
25)	Cl2(8) #2	11.66	18241249m	36.11497	ng
26)	Cl3(18) #2	13.51	40916255m	56.11314	ng
28)	Cl3(28) #2	16.23	72262315m	49.43694	ng
29)	Cl4(52) #2	17.61	52516784m	50.26765	ng
30)	Cl4(44) #2	18.40	47259468m	39.10831	ng
31)	Cl4(66) #2	20.77	60309275m	42.07326	ng
32)	Cl5(101) #2	21.65	71180408m	49.42216	ng
35)	Cl5(118) #2	24.79	61560915m	42.32142	ng
36)	Cl6(153) #2	25.50	54730727m	36.37082	ng
37)	Cl5(105) #2	25.82	64082441m	36.43839	ng
38)	Cl6(138) #2	26.54	60316347m	37.36980	ng
39)	Cl7(187) #2	26.96	53250337m	35.05888	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8583.D\ECD1A.CH Vial: 18
Signal #2 : I:\L\DATA\SL0420\L8583.D\ECD2B.CH
Acq On : 08 May 2014 12:09 am Operator: RR
Sample : M3115MSD-P(0) Inst : INST. L
Misc : Matrix Spike Duplicate of WQ-TPC-003-042 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:24 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:20 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	69226423m	35.88871	ng
41)	Cl7(180) #2	28.57	65486090m	37.40030	ng
42)	Cl7(170) #2	29.23	67602692m	35.75135	ng
43)	Cl8(195) #2	30.14	67784614m	36.11598	ng
44)	Cl9(206) #2	31.28	63355216m	35.62408	ng
45)	Cl10(209) #2	31.72	52831613m	36.99915	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8585.D\ECD1A.CH Vial: 20
Signal #2 : I:\L\DATA\SL0420\L8585.D\ECD2B.CH
Acq On : 5-8-2014 01:40:00 AM Operator: RR
Sample : M3114-P(0) Inst : INST. L
Misc : WQ-TPC-002-042314 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:27 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:23 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2331432m	50.00000	ng
10) I	Cl6(161)	25.57	7361384m	50.00000	ng
24) I	Cl5(96) #2	18.94	45176775m	50.00000	ng
33) I	Cl6(161) #2	25.32	109003772m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	1818467m	40.18667	ng
Spiked Amount	50.0000		Recovery	= 80.37%	
11) s	Cl6(152)	22.82	2926387m	39.06186	ng
Spiked Amount	50.2000		Recovery	= 77.81%	
27) s	Cl3(34) #2	14.97	32350569m	39.04534	ng
Spiked Amount	50.0000		Recovery	= 78.09%	
34) s	Cl6(152) #2	22.02 T	51680308m	40.35780	ng
Spiked Amount	50.2000		Recovery	= 80.39%	
	Target Compounds				
2)	Cl2(8)	12.26	751772m	28.31297	ng
3)	Cl3(18)	14.26	1644384m	44.31649	ng
5)	Cl3(28)	16.40	3278429m	42.66156	ng
6)	Cl4(52)	18.07	2266411m	43.78193	ng
7)	Cl4(44)	18.96	969379m	17.71433	ng
8)	Cl4(66)	20.94	1161091m	17.52871	ng
9)	Cl5(101)	22.02	679456m	11.63476	ng
12)	Cl5(118)	24.74	604197m	5.16479	ng
13)	Cl6(153)	25.77	586422m	6.76592	ng
14)	Cl5(105)	25.81	122831m	BelowCal	ng
15)	Cl6(138)	26.76	706467m	5.30916	ng
16)	Cl7(187)	27.34	134095m	BelowCal	ng
17)	Cl6(128)	27.60	62417m	BelowCal	ng
18)	Cl7(180)	28.77	155905m	BelowCal	ng
19)	Cl7(170)	29.45	818411m	6.28232	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.66	11845112m	24.27134	ng
26)	Cl3(18) #2	13.51	36643225m	50.54714	ng
28)	Cl3(28) #2	16.21	93581876m	57.24972	ng
29)	Cl4(52) #2	17.61	43490763m	42.93448	ng
30)	Cl4(44) #2	18.40	18431354m	17.02095	ng
31)	Cl4(66) #2	20.74	17299898m	14.51960	ng
32)	Cl5(101) #2	21.64	11736277m	8.73104	ng
35)	Cl5(118) #2	24.77	10469776m	6.70820	ng
36)	Cl6(153) #2	25.51	10998729m	4.70042	ng
37)	Cl5(105) #2	25.85	6224047m	BelowCal	ng
38)	Cl6(138) #2	26.53	4462982m	BelowCal	ng
39)	Cl7(187) #2	26.92	1028924m	BelowCal	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8585.D\ECD1A.CH Vial: 20
Signal #2 : I:\L\DATA\SL0420\L8585.D\ECD2B.CH
Acq On : 5-8-2014 01:40:00 AM Operator: RR
Sample : M3114-P(0) Inst : INST. L
Misc : WQ-TPC-002-042314 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:27 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:23 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.39	2466399m	BelowCal	ng
41)	Cl7(180) #2	28.57	1832406m	BelowCal	ng
42)	Cl7(170) #2	29.23	1593407m	BelowCal	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8586.D\ECD1A.CH Vial: 21
Signal #2 : I:\L\DATA\SL0420\L8586.D\ECD2B.CH
Acq On : 5-8-2014 02:25:13 AM Operator: RR
Sample : M3113-P(0) Inst : INST. L
Misc : WQ-TPC-001-042314 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:30 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:26 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2341183m	50.00000	ng
10) I	Cl6(161)	25.57	7430785m	50.00000	ng
24) I	Cl5(96) #2	18.94	49082788m	50.00000	ng
33) I	Cl6(161) #2	25.33	125761421m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	1688106m	37.95478	ng
Spiked Amount	50.0000		Recovery	= 75.91%	
11) s	Cl6(152)	22.82	2806188m	37.72814	ng
Spiked Amount	50.2000		Recovery	= 75.16%	
27) s	Cl3(34) #2	14.96	35547171m	39.38520	ng
Spiked Amount	50.0000		Recovery	= 78.77%	
34) s	Cl6(152) #2	22.02 T	56194599m	38.62231	ng
Spiked Amount	50.2000		Recovery	= 76.94%	
	Target Compounds				
2)	Cl2(8)	12.26	727004m	27.46125	ng
3)	Cl3(18)	14.27	1611498m	43.55624	ng
5)	Cl3(28)	16.41	4796666m	54.42864	ng
6)	Cl4(52)	18.07	3040715m	53.19244	ng
7)	Cl4(44)	18.96	1602718m	27.11297	ng
8)	Cl4(66)	20.93	1229619m	18.40768	ng
9)	Cl5(101)	22.02	1676131m	26.99951	ng
12)	Cl5(118)	24.74	1488401m	17.51634	ng
13)	Cl6(153)	25.77	1607055m	19.10997	ng
14)	Cl5(105)	25.82	285361m	BelowCal	ng
15)	Cl6(138)	26.76	1638027	17.08237	ng
16)	Cl7(187)	27.34	272058m	BelowCal	ng
17)	Cl6(128)	27.60	239749m	BelowCal	ng
18)	Cl7(180)	28.77	365390m	BelowCal	ng
19)	Cl7(170)	29.46	602895m	2.59994	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.66	14820260m	27.52692	ng
26)	Cl3(18) #2	13.51	42963523m	53.42750	ng
28)	Cl3(28) #2	16.22	110891270m	60.51467	ng
29)	Cl4(52) #2	17.61	63508529m	52.85205	ng
30)	Cl4(44) #2	18.40	34767819m	28.18590	ng
31)	Cl4(66) #2	20.75	37579315m	27.40463	ng
32)	Cl5(101) #2	21.64	31839889m	23.90265	ng
35)	Cl5(118) #2	24.77	28978601m	19.42782	ng
36)	Cl6(153) #2	25.51	28705860m	16.72619	ng
37)	Cl5(105) #2	25.85	7439889m	BelowCal	ng
38)	Cl6(138) #2	26.53	11801804m	3.97200	ng
39)	Cl7(187) #2	26.96	4850231m	BelowCal	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8586.D\ECD1A.CH Vial: 21
Signal #2 : I:\L\DATA\SL0420\L8586.D\ECD2B.CH
Acq On : 5-8-2014 02:25:13 AM Operator: RR
Sample : M3113-P(0) Inst : INST. L
Misc : WQ-TPC-001-042314 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:30 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:26 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	4727454m	BelowCal	ng
41)	Cl7(180) #2	28.57	6153496m	BelowCal	ng
42)	Cl7(170) #2	29.23	5110552m	BelowCal	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8587.D\ECD1A.CH Vial: 22
Signal #2 : I:\L\DATA\SL0420\L8587.D\ECD2B.CH
Acq On : 5-8-2014 03:10:24 AM Operator: RR
Sample : M3116-P(0) Inst : INST. L
Misc : WQ-TPC-003-042314-REP 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:33 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:29 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2442687m	50.00000	ng
10) I	Cl6(161)	25.57	7950453m	50.00000	ng
24) I	Cl5(96) #2	18.94	48220260m	50.00000	ng
33) I	Cl6(161) #2	25.33	123220214m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	1798240m	38.53617	ng
Spiked Amount	50.0000		Recovery	= 77.07%	
11) s	Cl6(152)	22.82	2850451m	36.41053	ng
Spiked Amount	50.2000		Recovery	= 72.53%	
27) s	Cl3(34) #2	14.97	35042026m	39.48831	ng
Spiked Amount	50.0000		Recovery	= 78.98%	
34) s	Cl6(152) #2	22.02 T	52568990m	37.30353	ng
Spiked Amount	50.2000		Recovery	= 74.31%	
	Target Compounds				
2)	Cl2(8)	12.26	1182042	38.61320	ng
3)	Cl3(18)	14.26	2683949	59.92224	ng
5)	Cl3(28)	16.41	7935639m	72.13781	ng
6)	Cl4(52)	18.07	5038513m	71.26499	ng
7)	Cl4(44)	18.96	2308485m	34.47851	ng
8)	Cl4(66)	20.93	1640200m	22.77198	ng
9)	Cl5(101)	22.02	2248600m	32.59343	ng
12)	Cl5(118)	24.74	1847367m	20.03490	ng
13)	Cl6(153)	25.77	2037699m	21.98552	ng
14)	Cl5(105)	25.82	315851m	BelowCal	ng
15)	Cl6(138)	26.75	1762579m	17.17206	ng
16)	Cl7(187)	27.34	336099m	BelowCal	ng
17)	Cl6(128)	27.60	231992m	BelowCal	ng
18)	Cl7(180)	28.77	389764m	BelowCal	ng
19)	Cl7(170)	29.46	659789m	2.86316	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.66	25189470m	43.00247	ng
26)	Cl3(18) #2	13.51	55204162m	64.55334	ng
28)	Cl3(28) #2	16.23	122987783m	65.31921	ng
29)	Cl4(52) #2	17.61	97650642m	71.03439	ng
30)	Cl4(44) #2	18.40	45092973m	35.07564	ng
31)	Cl4(66) #2	20.76	43287961m	30.97100	ng
32)	Cl5(101) #2	21.64	37933974m	28.24302	ng
35)	Cl5(118) #2	24.77	32249544m	21.78057	ng
36)	Cl6(153) #2	25.51	34074513m	20.30714	ng
37)	Cl5(105) #2	25.82 T	6684262m	BelowCal	ng
38)	Cl6(138) #2	26.53	12347900m	4.81221	ng
39)	Cl7(187) #2	26.96	5018933m	BelowCal	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8587.D\ECD1A.CH Vial: 22
Signal #2 : I:\L\DATA\SL0420\L8587.D\ECD2B.CH
Acq On : 5-8-2014 03:10:24 AM Operator: RR
Sample : M3116-P(0) Inst : INST. L
Misc : WQ-TPC-003-042314-REP 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:33 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:29 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	5544025m	BelowCal	ng
41)	Cl7(180) #2	28.57	5844595m	BelowCal	ng
42)	Cl7(170) #2	29.23	3771925m	BelowCal	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8588.D\ECD1A.CH Vial: 23
Signal #2 : I:\L\DATA\SL0420\L8588.D\ECD2B.CH
Acq On : 5-8-2014 03:55:37 AM Operator: RR
Sample : M3117-P(0) Inst : INST. L
Misc : WQ-TPC-003-042314-EB 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:37 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:32 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2392263	50.00000	ng
10) I	Cl6(161)	25.57	7563513m	50.00000	ng
24) I	Cl5(96) #2	18.94	46515529m	50.00000	ng
33) I	Cl6(161) #2	25.32	118672638m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	1527451	34.66612	ng
Spiked Amount	50.0000		Recovery	= 69.33%	
11) s	Cl6(152)	22.82	2740491	36.67562	ng
Spiked Amount	50.2000		Recovery	= 73.06%	
27) s	Cl3(34) #2	14.97	32270773m	38.10321	ng
Spiked Amount	50.0000		Recovery	= 76.21%	
34) s	Cl6(152) #2	22.02	50800758m	37.39904	ng
Spiked Amount	50.2000		Recovery	= 74.50%	
	Target Compounds				
2)	Cl2(8)	0.00	0d	N.D.	ng
3)	Cl3(18)	0.00	0d	N.D.	ng
5)	Cl3(28)	0.00	0d	N.D.	ng
6)	Cl4(52)	0.00	0d	N.D.	ng
7)	Cl4(44)	0.00	0d	N.D.	ng
8)	Cl4(66)	0.00	0d	N.D.	ng
9)	Cl5(101)	0.00	0d	N.D.	ng
12)	Cl5(118)	0.00	0d	N.D.	ng
13)	Cl6(153)	0.00	0d	N.D.	ng
14)	Cl5(105)	0.00	0d	N.D.	ng
15)	Cl6(138)	0.00	0d	N.D.	ng
16)	Cl7(187)	0.00	0d	N.D.	ng
17)	Cl6(128)	0.00	0d	N.D.	ng
18)	Cl7(180)	0.00	0d	N.D.	ng
19)	Cl7(170)	0.00	0d	N.D.	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	0.00	0d	N.D.	ng
26)	Cl3(18) #2	0.00	0d	N.D.	ng
28)	Cl3(28) #2	0.00	0d	N.D.	ng
29)	Cl4(52) #2	0.00	0d	N.D.	ng
30)	Cl4(44) #2	0.00	0d	N.D.	ng
31)	Cl4(66) #2	0.00	0d	N.D.	ng
32)	Cl5(101) #2	0.00	0d	N.D.	ng
35)	Cl5(118) #2	0.00	0d	N.D.	ng
36)	Cl6(153) #2	0.00	0d	N.D.	ng
37)	Cl5(105) #2	0.00	0d	N.D.	ng
38)	Cl6(138) #2	0.00	0d	N.D.	ng
39)	Cl7(187) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8588.D\ECD1A.CH Vial: 23
Signal #2 : I:\L\DATA\SL0420\L8588.D\ECD2B.CH
Acq On : 5-8-2014 03:55:37 AM Operator: RR
Sample : M3117-P(0) Inst : INST. L
Misc : WQ-TPC-003-042314-EB 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:37 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:32 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	0.00	0d	N.D.	ng
41)	Cl7(180) #2	0.00	0d	N.D.	ng
42)	Cl7(170) #2	0.00	0d	N.D.	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8589.D\ECD1A.CH Vial: 24
Signal #2 : I:\L\DATA\SL0420\L8589.D\ECD2B.CH
Acq On : 5-8-2014 04:40:55 AM Operator: RR
Sample : M3118-P(0) Inst : INST. L
Misc : WQ-TPC-004-042314 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:40 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:36 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2083118m	50.00000	ng
10) I	Cl6(161)	25.57	6244609m	50.00000	ng
24) I	Cl5(96) #2	18.94	45496936m	50.00000	ng
33) I	Cl6(161) #2	25.32	114826330m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	1532725m	38.52129	ng
Spiked Amount	50.0000		Recovery	= 77.04%	
11) s	Cl6(152)	22.82	2568281m	39.96320	ng
Spiked Amount	50.2000		Recovery	= 79.61%	
27) s	Cl3(34) #2	14.97	32667740m	39.12618	ng
Spiked Amount	50.0000		Recovery	= 78.25%	
34) s	Cl6(152) #2	22.02 T	54187519m	40.21926	ng
Spiked Amount	50.2000		Recovery	= 80.12%	
	Target Compounds				
2)	Cl2(8)	12.27	374089m	16.78343	ng
3)	Cl3(18)	14.27	793468m	27.73533	ng
5)	Cl3(28)	16.41	2422831m	37.49591	ng
6)	Cl4(52)	18.07	1479253	34.96166	ng
7)	Cl4(44)	18.96	702649m	14.36826	ng
8)	Cl4(66)	20.94	1019742m	17.24920	ng
9)	Cl5(101)	22.02	706039m	13.79488	ng
12)	Cl5(118)	24.75	689698m	8.83555	ng
13)	Cl6(153)	25.77	650863m	9.42173	ng
14)	Cl5(105)	25.81	129157m	BelowCal	ng
15)	Cl6(138)	26.76	609468m	5.53500	ng
16)	Cl7(187)	27.34	109259m	BelowCal	ng
17)	Cl6(128)	27.60	105906m	BelowCal	ng
18)	Cl7(180)	28.77	136934m	BelowCal	ng
19)	Cl7(170)	29.46	167400m	BelowCal	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.66	7701907m	15.77301	ng
26)	Cl3(18) #2	13.51	22328807m	34.25095	ng
28)	Cl3(28) #2	16.23	42585135m	33.08102	ng
29)	Cl4(52) #2	17.61	33619597m	35.25357	ng
30)	Cl4(44) #2	18.40	18582709m	17.04060	ng
31)	Cl4(66) #2	20.75	17085343m	14.20845	ng
32)	Cl5(101) #2	21.64	15372908m	12.28622	ng
35)	Cl5(118) #2	24.77	14145922m	9.78815	ng
36)	Cl6(153) #2	25.51	14478949m	7.53505	ng
37)	Cl5(105) #2	25.85	6668541m	BelowCal	ng
38)	Cl6(138) #2	26.53	6560285m	BelowCal	ng
39)	Cl7(187) #2	26.96	2447741m	BelowCal	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8589.D\ECD1A.CH Vial: 24
Signal #2 : I:\L\DATA\SL0420\L8589.D\ECD2B.CH
Acq On : 5-8-2014 04:40:55 AM Operator: RR
Sample : M3118-P(0) Inst : INST. L
Misc : WQ-TPC-004-042314 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:40 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:36 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	2472240m	BelowCal	ng
41)	Cl7(180) #2	28.57	2609121m	BelowCal	ng
42)	Cl7(170) #2	29.23	2236297m	BelowCal	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8590.D\ECD1A.CH Vial: 25
Signal #2 : I:\L\DATA\SL0420\L8590.D\ECD2B.CH
Acq On : 5-8-2014 05:26:10 AM Operator: RR
Sample : M3179-P(0) Inst : INST. L
Misc : WQ-TPC-001-042414 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:43 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:39 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2180598m	50.00000	ng
10) I	Cl6(161)	25.57	6770885m	50.00000	ng
24) I	Cl5(96) #2	18.94	42720231m	50.00000	ng
33) I	Cl6(161) #2	25.32	105907036m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	1583820	38.15827	ng
Spiked Amount	50.0000		Recovery	= 76.32%	
11) s	Cl6(152)	22.82	2526630m	37.42244	ng
Spiked Amount	50.2000		Recovery	= 74.55%	
27) s	Cl3(34) #2	14.97	28380017m	36.83735	ng
Spiked Amount	50.0000		Recovery	= 73.67%	
34) s	Cl6(152) #2	22.02 T	45839514m	37.71137	ng
Spiked Amount	50.2000		Recovery	= 75.12%	
	Target Compounds				
2)	Cl2(8)	12.27	719089	28.82808	ng
3)	Cl3(18)	14.27	1629602	46.15916	ng
5)	Cl3(28)	16.40	3718892m	48.42373	ng
6)	Cl4(52)	18.07	2548010m	49.60432	ng
7)	Cl4(44)	18.97	984588m	19.12268	ng
8)	Cl4(66)	20.94	1147066m	18.43383	ng
9)	Cl5(101)	22.02	759727m	14.20502	ng
12)	Cl5(118)	24.75	572423m	5.51578	ng
13)	Cl6(153)	25.77	710201m	9.48960	ng
14)	Cl5(105)	25.82	107349m	BelowCal	ng
15)	Cl6(138)	26.76	552584m	3.10360	ng
16)	Cl7(187)	27.34	137942m	BelowCal	ng
17)	Cl6(128)	27.60	81896m	BelowCal	ng
18)	Cl7(180)	28.77	141565m	BelowCal	ng
19)	Cl7(170)	29.46	170058m	BelowCal	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.66	12932792m	27.58962	ng
26)	Cl3(18) #2	13.51	36365151m	52.35906	ng
28)	Cl3(28) #2	16.23	61903659m	45.19594	ng
29)	Cl4(52) #2	17.61	48591613m	48.34421	ng
30)	Cl4(44) #2	18.40	19510259m	19.06240	ng
31)	Cl4(66) #2	20.75	17502495m	15.61445	ng
32)	Cl5(101) #2	21.64	15372846m	13.22522	ng
35)	Cl5(118) #2	24.77	10482546m	7.06035	ng
36)	Cl6(153) #2	25.51	13147116m	7.32638	ng
37)	Cl5(105) #2	25.85	3708862m	BelowCal	ng
38)	Cl6(138) #2	26.53	4247610m	BelowCal	ng
39)	Cl7(187) #2	26.95	1533772m	BelowCal	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8590.D\ECD1A.CH Vial: 25
Signal #2 : I:\L\DATA\SL0420\L8590.D\ECD2B.CH
Acq On : 5-8-2014 05:26:10 AM Operator: RR
Sample : M3179-P(0) Inst : INST. L
Misc : WQ-TPC-001-042414 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:43 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:39 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	1913392m	BelowCal	ng
41)	Cl7(180) #2	28.57	1908553m	BelowCal	ng
42)	Cl7(170) #2	29.23	1687350m	BelowCal	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8591.D\ECD1A.CH Vial: 26
Signal #2 : I:\L\DATA\SL0420\L8591.D\ECD2B.CH
Acq On : 5-8-2014 06:11:24 AM Operator: RR
Sample : M3180-P(0) Inst : INST. L
Misc : WQ-TPC-002-042414 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:46 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:42 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2557188m	50.00000	ng
10) I	Cl6(161)	25.57	8110755m	50.00000	ng
24) I	Cl5(96) #2	18.95	48633921m	50.00000	ng
33) I	Cl6(161) #2	25.32	123753943m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	1757167m	36.62873	ng
Spiked Amount	50.0000		Recovery	= 73.26%	
11) s	Cl6(152)	22.82	2911026m	36.43725	ng
Spiked Amount	50.2000		Recovery	= 72.58%	
27) s	Cl3(34) #2	14.97	31975322m	36.53869	ng
Spiked Amount	50.0000		Recovery	= 73.08%	
34) s	Cl6(152) #2	22.02	51083849m	36.38291	ng
Spiked Amount	50.2000		Recovery	= 72.48%	
	Target Compounds				
2)	Cl2(8)	12.27	653505	23.31096	ng
3)	Cl3(18)	14.27	1481884	38.44962	ng
5)	Cl3(28)	16.41	3688287m	43.38876	ng
6)	Cl4(52)	18.06	2523317m	44.23594	ng
7)	Cl4(44)	18.96	1094481m	18.20288	ng
8)	Cl4(66)	20.94	1427968m	19.44901	ng
9)	Cl5(101)	22.01	950789m	15.19332	ng
12)	Cl5(118)	24.74	856515m	8.25781	ng
13)	Cl6(153)	25.77	973320m	10.99261	ng
14)	Cl5(105)	25.81	190495m	BelowCal	ng
15)	Cl6(138)	26.75	854930m	6.56490	ng
16)	Cl7(187)	27.34	193463m	BelowCal	ng
17)	Cl6(128)	27.60	132614m	BelowCal	ng
18)	Cl7(180)	28.77	212600m	BelowCal	ng
19)	Cl7(170)	29.46	240770m	BelowCal	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.66	11272699m	21.64328	ng
26)	Cl3(18) #2	13.51	30757524m	41.92047	ng
28)	Cl3(28) #2	16.23	63644053m	42.13194	ng
29)	Cl4(52) #2	17.61	48355022m	43.94563	ng
30)	Cl4(44) #2	18.40	22047293m	18.92496	ng
31)	Cl4(66) #2	20.75	20736478m	16.27558	ng
32)	Cl5(101) #2	21.64	17483796m	13.21039	ng
35)	Cl5(118) #2	24.77	14630296m	9.25198	ng
36)	Cl6(153) #2	25.50	17184648m	8.85706	ng
37)	Cl5(105) #2	25.85	5129208m	BelowCal	ng
38)	Cl6(138) #2	26.53	6174452m	BelowCal	ng
39)	Cl7(187) #2	26.96	2504341m	BelowCal	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8591.D\ECD1A.CH Vial: 26
Signal #2 : I:\L\DATA\SL0420\L8591.D\ECD2B.CH
Acq On : 5-8-2014 06:11:24 AM Operator: RR
Sample : M3180-P(0) Inst : INST. L
Misc : WQ-TPC-002-042414 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:46 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:42 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	2679884m	BelowCal	ng
41)	Cl7(180) #2	28.57	3359538m	BelowCal	ng
42)	Cl7(170) #2	29.23	2482215m	BelowCal	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8592.D\ECD1A.CH Vial: 27
Signal #2 : I:\L\DATA\SL0420\L8592.D\ECD2B.CH
Acq On : 5-8-2014 06:56:40 AM Operator: RR
Sample : M3181-P(0) Inst : INST. L
Misc : WQ-TPC-003-042414 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:49 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:45 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2276825m	50.00000	ng
10) I	Cl6(161)	25.57	7372280m	50.00000	ng
24) I	Cl5(96) #2	18.94	47485665m	50.00000	ng
33) I	Cl6(161) #2	25.33	118875145m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	1697776	38.89842	ng
Spiked Amount	50.0000		Recovery	= 77.80%	
11) s	Cl6(152)	22.82	2561684m	35.63166	ng
Spiked Amount	50.2000		Recovery	= 70.98%	
27) s	Cl3(34) #2	14.97	32027117m	37.27627	ng
Spiked Amount	50.0000		Recovery	= 74.55%	
34) s	Cl6(152) #2	22.02 T	48175801m	35.87637	ng
Spiked Amount	50.2000		Recovery	= 71.47%	
	Target Compounds				
2)	Cl2(8)	12.26	796746	30.22007	ng
3)	Cl3(18)	14.27	1909952	50.00636	ng
5)	Cl3(28)	16.41	5821450m	62.43744	ng
6)	Cl4(52)	18.07	4996874m	74.01495	ng
7)	Cl4(44)	18.96	2330847m	36.48794	ng
8)	Cl4(66)	20.94	3769493m	44.10949	ng
9)	Cl5(101)	22.02	2729935m	39.25373	ng
12)	Cl5(118)	24.74	2741784m	29.20880	ng
13)	Cl6(153)	25.77	3075387m	31.84824	ng
14)	Cl5(105)	25.82	524553m	0.50508	ng
15)	Cl6(138)	26.76	2574274m	24.98543	ng
16)	Cl7(187)	27.34	510937m	1.94255	ng
17)	Cl6(128)	27.60	549746m	1.20686	ng
18)	Cl7(180)	28.77	683908m	4.38361	ng
19)	Cl7(170)	29.46	693890m	4.32730	ng
20)	Cl8(195)	30.43	67396m	BelowCal	ng
21)	Cl9(206)	31.61	75084m	BelowCal	ng
22)	Cl10(209)	32.17	22482m	BelowCal	ng
25)	Cl2(8) #2	11.66	13860279m	26.72050	ng
26)	Cl3(18) #2	13.51	42399910m	54.19823	ng
28)	Cl3(28) #2	16.23	117722508m	64.16772	ng
29)	Cl4(52) #2	17.61	97519526m	71.67233	ng
30)	Cl4(44) #2	18.40	43817233m	34.72234	ng
31)	Cl4(66) #2	20.75	56431603m	37.93656	ng
32)	Cl5(101) #2	21.64	45527510m	33.19873	ng
35)	Cl5(118) #2	24.77	47414054m	30.71280	ng
36)	Cl6(153) #2	25.51	48474979m	28.66979	ng
37)	Cl5(105) #2	25.84	8621237m	0.58165	ng
38)	Cl6(138) #2	26.53	25053589m	15.49898	ng
39)	Cl7(187) #2	26.96	8775219m	1.62223	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8592.D\ECD1A.CH Vial: 27
Signal #2 : I:\L\DATA\SL0420\L8592.D\ECD2B.CH
Acq On : 5-8-2014 06:56:40 AM Operator: RR
Sample : M3181-P(0) Inst : INST. L
Misc : WQ-TPC-003-042414 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:49 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:45 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	10462939m	1.06083	ng
41)	Cl7(180) #2	28.57	11851284m	3.93269	ng
42)	Cl7(170) #2	29.23	7924289m	BelowCal	ng
43)	Cl8(195) #2	30.14	1768424m	BelowCal	ng
44)	Cl9(206) #2	31.27	1737687m	BelowCal	ng
45)	Cl10(209) #2	31.75	499467m	BelowCal	ng

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G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0420\L8593.D\ECD1A.CH Vial: 28
Signal #2 : I:\L\DATA\SL0420\L8593.D\ECD2B.CH
Acq On : 5-8-2014 07:41:53 AM Operator: RR
Sample : M3182-P(0) Inst : INST. L
Misc : WQ-TPC-004-042414 5-128 14-0175 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 08 11:21:52 2014 Quant Results File: ML04120.RES

Quant Method : I:\L\DATA\ML04120.M (Chemstation Integrator)
Title : NBH
Last Update : Thu May 08 11:21:48 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.68	2200122m	50.00000	ng
10) I	Cl6(161)	25.57	7071596m	50.00000	ng
24) I	Cl5(96) #2	18.94	45211694m	50.00000	ng
33) I	Cl6(161) #2	25.32	115830561m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.58	1807442m	41.70890	ng
Spiked Amount	50.0000		Recovery	= 83.42%	
11) s	Cl6(152)	22.82	2742424m	38.41433	ng
Spiked Amount	50.2000		Recovery	= 76.52%	
27) s	Cl3(34) #2	14.97	34628671m	41.09681	ng
Spiked Amount	50.0000		Recovery	= 82.19%	
34) s	Cl6(152) #2	22.02 T	53108925m	39.37084	ng
Spiked Amount	50.2000		Recovery	= 78.43%	
	Target Compounds				
2)	Cl2(8)	12.27	1012389m	37.21680	ng
3)	Cl3(18)	14.27	3133760m	70.82472	ng
5)	Cl3(28)	16.41	6585994m	68.69372	ng
6)	Cl4(52)	18.07	5953715m	83.94960	ng
7)	Cl4(44)	18.96	2054562m	34.18494	ng
8)	Cl4(66)	20.94	2385335m	32.92814	ng
9)	Cl5(101)	22.02	1417656m	24.84803	ng
12)	Cl5(118)	24.74	1008201m	12.30999	ng
13)	Cl6(153)	25.78	1708583m	20.95603	ng
14)	Cl5(105)	25.82	157840m	BelowCal	ng
15)	Cl6(138)	26.75	1197666m	13.10377	ng
16)	Cl7(187)	27.34	388595m	BelowCal	ng
17)	Cl6(128)	27.60	141912m	BelowCal	ng
18)	Cl7(180)	28.77	313530m	BelowCal	ng
19)	Cl7(170)	29.46	279274m	BelowCal	ng
20)	Cl8(195)	30.43	39434m	BelowCal	ng
21)	Cl9(206)	31.61	49145m	BelowCal	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.66	18624072m	35.70344	ng
26)	Cl3(18) #2	13.51	63617164m	74.23556	ng
28)	Cl3(28) #2	16.23	129556142m	70.21423	ng
29)	Cl4(52) #2	17.61	113934371m	81.52674	ng
30)	Cl4(44) #2	18.40	40451867m	33.91490	ng
31)	Cl4(66) #2	20.74	34662911m	27.43421	ng
32)	Cl5(101) #2	21.64	27055282m	22.22037	ng
35)	Cl5(118) #2	24.77	20853124m	15.26983	ng
36)	Cl6(153) #2	25.51	30731955m	19.50586	ng
37)	Cl5(105) #2	25.85	5017422m	BelowCal	ng
38)	Cl6(138) #2	26.54	6717795m	BelowCal	ng
39)	Cl7(187) #2	26.96	6390388m	BelowCal	ng

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Title : NBH
Last Update : Thu May 08 11:21:48 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.40	2932157m	BelowCal	ng
41)	Cl7(180) #2	28.57	5706325m	BelowCal	ng
42)	Cl7(170) #2	29.23	3458718m	BelowCal	ng
43)	Cl8(195) #2	30.13	1038736m	BelowCal	ng
44)	Cl9(206) #2	31.27	1409721m	BelowCal	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
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G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

USACE/NAE New Bedford Harbor Task Order 10
Project No 100043429
Pesticide / PCB by GC/ECD

WATER

Batch 14-0176

Package DP-14-0243

Submitted to:
USACE/NAE
696 Virginia Road
Concord, MA 01742 USA

Submitted by:
Battelle Duxbury Operations
397 Washington Street
Duxbury, MA 02332

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Submitted to:
USACE/NAE
696 Virginia Road
Concord, MA 01742 USA

Submitted by:
Battelle Duxbury Operations
397 Washington Street
Duxbury, MA 02332

Analyst Approval: Rich Restucci 2014.05.07 12:15:27 -04'00'

QC Chemist Approval: Carla Devine 2014.05.14 11:36:31 -04'00'

Project Manager Approval: Carole McCarthy 2014.05.16 09:38:51 -04'00'

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2014 Signature Page

Name (print)	Name (signature)	Initials
Matt Schumitz		MJS
Ellyn M Webb	Ellyn M Webb	EMW
Carla Devine	Carla Devine	CRD
Roxanne M. Brackett	Roxanne M. Brackett	RMB
Robert Lizotte, Jr.		BL
Lauren M Griffith	Lauren M Griffith	LMG
Kevin M. McInerney		KMC
Michael Moore		
Rich Restucci		RR
Stephanie Hart		SAH
Kerry Davis	Kerry Davis	KPD
Katherine Goodrow Robinson	Katherine Goodrow Robinson	KGR
Sam Guimaraes		SAG
Emily Fraser	Emily Fraser	EF
Denise Schumitz	Denise Schumitz	DMS
Jonathan Thorn		JRT
Christie Usher	Christie Usher	CU
Caitlyn Farragher	Caitlyn Farragher	CNF
Mark J. Benotti		
Cwimiaa H Brown		CB
Dawn Trapp	Dawn B Trapp	DBT
Curtis S. Peven McCarthy		CSPM
Weidong Li	Weidong	W.L
Jeannine Seyfert	Jeannine	
FRANCO PALA	Franco Pala	

USACE/NAE New Bedford Harbor Task Order 10
Project No 100043429
Pesticide / PCB by GC/ECD

WATER

Batch 14-0176

Package DP-14-0243

1	***Work Plan*** Laboratory Work Plan, Addendums To Work Plan, Memos From Project Manager, Special Instructions, Chain-of-Custody Reports.	1
2	***Tables*** Analytical Data Tables, Qualifier Definitions.	30
3	***Miscellaneous Documentation*** Case Narrative, Miscellaneous Documentation Form, Quality Control Summary, Example Calculations, Internal Standard Recovery Report, Retention Time Window Report.	39
4	***Sample Preparation Records*** Sample Preparation Records, Dilution Worksheets, Standard Preparation Records, Certificates Of Analysis, GPC Check Report.	45
5	***Analytical Calibrations*** Analytical Sequence, Analytical Method, Tune Report, Initial Calibration, Pesticide Degradation Report, RF Summary, Calibration Verifications, Independent Calibration Verification Check.	64
6	***Analytical Data*** Raw Data Quantification Reports.	95
7	***Chromatograms*** Sample And Standard Chromatograms.	N/A
8	***Unused Data***	N/A

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WORK/QUALITY ASSURANCE PROJECT PLAN

1.0 GENERAL PROJECT INFORMATION

Project Title:	USACE-NAE New Bedford Harbor Task Order 10 - Waters
Project Number:	100043429
Client:	USACE/NAE 696 Virginia Road Concord, MA 01742 USA
Client Contact Information:	Peter Hugh Engineering Technical Lead (978) 318-8452(V) NA NA
Effective Date of QAPP:	4/29/2014
Version Number:	100043429(L)-01
Project Manager:	Peven-McCarthy, Carole
Laboratory Task Manager:	Peven-McCarthy, Carole
Deliverable Due Date:	5/7/2014

2.0 SCOPE OF WORK

Overview:	Water samples (total and dissolved) will be analyzed for PCB congeners. Please charge 100043429-14LABBATWAT
Matrix:	Water

2.1 TECHNICAL APPROACH

2.1.1 Sample Receipt, Storage, and Handling

The list of samples for this project plan are presented in Attachment 1.

Storage Directions:	Store refrigerated until extraction.
Sub_Sampling:	None
Procedures:	NA
Contact:	NA
Comment:	NA
Archiving:	Sample should be consumed during extraction.
Disposal:	N/A

2.1.2 Sample Preparation

Week 1 Dredging: 12 total waters for PCB 18 Congeners (12 dissolved, 12 total):

4 samples on Tuesday 4/22
4 samples on Wednesday 4/23
4 samples on Thursday 4/24

NOTE: Filtration must occur within 24 hr of sampling

We will also receive water for MS/MSD, field replicate, and equipment blank.

Samples Expected:	Samples Per Batch:	Batches Expected:
24	20	2

Batch quality control samples are defined in Table 1.

Target samples are presented in Attachment 1.

Table 1: Quality Control Samples

Type:	*Description:*	*Count:*	*Rgt:*	*Reference:*	*Comment:*
PB	Laboratory control reagent blank.	1 per batch	--	NA	
LCS	Laboratory Control Sample	1 per batch	No	NA	
LCSD	Laboratory Control Sample Duplicate	1 per batch	No	NA	
MS	Spiked field sample for determining method accuracy in the presence of matrix.	1 per batch	--	NA	
MSD	Spiked field sample for determining method accuracy and precision in the presence of matrix.	1 per batch	--	NA	

2.1.3 Extraction/Preparation

2.1.3.1 Extraction

SOP No.-Rev:	**5-200-10**
SOP Title:	*Water Extraction for Trace Level Semi-Volatile Organic Contaminant Analysis*
Sample Size:	1 L
SIS and LCS/MS Compounds:	Defined in Table 2.
Deviations:	N/A
Comments:	We will receive 4 1-L bottles of each water (one extra liter will be collected of each sample for contingency). One will be extracted for "total" PCB analysis and one will be vacuum filtered for "dissolved" PCB analysis. Use 0.45 um 47 mm cellulose filters, Milli-Q water rinsed and baked. Do not solvent clean filters. Measure volume of both water samples. Field/equipment blanks will be filtered to create dissolved and total samples. We will create two batches - one with filtered samples and one with total samples. Each batch will have all the required QC, treated the same as the samples. NOTE: For equipment blank received 5/6/2014, the sample will be extracted with a PB and an LCS, and analyzed for the full congener list by GC/MS.

Table 2: SIS and LCS/MS Spiking Level

Standard Type	Standard Contents	Spike Amount (ng)	Volume (uL)	Comment
PCB Surrogate	HW93 SIS	~ 50 ng	50 uL	NA
ECD LCS/MS Solution	HX10 LCS/MS	~ 38 - 150 ng	75 uL	NA

2.1.3.2 Cleanup

1)	SOP No.-Rev:	**5-329-06**
	SOP Title:	*Alumina Cleanup of Environmental Sample Extracts*
	Deviations:	NA
	Comments:	NA

2)	SOP No.-Rev:	**5-328-04**
	SOP Title:	*Removal (cleanup) of Sulfur from Environmental Sample Extracts*
	Deviations:	NA
	Comments:	NA
3)	SOP No.-Rev:	**5-191-10**
	SOP Title:	*Size Exclusion HPLC Cleanup of Environmental Sample Extracts*
	Deviations:	NA
	Comments:	If deemed necessary by sample prep task leader. If HPLC fractionation performed, decrease PIV to 250 uL and spike with 25 uL internal standard.

RIS spiking levels are presented in Table 3.

Extract PIV (uL): 500

Table 3: RIS Spiking Level

Standard Type	Standard Contents	Spike Amount (ng)	Volume (uL)	Comment
PCB IS	HX16 RIS	~ 50 ng	50 uL	Spike 25 uL if HPLC required (not 50 uL)

2.1.4 Instrumental Analysis

The list of analytes along with data quality criteria are presented in Attachment 2.

1)	SOP_No-Rev:	**5-128-13**
	SOP_Title:	*Identification and Quantification of Polychlorinated Biphenyls (By Congener and Aroclor) and Chlorinated Pesticides by Gas Chromatography/Electron Capture Detection*
	Deviations:	ECD calibration: quadratic, not forced
	Comments:	Total PCB not required. PCB congener results must be reported using dual column confirmation by SW-846 Method 8082. The highest concentration from the two columns will be reported. If there is a 40% or greater difference between the two column results, the reported result (highest concentration) will be flagged as estimated (qualified with a “P” by the laboratory in the electronic data deliverable [EDD]).

2) SOP_No-Rev: **5-315-10**

SOP_Title: *Identification and Quantification of Polychlorinated Biphenyl Congeners (PCBs),PCB Homologues, and Chlorinated Pesticides by Gas Chromatography / Mass Specroscopy in the Selected Ion Monitoring (SIM) Mode*

Deviations: NA

Comments: For field blank (5/6/2014) only.

2.2. DELIVERABLES

Deliverables Due:	5/7/2014
LIMS Reports:	*Yes*
Histograms:	*No*
Excel Tables:	*Yes*
EICs:	*No*
Chromatograms:	*No*
EDDs:	*Yes*
Comments:	Required 14 day TAT. Assumes first samples arrive on April 18 and last on the 23rd. New Bedford Harbor EDD required. Full data package (pdf) required for external validation. Detailed quant reports are not required.

3.0 QUALITY

The Method Quality Objectives are defined in Attachment 3.

4.0 ORGANIZATION AND COMMUNICATION

4.1 ORGANIZATION

The project team is defined in Table 4. Supervisors may make substitutions with Project Manager concurrence.

Table 4: Project Team and Roles

Staff Member	Role	Comment
Carole S. Peven-McCarthy	Project Manager	NA
Dawn B. Trapp	Sample Preparation	NA
Lauren M. Griffith	GC/MS Analysis	NA
Richard P. Restucci Jr	GC/ECD Analysis	NA

Staff Member	Role	Comment
Matt D. Schumitz	Sample Custody	NA
Carla R. Devine	Quality Control Officer	NA

4.2 COMMUNICATION

A kick-off meeting will be held to discuss project scope and goals.

5.0 SCHEDULE

The project schedule is presented in Table 5.

Table 5. Schedule of Laboratory Activities

Activity:	Start Date:	End Date:	TAT (days):	Comment:
Sample Receipt	04/18/2014	04/23/2014	5	NA
Sample Preparation	04/18/2014	04/29/2014	11	NA
Instrument Analysis	04/29/2014	05/05/2014	6	NA
Quality Control Review	05/05/2014	05/06/2014	1	NA
Final Data Reporting	05/07/2014	05/07/2014	0	NA

6.0 BUDGET

The labor budget for the analytical task is presented in Table 6.

Table 6. Labor Budget (Laboratory Analytical Task)

Labor Activity:	Hours/ Batch:	Batches:	Total Hours:	Comment:
Sample Receipt	1	2	2	NA
Sample Preparation	24	2	48	Pre-processing = filtering
Extraction	*18*			
glassware	*4*			
Sample pre-processing	*2*			
Instrument Analysis	23	2	46	NA
GC/ECD	*18*			
Quality Control Review	2	2	4	NA

Labor Activity:	Hours/ Batch:	Batches:	Total Hours:	Comment:
Final Data Reporting	1	2	2	NA

7.0 STAFF DEVELOPMENT

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 1: Target Samples

Shipment: **SHP-140423-01**

Status: Approved

Description: New Bedfor Harbor Water Qaulity Monitoring

Range: M2921-M2928

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	M2921	WQ-TPC-001-042214	04/22/2014 12:15 pm	WATER	R0003 (Upper Cold Room)			
2	M2922	WQ-TPC-002-042214	04/22/2014 1:00 pm	WATER	R0003 (Upper Cold Room)			
3	M2923	WQ-TPC-003-042214	04/22/2014 3:05 pm	WATER	R0003 (Upper Cold Room)			
4	M2924	WQ-TPC-004-042214	04/22/2014 4:00 pm	WATER	R0003 (Upper Cold Room)			
5	M2925	WQ-DPC-001-042214	04/22/2014 12:15 pm	WATER	R0003 (Upper Cold Room)			
6	M2926	WQ-DPC-002-042214	04/22/2014 1:00 pm	WATER	R0003 (Upper Cold Room)			
7	M2927	WQ-DPC-003-042214	04/22/2014 3:05 pm	WATER	R0003 (Upper Cold Room)			
8	M2928	WQ-DPC-004-042214	04/22/2014 4:00 pm	WATER	R0003 (Upper Cold Room)			

Shipment: **SHP-140424-01**

Status: Pending

Description: New Bedford Harbor Water Qaultiy Monitoring

Range: M3113-M3124

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	M3113	WQ-TPC-001-042314	04/23/2014 2:38 pm	WATER	R0003 (Upper Cold Room)			
2	M3114	WQ-TPC-002-042314	04/23/2014 3:25 pm	WATER	R0003 (Upper Cold Room)			
3	M3115	WQ-TPC-003-042314	04/23/2014 4:25 pm	WATER	R0003 (Upper Cold Room)			MS-MSD
4	M3116	WQ-TPC-003-042314-REP	04/23/2014 4:25 pm	WATER	R0003 (Upper Cold Room)			
5	M3117	WQ-TPC-003-042314-EB	04/23/2014 4:25 pm	WATER	R0003 (Upper Cold Room)			
6	M3118	WQ-TPC-004-042314	04/23/2014 5:30 pm	WATER	R0003 (Upper Cold Room)			
7	M3119	WQ-DPC-001-042314	04/23/2014 2:38 pm	WATER	R0003 (Upper Cold Room)			
8	M3120	WQ-DPC-002-042314	04/23/2014 3:25 pm	WATER	R0003 (Upper Cold Room)			
9	M3121	WQ-DPC-003-042314	04/23/2014 4:25 pm	WATER	R0003 (Upper Cold Room)			MS-MSD
10	M3122	WQ-DPC-003-042314-REP	04/23/2014 4:25 pm	WATER	R0003 (Upper Cold Room)			

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WORK/QUALITY ASSURANCE PROJECT PLAN

Shipment: **SHP-140424-01**
Status: Pending
Description: New Bedford Harbor Water Qaultiy Monitoring
Range: M3113-M3124
Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
11	M3123	WQ-DPC-003-042314-EB	04/23/2014 4:25 pm	WATER	R0003 (Upper Cold Room)			
12	M3124	WQ-DPC-004-042314	04/23/2014 5:30 pm	WATER	R0003 (Upper Cold Room)			

Shipment: **SHP-140424-04**
Status: Approved
Description: New Bedford Harbor Water Qaultiy Monitoring
Range: M3179-M3186
Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	M3179	WQ-TPC-001-042414	04/24/2014 7:37 am	WATER	R0003 (Upper Cold Room)			
2	M3180	WQ-TPC-002-042414	04/24/2014 8:15 am	WATER	R0003 (Upper Cold Room)			
3	M3181	WQ-TPC-003-042414	04/24/2014 10:50 am	WATER	R0003 (Upper Cold Room)			
4	M3182	WQ-TPC-004-042414	04/24/2014 12:30 pm	WATER	R0003 (Upper Cold Room)			
5	M3183	WQ-DPC-001-042414	04/24/2014 7:37 am	WATER	R0003 (Upper Cold Room)			
6	M3184	WQ-DPC-002-042414	04/24/2014 8:15 am	WATER	R0003 (Upper Cold Room)			
7	M3185	WQ-DPC-003-042414	04/24/2014 10:50 am	WATER	R0003 (Upper Cold Room)			
8	M3186	WQ-DPC-004-042414	04/24/2014 12:30 pm	WATER	R0003 (Upper Cold Room)			

Shipment: **SHP-140506-01**
Status: Pending
Description: New Bedford Harbor - Lower Harbor
Range: M3373-M3373
Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	M3373	W-14Y-EB	05/02/2014 10:05 am	W	R0003 (Upper Cold Room)			

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Attachment 2: Test Codes

Project Test Code Name:	Master_128
SOP Reference:	5-128 - Identification and Quantification of Polychlorinated Biphenyls (By Congener and Aroclor) and Chlorinated Pesticides by Gas Chromatography/Electron Capture Detection
Description:	Pesticide / PCB by GC/ECD
Matrix:	L - Liquid Samples, like water or sea water, prepared and anlyzed under the same class of detection limits.
Detection Limit Study:	5-128-2013-ssMDL-SF
Instrument:	ECD
MQO Criteria	USACE/NBH
Standard Report:	Standard Result Report

Method Specific Reporting

Result Units:	ug/L	***Unit Conversion:***	ng->ug	***Sample:***	7	***DL_Flag:***	U
Weight Basis:	LIQUID	***Result Format:***	Significant Figure	***Frozen:***	40	***RL_Flag:***	J
Standard Basis:	RIS	***# of Figures/Digits:***	3	***Extract:***	40	***PB_Flag:***	B
Oil Weight Basis:	No	***Oil Weight Source:***	Oil Weight			***DIL_Flag:***	D
U-Value Substition:	U-Flag=NED	***Histograms:***	No			***HT_Flag:***	T
ECD_Reporting:	Yes						

Holding Times (days)

Data Flags

ECD_Result:	Higher	***ECD_Flag***	p
RPD_Limit (<%):	40	***ECD_Manual_Flag:***	m

No:	Analyte:	Report Name:	Type	RIS	SIS	Hidden:	Graph:
1	Cl2(8)	Cl2(8)	T	Cl5(96)	Cl3(34)	No	No
2	Cl3(18)	Cl3(18)	T	Cl5(96)	Cl3(34)	No	No
3	Cl3(28)	Cl3(28)	T	Cl5(96)	Cl3(34)	No	No
4	Cl4(44)	Cl4(44)	T	Cl5(96)	Cl3(34)	No	No
5	Cl4(52)	Cl4(52)	T	Cl5(96)	Cl3(34)	No	No
6	Cl4(66)	Cl4(66)	T	Cl5(96)	Cl3(34)	No	No
7	Cl5(101)	Cl5(101)	T	Cl5(96)	Cl3(34)	No	No
8	Cl5(105)	Cl5(105)	T	Cl6(161)	Cl6(152)	No	No
9	Cl5(118)	Cl5(118)	T	Cl6(161)	Cl6(152)	No	No
10	Cl6(128)	Cl6(128)	T	Cl6(161)	Cl6(152)	No	No
11	Cl6(138)	Cl6(138)	T	Cl6(161)	Cl6(152)	No	No
12	Cl6(153)	Cl6(153)	T	Cl6(161)	Cl6(152)	No	No
13	Cl7(170)	Cl7(170)	T	Cl6(161)	Cl6(152)	No	No
14	Cl7(180)	Cl7(180)	T	Cl6(161)	Cl6(152)	No	No
15	Cl7(187)	Cl7(187)	T	Cl6(161)	Cl6(152)	No	No
16	Cl8(195)	Cl8(195)	T	Cl6(161)	Cl6(152)	No	No

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Attachment 2: Test Codes

Project Test Code Name: Master_128

No:	Analyte:	Report Name:	Type	RIS	SIS	Hidden:	Graph:
17	Cl9(206)	Cl9(206)	T	Cl6(161)	Cl6(152)	No	No
18	Cl10(209)	Cl10(209)	T	Cl6(161)	Cl6(152)	No	No
1	Cl3(34)	Cl3(34)	SIS	Cl5(96)		No	No
2	Cl6(152)	Cl6(152)	SIS	Cl6(161)		No	No

Total Analytes: 20

Subtract Peaks:

None

Sum Peaks:

None

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Attachment 2: Test Codes

Project Test Code Name: Master_128

ICAL Acceptance Criteria:

Curve Fit:	Limit Mean(%):	Mean Qual:	Limit Ind.:	Ind. Qual:	Min Points:	Points Qual:	Comments:
Linear	NA	NA	0.995	N	5	N	y = Bx + C
Average RF	15	N	25	N	5	N	y = Bx
Linear (0,0)	NA	NA	0.995	N	5	N	y = Bx + 0
Quadratic	NA	NA	0.995	N	6	N	y = Ax^2 + Bx + C
Quadratic (0,0)	NA	NA	0.995	N	6	N	y = Ax^2 + Bx + 0

Continuing Calibration Verification Criteria:

CCV Name: 5-128

Frequency Hrs:	Mean PD(%):	Individual PD(%):	RIS/SIS RT Window (min):	Area Limit Low(%):	Area Limit High(%):	Comment:
24 (N)	15 (N)	20 (N)	0.25 (N)	-50	100 (N)	NA

Independent Calibration Verification:

ICC Name: 5-128

Mean PD Limit(%):	Ind. PD Limit(%):	RIS/SIS Window Limit (Secs):	Area Limit High(%):	Area Limit Low(%):	Comment:
20 (N)	20 (N)	0.25 (N)	-50	100 (N)	NA

Mass Discrimination Criteria:

None

Degredation Check Criteria:

Degredation Check Name: 5-128

DDT Breakdown Limit (%):	Endrin Breakdown Limit(%):	Total Breakdown Limit(%):	Comment:
20 (N)	20 (N)	20 (N)	

Attachment 2: Test Codes

Project Test Code Name: Master_315

SOP Reference: 5-315 - Identification and Quantification of Polychlorinated Biphenyl Congeners (PCBs),PCB Homologues, and Chlorinated Pesticides by Gas Chromatography / Mass Specroscopy in the Selected Ion Monitoring (SIM) Mode

Description: Pesticide/PCB by GC/MS SIM

Matrix: L - Liquid Samples, like water or sea water, prepared and anlyzed under the same class of detection limits.

Detection Limit Study: 5-315-2013-ssMDL-SF

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 2: Test Codes

Project Test Code Name: Master_315

Instrument: GCMS

MQO Criteria USACE/NBH

Standard Report: Standard Result Report

Method Specific Reporting				Holding Times (days)		Data Flags	
Result Units:	ug/L	***Unit Conversion:***	ng->ug	***Sample:***	7	***DL_Flag:***	U
Weight Basis:	LIQUID	***Result Format:***	Significant Figures	***Frozen:***	40	***RL_Flag:***	J
Standard Basis:	RIS	***# of Figures/Digits:***	3	***Extract:***	40	***PB_Flag:***	B
Oil Weight Basis:	No	***Oil Weight Source:***	Oil Weight			***DIL_Flag:***	D
U-Value Substition:	U-Flag=NE	***Histograms:***	No			***HT_Flag:***	T
ECD_Reporting:	No						

No:	Analyte:	Report Name:	Type	RIS	SIS	Hidden:	Graph:
1	Cl1(1)	Cl1(1)	T	Cl5(96)	Cl3(34)	No	No
2	Cl1(3)	Cl1(3)	T	Cl5(96)	Cl3(34)	No	No
3	Cl2(4)	Cl2(4)	T	Cl5(96)	Cl3(34)	No	No
4	Cl2(5)	Cl2(5)	T	Cl5(96)	Cl3(34)	No	No
5	Cl2(6)	Cl2(6)	T	Cl5(96)	Cl3(34)	No	No
6	Cl2(7)	Cl2(7)	T	Cl5(96)	Cl3(34)	No	No
7	Cl2(8)	Cl2(8)	T	Cl5(96)	Cl3(34)	No	No
8	Cl2(9)	Cl2(9)	T	Cl5(96)	Cl3(34)	No	No
9	Cl2(11)	Cl2(11)	T	Cl5(96)	Cl3(34)	No	No
10	Cl2(12)	Cl2(12)	T	Cl5(96)	Cl3(34)	No	No
11	Cl2(13)	Cl2(13)	T	Cl5(96)	Cl3(34)	No	No
12	Cl2(15)	Cl2(15)	T	Cl5(96)	Cl3(34)	No	No
13	Cl3(16)	Cl3(16)	T	Cl5(96)	Cl3(34)	No	No
14	Cl3(17)	Cl3(17)	T	Cl5(96)	Cl3(34)	No	No
15	Cl3(18)	Cl3(18)	T	Cl5(96)	Cl3(34)	No	No
16	Cl3(19)	Cl3(19)	T	Cl5(96)	Cl3(34)	No	No
17	Cl3(22)	Cl3(22)	T	Cl5(96)	Cl3(34)	No	No
18	Cl3(24)	Cl3(24)	T	Cl5(96)	Cl3(34)	No	No
19	Cl3(25)	Cl3(25)	T	Cl5(96)	Cl3(34)	No	No
20	Cl3(26)	Cl3(26)	T	Cl5(96)	Cl3(34)	No	No
21	Cl3(27)	Cl3(27)	T	Cl5(96)	Cl3(34)	No	No
22	Cl3(28)	Cl3(28)	T	Cl5(96)	Cl3(34)	No	No
23	Cl3(29)	Cl3(29)	T	Cl5(96)	Cl3(34)	No	No
24	Cl3(30)	Cl3(30)	T	Cl5(96)	Cl3(34)	No	No
25	Cl3(31)	Cl3(31)	T	Cl5(96)	Cl3(34)	No	No
26	Cl3(32)	Cl3(32)	T	Cl5(96)	Cl3(34)	No	No
27	Cl3(33)	Cl3(33)	T	Cl5(96)	Cl3(34)	No	No
28	Cl3(37)	Cl3(37)	T	Cl5(96)	Cl3(34)	No	No

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Attachment 2: Test Codes

Project Test Code Name: Master_315

No:	Analyte:	Report Name:	Type	RIS	SIS	Hidden:	Graph:
29	Cl4(40)	Cl4(40)	T	Cl5(96)	Cl3(34)	No	No
30	Cl4(41)	Cl4(41)	T	Cl5(96)	Cl3(34)	No	No
31	Cl4(42)	Cl4(42)	T	Cl5(96)	Cl3(34)	No	No
32	Cl4(43)	Cl4(43)	T	Cl5(96)	Cl3(34)	No	No
33	Cl4(44)	Cl4(44)	T	Cl5(96)	Cl3(34)	No	No
34	Cl4(45)	Cl4(45)	T	Cl5(96)	Cl3(34)	No	No
35	Cl4(46)	Cl4(46)	T	Cl5(96)	Cl3(34)	No	No
36	Cl4(47)	Cl4(47)	T	Cl5(96)	Cl3(34)	No	No
37	Cl4(48)	Cl4(48)	T	Cl5(96)	Cl3(34)	No	No
38	Cl4(49)	Cl4(49)	T	Cl5(96)	Cl3(34)	No	No
39	Cl4(50)	Cl4(50)	T	Cl5(96)	Cl3(34)	No	No
40	Cl4(51)	Cl4(51)	T	Cl5(96)	Cl3(34)	No	No
41	Cl4(52)	Cl4(52)	T	Cl5(96)	Cl3(34)	No	No
42	Cl4(53)	Cl4(53)	T	Cl5(96)	Cl3(34)	No	No
43	Cl4(54)	Cl4(54)	T	Cl5(96)	Cl3(34)	No	No
44	Cl4(56)	Cl4(56)	T	Cl5(96)	Cl3(34)	No	No
45	Cl4(60)	Cl4(60)	T	Cl6(161)	Cl6(152)	No	No
46	Cl4(63)	Cl4(63)	T	Cl5(96)	Cl3(34)	No	No
47	Cl4(64)	Cl4(64)	T	Cl5(96)	Cl3(34)	No	No
48	Cl4(66)	Cl4(66)	T	Cl5(96)	Cl3(34)	No	No
49	Cl4(67)	Cl4(67)	T	Cl5(96)	Cl3(34)	No	No
50	Cl4(70)	Cl4(70)	T	Cl5(96)	Cl3(34)	No	No
51	Cl4(71)	Cl4(71)	T	Cl5(96)	Cl3(34)	No	No
52	Cl4(74)	Cl4(74)	T	Cl5(96)	Cl3(34)	No	No
53	Cl4(75)	Cl4(75)	T	Cl5(96)	Cl3(34)	No	No
54	Cl4(77)	Cl4(77)	T	Cl6(161)	Cl6(152)	No	No
55	Cl4(80)	Cl4(80)	T	Cl5(96)	Cl3(34)	No	No
56	Cl4(81)	Cl4(81)	T	Cl6(161)	Cl6(152)	No	No
57	Cl5(82)	Cl5(82)	T	Cl6(161)	Cl6(152)	No	No
58	Cl5(83)	Cl5(83)	T	Cl6(161)	Cl6(152)	No	No
59	Cl5(84)	Cl5(84)	T	Cl5(96)	Cl3(34)	No	No
60	Cl5(85)	Cl5(85)	T	Cl6(161)	Cl6(152)	No	No
61	Cl5(87)	Cl5(87)	T	Cl6(161)	Cl6(152)	No	No
62	Cl5(91)	Cl5(91)	T	Cl5(96)	Cl3(34)	No	No
63	Cl5(92)	Cl5(92)	T	Cl5(96)	Cl3(34)	No	No
64	Cl5(95)	Cl5(95)	T	Cl5(96)	Cl3(34)	No	No
65	Cl5(97)	Cl5(97)	T	Cl6(161)	Cl6(152)	No	No
66	Cl5(99)	Cl5(99)	T	Cl6(161)	Cl6(152)	No	No
67	Cl5(100)	Cl5(100)	T	Cl5(96)	Cl3(34)	No	No
68	Cl5(101)	Cl5(101)	T	Cl5(96)	Cl3(34)	No	No
69	Cl5(104)	Cl5(104)	T	Cl5(96)	Cl3(34)	No	No
70	Cl5(105)	Cl5(105)	T	Cl6(161)	Cl6(152)	No	No
71	Cl5(110)	Cl5(110)	T	Cl6(161)	Cl6(152)	No	No
72	Cl5(114)	Cl5(114)	T	Cl6(161)	Cl6(152)	No	No
73	Cl5(115)	Cl5(115)	T	Cl6(161)	Cl6(152)	No	No
74	Cl5(118)	Cl5(118)	T	Cl6(161)	Cl6(152)	No	No

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Attachment 2: Test Codes

Project Test Code Name: Master_315

No:	Analyte:	Report Name:	Type	RIS	SIS	Hidden:	Graph:
75	Cl5(123)	Cl5(123)	T	Cl6(161)	Cl6(152)	No	No
76	Cl5(124)	Cl5(124)	T	Cl6(161)	Cl6(152)	No	No
77	Cl5(125)	Cl5(125)	T	Cl6(161)	Cl6(152)	No	No
78	Cl5(126)	Cl5(126)	T	Cl6(161)	Cl6(152)	No	No
79	Cl5(127)	Cl5(127)	T	Cl6(161)	Cl6(152)	No	No
80	Cl6(128)	Cl6(128)	T	Cl6(161)	Cl6(152)	No	No
81	Cl6(130)	Cl6(130)	T	Cl6(161)	Cl6(152)	No	No
82	Cl6(131)	Cl6(131)	T	Cl6(161)	Cl6(152)	No	No
83	Cl6(134)	Cl6(134)	T	Cl6(161)	Cl6(152)	No	No
84	Cl6(135)	Cl6(135)	T	Cl6(161)	Cl6(152)	No	No
85	Cl6(136)	Cl6(136)	T	Cl6(161)	Cl6(152)	No	No
86	Cl6(137)	Cl6(137)	T	Cl6(161)	Cl6(152)	No	No
87	Cl6(138)	Cl6(138)	T	Cl6(161)	Cl6(152)	No	No
88	Cl6(139)	Cl6(139)	T	Cl6(161)	Cl6(152)	No	No
89	Cl6(140)	Cl6(140)	T	Cl6(161)	Cl6(152)	No	No
90	Cl6(141)	Cl6(141)	T	Cl6(161)	Cl6(152)	No	No
91	Cl6(144)	Cl6(144)	T	Cl6(161)	Cl6(152)	No	No
92	Cl6(146)	Cl6(146)	T	Cl6(161)	Cl6(152)	No	No
93	Cl6(149)	Cl6(149)	T	Cl6(161)	Cl6(152)	No	No
94	Cl6(151)	Cl6(151)	T	Cl6(161)	Cl6(152)	No	No
95	Cl6(153)	Cl6(153)	T	Cl6(161)	Cl6(152)	No	No
96	Cl6(154)	Cl6(154)	T	Cl6(161)	Cl6(152)	No	No
97	Cl6(155)	Cl6(155)	T	Cl5(96)	Cl3(34)	No	No
98	Cl6(156)	Cl6(156)	T	Cl6(161)	Cl6(152)	No	No
99	Cl6(157)	Cl6(157)	T	Cl6(161)	Cl6(152)	No	No
100	Cl6(158)	Cl6(158)	T	Cl6(161)	Cl6(152)	No	No
101	Cl6(163)	Cl6(163)	T	Cl6(161)	Cl6(152)	No	No
102	Cl6(164)	Cl6(164)	T	Cl6(161)	Cl6(152)	No	No
103	Cl6(166)	Cl6(166)	T	Cl6(161)	Cl6(152)	No	No
104	Cl6(167)	Cl6(167)	T	Cl6(161)	Cl6(152)	No	No
105	Cl6(169)	Cl6(169)	T	Cl6(161)	Cl6(152)	No	No
106	Cl7(170)	Cl7(170)	T	Cl6(161)	Cl6(152)	No	No
107	Cl7(171)	Cl7(171)	T	Cl6(161)	Cl6(152)	No	No
108	Cl7(172)	Cl7(172)	T	Cl6(161)	Cl6(152)	No	No
109	Cl7(173)	Cl7(173)	T	Cl6(161)	Cl6(152)	No	No
110	Cl7(174)	Cl7(174)	T	Cl6(161)	Cl6(152)	No	No
111	Cl7(175)	Cl7(175)	T	Cl6(161)	Cl6(152)	No	No
112	Cl7(176)	Cl7(176)	T	Cl6(161)	Cl6(152)	No	No
113	Cl7(177)	Cl7(177)	T	Cl6(161)	Cl6(152)	No	No
114	Cl7(178)	Cl7(178)	T	Cl6(161)	Cl6(152)	No	No
115	Cl7(179)	Cl7(179)	T	Cl6(161)	Cl6(152)	No	No
116	Cl7(180)	Cl7(180)	T	Cl6(161)	Cl6(152)	No	No
117	Cl7(183)	Cl7(183)	T	Cl6(161)	Cl6(152)	No	No
118	Cl7(184)	Cl7(184)	T	Cl6(161)	Cl6(152)	No	No
119	Cl7(185)	Cl7(185)	T	Cl6(161)	Cl6(152)	No	No
120	Cl7(187)	Cl7(187)	T	Cl6(161)	Cl6(152)	No	No

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Attachment 2: Test Codes

Project Test Code Name: Master_315

No:	Analyte:	Report Name:	Type	RIS	SIS	Hidden:	Graph:
121	Cl7(188)	Cl7(188)	T	Cl6(161)	Cl6(152)	No	No
122	Cl7(189)	Cl7(189)	T	Cl6(161)	Cl6(152)	No	No
123	Cl7(190)	Cl7(190)	T	Cl6(161)	Cl6(152)	No	No
124	Cl7(191)	Cl7(191)	T	Cl6(161)	Cl6(152)	No	No
125	Cl7(193)	Cl7(193)	T	Cl6(161)	Cl6(152)	No	No
126	Cl8(194)	Cl8(194)	T	Cl6(161)	Cl6(152)	No	No
127	Cl8(195)	Cl8(195)	T	Cl6(161)	Cl6(152)	No	No
128	Cl8(197)	Cl8(197)	T	Cl6(161)	Cl6(152)	No	No
129	Cl8(198)	Cl8(198)	T	Cl6(161)	Cl6(152)	No	No
130	Cl8(199)	Cl8(199)	T	Cl6(161)	Cl6(152)	No	No
131	Cl8(200)	Cl8(200)	T	Cl6(161)	Cl6(152)	No	No
132	Cl8(201)	Cl8(201)	T	Cl6(161)	Cl6(152)	No	No
133	Cl8(202)	Cl8(202)	T	Cl6(161)	Cl6(152)	No	No
134	Cl8(203)	Cl8(203)	T	Cl6(161)	Cl6(152)	No	No
135	Cl8(205)	Cl8(205)	T	Cl6(161)	Cl6(152)	No	No
136	Cl9(206)	Cl9(206)	T	Cl6(161)	Cl6(152)	No	No
137	Cl9(207)	Cl9(207)	T	Cl6(161)	Cl6(152)	No	No
138	Cl9(208)	Cl9(208)	T	Cl6(161)	Cl6(152)	No	No
139	Cl10(209)	Cl10(209)	T	Cl6(161)	Cl6(152)	No	No
1	Cl3(34)	Cl3(34)	SIS	Cl5(96)		No	No
2	Cl6(152)	Cl6(152)	SIS	Cl6(161)		No	No

Total Analytes: 141

Subtract Peaks:

None

Sum Peaks:

None

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 2: Test Codes

Project Test Code Name: Master_315

ICAL Acceptance Criteria:

Curve Fit:	Limit Mean(%):	Mean Qual:	Limit Ind.:	Ind. Qual:	Min Points:	Points Qual:	Comments:
Linear	NA	NA	0.995	N	5	N	y = Bx + C
Average RF	15	N	25	N	5	N	y = Bx
Linear (0,0)	NA	NA	0.995	N	5	N	y = Bx + 0
Quadratic	NA	NA	0.995	N	6	N	y = Ax^2 + Bx + C
Quadratic (0,0)	NA	NA	0.995	N	6	N	y = Ax^2 + Bx + 0

Continuing Calibration Verification Criteria:

CCV Name: 5-315

Frequency Hrs:	Mean PD(%):	Individual PD(%):	RIS/SIS RT Window (min):	Area Limit Low(%):	Area Limit High(%):	Comment:
24 (N)	15 (N)	25 (N)	0.25 (N)	-50	100 (N)	NA

Independent Calibration Verification:

ICC Name: 5-315

Mean PD Limit(%):	Ind. PD Limit(%):	RIS/SIS Window Limit (Secs):	Area Limit High(%):	Area Limit Low(%):	Comment:
25 (N)	25 (N)	0.25 (N)	-50	100 (N)	NA

Mass Discrimination Criteria:

None

Degredation Check Criteria:

Degredation Check Name: 5-315

DDT Breakdown Limit (%):	Endrin Breakdown Limit(%):	Total Breakdown Limit(%):	Comment:
20 (N)	20 (N)	20 (N)	

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 3: Method Quality Objectives

MQO Application	***USACE/NBH***		
MQO:	**Acceptance Criteria**	**Qual:**	**Corrective Action:**
Procedural Blank	Samples must be greater than five times the blank concentration (>5xPB).	B	Review with Project Manager; re-analyze or justify results in project records.
PB Measurement Quality Objective	Organic results in the Procedural Blank are less than the ssRL (<ssRL)	N	
Laboratory Control Sample	Recovery values 40-120%.	N	Review with project manager; re-analyze or justify reporting the results in project records.
Matrix Spike Recovery	Organics 40-120%. Analyte concentration in MS must be greater than five times reported background concentration.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
	Organics Results in the Target is less than 5 times the Original	n	
Matrix Spike/Spike Duplicate Precision	Organics results less than 30% Relative Percent Difference (RPD). Spike must be >5x background concentration.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
	Organics Results in the Target is less than 5 times the Original	n	
Standard Reference Material Accuracy	Organics Percent Difference less than 30% from a range of certified values on average. Analyte concentration must be greater than five times the Method Detection Limit (>5xMDL).	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
	Organics Results in the Target is less than 5 times the MDL	n	
Analytical Duplicate Precision	Organics results less than 30% Relative Percent Difference (RPD). Concentration must be >10X the MDL.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
	Organics Results in the Original is less than 10 times the MDL	n	
Analytical Triplicate Precision	Organics results less than 30% Relative Standard Deviation (RSD). Concentration must be >10X the MDL.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
	Organics Results in the Original is less than 10 times the MDL	n	

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 3: Method Quality Objectives

MQO Application	***USACE/NBH***		
MQO:	**Acceptance Criteria**	**Qual:**	**Corrective Action:**
Surrogate Compound Recovery	Recovery results between 30% and 150%.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
Control Oil	RPD < 30% for at least 90% of analytes	N n	Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented.
Instrument Calibration	5-128-13: R-squared greater than or equal to 0.995 Mean RSD less than or equal to 15%, Individual RSD less than or equal to 25%	N	Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented.
	5-315-10: R-squared greater than or equal to 0.995 Mean RSD less than or equal to 15%, Individual RSD less than or equal to 25%	N	Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented.
Independent Calibration Check Solution	5-128-13: Individual PD less than or equal to 20%. Mean Percent Difference less than or equal to 20%.	N	Review with Project Manager; re-analyze or justify in project records.
	5-315-10: Individual PD less than or equal to 25%. Mean Percent Difference less than or equal to 25%.	N	Review with Project Manager; re-analyze or justify in project records.
Continuing Calibration Verification	5-128-13: Individual PD less than or equal to 20%. Mean Percent Difference less than or equal to 15%.	N	
	5-315-10: Individual PD less than or equal to 25%. Mean Percent Difference less than or equal to 15%.	N	

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ShpNo SHP-140423-01

Battelle Project No:

Sample Receipt Form

Approved: ☐ **Authorized** ☐

Project Number: W912WJ-12-D-0004 **Client:** USACE

Received by: Schumitz, Matt **Date/Time Received:** Wednesday, April 23, 2014 12:00 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Hand Delivered **Tracking Number:** Mike Walsh

COC Forms: ☑ **Shipped with samples** ☐ **No Forms**

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal Condition	Container Condition	Temp C	Smps
1 of 1	Cooler		Custody Seals	Intact	Intact	1.0	8

Samples

Sample Labels:
☑ Sample labels agree with COC forms
☐ Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:
☐ Tape ☐ Custody Seals ☐ Other Seals (See sample Log)
☑ Seals intact for each shipping container
☐ Seals broken (See sample log for impacted samples)

Condition of Samples:
☑ Sample containers intact
☐ Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 1 Temperature Blank used ☐ Yes ☑ No
(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☐ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA
If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☐ No ☑ NA
If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA
Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☐ Yes ☐ No ☑ Unknown /Lot No.: Unknown

Storage Location: Chem South: Refrigerator - R0003 (Upper Cold **BDO IDs Assigned:** M2921 - M2928

Samples logged in by: Schumitz, Matt **Date/Time:** 04/23/2014 12:00 AM

Approved By: **Approved On:**

Authorized By: **Authorized On:**

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ShpNo SHP-140423-01

Battelle Project No: 100043429

Sample Receipt Form Details

Approved: ☑ Authorized ☐

Project Number: W912WJ-12-D-0004 **Client:** USACE

Received by: Schumitz, Matt **Date/Time Received:** Wednesday, April 23, 2014 12:00 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
M2921	WQ-TPC-001-042214	04/22/14 12:15	04/23/14 8:59	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M2922	WQ-TPC-002-042214	04/22/14 13:00	04/23/14 9:00	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M2923	WQ-TPC-003-042214	04/22/14 15:05	04/23/14 9:00	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M2924	WQ-TPC-004-042214	04/22/14 16:00	04/23/14 9:01	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M2925	WQ-DPC-001-042214	04/22/14 12:15	04/23/14 9:01	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M2926	WQ-DPC-002-042214	04/22/14 13:00	04/23/14 9:01	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M2927	WQ-DPC-003-042214	04/22/14 15:05	04/23/14 9:01	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M2928	WQ-DPC-004-042214	04/22/14 16:00	04/23/14 9:02	2	WQ	1	NA	NA	NA	R0003 (Upper C			

Total Samples: 8

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Chain of Custody

Project Manager: Deirdre Dahlen
Phone: (781) 952-5253

Ship to:
Battelle Sample Receiving
397 Washington St
Duxbury, Ma 02332

Sampling Firm:
Battelle
397 Washington St
Duxbury, Ma 02332

Site Contact: Alex Mansfield
Mobile: (617) 571-9962

Date	Time	Field ID	Lab ID(s)	Matrix	station	Analyses (Record No. of containers / Preservative)									
						Total PCB	Dissolved PCB	Turbidity	TSS	TOC	Metals	Archive	Preservative	Field Turbidity Reading (NTU)	Field Salinity Reading (PPT)
4/22/2014	12:15	WQ-TPC-001-042214	M2921	water	Reference 1000' South	2							4°C	0.52	28
4/22/2014	13:00	WQ-TPC-002-042214	M2922	water	Compliance 300' North	2							4°C	1.73	27
4/22/2014	15:05	WQ-TPC-003-042214	M2923	water	Reference 1000' North	2							4°C	5.5	22
4/22/2014	16:00	WQ-TPC-004-042214	M2924	water	Compliance 300' South	2							4°C	0.8	28
4/22/2014	12:15	WQ-DPC-001-042214	M2925	water	Reference 1000' South		2						4°C	0.52	28
4/22/2014	13:00	WQ-DPC-002-042214	M2926	water	Compliance 300' North		2						4°C	1.73	27
4/22/2014	15:05	WQ-DPC-003-042214	M2927	water	Reference 1000' North		2						4°C	5.5	22
4/22/2014	16:00	WQ-DPC-004-042214	M2928	water	Compliance 300' South		2						4°C	0.8	28

Comments:
1st of 3 days of sampling for the week. QC samples will be collected later in the week.

Sampling Team:
Alex Mansfield, Mike Walsh

Relinquished By (name/date/time):
Mike Walsh 4/23/14 084 BDO

Received (name/date/time):
MB 4/23/14 8:40

Battelle
The Business of Innovation

ShpNo SHP-140424-01

Battelle Project No: 100043429

Sample Receipt Form

Approved: ☑ **Authorized** ☐

Project Number: W912WJ-12-D-0004 **Client:** USACE

Received by: Schumitz, Matt **Date/Time Received:** Thursday, April 24, 2014 12:00 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Hand Delivered **Tracking Number:** Mike Walsh

COC Forms: ☑ **Shipped with samples** ☐ **No Forms**

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal Condition	Container Condition	Temp C	Smps
1 of 1	Cooler					1.0	12

Samples

Sample Labels:
☑ Sample labels agree with COC forms
☐ Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:
☐ Tape ☐ Custody Seals ☐ Other Seals (See sample Log)
☑ Seals intact for each shipping container
☐ Seals broken (See sample log for impacted samples)

Condition of Samples:
☑ Sample containers intact
☐ Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 1 Temperature Blank used ☐ Yes ☑ No
(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☐ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA
If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☐ No ☑ NA
If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA
Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☐ Yes ☐ No ☑ Unknown /Lot No.: UnKnown

Storage Location: Chem South: Refrigerator - R0003 (Upper Cold **BDO IDs Assigned:** M3113 - M3124

Samples logged in by: Schumitz, Matt **Date/Time:** 04/24/2014 12:00 AM

Approved By: Davis, Kerry **Approved On:** 5/20/2014 3:50:00 PM

Authorized By: **Authorized On:**

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ShpNo: SHP-140424-01

Battelle Project No: 100043429

Report Corrective Actions

Corrective Action No: 1 **of** 1

Authorized ☐ Approved: ☐

COC Client: USACE

COC Project: New Bedford Harbor Water Qaultiy Monitoring

COC Date: 4/24/2014 9:59:

	Description of Problem:	Explanation:
Client Id	Either label or C-O-C cannot be verified	The MS-MSD samples were logged in as extra bottles under the parent ID as opposed to 2 separate samples as the COC has them listed.

Documentation of project manager notification

Sample Custodian Schumitz, Matt **Date:** 4/24/2014 10:10:00 A

Laboratory Manager: Lizotte Jr, Robert **Date:** 5/6/2014 8:25:00 AM

Project Manager Peven-McCarthy, Carole **Date:** 5/6/2014 7:56:00 AM

Documentation of client notification (should be completed by project manager within 24 hrs):

On _____ **I contacted** _____ **at**

Results of communication with client (Describe any corrective action directed by the client):

Appropriate.

Date this form was received back to the custodian: _____

Reference Number: _____

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ShpNo SHP-140424-01

Battelle Project No: 100043429

Sample Receipt Form Details

Approved: ☐ Authorized ☐

Project Number: W912WJ-12-D-0004 **Client:** USACE

Received by: Schumitz, Matt **Date/Time Received:** Thursday, April 24, 2014 12:00 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
M3113	WQ-TPC-001-042314	04/23/14 14:38	04/24/14 10:02	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3114	WQ-TPC-002-042314	04/23/14 15:25	04/24/14 10:03	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3115	WQ-TPC-003-042314	04/23/14 16:25	04/24/14 10:03	4	WQ	1	NA	NA	NA	R0003 (Upper C			MS-MSD
M3116	WQ-TPC-003-042314-REP	04/23/14 16:25	04/24/14 10:03	1	WQ	1	NA	NA	NA	R0003 (Upper C			
M3117	WQ-TPC-003-042314-EB	04/23/14 16:25	04/24/14 10:03	2	BLK	1	NA	NA	NA	R0003 (Upper C			
M3118	WQ-TPC-004-042314	04/23/14 17:30	04/24/14 10:04	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3119	WQ-DPC-001-042314	04/23/14 14:38	04/24/14 10:04	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3120	WQ-DPC-002-042314	04/23/14 15:25	04/24/14 10:05	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3121	WQ-DPC-003-042314	04/23/14 16:25	04/24/14 10:05	4	WQ	1	NA	NA	NA	R0003 (Upper C			MS-MSD
M3122	WQ-DPC-003-042314-REP	04/23/14 16:25	04/24/14 10:05	1	WQ	1	NA	NA	NA	R0003 (Upper C			
M3123	WQ-DPC-003-042314-EB	04/23/14 16:25	04/24/14 10:05	2	BLK	1	NA	NA	NA	R0003 (Upper C			
M3124	WQ-DPC-004-042314	04/23/14 17:30	04/24/14 10:06	2	WQ	1	NA	NA	NA	R0003 (Upper C			

Total Samples: 12

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Chain of Custody

Project Manager: Deirdre Dahlen
Phone: (781) 952-5253

Ship to:
Battelle Sample Receiving
397 Washington St
Duxbury, Ma 02332

Sampling Firm:
Battelle
397 Washington St
Duxbury, Ma 02332

Site Contact: Alex Mansfield
Mobile: (617) 571-9962

Date	Time	Field ID	Lab ID(s)	Matrix	station	Analyses (Record No. of containers / Preservative)									
						Total PCB	Dissolved PCB	Turbidity	TSS	TOC	Metals	Archive	Preservative	Field Turbidity Reading (NTU)	Field Salinity Reading (PPT)
4/23/2014	14:38	WQ-TPC-001-042314	M3113	water	Reference 1000' South	2							4°C	4.1	17
4/23/2014	15:25	WQ-TPC-002-042314	M3114	water	Compliance 300' North	2							4°C	4.9	11
4/23/2014	16:25	WQ-TPC-003-042314	M3115	water	Reference 1000' North	2							4°C	3.5	17
4/23/2014	16:25	WQ-TPC-003-042314-REP	M3116	water	eference 1000' North (REP	1							4°C	3.5	17
4/23/2014	16:25	WQ-TPC-003-042314-MS	M3115 *	water	Reference 1000' North (MS	1							4°C	3.5	17
4/23/2014	16:25	WQ-TPC-003-042314-MSD	M3115 *	water	eference 1000' North (MSD	1							4°C	3.5	17
4/23/2014	16:25	WQ-TPC-003-042314-EB	M3117	water	Reference 1000' North (EB	2							4°C	NA	NA
4/23/2014	17:30	WQ-TPC-004-042314	M3118	water	Compliance 300' South	2							4°C	4.7	16
4/23/2014	14:38	WQ-DPC-001-042314	M3119	water	Reference 1000' South		2						4°C	4.1	17
4/23/2014	15:25	WQ-DPC-002-042314	M3120	water	Compliance 300' North		2						4°C	4.9	11
4/23/2014	16:25	WQ-DPC-003-042314	M3121	water	Reference 1000' North		2						4°C	3.5	17
4/23/2014	16:25	WQ-DPC-003-042314-REP	M3122	water	eference 1000' North (REP)		1						4°C	3.5	17
4/23/2014	16:25	WQ-DPC-003-042314-MS	M3121 *	water	Reference 1000' North (MS)		1						4°C	3.5	17
4/23/2014	16:25	WQ-DPC-003-042314-MSD	M3121 *	water	eference 1000' North (MSD)		1						4°C	3.5	17
4/23/2014	16:25	WQ-DPC-003-042314-EB	M3123	water	Reference 1000' North (EB)		2						4°C	NA	NA
4/23/2014	17:30	WQ-DPC-004-042314	M3124	water	Compliance 300' South		2						4°C	4.7	16

Comments:
1st of 3 days of sampling for the week. QC samples will be collected later in the week.

* The MS/MSD samples were logged in as bottles for the parent ID

Sampling Team:
Alex Mansfield, Mike Walsh

Relinquished By (name/date/time): 4/23/14 18:30

Page: 1 of 1

Received (name/date/time): 4-24-14 830

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ShpNo SHP-140424-04

Battelle Project No:

Sample Receipt Form

Approved: ☐ **Authorized** ☐

Project Number: W912WJ-12-D-0004 **Client:** USACE

Received by: Schumitz, Matt **Date/Time Received:** Thursday, April 24, 2014 12:00 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Hand Delivered **Tracking Number:** Mike Walsh

COC Forms: ☑ **Shipped with samples** ☐ **No Forms**

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal Condition	Container Condition	Temp C	Smps
1 of 1	Cooler				Intact	1.0	8

Samples

Sample Labels:
☑ Sample labels agree with COC forms
☐ Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:
☐ Tape ☐ Custody Seals ☐ Other Seals (See sample Log)
☑ Seals intact for each shipping container
☐ Seals broken (See sample log for impacted samples)

Condition of Samples:
☑ Sample containers intact
☐ Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 1 Temperature Blank used ☐ Yes ☑ No

(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☐ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA

If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☐ No ☑ NA

If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA

Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☐ Yes ☐ No ☑ Unknown /Lot No.: Unknown

Storage Location: Chem South: Refrigerator - R0003 (Upper Cold **BDO IDs Assigned:** M3179 - M3186

Samples logged in by: Schumitz, Matt **Date/Time:** 04/24/2014 12:00 AM

Approved By: **Approved On:**

Authorized By: **Authorized On:**

Battelle
The Business of Innovation

ShpNo SHP-140424-04

Battelle Project No: 100043429

Sample Receipt Form Details

Approved: ☑ Authorized ☐

Project Number: W912WJ-12-D-0004 **Client:** USACE

Received by: Schumitz, Matt **Date/Time Received:** Thursday, April 24, 2014 12:00 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
M3179	WQ-TPC-001-042414	04/24/14 7:37	04/24/14 15:21	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3180	WQ-TPC-002-042414	04/24/14 8:15	04/24/14 15:21	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3181	WQ-TPC-003-042414	04/24/14 10:50	04/24/14 15:21	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3182	WQ-TPC-004-042414	04/24/14 12:30	04/24/14 15:21	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3183	WQ-DPC-001-042414	04/24/14 7:37	04/24/14 15:21	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3184	WQ-DPC-002-042414	04/24/14 8:15	04/24/14 15:22	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3185	WQ-DPC-003-042414	04/24/14 10:50	04/24/14 15:22	2	WQ	1	NA	NA	NA	R0003 (Upper C			
M3186	WQ-DPC-004-042414	04/24/14 12:30	04/24/14 15:22	2	WQ	1	NA	NA	NA	R0003 (Upper C			

Total Samples: 8

Chain of Custody

Battelle
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Project Manager: Deirdre Dahlen
Phone: (781) 952-5253

Ship to:
Battelle Sample Receiving
397 Washington St
Duxbury, Ma 02332

Sampling Firm:
Battelle
397 Washington St
Duxbury, Ma 02332

Site Contact: Alex Mansfield
Mobile: (617) 571-9962

Date	Time	Field ID	Lab ID(s)	Matrix	station	Analyses (Record No. of containers / Preservative)									
						Total PCB	Dissolved PCB	Turbidity	TSS	TOC	Metals	Archive	Preservative	Field Turbidity Reading (NTU)	Field Salinity Reading (PPT)
4/24/2014	0737	WQ-TPC-001-042414	M3179	water	Reference 1000' North	2							4°C	1.6	17.8
4/24/2014	0815	WQ-TPC-002-042414	M3180	water	Compliance 300' South	2							4°C	1.8	22.6
4/24/2014	1050	WQ-TPC-003-042414	M3181	water	Reference 1000' South	2							4°C	5.5	23.8
4/24/2014	1230	WQ-TPC-004-042414	M3182	water	Compliance 300' North	2							4°C	5.5	22.7
4/24/2014	0737	WQ-DPC-001-042414	M3183	water	Reference 1000' North		2						4°C	1.6	17.8
4/24/2014	0815	WQ-DPC-002-042414	M3184	water	Compliance 300' South		2						4°C	1.8	22.6
4/24/2014	1050	WQ-DPC-003-042414	M3185	water	Reference 1000' South		2						4°C	5.5	23.8
4/24/2014	1230	WQ-DPC-004-042414	M3186	water	Compliance 300' North		2						4°C	5.5	22.7

Comments:
3rd of 3 days of sampling for the week. QC samples were collected on 4/23/14

Sampling Team:
Mike Walsh, Paul Sokoloff

Relinquished By (name/date/time):
Mike Walsh 4/24/14 1513 BDO

Received (name/date/time):
MA 4-24-14 1513

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Project Client: USACE/NAE
Project Name: USACE-NAE New Bedford Harbor Task Order 10 - Waters
Project Number: 100043429

Client ID	Procedural Blank
Battelle ID	CC128PB-P
Sample Type	PB
Collection Date	04/29/2014
Extraction Date	04/29/2014
Analysis Date	05/06/2014
Analytical Instrument	ECD
% Moisture	NA
% Lipid	NA
Matrix	WATER
Sample Size	1.00
Size Unit-Basis	L_LIQUID
Units	UG/L_LIQUID

Cl2(8)	0.00120 U
Cl3(18)	0.00120 U
Cl3(28)	0.00120 U
Cl4(44)	0.00120 U
Cl4(52)	0.00120 U
Cl4(66)	0.00120 U
Cl5(101)	0.00120 U
Cl5(105)	0.00120 U
Cl5(118)	0.00120 U
Cl6(128)	0.00120 U
Cl6(138)	0.00120 U
Cl6(153)	0.00120 U
Cl7(170)	0.00120 U
Cl7(180)	0.00120 U
Cl7(187)	0.00120 U
Cl8(195)	0.00120 U
Cl9(206)	0.00120 U
Cl10(209)	0.00120 U

Surrogate Recoveries (%)	
Cl3(34)	72
Cl6(152)	76

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Project Client: USACE/NAE
Project Name: USACE-NAE New Bedford Harbor Task Order 10 - Waters
Project Number: 100043429

Client ID	Laboratory Control Sample				Laboratory Control Sample Duplicate					
Battelle ID	CC129LCS-P				CC130LCSD-P					
Sample Type	LCS				LCSD					
Collection Date	04/29/2014				04/29/2014					
Extraction Date	04/29/2014				04/29/2014					
Analysis Date	05/06/2014				05/06/2014					
Analytical Instrument	ECD				ECD					
% Moisture	NA				NA					
% Lipid	NA				NA					
Matrix	WATER				WATER					
Sample Size	1.00				1.00					
Size Unit-Basis	L_LIQUID				L_LIQUID					
Units	UG/L_LIQUID	**Target**	**% REC**	**Qual**	UG/L_LIQUID	**Target**	**% REC**	**Qual**	**RPD**	**Qual**
Cl2(8)	0.0295	0.04	79		0.0253	0.04	67		16.4	
Cl3(18)	0.0343	0.04	91		0.0297	0.04	79		14.1	
Cl3(28)	0.0330	0.04	88		0.0295	0.04	79		10.8	
Cl4(44)	0.0343	0.04	91		0.0311	0.04	83		9.2	
Cl4(52)	0.0337	0.04	90		0.0299	0.04	80		11.8	
Cl4(66)	0.0344	0.04	92		0.0322	0.04	86		6.7	
Cl5(101)	0.0409	0.04	109		0.0412	0.04	110		0.9	
Cl5(105)	0.0351	0.04	94		0.0325	0.04	87		7.7	
Cl5(118)	0.0354	0.04	94		0.0342	0.04	91		3.2	
Cl6(128)	0.0360	0.04	96		0.0331	0.04	88		8.7	
Cl6(138)	0.0347	0.04	93		0.0327	0.04	87		6.7	
Cl6(153)	0.0348	0.04	93		0.0363	0.04	97		4.2	
Cl7(170)	0.0363	0.04	97		0.0337	0.04	90		7.5	
Cl7(180)	0.0368	0.04	98		0.0342	0.04	91		7.4	
Cl7(187)	0.0361	0.04	96		0.0333	0.04	89		7.6	
Cl8(195)	0.0370	0.04	99		0.0349	0.04	93		6.3	
Cl9(206)	0.0375	0.04	100		0.0342	0.04	91		9.4	
Cl10(209)	0.0382	0.04	102		0.0356	0.04	95		7.1	
Surrogate Recoveries (%)										
Cl3(34)	76				71					
Cl6(152)	79				74					

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Project Client: USACE/NAE
Project Name: USACE-NAE New Bedford Harbor Task Order 10 - Waters
Project Number: 100043429

Client ID	WQ-DPC-001-042214		WQ-DPC-002-042214		WQ-DPC-003-042214		WQ-DPC-004-042214	
Battelle ID	M2925-P		M2926-P		M2927-P		M2928-P	
Sample Type	SA		SA		SA		SA	
Collection Date	04/22/2014		04/22/2014		04/22/2014		04/22/2014	
Extraction Date	04/29/2014		04/29/2014		04/29/2014		04/29/2014	
Analysis Date	05/06/2014		05/06/2014		05/06/2014		05/06/2014	
Analytical Instrument	ECD		ECD		ECD		ECD	
% Moisture	NA		NA		NA		NA	
% Lipid	NA		NA		NA		NA	
Matrix	WQ		WQ		WQ		WQ	
Sample Size	1.08		1.07		1.06		1.07	
Size Unit-Basis	L_LIQUID		L_LIQUID		L_LIQUID		L_LIQUID	
Units	UG/L_LIQUID		UG/L_LIQUID		UG/L_LIQUID		UG/L_LIQUID	
Cl2(8)	0.00111	U	0.00656		0.00550		0.00112	U
Cl3(18)	0.00677	p	0.0286		0.0214		0.00986	
Cl3(28)	0.00112	U	0.00113	U	0.00172	p	0.00113	U
Cl4(44)	0.00112	U	0.00113	U	0.00114	U	0.00113	U
Cl4(52)	0.00111	U	0.00416		0.00340		0.00112	U
Cl4(66)	0.00111	U	0.00112	U	0.00113	U	0.00112	U
Cl5(101)	0.00111	U	0.00112	U	0.00113	U	0.00112	U
Cl5(105)	0.00112	U	0.00113	U	0.00114	U	0.00113	U
Cl5(118)	0.00112	U	0.00113	U	0.00114	U	0.00113	U
Cl6(128)	0.00112	U	0.00113	U	0.00114	U	0.00113	U
Cl6(138)	0.00112	U	0.00113	U	0.00114	U	0.00113	U
Cl6(153)	0.00112	U	0.00113	U	0.00114	U	0.00113	U
Cl7(170)	0.00112	U	0.00113	U	0.00114	U	0.00113	U
Cl7(180)	0.00112	U	0.00113	U	0.00114	U	0.00113	U
Cl7(187)	0.00112	U	0.00113	U	0.00114	U	0.00113	U
Cl8(195)	0.00112	U	0.00113	U	0.00114	U	0.00113	U
Cl9(206)	0.00111	U	0.00112	U	0.00113	U	0.00112	U
Cl10(209)	0.00112	U	0.00113	U	0.00114	U	0.00113	U
Surrogate Recoveries (%)								
Cl3(34)	66		76		69		71	
Cl6(152)	73		81		75		79	

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Project Client: USACE/NAE
Project Name: USACE-NAE New Bedford Harbor Task Order 10 - Waters
Project Number: 100043429

Client ID	WQ-DPC-001-042314	WQ-DPC-002-042314	WQ-DPC-003-042314	WQ-DPC-003-042314-REP
Battelle ID	M3119-P	M3120-P	M3121-P	M3122-P
Sample Type	SA	SA	SA	SA
Collection Date	04/23/2014	04/23/2014	04/23/2014	04/23/2014
Extraction Date	04/29/2014	04/29/2014	04/29/2014	04/29/2014
Analysis Date	05/06/2014	05/06/2014	05/06/2014	05/07/2014
Analytical Instrument	ECD	ECD	ECD	ECD
% Moisture	NA	NA	NA	NA
% Lipid	NA	NA	NA	NA
Matrix	WQ	WQ	WQ	WQ
Sample Size	1.04	1.07	1.04	1.01
Size Unit-Basis	L_LIQUID	L_LIQUID	L_LIQUID	L_LIQUID
Units	UG/L_LIQUID	UG/L_LIQUID	UG/L_LIQUID	UG/L_LIQUID

Cl2(8)	0.00115	U	0.00112	pU	0.00423		0.00163	
Cl3(18)	0.0144	p	0.0151		0.0191		0.0169	
Cl3(28)	0.0181	p	0.0290	p	0.0109	p	0.00346	p
Cl4(44)	0.00116	U	0.00113	U	0.00116	U	0.00119	U
Cl4(52)	0.00115	U	0.00046	J	0.00895		0.00292	p
Cl4(66)	0.00115	U	0.00112	U	0.00115	U	0.00119	U
Cl5(101)	0.00115	U	0.00112	U	0.00115	U	0.00119	U
Cl5(105)	0.00116	U	0.00113	U	0.00116	U	0.00119	U
Cl5(118)	0.00116	U	0.00113	U	0.00116	U	0.00119	U
Cl6(128)	0.00116	U	0.00113	U	0.00116	U	0.00119	U
Cl6(138)	0.00116	U	0.00113	U	0.00116	U	0.00119	U
Cl6(153)	0.00116	U	0.00113	U	0.00116	U	0.00119	U
Cl7(170)	0.00116	U	0.00113	U	0.00116	U	0.00119	U
Cl7(180)	0.00116	U	0.00113	U	0.00116	U	0.00119	U
Cl7(187)	0.00116	U	0.00113	U	0.00116	U	0.00119	U
Cl8(195)	0.00116	U	0.00113	U	0.00116	U	0.00119	U
Cl9(206)	0.00115	U	0.00112	U	0.00115	U	0.00119	U
Cl10(209)	0.00116	U	0.00113	U	0.00116	U	0.00119	U
Surrogate Recoveries (%)								
Cl3(34)	73		80		74		74	
Cl6(152)	78		82		80		81	

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Project Client: USACE/NAE
Project Name: USACE-NAE New Bedford Harbor Task Order 10 - Waters
Project Number: 100043429

Client ID	WQ-DPC-003-042314-EB		WQ-DPC-004-042314		WQ-DPC-001-042414		WQ-DPC-002-042414	
Battelle ID	M3123-P		M3124-P		M3183-P		M3184-P	
Sample Type	SA		SA		SA		SA	
Collection Date	04/23/2014		04/23/2014		04/24/2014		04/24/2014	
Extraction Date	04/29/2014		04/29/2014		04/29/2014		04/29/2014	
Analysis Date	05/07/2014		05/07/2014		05/07/2014		05/07/2014	
Analytical Instrument	ECD		ECD		ECD		ECD	
% Moisture	NA		NA		NA		NA	
% Lipid	NA		NA		NA		NA	
Matrix	BLK		WQ		WQ		WQ	
Sample Size	1.04		1.06		1.08		1.08	
Size Unit-Basis	L_LIQUID		L_LIQUID		L_LIQUID		L_LIQUID	
Units	UG/L_LIQUID		UG/L_LIQUID		UG/L_LIQUID		UG/L_LIQUID	
Cl2(8)	0.00115	U	0.00113		0.00138		0.00111	U
Cl3(18)	0.00116	U	0.0159		0.0203		0.0134	
Cl3(28)	0.00116	U	0.0194	p	0.00569	p	0.00189	p
Cl4(44)	0.00116	U	0.00114	U	0.00112	U	0.00112	U
Cl4(52)	0.00115	U	0.00052	pJ	0.00340		0.00047	J
Cl4(66)	0.00115	U	0.00113	U	0.00111	U	0.00111	U
Cl5(101)	0.00115	U	0.00113	U	0.00111	U	0.00111	U
Cl5(105)	0.00116	U	0.00114	U	0.00112	U	0.00112	U
Cl5(118)	0.00116	U	0.00114	U	0.00112	U	0.00112	U
Cl6(128)	0.00116	U	0.00114	U	0.00112	U	0.00112	U
Cl6(138)	0.00116	U	0.00114	U	0.00112	U	0.00112	U
Cl6(153)	0.00116	U	0.00114	U	0.00112	U	0.00112	U
Cl7(170)	0.00116	U	0.00114	U	0.00112	U	0.00112	U
Cl7(180)	0.00116	U	0.00114	U	0.00112	U	0.00112	U
Cl7(187)	0.00116	U	0.00114	U	0.00112	U	0.00112	U
Cl8(195)	0.00116	U	0.00114	U	0.00112	U	0.00112	U
Cl9(206)	0.00115	U	0.00113	U	0.00111	U	0.00111	U
Cl10(209)	0.00116	U	0.00114	U	0.00112	U	0.00112	U
Surrogate Recoveries (%)								
Cl3(34)	74		82		78		78	
Cl6(152)	77		82		82		84	

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Project Client: USACE/NAE
Project Name: USACE-NAE New Bedford Harbor Task Order 10 - Waters
Project Number: 100043429

Client ID	WQ-DPC-003-042414		WQ-DPC-004-042414	
Battelle ID	M3185-P		M3186-P	
Sample Type	SA		SA	
Collection Date	04/24/2014		04/24/2014	
Extraction Date	04/29/2014		04/29/2014	
Analysis Date	05/07/2014		05/07/2014	
Analytical Instrument	ECD		ECD	
% Moisture	NA		NA	
% Lipid	NA		NA	
Matrix	WQ		WQ	
Sample Size	1.06		1.05	
Size Unit-Basis	L_LIQUID		L_LIQUID	
Units	UG/L_LIQUID		UG/L_LIQUID	
Cl2(8)	0.00113	U	0.00043	J
Cl3(18)	0.0127		0.0220	
Cl3(28)	0.00277	p	0.00085	pJ
Cl4(44)	0.00114	U	0.00115	U
Cl4(52)	0.00113	U	0.00263	
Cl4(66)	0.00113	U	0.00114	U
Cl5(101)	0.00113	U	0.00114	U
Cl5(105)	0.00114	U	0.00115	U
Cl5(118)	0.00114	U	0.00115	U
Cl6(128)	0.00114	U	0.00115	U
Cl6(138)	0.00114	U	0.00115	U
Cl6(153)	0.00114	U	0.00115	U
Cl7(170)	0.00114	U	0.00115	U
Cl7(180)	0.00114	U	0.00115	U
Cl7(187)	0.00114	U	0.00115	U
Cl8(195)	0.00114	U	0.00115	U
Cl9(206)	0.00113	U	0.00114	U
Cl10(209)	0.00114	U	0.00115	U
Surrogate Recoveries (%)				
Cl3(34)	80		83	
Cl6(152)	84		82	

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Project Client: USACE/NAE
Project Name: USACE-NAE New Bedford Harbor Task Order 10 - Waters
Project Number: 100043429

Client ID	WQ-DPC-003-042314	WQ-DPC-003-042314			
Battelle ID	M3121-P	M3121MS-P			
Sample Type	SA	MS			
Collection Date	04/23/2014	04/23/2014			
Extraction Date	04/29/2014	04/29/2014			
Analysis Date	05/06/2014	05/06/2014			
Analytical Instrument	ECD	ECD			
% Moisture	NA	NA			
% Lipid	NA	NA			
Matrix	WQ	WQ			
Sample Size	1.04	0.52			
Size Unit-Basis	L_LIQUID	L_LIQUID			
Units	UG/L_LIQUID	UG/L_LIQUID	**Target**	**% REC**	**Qual**
Cl2(8)	0.00423	0.0546	0.07	70	
Cl3(18)	0.0191	0.0713	0.07	72	
Cl3(28)	0.0109 p	0.0640	0.07	74	
Cl4(44)	0.00116 U	0.0661	0.07	92	
Cl4(52)	0.00895	0.0655	0.07	78	
Cl4(66)	0.00115 U	0.0651	0.07	90	
Cl5(101)	0.00115 U	0.0808	0.07	112	
Cl5(105)	0.00116 U	0.0659	0.07	91	
Cl5(118)	0.00116 U	0.0703	0.07	97	
Cl6(128)	0.00116 U	0.0666	0.07	92	
Cl6(138)	0.00116 U	0.0645	0.07	89	
Cl6(153)	0.00116 U	0.0698	0.07	97	
Cl7(170)	0.00116 U	0.0689	0.07	96	
Cl7(180)	0.00116 U	0.0694	0.07	96	
Cl7(187)	0.00116 U	0.0678	0.07	94	
Cl8(195)	0.00116 U	0.0726	0.07	101	
Cl9(206)	0.00115 U	0.0693	0.07	96	
Cl10(209)	0.00116 U	0.0719	0.07	100	
Surrogate Recoveries (%)					
Cl3(34)	74	77			
Cl6(152)	80	82			

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Project Client: USACE/NAE
Project Name: USACE-NAE New Bedford Harbor Task Order 10 - Waters
Project Number: 100043429

Client ID	WQ-DPC-003-042314
Battelle ID	M3121MSD-P
Sample Type	MSD
Collection Date	04/23/2014
Extraction Date	04/29/2014
Analysis Date	05/06/2014
Analytical Instrument	ECD
% Moisture	NA
% Lipid	NA
Matrix	WQ
Sample Size	0.52
Size Unit-Basis	L_LIQUID
Units	UG/L_LIQUID

		Target	% REC	Qual	RPD	Qual
Cl2(8)	0.0581	0.07	75		6.9	
Cl3(18)	0.0747	0.07	77		6.7	
Cl3(28)	0.0671	0.07	78		5.3	
Cl4(44)	0.0690	0.07	96		4.3	
Cl4(52)	0.0685	0.07	83		6.2	
Cl4(66)	0.0700	0.07	97		7.5	
Cl5(101)	0.0824	0.07	114		1.8	
Cl5(105)	0.0736	0.07	102		11.4	
Cl5(118)	0.0772	0.07	107		9.8	
Cl6(128)	0.0729	0.07	101		9.3	
Cl6(138)	0.0720	0.07	100		11.6	
Cl6(153)	0.0717	0.07	99		2.0	
Cl7(170)	0.0736	0.07	102		6.1	
Cl7(180)	0.0736	0.07	102		6.1	
Cl7(187)	0.0738	0.07	102		8.2	
Cl8(195)	0.0774	0.07	107		5.8	
Cl9(206)	0.0761	0.07	106		9.9	
Cl10(209)	0.0791	0.07	110		9.5	

Surrogate Recoveries (%)

Cl3(34)	81
Cl6(152)	83

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Glossary of Data Qualifiers

Flag:	Application:
B	Analyte concentration found in the sample at a concentration <5x the level found in the procedural blank.
D	Dilution Run. Initial run outside linear range of instrument.
E	Estimate, result is greater than the highest concentration level in the calibration.
H	Surrogate diluted out. Used when surrogate recovery is affected by excessive dilution of the sample extract.
J	Analyte detected below the sample-specific Reporting Limit (RL).
m	Confirmation column manually over-ridden by analyst, dual column quantitative analysis only.
ME	Significant Matrix Interference - Estimated value.
MI	Significant Matrix Interference - value could not be determined or estimated.
n	Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO), but meets the contingency criteria.
N	Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO)
NA	Not applicable
p	Dual column value exceeds RPD criteria, dual column quantitative analysis only.
T	Holding Time (HT) exceeded.
U	Analyte not detected at 3:1 signal:noise ratio.

QA/QC Summary
Batch 14-0176

Project:	USACE/NAE – New Bedford Harbor Task Order 10
Parameters:	PCBs – Dissolved Fraction
Laboratory:	Battelle, Duxbury, MA
Matrix:	WQ, BLK
Data Set:	DP-14-0243
Analytical SOP:	5-128
Method Reference:	EPA 8081B/8082A modified

Sample Custody

Collection Date	Receipt Date	Temp (°C)
4/22-24/2014	4/22, 4/23 & 24/2014 (hand delivered after collection)	1.0 – ambient (hand delivered)

Corrective Actions	Confusion related to label of samples intended for MS/MSD. Samples logged in with the same sample ID.
Sample Storage	The water samples were stored refrigerated until extraction.
Related samples	NA

METHOD SUMMARIES

Sample Preparation	Water samples were vacuum filtered through a 0.45 um filter prior to extraction. (see sample preparation records for details.) The liquid portion (dissolved fraction) was collected and processed. Water samples were extracted for PCB analysis according to Battelle SOP 5-200, *Water Extraction for Trace Level Semi-Volatile Organic Contaminant Analysis.* Approximately 1 liter of water was spiked with surrogates and extracted three times with dichloromethane using separatory funnel techniques. The combined extract was dried over anhydrous sodium sulfate, concentrated, processed through alumina cleanup columns, and concentrated. The final concentrated extract was cleaned with activated copper, solvent exchanged into hexane and fortified with internal standard (IS) compounds prior to analysis by GC/ECD.
Prep Comments	• MS and MSD samples were taken from one bottle because only two bottles of sample M3121 (one for background and one for MS/MSD) were filtered. • All samples (including QC) were vacuum filtered through 0.45 um mixed cellulose ester filters (47 mm diameter) using two-piece fritted glass filter funnels. A new filter was used for each unique filed sample. Before use, each assembly was rinsed by filtering approximately 100 mL of Milli-Q water under vacuum. All samples (excluding lab-generated QC samples, which were collected and filtered on the day of extraction) were filtered between 4/23/14 and 4/25/14, and each sample was filtered within 24 hours of collection.

QA/QC Summary
Batch 14-0176

Analysis	PCBs were analyzed by gas chromatography electron capture detection (GC/ECD). An initial calibration consisting of target analytes was analyzed prior to sample analysis to demonstrate the linear range. Calibration verification was performed at the beginning and end of each 24-hr period in which samples were analyzed. Concentrations of target compounds were calculated versus internal standards using the average response factors (RF) generated from the initial calibration.

Holding Times	Extraction Date(s)		Analysis Date(s)	
	4/29/2014		5/6-7/2014	

Procedural Blank (PB)	A PB was prepared with this analytical batch to ensure the sample extraction and analysis methods are free of contamination.
Blank value <SSRL Samples >5X PB	No exceedences noted.
	No comments.

Laboratory Control Spike (LCS)/ Laboratory Control Spike Duplicate (LCSD)	A LCS/LCSD pair was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy. The relative percent difference (RPD) was calculated to measure data quality in terms of precision.
40-120% recovery <30% RPD	No exceedences noted.
	No comments.

Surrogate Recovery	Surrogate compounds were added prior to extraction. The surrogate recoveries are calculated to measure extraction efficiency.
30-150% recovery	No exceedences noted.
	No comments.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)	A matrix spike/matrix spike duplicate pair was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure data quality in terms of accuracy. The relative percent difference (RPD) was calculated to measure data quality in terms of precision.
40-120% recovery; Concentration in MS must be >5x background; <30% RPD	No exceedences noted.
	No comments.

QA/QC Summary
Batch 14-0176

Initial Calibration (ICAL)	The GC/ECD was calibrated with six-level quadratic calibration curve for all compounds using an instrument response factor (RF).
$R^2 \geq 0.995$	No exceedences noted.
	No comments.

Independent Calibration Check (ICC)	The independent check was run after each initial calibration to verify the calibration. This standard is from a different source than the ICAL.
≤ 20% difference individual and mean	No exceedences noted.
	No comments.

Continuing Calibration Verification (CCV)	Continuing calibration standards were run every 24 hours to ensure that initial calibration is still valid.
≤ 20% difference individual; ≤15% difference mean	No exceedences noted.
	No comments.

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Report Project Data Set MQOs

Project Title: USACE/NAE New Bedford Harbor Task

Data Set Number: DP-14-0243

Project Number: 100043429

Prep Batch Number: 14-0176

Test Code (Matrix Type): Master_128(L)

QC_PARAMETER:	Exceed:	Contg.:	JUSTIFICATION:
Procedural Blank	0	0	None
PB Measurement Quality Objective	0	0	None
Laboratory Control Sample	0	0	None
Matrix Spike Recovery	0	0	None
Matrix Spike/Spike Duplicate Precision	0	0	None
Standard Reference Material Accuracy	NA	NA	NA
Analytical Duplicate Precision	NA	NA	NA
Analytical Triplicate Precision	NA	NA	NA
Surrogate Compound Recovery	0	0	None
Control Oil	NA	NA	NA
Instrument Calibration	0	0	None
Independent Calibration Check Solution	0	0	None
Continuing Calibration Verification	0	0	None

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BATTELLE - DUXBURY OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM

Project Title:	USACE/NAE New Bedford Harbor Task	**Data Set Number:**	DP-14-0243
Project Number:	100043429	**Prep Batch Number:**	14-0176
Entered By:	Richard Restucci Jr	**Entered On:**	05/07/2014
Test Code (Matrix Type):	Master_128(L)		

Integrations by Rich Restucci and Bob Lizotte.
RR 5/7/14

In the LCS/LCSD/MS/MSD, PCBs 118,152, and 138 coelute with non-target pesticides. As such, vertical integrations are performed inside these peaks in the LCS/LSCD/MS/MSD to accurately represent the detected PCB.
RR 5/7/14

Task Leader Approval: Kevin McInerney 2014.05.07 12:30:48 -04'00'

SupervisorApproval:

PM Approval: Carole McCarthy 2014.05.07 13:45:30 -04'00'

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Report Project Data Set MQOs

Project Title: USACE/NAE New Bedford Harbor Task

Data Set Number: DP-14-0243

Project Number: 100043429

Prep Batch Number: 14-0176

Test Code (Matrix Type): Master_128(L)

QC_PARAMETER:	Exceed:	Contg.:	JUSTIFICATION:
Procedural Blank	0	0	None
PB Measurement Quality Objective	0	0	None
Laboratory Control Sample	0	0	None
Matrix Spike Recovery	0	0	None
Matrix Spike/Spike Duplicate Precision	0	0	None
Standard Reference Material Accuracy	NA	NA	NA
Analytical Duplicate Precision	NA	NA	NA
Analytical Triplicate Precision	NA	NA	NA
Surrogate Compound Recovery	0	0	None
Control Oil	NA	NA	NA
Instrument Calibration	0	0	None
Independent Calibration Check Solution	0	0	None
Continuing Calibration Verification	0	0	None

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BATTELLE - DUXBURY OPERATIONS
SAMPLE PREPARATION RECORDS

Project Title(s)	Project No.(s)
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USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

SOP Numbers (see workplan for modifications)

ExtractionSOP No.	5-200
CleanupSOP No.	5-191
CleanupSOP No.	5-328

This Batch Contains The Following Samples:

CC128PB-P	M2928-P	M3122-P	M3186-P
CC129LCS-P	M3119-P	M3123-P	
CC130LCSD-P	M3120-P	M3124-P	
M2925-P	M3121-P	M3183-P	
M2926-P	M3121MS-P	M3184-P	
M2927-P	M3121MSD-P	M3185-P	

Laboratory Preparation Records
COMPLETE AND VALIDATED

Prep Task Leader: Stephanie Hart

Approved By:	Date	Initials
Dawn Trapp	05/06/2014	DBT

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BATTELLE - DUXBURY OPERATIONS
SAMPLE CUSTODY LOG

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

Project No.(s)
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USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Requested On/By:	04/29/2014 SAH	**Purpose:**	Sample Preparation
Relinquished On/By:	04/29/2014 MDS	**Last Activity:**	Transfer

Accepted On/By:	04/29/2014 SAH	**Returned On/To:**	
Stored In Facility:	Organics I	**Returned To Facility:**	
Stored Until	04/29/2014		
Stored Comment:	NA	**Returned Comment:**	NA

No.	BDO-ID:	Ctrs	*	Condition:	Custody Comment:
1	M2925	1	C	Consumed	NA
2	M2926	1	C	Consumed	NA
3	M2927	1	C	Consumed	NA
4	M2928	1	C	Consumed	NA
5	M3119	1	C	Consumed	NA
6	M3120	1	C	Consumed	NA
7	M3121	1	C	Consumed	NA
8	M3122	1	C	Consumed	NA
9	M3123	1	C	Consumed	NA
10	M3124	1	C	Consumed	NA
11	M3183	1	C	Consumed	NA
12	M3184	1	C	Consumed	NA
13	M3185	1	C	Consumed	NA
14	M3186	1	C	Consumed	NA

Total Samples 14 * "C" = Consumed Container

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BATTELLE - DUXBURY OPERATIONS
SAMPLE IDENTIFICATION PAGE

Project Title(s)	Project No.(s)
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WATER

Sample ID	Description
CC128PB-P	Procedural Blank
CC129LCS-P	Laboratory Control Sample
CC130LCSD-P	Laboratory Control Sample Duplicate
M2925-P	WQ-DPC-001-042214
M2926-P	WQ-DPC-002-042214
M2927-P	WQ-DPC-003-042214
M2928-P	WQ-DPC-004-042214
M3119-P	WQ-DPC-001-042314
M3120-P	WQ-DPC-002-042314
M3121-P	WQ-DPC-003-042314
M3121MS-P	Matrix Spike of WQ-DPC-003-042314
M3121MSD-P	Matrix Spike Duplicate of WQ-DPC-003-042314
M3122-P	WQ-DPC-003-042314-REP
M3123-P	WQ-DPC-003-042314-EB
M3124-P	WQ-DPC-004-042314
M3183-P	WQ-DPC-001-042414
M3184-P	WQ-DPC-002-042414
M3185-P	WQ-DPC-003-042414
M3186-P	WQ-DPC-004-042414

Samples Assigned By Stephanie Hart Date : April 29, 2014

Comments:

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BATTELLE - DUXBURY OPERATIONS
LIQUID SAMPLE ID FORM

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

Project No.(s)
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USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Sample ID	Description	Volume (mL)	Bottles	*	Date Initials
CC128PB-P	Procedural Blank	1000.0	NA	--	04/29/14 SAH
CC129LCS-P	Laboratory Control Sample	1000.0	NA	--	04/29/14 SAH
CC130LCSD-P	Laboratory Control Sample Duplicate	1000.0	NA	--	04/29/14 SAH
M2925-P	WQ-DPC-001-042214	1080.0	1	C	04/29/14 SAH
M2926-P	WQ-DPC-002-042214	1070.0	1	C	04/29/14 SAH
M2927-P	WQ-DPC-003-042214	1060.0	1	C	04/29/14 SAH
M2928-P	WQ-DPC-004-042214	1070.0	1	C	04/29/14 SAH
M3119-P	WQ-DPC-001-042314	1040.0	1	C	04/29/14 SAH
M3120-P	WQ-DPC-002-042314	1070.0	1	C	04/29/14 SAH
M3121-P	WQ-DPC-003-042314	1040.0	1	C	04/29/14 SAH
M3121MS-P	Matrix Spike	520.0	2	C	04/29/14 SAH
M3121MSD-P	Matrix Spike Duplicate	520.0	2	C	04/29/14 SAH
M3122-P	WQ-DPC-003-042314-REP	1010.0	1	C	04/29/14 SAH
M3123-P	WQ-DPC-003-042314-EB	1040.0	1	C	04/29/14 SAH
M3124-P	WQ-DPC-004-042314	1060.0	1	C	04/29/14 SAH
M3183-P	WQ-DPC-001-042414	1080.0	1	C	04/29/14 SAH
M3184-P	WQ-DPC-002-042414	1080.0	1	C	04/29/14 SAH
M3185-P	WQ-DPC-003-042414	1060.0	1	C	04/29/14 SAH
M3186-P	WQ-DPC-004-042414	1050.0	1	C	04/29/14 SAH

Comments:

Samples Assigned By Stephanie Hart Date : April 29, 2014

* - "C" = Sample is Consumed

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BATTELLE - DUXBURY OPERATIONS
SURROGATE SPIKE FORM

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

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USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Sample ID	Standard ID	Type	Vial No.	Vol Added (uL)	Date Spiked/ Spiked By	Witn'd By	Comment
CC128PB-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
CC129LCS-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
CC129LCS-P	HX10	LCS/MS	4	75	04/29/14 SAH	EMW	NA
CC130LCSD-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
CC130LCSD-P	HX10	LCS/MS	4	75	04/29/14 SAH	EMW	NA
M2925-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M2926-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M2927-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M2928-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3119-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3120-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3121-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3121MS-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3121MS-P	HX10	LCS/MS	4	75	04/29/14 SAH	EMW	NA
M3121MSD-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3121MSD-P	HX10	LCS/MS	4	75	04/29/14 SAH	EMW	NA
M3122-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3123-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3124-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3183-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3184-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3185-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA
M3186-P	HW93	SIS	3	50	04/29/14 SAH	EMW	NA

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BATTELLE - DUXBURY OPERATIONS
SURROGATE SPIKE FORM

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

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USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Sample ID	Standard ID	Type	Vial No.	Vol Added (uL)	Date Spiked/ Spiked By	Witn'd By	Comment

Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
HW93	Pipette	I0793912B
HX10	Pipette	I0793912B

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BATTELLE - DUXBURY OPERATIONS
SAMPLE EXTRACTION FORM

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USACE/NAE New Bedford Harbor Task Order 10

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USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Sample ID	First Extraction	Second Extraction	Third Extraction	Turbo °C	Turbo PSI	KD °C	Comment
CC128PB-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
CC129LCS-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
CC130LCSD-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M2925-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M2926-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M2927-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M2928-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3119-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3120-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3121-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3121MS-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3121MSD-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3122-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3123-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3124-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3183-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3184-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3185-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA
M3186-P	04/29/14 SAH	04/29/14 EMW	04/29/14 RMB	NA	NA	65	NA

Reagents:

Name	Expires	Lot No	Procedure	Comments
Sodium Sulfate	05/05/14	0000065658	Muffled at 400 °C for more than 4 hours. Expiration date was changed once sodium sulfate was consumed in prep.	

Solvents:

Name	Lot No	Comments
DCM Cycletainer	0000066569	
Hexane	0000059693	

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BATTELLE - DUXBURY OPERATIONS
EXTRACT CLEANUP FORM

Project Title(s)
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USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Extract Id	Date	Init.	Comments
CC128PB-P(0)	05/06/14	DBT	NA
CC129LCS-P(0)	05/06/14	DBT	NA
CC130LCSD-P(0)	05/06/14	DBT	NA
M2925-P(0)	05/06/14	DBT	NA
M2926-P(0)	05/06/14	DBT	NA
M2927-P(0)	05/06/14	DBT	NA
M2928-P(0)	05/06/14	DBT	NA
M3119-P(0)	05/06/14	DBT	NA
M3120-P(0)	05/06/14	DBT	NA
M3121-P(0)	05/06/14	DBT	NA
M3121MS-P(0)	05/06/14	DBT	NA
M3121MSD-P(0)	05/06/14	DBT	NA
M3122-P(0)	05/06/14	DBT	NA
M3123-P(0)	05/06/14	DBT	NA
M3124-P(0)	05/06/14	DBT	NA
M3183-P(0)	05/06/14	DBT	NA
M3184-P(0)	05/06/14	DBT	NA
M3185-P(0)	05/06/14	DBT	NA

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BATTELLE - DUXBURY OPERATIONS
EXTRACT CLEANUP FORM

Project Title(s)
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USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Extract Id	Date	Init.	Comments
M3186-P(0)	05/06/14	DBT	NA

Cleanup:
Copper Cleanup

Reagents:

Name	Expires	Lot No	Procedure
Activated Copper	05/06/14	0000067838	Activated according to Cleanup SOP (5-328)

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BATTELLE - DUXBURY OPERATIONS
COLUMN FRACTIONATION FORM

Project Title(s)
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USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Extract Id	Date	Init.	Sample Specific Comments
CC128PB-P(0)	05/06/14	DBT	NA
CC129LCS-P(0)	05/06/14	DBT	NA
CC130LCSD-P(0)	05/06/14	DBT	NA
M2925-P(0)	05/06/14	DBT	NA
M2926-P(0)	05/06/14	DBT	NA
M2927-P(0)	05/06/14	DBT	NA
M2928-P(0)	05/06/14	DBT	NA
M3119-P(0)	05/06/14	DBT	NA
M3120-P(0)	05/06/14	DBT	NA
M3121-P(0)	05/06/14	DBT	NA
M3121MS-P(0)	05/06/14	DBT	NA
M3121MSD-P(0)	05/06/14	DBT	NA
M3122-P(0)	05/06/14	DBT	NA
M3123-P(0)	05/06/14	DBT	NA
M3124-P(0)	05/06/14	DBT	NA
M3183-P(0)	05/06/14	DBT	NA
M3184-P(0)	05/06/14	DBT	NA

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BATTELLE - DUXBURY OPERATIONS
COLUMN FRACTIONATION FORM

Project Title(s)
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WATER

Extract Id	Date	Init.	Sample Specific Comments
M3185-P(0)	05/06/14	DBT	NA
M3186-P(0)	05/06/14	DBT	NA

Column Diameter: 13 mm **Procedure Comment:**

Elution Volume: 50 mL

Solvents

Name	Lot No
DCM Cycletainer	0000064589

Reagents

Weight g	Name	Expires	Lot No	Procedure
Not Measured	Sodium Sulfate	05/07/14	0000065658	Muffled at 400 °C for more than 4 hours. Expiration date was changed from one year after preparation once reagent was consumed.
10.00	6% Deactivated Alumina	05/06/14	MKBQ1135V	Alumina shaken for 2 hours with 6 mL Milli-Q water / 100 g alumina

Fractions

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BATTELLE - DUXBURY OPERATIONS
PREPARATION EXTRACT SPLIT FORM

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

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USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Extract		*	Extract Date	Source		Initial Extract Vol (uL)	Extract Split	Extract Split	Total Dilution	Date/Initials
Name	#			Name	#					
CC128PB-P	0	--	4/29/2014 3:10:00 PM	NA		NA	NA	1.000	1.000	04/29/14 SAH
CC129LCS-P	0	--	4/29/2014 3:10:00 PM	NA		NA	NA	1.000	1.000	04/29/14 SAH
CC130LCSD-P	0	--	4/29/2014 3:10:00 PM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M2925-P	0	--	4/29/2014 3:10:00 PM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M2926-P	0	--	4/29/2014 3:10:00 PM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M2927-P	0	--	4/29/2014 3:10:00 PM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M2928-P	0	--	4/29/2014 3:10:00 PM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3119-P	0	--	4/29/2014 3:10:00 PM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3120-P	0	--	4/29/2014 3:10:00 PM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3121-P	0	--	4/29/2014 3:10:00 PM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3121MS-P	0	--	4/29/2014 3:10:00 PM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3121MSD-P	0	--	4/29/2014 3:10:00 PM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3122-P	0	--	4/29/2014 3:10:00 PM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3123-P	0	--	4/29/2014 3:10:00 PM	NA		NA	NA	1.000	1.000	04/29/14 SAH

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] * [Aliquot Weight (mg)]
Dilution Factor = [Sample Volume (uL) / Aliqot Volume (uL))] * Prior Dilution Factor
* - "C" = Extract is Consumed

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BATTELLE - DUXBURY OPERATIONS
PREPARATION EXTRACT SPLIT FORM

Project Title(s)
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USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Extract		*	Extract Date	Source		Initial Extract Vol (uL)	Extract Split	Extract Split	Total Dilution	Date/Initials
Name	#			Name	#					
M3124-P	0	--	4/29/2014 3:10:00 PM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3183-P	0	--	4/29/2014 3:10:00 PM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3184-P	0	--	4/29/2014 3:10:00 PM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3185-P	0	--	4/29/2014 3:10:00 PM	NA		NA	NA	1.000	1.000	04/29/14 SAH
M3186-P	0	--	4/29/2014 3:10:00 PM	NA		NA	NA	1.000	1.000	04/29/14 SAH

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] * [Aliquot Weight (mg)]
Dilution Factor = [Sample Volume (uL) / Aliqot Volume (uL))] * Prior Dilution Factor
* - "C" = Extract is Consumed

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BATTELLE - DUXBURY OPERATIONS
INTERNAL STANDARD SPIKING FORM

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

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USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

(N/A Fraction)

Extract Id	Extr. Vol. (uL)	Added (uL)	Std. Id	Accm. (uL)	Vial No.	Pre Inj. Vol. (uL)^	Final Dilution *	Date Spiked/ Spiked By	Witn'd By
CC128PB-P(0)	450	50	HX16	50	2	500	1.000	05/06/14 DBT	SG
CC129LCS-P(0)	450	50	HX16	50	2	500	1.000	05/06/14 DBT	SG
CC130LCSD-P(0)	450	50	HX16	50	2	500	1.000	05/06/14 DBT	SG
M2925-P(0)	450	50	HX16	50	2	500	1.000	05/06/14 DBT	SG
M2926-P(0)	450	50	HX16	50	2	500	1.000	05/06/14 DBT	SG
M2927-P(0)	450	50	HX16	50	2	500	1.000	05/06/14 DBT	SG
M2928-P(0)	450	50	HX16	50	2	500	1.000	05/06/14 DBT	SG
M3119-P(0)	450	50	HX16	50	2	500	1.000	05/06/14 DBT	SG
M3120-P(0)	450	50	HX16	50	2	500	1.000	05/06/14 DBT	SG
M3121-P(0)	450	50	HX16	50	2	500	1.000	05/06/14 DBT	SG
M3121MS-P(0)	450	50	HX16	50	2	500	1.000	05/06/14 DBT	SG
M3121MSD-P(0)	450	50	HX16	50	2	500	1.000	05/06/14 DBT	SG
M3122-P(0)	450	50	HX16	50	2	500	1.000	05/06/14 DBT	SG
M3123-P(0)	450	50	HX16	50	2	500	1.000	05/06/14 DBT	SG
M3124-P(0)	450	50	HX16	50	2	500	1.000	05/06/14 DBT	SG
M3183-P(0)	450	50	HX16	50	2	500	1.000	05/06/14 DBT	SG
M3184-P(0)	450	50	HX16	50	2	500	1.000	05/06/14 DBT	SG
M3185-P(0)	450	50	HX16	50	2	500	1.000	05/06/14 DBT	SG
M3186-P(0)	450	50	HX16	50	2	500	1.000	05/06/14 DBT	SG

* - Final Dilution is any HPLC, dilutions, or other manipulation

^ - Pre Injection Volume (PIV) includes any RIS spikes.

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BATTELLE - DUXBURY OPERATIONS
INTERNAL STANDARD SPIKING FORM

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

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USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

(N/A Fraction)

Extract Id	Extr. Vol. (uL)	Added (uL)	Std. Id	Accm. (uL)	Vial No.	Pre Inj. Vol. (uL)^	Final Dilution *	Date Spiked/ Spiked By	Witn'd By

Syringes/Pipettes Used:

* - Final Dilution is any HPLC, dilutions, or other manipulation

^ - Pre Injection Volume (PIV) includes any RIS spikes.

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BATTELLE - DUXBURY OPERATIONS
SAMPLE SPECIFIC COMMENTS

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100043429

14-0176

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Sample ID:	Comment:	Date/Initials:
CC128PB-P	NA	NA
CC129LCS-P	NA	NA
CC130LCSD-P	NA	NA
M2925-P	NA	NA
M2926-P	NA	NA
M2927-P	NA	NA
M2928-P	NA	NA
M3119-P	NA	NA
M3120-P	NA	NA
M3121-P	NA	NA
M3121MS-P	NA	NA
M3121MSD-P	NA	NA
M3122-P	NA	NA
M3123-P	NA	NA
M3124-P	NA	NA
M3183-P	NA	NA
M3184-P	NA	NA
M3185-P	NA	NA
M3186-P	NA	NA

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EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE

Project Title(s)
USACE/NAE New Bedford Harbor Task Order 10

Project No.(s)
100043429

14-0176

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Purpose:	GC/ECD TRANSFER	**Last Activity:**	Prep->Inst
Relinquished On/By:	May 6 2014 1:27PM DBT	**Received On/By:**	May 6 2014 2:06PM RR
Relinquished From:	Organics I: NA	**Received Location:**	GC Room: NA
Relinquish Comment:	NA	**Received Comment:**	NA

No.	BDO-ID:	PIV:	DF:	Condition:	Custody Comment:
1	CC128PB-P(0)	500	1	Intact	NA
2	CC129LCS-P(0)	500	1	Intact	NA
3	CC130LCSD-P(0)	500	1	Intact	NA
4	M2925-P(0)	500	1	Intact	NA
5	M2926-P(0)	500	1	Intact	NA
6	M2927-P(0)	500	1	Intact	NA
7	M2928-P(0)	500	1	Intact	NA
8	M3119-P(0)	500	1	Intact	NA
9	M3120-P(0)	500	1	Intact	NA
10	M3121-P(0)	500	1	Intact	NA
11	M3121MS-P(0)	500	1	Intact	NA
12	M3121MSD-P(0)	500	1	Intact	NA
13	M3122-P(0)	500	1	Intact	NA
14	M3123-P(0)	500	1	Intact	NA
15	M3124-P(0)	500	1	Intact	NA
16	M3183-P(0)	500	1	Intact	NA
17	M3184-P(0)	500	1	Intact	NA
18	M3185-P(0)	500	1	Intact	NA
19	M3186-P(0)	500	1	Intact	NA

Total Extracts: 19

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MISCELLANEOUS DOCUMENTATION FORM

Project Title(s)	Project No.(s)
USACE/NAE New Bedford Harbor Task Order 10	100043429

14-0176

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Entered By:	Dawn Trapp	**On:**	05/06/2014

MS and MSD samples were taken from one bottle because only two bottles of sample M3121 (one for background and one for MS/MSD) were filtered.

Task Leader Approval:	Dawn Trapp	**On:**	05/13/2014
SupervisorApproval:	Dawn Trapp	**On:**	05/13/2014
PM Approval:	Carole Peven-McCarthy	**On:**	05/13/2014

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BATTELLE - DUXBURY OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM

Project Title(s)	Project No.(s)
USACE/NAE New Bedford Harbor Task Order 10	100043429

14-0176

USACE-NAE New Bedford Harbor Task Order 10 - Waters

WATER

Entered By:	Dawn Trapp	**On:**	05/06/2014

All samples in this batch, including lab-generated QC, were vacuum filtered through 0.45-µm pore size mixed cellulose ester filters (47 mm diameter) using two-piece fritted glass filter funnels. A new filter was used for each unique field sample. Before use, each assembly was rinsed by filtering approximately 100 mL of Milli-Q water under vacuum. All samples (excluding lab-generated QC samples, which were collected and filtered on the day of extraction) were filtered between 4/23/14 and 4/25/14, and each sample was filtered within 24 hours of collection.

Task Leader Approval:	Dawn Trapp	**On:**	05/13/2014
SupervisorApproval:	Dawn Trapp	**On:**	05/13/2014
PM Approval:	Carole Peven-McCarthy	**On:**	05/14/2014

Directory I:\L\DATA\SL0418\ Highlighted cells reported.

Lin	BTL	File	Sample Id	Miscellaneous	Injected
1	1	L8527.D	IB46		5-6-2014 08:52 AM
2	2	L8528.D	IB47		5-6-2014 09:37 AM
3	3	L8529.D	IB48		5-6-2014 10:41 AM
4	4	L8530.D	IB49		5-6-2014 11:26 AM
5	5	L8531.D	IB50		5-6-2014 12:11 PM
6	6	L8532.D	IB51		5-6-2014 12:57 PM
7	7	L8533.D	IB52 ICC		5-6-2014 01:42 PM
8	1	L8534.D	CC128PB-P(0)	Procedural Blank 5-128 14	5-6-2014 02:27 PM
9	2	L8535.D	CC129LCS-P(0)	Laboratory Control Sample	5-6-2014 03:12 PM
10	3	L8536.D	CC130LCSD-P(0)	Laboratory Control Sample	5-6-2014 03:57 PM
11	4	L8537.D	M2925-P(0)	WQ-DPC-001-042214 5-128 1	5-6-2014 04:42 PM
12	5	L8538.D	M2926-P(0)	WQ-DPC-002-042214 5-128 1	5-6-2014 05:27 PM
13	6	L8539.D	M2927-P(0)	WQ-DPC-003-042214 5-128 1	5-6-2014 06:12 PM
14	7	L8540.D	M2928-P(0)	WQ-DPC-004-042214 5-128 1	5-6-2014 06:58 PM
15	8	L8541.D	M3119-P(0)	WQ-DPC-001-042314 5-128 1	5-6-2014 07:43 PM
16	9	L8542.D	M3120-P(0)	WQ-DPC-002-042314 5-128 1	5-6-2014 08:28 PM
17	10	L8543.D	M3121-P(0)	WQ-DPC-003-042314 5-128 1	5-6-2014 09:13 PM
18	11	L8544.D	IB49 mid		5-6-2014 09:59 PM
19	12	L8545.D	M3121MS-P(0)	Matrix Spike of WQ-DPC-00	5-6-2014 10:44 PM
20	13	L8546.D	M3121MSD-P(0)	Matrix Spike Duplicate of	5-6-2014 11:29 PM
21	14	L8547.D	M3122-P(0)	WQ-DPC-003-042314-REP 5-1	5-7-2014 12:14 AM
22	15	L8548.D	M3123-P(0)	WQ-DPC-003-042314-EB 5-12	5-7-2014 12:59 AM
23	16	L8549.D	M3124-P(0)	WQ-DPC-004-042314 5-128 1	5-7-2014 01:44 AM
24	17	L8550.D	M3183-P(0)	WQ-DPC-001-042414 5-128 1	5-7-2014 02:29 AM
25	18	L8551.D	M3184-P(0)	WQ-DPC-002-042414 5-128 1	5-7-2014 03:15 AM
26	19	L8552.D	M3185-P(0)	WQ-DPC-003-042414 5-128 1	5-7-2014 04:00 AM
27	20	L8553.D	M3186-P(0)	WQ-DPC-004-042414 5-128 1	5-7-2014 04:45 AM
28	21	L8554.D	IB50 mid		5-7-2014 05:30 AM

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Calibration Response Factor Report

Batch: 14-0176 **Project Test Code:** Master_128(L)

RFs validated CRD 5/13/2014

Data Set: DP-14-0243 **SOP_NO:** 5-128-13

Project Number: 100043429 **Project Name:** USACE/NAE New Bedford Harbor Task Order 10

File: ML0418A.M **Responses Via** Initial Calibration **Last Updated** 5/7/2014 10:01:00 AM **Title:** NBH

Instrument: Inst. L **Operator:** RR **Path:** I:\L\DATA\ML0418A.M

No:	Analyte:	Type:	Column:	MQO:	1 IB46 L8527.D	2 IB47 L8528.D	3 IB48 L8529.D	4 IB49 L8530.D	5 IB50 L8531.D	6 IB51 L8532.D	7 - -	8 - -	Levels:	Curve Fit:	(A)	(B)	(C)	Stat (r^2/RSD):	Qual:
1	Cl5(96)	I	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	Cl2(8)		1	Y	0.96359	0.80573	0.72005	0.65571	0.63800	0.93683	-	-	6	Q	0.35605	0.33637	0.04230	0.99815	
3	Cl3(18)		1	Y	1.32452	1.02389	0.88972	0.81191	0.78820	1.12948	-	-	6	Q	0.40966	0.43487	0.05276	0.99836	
4	Cl3(34)	s	1	Y	2.37717	1.34713	1.04462	0.93855	0.89845	1.37083	-	-	6	Q	0.58568	0.37436	0.08743	0.99814	
5	Cl3(28)		1	Y	2.29785	1.72225	1.58325	1.54662	1.56112	2.51492	-	-	6	Q	1.13329	0.62153	0.10318	0.99827	
6	Cl4(52)		1	Y	2.49717	1.54778	1.18833	1.05958	1.02293	1.55863	-	-	6	Q	0.66275	0.43108	0.09725	0.99812	
7	Cl4(44)		1	Y	2.15734	1.59970	1.45794	1.38822	1.40505	2.21593	-	-	6	Q	0.96914	0.59362	0.09343	0.99839	
8	Cl4(66)		1	Y	2.43165	1.79419	1.69686	1.69187	1.73368	2.76841	-	-	6	Q	1.23248	0.71982	0.10236	0.99851	
9	Cl5(101)		1	Y	2.15959	1.54797	1.50903	1.44293	1.51251	2.35030	-	-	6	Q	1.00819	0.67461	0.08447	0.99881	
10	Cl6(161)	I	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11	Cl6(152)	s	1	Y	0.76014	0.67855	0.53679	0.49847	0.48256	0.78849	-	-	6	Q	0.36445	0.17359	0.04216	0.99744	
12	Cl5(118)		1	Y	1.01993	0.83005	0.75069	0.70413	0.68237	1.17662	-	-	6	Q	0.58114	0.20138	0.05869	0.99716	
13	Cl6(153)		1	Y	1.94778	0.79885	0.73877	0.58337	0.71888	1.16547	-	-	6	Q	0.58071	0.19411	0.05934	0.99952	
14	Cl5(105)		1	Y	1.29354	0.97215	0.85074	0.81896	0.87086	1.55543	-	-	6	Q	0.82276	0.18599	0.06993	0.99817	
15	Cl6(138)		1	Y	1.15653	0.90927	0.83281	0.80201	0.84733	1.45268	-	-	6	Q	0.72438	0.24670	0.06010	0.99831	
16	Cl7(187)		1	Y	1.11395	0.83375	0.80405	0.72698	0.76510	1.33274	-	-	6	Q	0.67944	0.19891	0.06028	0.99802	
17	Cl6(128)		1	Y	1.28152	0.97208	0.90411	0.86048	0.90999	1.60993	-	-	6	Q	0.83664	0.21668	0.06985	0.99812	
18	Cl7(180)		1	Y	1.31410	0.94445	0.88000	0.84091	0.88016	1.62287	-	-	6	Q	0.88491	0.14836	0.07496	0.99779	
19	Cl7(170)		1	Y	1.35417	0.97599	0.90441	0.85541	0.89238	1.65144	-	-	6	Q	0.90457	0.14308	0.07823	0.99771	
20	Cl8(195)		1	Y	1.32605	0.97210	0.89964	0.84385	0.86794	1.63252	-	-	6	Q	0.90830	0.11635	0.08063	0.99742	
21	Cl9(206)		1	Y	1.27524	0.93525	0.86458	0.79671	0.79105	1.47740	-	-	6	Q	0.81296	0.11888	0.07772	0.99699	
22	Cl10(209)		1	Y	0.97484	0.71044	0.65471	0.59618	0.58667	1.07798	-	-	6	Q	0.58091	0.10379	0.05798	0.99695	
23	Signal		2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24	Cl5(96)	I	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25	Cl2(8)		2	Y	0.99809	0.80898	0.69168	0.66411	0.65412	0.83664	-	-	6	Q	0.22246	0.45997	0.02919	0.99925	
26	Cl3(18)		2	Y	1.43031	1.11408	0.92257	0.86847	0.83523	1.04168	-	-	6	Q	0.25311	0.60624	0.04246	0.99912	
27	Cl3(34)	s	2	Y	2.01055	1.38427	1.08258	0.99534	0.91714	1.28854	-	-	6	Q	0.45130	0.51463	0.07549	0.99792	
28	Cl3(28)		2	Y	2.70184	1.98293	1.70039	1.55006	1.55481	2.37855	-	-	6	Q	0.99710	0.69807	0.11412	0.99840	
29	Cl4(52)		2	Y	1.89040	1.38892	1.21058	1.14972	1.10434	1.56751	-	-	6	Q	0.55387	0.63222	0.06913	0.99843	
30	Cl4(44)		2	Y	2.48570	1.75836	1.50884	1.37641	1.33268	1.98470	-	-	6	Q	0.78448	0.65508	0.10049	0.99817	

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Calibration Response Factor Report

Batch: 14-0176 **Project Test Code:** Master_128(L)

Data Set: DP-14-0243 **SOP_NO:** 5-128-13

Project Number: 100043429 **Project Name:** USACE/NAE New Bedford Harbor Task Order 10

File: ML0418A.M **Responses Via** Initial Calibration **Last Updated** 5/7/2014 10:01:00 AM **Title:** NBH

Instrument: Inst. L **Operator:** RR **Path:** I:\L\DATA\ML0418A.M

No:	Analyte:	Type:	Column:	MQO:	1 IB46 L8527.D	2 IB47 L8528.D	3 IB48 L8529.D	4 IB49 L8530.D	5 IB50 L8531.D	6 IB51 L8532.D	7 - -	8 - -	Levels:	Curve Fit:	(A)	(B)	(C)	Stat (r^2/RSD):	Qual:
31	Cl4(66)		2	Y	3.45701	1.93735	1.70291	1.57561	1.51419	2.35970	-	-	6	Q	1.02108	0.63410	0.12830	0.99802	
32	Cl5(101)		2	Y	2.45597	1.74991	1.74177	1.49755	1.37082	2.01513	-	-	6	Q	0.75143	0.73461	0.10733	0.99699	
33	Cl6(161)	I	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
34	Cl6(152)	s	2	Y	1.11035	0.77803	0.61872	0.57166	0.55545	0.87060	-	-	6	Q	0.38116	0.22522	0.04808	0.99797	
35	Cl5(118)		2	Y	1.61946	0.86744	0.75772	0.70439	0.70447	1.12610	-	-	6	Q	0.51354	0.26063	0.05916	0.99840	
36	Cl6(153)		2	Y	0.77120	1.10214	0.85321	0.76987	0.72758	1.15698	-	-	6	Q	0.50379	0.30415	0.06159	0.99671	
37	Cl5(105)		2	Y	1.70559	1.09187	0.97551	0.92100	0.87771	1.52138	-	-	6	Q	0.76159	0.24090	0.08275	0.99712	
38	Cl6(138)		2	Y	1.42515	0.96457	0.83993	0.78869	0.75243	1.28771	-	-	6	Q	0.63367	0.22034	0.07040	0.99717	
39	Cl7(187)		2	Y	1.48933	0.97347	0.82270	0.74419	0.73559	1.20247	-	-	6	Q	0.56385	0.25107	0.06611	0.99790	
40	Cl6(128)		2	Y	1.85006	1.23067	1.05017	0.97476	0.96763	1.61346	-	-	6	Q	0.77581	0.30839	0.08470	0.99787	
41	Cl7(180)		2	Y	1.88639	1.19605	0.99332	0.89946	0.89388	1.51662	-	-	6	Q	0.75285	0.24757	0.08649	0.99778	
42	Cl7(170)		2	Y	1.94726	1.25257	1.04960	0.95293	0.94252	1.62121	-	-	6	Q	0.81718	0.24446	0.09245	0.99762	
43	Cl8(195)		2	Y	2.06124	1.28055	1.05621	0.94143	0.92861	1.60352	-	-	6	Q	0.81608	0.22600	0.09654	0.99756	
44	Cl9(206)		2	Y	2.08226	1.32321	1.05251	0.92170	0.87467	1.50295	-	-	6	Q	0.75931	0.21668	0.09984	0.99701	
45	Cl10(209)		2	Y	1.72309	1.08466	0.86130	0.75006	0.71176	1.16582	-	-	6	Q	0.55098	0.22779	0.07723	0.99731	

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Calibration Response Factor Report

Batch:	14-0176	**Project Test Code:**	Master_128(L)
Data Set:	DP-14-0243	**SOP_NO:**	5-128-13
Project Number:	100043429	**Project Name:**	USACE/NAE New Bedford Harbor Task Order 10

File:	ML0418A.M	**Responses Via**	Initial Calibration	**Last Updated**	5/7/2014 10:01:00 AM	**Title:**	NBH
Instrument:	Inst. L	**Operator:**	RR	**Path:**	I:\L\DATA\ML0418A.M		

No:	Analyte:	Type:	Column:	MQO:	1	2	3	4	5	6	7	8	Levels:	Curve Fit:	(A)	(B)	(C)	Stat (r^2/RSD):	Qual:
					IB46	IB47	IB48	IB49	IB50	IB51	-	-							
					L8527.D	L8528.D	L8529.D	L8530.D	L8531.D	L8532.D	-	-							

MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences.

Mean RSD: -
Count RSD: -

Calibration Curve Definitions:

Curve Fit:	Name:	Description:	Evaluate:
L	Linear	y = Bx + C	r-squared
RF	Average RF	y = Bx	RSD
L0	Linear (0,0)	y = Bx + 0	r-squared
Q	Quadratic	y = Ax^2 + Bx + C	r-squared
Q0	Quadratic (0,0)	y = Ax^2 + Bx + 0	r-squared

Calibration Curve Accpetance Criteria:

Curve Fit:	Limit Mean(%):	Mean Qual:	Limit Ind.:	Ind. Qual:	Min Points:	Points Qual:	Comments:
Linear	NA	NA	0.995	N	5	N	y = Bx + C
Average RF	15	N	25	N	5	N	y = Bx
Linear (0,0)	NA	NA	0.995	N	5	N	y = Bx + 0
Quadratic	NA	NA	0.995	N	6	N	y = Ax^2 + Bx + C
Quadratic (0,0)	NA	NA	0.995	N	6	N	y = Ax^2 + Bx + 0

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Calibration Response Factor Report

Batch:	14-0176	**Project Test Code:**	Master_128(L)
Data Set:	DP-14-0243	**SOP_NO:**	5-128-13
Project Number:	100043429	**Project Name:**	USACE/NAE New Bedford Harbor Task Order 10

Method: I:\L\DATA\ML0418A.M
Title: NBH
Last Update: Wed May 07 10:01 2014
Response via: Initial Calibration
Instrument: Inst. L
Operator: RR

No:	ID:	Path\File:	Update Time:	Quant Time:	Acquisition Time:
1	IB46	I:\L\DATA\SL0418\L8527.D	May 07 9:58 2014	May 07 9:25 2014	06 May 2014 8:52 AM
2	IB47	I:\L\DATA\SL0418\L8528.D	May 07 9:58 2014	May 07 9:25 2014	06 May 2014 9:38 AM
3	IB48	I:\L\DATA\SL0418\L8529.D	May 07 10:01 2014	May 07 9:25 2014	06 May 2014 10:41 AM
4	IB49	I:\L\DATA\SL0418\L8530.D	May 07 9:59 2014	May 07 9:26 2014	06 May 2014 11:26 AM
5	IB50	I:\L\DATA\SL0418\L8531.D	May 07 9:59 2014	May 07 9:26 2014	06 May 2014 12:11 PM
6	IB51	I:\L\DATA\SL0418\L8532.D	May 07 9:59 2014	May 07 9:26 2014	06 May 2014 12:57 PM

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ICC Summary Report

Batch:	14-0176	**Data Set:**	DP-14-0243
Project Test Code:	Master_128(L)	**SOP_NO:**	5-128-13
Project Name:	USACE/NAE New Bedford Harbor Task Order 10	**Project Number:**	100043429

Project Name:	USACE/NAE New Bedford Harbor Task Order 10			**Project No:**	100043429
Batch:	14-0176	**Matrix:**	WATER		
Calibration File:	ML0418A.M	**Last Updated:**	5/7/2014 10:01:00 AM		

						L8533.D	
					IB52		
					Acq'd:	05/06/2014 13:42	
No:	**Analyte:**	**Type:**	**Col:**	**MQO:**	**(ug/mL)**	**(ug/mL)**	**% Diff**
1	CI5(96)	I	1	-			
2	CI2(8)		1	Y	0.04000	0.04220	5.5
3	CI3(18)		1	Y	0.04000	0.04261	6.5
4	CI3(34)	s	1	Y	0.04000	0.04456	11.5
5	CI3(28)		1	Y	0.04000	0.04437	11.0
6	CI4(52)		1	Y	0.04000	0.04394	9.8
7	CI4(44)		1	Y	0.04000	0.04462	11.5
8	CI4(66)		1	Y	0.04000	0.04407	10.3
9	CI5(101)		1	Y	0.04000	0.04391	9.8
10	CI6(161)	I	1	-			
11	CI6(152)	s	1	Y	0.04020	0.04622	15.0
12	CI5(118)		1	Y	0.04000	0.04590	14.8
13	CI6(153)		1	Y	0.04000	0.03707	7.3
14	CI5(105)		1	Y	0.04000	0.04557	14.0
15	CI6(138)		1	Y	0.04000	0.04480	12.0
16	CI7(187)		1	Y	0.04000	0.04527	13.3
17	CI6(128)		1	Y	0.04000	0.04500	12.5
18	CI7(180)		1	Y	0.04000	0.04574	14.3
19	CI7(170)		1	Y	0.04000	0.04574	14.3
20	CI8(195)		1	Y	0.04000	0.04524	13.0
21	CI9(206)		1	Y	0.04000	0.04416	10.5
22	CI10(209)		1	Y	0.04000	0.04423	10.5
24	CI5(96)	I	2	-			
25	CI2(8)		2	Y	0.04000	0.04040	1.0
26	CI3(18)		2	Y	0.04000	0.04203	5.0
27	CI3(34)	s	2	Y	0.04000	0.04413	10.3
28	CI3(28)		2	Y	0.04000	0.04412	10.3
29	CI4(52)		2	Y	0.04000	0.04392	9.8
30	CI4(44)		2	Y	0.04000	0.04469	11.8
31	CI4(66)		2	Y	0.04000	0.04468	11.8
32	CI5(101)		2	Y	0.04000	0.04548	13.8
33	CI6(161)	I	2	-			
34	CI6(152)	s	2	Y	0.04020	0.04606	14.8
35	CI5(118)		2	Y	0.04000	0.04423	10.5
36	CI6(153)		2	Y	0.04000	0.04449	11.3
37	CI5(105)		2	Y	0.04000	0.04458	11.5
38	CI6(138)		2	Y	0.04000	0.04525	13.3
39	CI7(187)		2	Y	0.04000	0.04537	13.5
40	CI6(128)		2	Y	0.04000	0.04496	12.5
41	CI7(180)		2	Y	0.04000	0.04528	13.3
42	CI7(170)		2	Y	0.04000	0.04548	13.8
43	CI8(195)		2	Y	0.04000	0.04535	13.5
44	CI9(206)		2	Y	0.04000	0.04447	11.3

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ICC Summary Report

Batch:	14-0176	**Data Set:**	DP-14-0243
Project Test Code:	Master_128(L)	**SOP_NO:**	5-128-13
Project Name:	USACE/NAE New Bedford Harbor Task Order 10	**Project Number:**	100043429

Project Name:	USACE/NAE New Bedford Harbor Task Order 10			**Project No:**	100043429
Batch:	14-0176	**Matrix:**	WATER		
Calibration File:	ML0418A.M	**Last Updated:**	5/7/2014 10:01:00 AM		

					L8533.D		
					IB52		
					Acq'd:	05/06/2014 13:42	
No:	**Analyte:**	**Type:**	**Col:**	**MQO:**	**(ug/mL)**	**(ug/mL)**	**% Diff**
45	Cl10(209)		2	**Y**	0.04000	0.04523	13.0

MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences.

Mean PD: **11.34**
Follow ICAL: **PASS**

ICC Acceptance Criteria:

Mean PD(%):	20	**Qual:**	N
Individual PD(%):	20	**Qual:**	N

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CCV Summary Report

Batch: 14-0176 **Data Set:** DP-14-0243
Project Test Code: Master_128(L) **SOP_NO:** 5-128-13
Project Name: USACE/NAE New Bedford Harbor Task Order 10 **Project Number:** 100043429

Matrix: WATER
Calibration File: ML0418A.M **Last Updated:** 5/7/2014 10:01:00 AM

						L8544.D IB49 mid 05/06/2014 21:59	
No:	**Analyte:**	**Type:**	**Col:**	**MQO:**	**CAL**	**MID**	**% Diff**
1	CI5(96)	I	1	-			
2	CI2(8)		1	Y	0.04008	0.04135	3.2
3	CI3(18)		1	Y	0.04016	0.04155	3.5
4	CI3(34)	s	1	Y	0.04000	0.04381	9.5
5	CI3(28)		1	Y	0.04016	0.04430	10.3
6	CI4(52)		1	Y	0.04004	0.04351	8.7
7	CI4(44)		1	Y	0.04016	0.04432	10.4
8	CI4(66)		1	Y	0.04008	0.04416	10.2
9	CI5(101)		1	Y	0.04008	0.04391	9.6
10	CI6(161)	I	1	-			
11	CI6(152)	s	1	Y	0.04016	0.04375	8.9
12	CI5(118)		1	Y	0.04016	0.04375	8.9
13	CI6(153)		1	Y	0.04016	0.04441	10.6
14	CI5(105)		1	Y	0.04012	0.04521	12.7
15	CI6(138)		1	Y	0.04016	0.04429	10.3
16	CI7(187)		1	Y	0.04016	0.04535	12.9
17	CI6(128)		1	Y	0.04016	0.04541	13.1
18	CI7(180)		1	Y	0.04016	0.04708	17.2
19	CI7(170)		1	Y	0.04016	0.04700	17.0
20	CI8(195)		1	Y	0.04016	0.04754	18.4
21	CI9(206)		1	Y	0.04008	0.04672	16.6
22	CI10(209)		1	Y	0.04016	0.04664	16.1
24	CI5(96)	I	2	-			
25	CI2(8)		2	Y	0.04008	0.04051	1.1
26	CI3(18)		2	Y	0.04016	0.04098	2.0
27	CI3(34)	s	2	Y	0.04000	0.04383	9.6
28	CI3(28)		2	Y	0.04016	0.04468	11.3
29	CI4(52)		2	Y	0.04004	0.04403	10.0
30	CI4(44)		2	Y	0.04016	0.04482	11.6
31	CI4(66)		2	Y	0.04008	0.04564	13.9
32	CI5(101)		2	Y	0.04008	0.04574	14.1
33	CI6(161)	I	2	-			
34	CI6(152)	s	2	Y	0.04016	0.04509	12.3
35	CI5(118)		2	Y	0.04016	0.04342	8.1
36	CI6(153)		2	Y	0.04016	0.04545	13.2
37	CI5(105)		2	Y	0.04012	0.04534	13.0
38	CI6(138)		2	Y	0.04016	0.04523	12.6
39	CI7(187)		2	Y	0.04016	0.04511	12.3
40	CI6(128)		2	Y	0.04016	0.04479	11.5
41	CI7(180)		2	Y	0.04016	0.04508	12.3
42	CI7(170)		2	Y	0.04016	0.04540	13.0
43	CI8(195)		2	Y	0.04016	0.04557	13.5
44	CI9(206)		2	Y	0.04008	0.04603	14.8

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CCV Summary Report

Batch:	14-0176	**Data Set:**	DP-14-0243
Project Test Code:	Master_128(L)	**SOP_NO:**	5-128-13
Project Name:	USACE/NAE New Bedford Harbor Task Order 10	**Project Number:**	100043429

Matrix: WATER

Calibration File: ML0418A.M **Last Updated:** 5/7/2014 10:01:00 AM

L8544.D
IB49 mid
05/06/2014 21:59

No:	Analyte:	Type:	Col:	MQO:	CAL	MID	% Diff
45	Cl10(209)		2	Y	0.04016	0.04503	12.1

MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences.

Mean PD: **11.3**
Time Check: **< 24**

CCV Acceptance Criteria:

Frequency Hours:	24	**Qual:**	N
Mean PD(%):	15	**Qual:**	N
Individual PD(%):	20	**Qual:**	N

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CCV Summary Report

Batch: 14-0176 **Data Set:** DP-14-0243

Project Test Code: Master_128(L) **SOP_NO:** 5-128-13

Project Name: USACE/NAE New Bedford Harbor Task Order 10 **Project Number:** 100043429

Matrix: WATER

Calibration File: ML0418A.M **Last Updated:** 5/7/2014 10:01:00 AM

						L8554.D IB50 mid 05/07/2014 05:31	
No:	**Analyte:**	**Type:**	**Col:**	**MQO:**	**CAL**	**MID**	**% Diff**
1	CI5(96)	I	1	-			
2	CI2(8)		1	Y	0.08016	0.07315	-8.7
3	CI3(18)		1	Y	0.08032	0.07163	-10.8
4	CI3(34)	s	1	Y	0.08000	0.07634	-4.6
5	CI3(28)		1	Y	0.08032	0.07626	-5.1
6	CI4(52)		1	Y	0.08008	0.07573	-5.4
7	CI4(44)		1	Y	0.08032	0.07690	-4.3
8	CI4(66)		1	Y	0.08016	0.07675	-4.3
9	CI5(101)		1	Y	0.08016	0.07633	-4.8
10	CI6(161)	I	1	-			
11	CI6(152)	s	1	Y	0.08032	0.07224	-10.1
12	CI5(118)		1	Y	0.08032	0.07291	-9.2
13	CI6(153)		1	Y	0.08032	0.06799	-15.4
14	CI5(105)		1	Y	0.08024	0.07693	-4.1
15	CI6(138)		1	Y	0.08032	0.07410	-7.7
16	CI7(187)		1	Y	0.08032	0.07677	-4.4
17	CI6(128)		1	Y	0.08032	0.07663	-4.6
18	CI7(180)		1	Y	0.08032	0.08036	0.0
19	CI7(170)		1	Y	0.08032	0.08099	0.8
20	CI8(195)		1	Y	0.08032	0.08304	3.4
21	CI9(206)		1	Y	0.08016	0.08216	2.5
22	CI10(209)		1	Y	0.08032	0.08193	2.0
24	CI5(96)	I	2	-			
25	CI2(8)		2	Y	0.08016	0.07206	-10.1
26	CI3(18)		2	Y	0.08032	0.06985	-13.0
27	CI3(34)	s	2	Y	0.08000	0.07525	-5.9
28	CI3(28)		2	Y	0.08032	0.07408	-7.8
29	CI4(52)		2	Y	0.08008	0.07406	-7.5
30	CI4(44)		2	Y	0.08032	0.07726	-3.8
31	CI4(66)		2	Y	0.08016	0.07817	-2.5
32	CI5(101)		2	Y	0.08016	0.07748	-3.3
33	CI6(161)	I	2	-			
34	CI6(152)	s	2	Y	0.08032	0.07499	-6.6
35	CI5(118)		2	Y	0.08032	0.07469	-7.0
36	CI6(153)		2	Y	0.08032	0.07522	-6.3
37	CI5(105)		2	Y	0.08024	0.07591	-5.4
38	CI6(138)		2	Y	0.08032	0.07570	-5.8
39	CI7(187)		2	Y	0.08032	0.07504	-6.6
40	CI6(128)		2	Y	0.08032	0.07544	-6.1
41	CI7(180)		2	Y	0.08032	0.07614	-5.2
42	CI7(170)		2	Y	0.08032	0.07726	-3.8
43	CI8(195)		2	Y	0.08032	0.07766	-3.3
44	CI9(206)		2	Y	0.08016	0.07901	-1.4

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CCV Summary Report

Batch:	14-0176	**Data Set:**	DP-14-0243
Project Test Code:	Master_128(L)	**SOP_NO:**	5-128-13
Project Name:	USACE/NAE New Bedford Harbor Task Order 10	**Project Number:**	100043429

Matrix: WATER

Calibration File: ML0418A.M **Last Updated:** 5/7/2014 10:01:00 AM

L8554.D
IB50 mid
05/07/2014 05:31

No:	Analyte:	Type:	Col:	MQO:	CAL	MID	% Diff
45	Cl10(209)		2	Y	0.08032	0.07832	-2.5

MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences.

Mean PD: **5.7**
Time Check: **< 24**

CCV Acceptance Criteria:

Frequency Hours:	24	**Qual:**	N
Mean PD(%):	15	**Qual:**	N
Individual PD(%):	20	**Qual:**	N

Calibration Amounts List Report INST. L

Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:22:47 2014
Response via : Initial Calibration
RIS/SIS Mult : 1.000
Total Cpnds : 45

IB46 =L8527.D IB47 =L8528.D IB48 =L8529.D IB49 =L8530.D
IB50 =L8531.D IB51 =L8532.D

		Compound	IB46	IB47	IB48	IB49	IB50	IB51
1	I	Cl5(96)	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000
2		Cl2(8)	0.00240	0.01042	0.02004	0.04008	0.08016	0.16032
3		Cl3(18)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
4	s	Cl3(34)	0.00240	0.01040	0.02000	0.04000	0.08000	0.16000
5		Cl3(28)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
6		Cl4(52)	0.00240	0.01041	0.02002	0.04004	0.08008	0.16016
7		Cl4(44)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
8		Cl4(66)	0.00240	0.01042	0.02004	0.04008	0.08016	0.16032
9		Cl5(101)	0.00240	0.01042	0.02004	0.04008	0.08016	0.16032
10	I	Cl6(161)	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000
11	s	Cl6(152)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
12		Cl5(118)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
13		Cl6(153)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
14		Cl5(105)	0.00241	0.01043	0.02006	0.04012	0.08024	0.16048
15		Cl6(138)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
16		Cl7(187)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
17		Cl6(128)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
18		Cl7(180)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
19		Cl7(170)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
20		Cl8(195)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
21		Cl9(206)	0.00240	0.01042	0.02004	0.04008	0.08016	0.16032
22		Cl10(209)	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
23		Signal #2	-----	-----	-----	-----	-----	-----
24	I	Cl5(96) #2	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000
25		Cl2(8) #2	0.00240	0.01042	0.02004	0.04008	0.08016	0.16032
26		Cl3(18) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
27	s	Cl3(34) #2	0.00240	0.01040	0.02000	0.04000	0.08000	0.16000
28		Cl3(28) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
29		Cl4(52) #2	0.00240	0.01041	0.02002	0.04004	0.08008	0.16016
30		Cl4(44) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
31		Cl4(66) #2	0.00240	0.01042	0.02004	0.04008	0.08016	0.16032
32		Cl5(101) #2	0.00240	0.01042	0.02004	0.04008	0.08016	0.16032
33	I	Cl6(161) #2	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000
34	s	Cl6(152) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
35		Cl5(118) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
36		Cl6(153) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
37		Cl5(105) #2	0.00241	0.01043	0.02006	0.04012	0.08024	0.16048
38		Cl6(138) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
39		Cl7(187) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
40		Cl6(128) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
41		Cl7(180) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
42		Cl7(170) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
43		Cl8(195) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064
44		Cl9(206) #2	0.00240	0.01042	0.02004	0.04008	0.08016	0.16032
45		Cl10(209) #2	0.00241	0.01044	0.02008	0.04016	0.08032	0.16064

Standards Loaded From LIMS

Solution ID : IB46 - ECD PCB curve L1
Last Updated : 5/2/2014 11:12:01 AM
Create Date : May 2 2014 12:00AM RR
Expire Date : 5/2/2015
Approval Date: Not Approved
Override Date: No Override

Solution ID : IB47 - ECD PCB Curve L2
Last Updated : 5/2/2014 11:12:01 AM
Create Date : May 2 2014 12:00AM RR
Expire Date : 5/2/2015

Approval Date: Not Approved
Override Date: No Override

Solution ID : IB48 - ECD PCB Curve L3
Last Updated : 5/2/2014 11:36:01 AM
Create Date : May 2 2014 12:00AM RR
Expire Date : 5/2/2015
Approval Date: Not Approved
Override Date: No Override

Solution ID : IB49 - ECD PCB Curve L4
Last Updated : 5/7/2014 9:21:04 AM
Create Date : May 2 2014 12:00AM RR
Expire Date : 1/10/2015
Approval Date: Not Approved
Override Date: No Override

Solution ID : IB50 - ECD PCB Curve L5
Last Updated : 5/2/2014 11:36:02 AM
Create Date : May 2 2014 12:00AM RR
Expire Date : 5/2/2015
Approval Date: Not Approved
Override Date: No Override

Solution ID : IB51 - ECD PCB Curve L6
Last Updated : 5/2/2014 11:36:02 AM
Create Date : May 2 2014 12:00AM RR
Expire Date : 1/10/2015
Approval Date: Not Approved
Override Date: No Override

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8527.D\ECD1A.CH Vial: 1
Signal #2 : I:\L\DATA\SL0418\L8527.D\ECD2B.CH
Acq On : 5-6-2014 08:52:26 AM Operator: RR
Sample : IB46 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 09:25:51 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 06:50:14 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.91	2528901m	0.10000	ng
10) I	Cl6(161)	25.80	6364946m	0.10000	ng
24) I	Cl5(96) #2	19.16	37824133m	0.10000	ng
33) I	Cl6(161) #2	25.55	84391202m	0.10000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.81	144279m	BelowCal	ng
Spiked Amount	0.0024		Recovery	=	0.00%
11) s	Cl6(152)	23.05	116602	BelowCal	ng
Spiked Amount	0.0024		Recovery	=	0.00%
27) s	Cl3(34) #2	15.17	1825140m	BelowCal	ng
Spiked Amount	0.0024		Recovery	=	0.00%
34) s	Cl6(152) #2	22.24	2258259m	BelowCal	ng
Spiked Amount	0.0024		Recovery	=	0.00%
	Target Compounds				
2)	Cl2(8)	12.49	58484m	BelowCal	ng
3)	Cl3(18)	14.50	80725m	BelowCal	ng
5)	Cl3(28)	16.65	140046m	BelowCal	ng
6)	Cl4(52)	18.30	151562	BelowCal	ng
7)	Cl4(44)	19.19	131483m	BelowCal	ng
8)	Cl4(66)	21.13	147586m	BelowCal	ng
9)	Cl5(101)	22.25	131074m	BelowCal	ng
12)	Cl5(118)	24.98	156453m	BelowCal	ng
13)	Cl6(153)	25.97	298781	0.00084	ng
14)	Cl5(105)	26.05	198423	BelowCal	ng
15)	Cl6(138)	26.95	177405	BelowCal	ng
16)	Cl7(187)	27.51	170875m	BelowCal	ng
17)	Cl6(128)	27.77	196579m	BelowCal	ng
18)	Cl7(180)	28.92	201577m	BelowCal	ng
19)	Cl7(170)	29.60	207723m	BelowCal	ng
20)	Cl8(195)	30.57	203410m	BelowCal	ng
21)	Cl9(206)	31.73	194804m	BelowCal	ng
22)	Cl10(209)	32.31	149535m	BelowCal	ng
25)	Cl2(8) #2	11.86	906042m	BelowCal	ng
26)	Cl3(18) #2	13.71	1303815m	BelowCal	ng
28)	Cl3(28) #2	16.44	2462894m	BelowCal	ng
29)	Cl4(52) #2	17.82	1716062m	BelowCal	ng
30)	Cl4(44) #2	18.61	2265865m	BelowCal	ng
31)	Cl4(66) #2	20.99	3138202m	BelowCal	ng
32)	Cl5(101) #2	21.86	2229479m	BelowCal	ng
35)	Cl5(118) #2	25.00	3293702m	BelowCal	ng
36)	Cl6(153) #2	25.73	1568482m	BelowCal	ng
37)	Cl5(105) #2	26.04	3468869m	BelowCal	ng
38)	Cl6(138) #2	26.72	2898507m	BelowCal	ng
39)	Cl7(187) #2	27.13	3029047m	BelowCal	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8527.D\ECD1A.CH Vial: 1
Signal #2 : I:\L\DATA\SL0418\L8527.D\ECD2B.CH
Acq On : 5-6-2014 08:52:26 AM Operator: RR
Sample : IB46 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 09:25:51 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 06:50:14 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.57	3762696m	BelowCal	ng
41)	Cl7(180) #2	28.72	3836600m	BelowCal	ng
42)	Cl7(170) #2	29.38	3960397m	BelowCal	ng
43)	Cl8(195) #2	30.28	4192200m	BelowCal	ng
44)	Cl9(206) #2	31.41	4217389m	BelowCal	ng
45)	Cl10(209) #2	31.86	3504459m	BelowCal	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8528.D\ECD1A.CH Vial: 2
Signal #2 : I:\L\DATA\SL0418\L8528.D\ECD2B.CH
Acq On : 5-6-2014 09:37:45 AM Operator: RR
Sample : IB47 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 09:25:55 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 09:25:50 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.89	2698673m	0.10000	ng
10) I	Cl6(161)	25.78	5211838m	0.10000	ng
24) I	Cl5(96) #2	19.15	35829527m	0.10000	ng
33) I	Cl6(161) #2	25.54	72574830m	0.10000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.78	378088m	0.01346	ng
Spiked Amount	0.0104		Recovery	= 129.42%	
11) s	Cl6(152)	23.03	369208m	0.01539	ng
Spiked Amount	0.0104		Recovery	= 147.41%	
27) s	Cl3(34) #2	15.17	5158160m	0.01210	ng
Spiked Amount	0.0104		Recovery	= 116.35%	
34) s	Cl6(152) #2	22.24	5895019m	0.01380	ng
Spiked Amount	0.0104		Recovery	= 132.18%	
	Target Compounds				
2)	Cl2(8)	12.45	226573m	0.01084	ng
3)	Cl3(18)	14.46	288472m	0.01106	ng
5)	Cl3(28)	16.62	485228m	0.00976	ng
6)	Cl4(52)	18.28	434819m	0.01181	ng
7)	Cl4(44)	19.17	450702m	0.00968	ng
8)	Cl4(66)	21.11	504529m	0.00946	ng
9)	Cl5(101)	22.23	435291m	0.00947	ng
12)	Cl5(118)	24.95	451641m	0.01076	ng
13)	Cl6(153)	25.96	434665m	0.01294	ng
14)	Cl5(105)	26.03	528457m	0.01095	ng
15)	Cl6(138)	26.93	494749m	0.01092	ng
16)	Cl7(187)	27.49	453657m	0.01077	ng
17)	Cl6(128)	27.76	528923m	0.01060	ng
18)	Cl7(180)	28.91	513890m	0.01014	ng
19)	Cl7(170)	29.59	531051m	0.01032	ng
20)	Cl8(195)	30.56	528937m	0.01019	ng
21)	Cl9(206)	31.73	507912m	0.01017	ng
22)	Cl10(209)	32.30	386561m	0.01001	ng
25)	Cl2(8) #2	11.86	3020289m	0.01132	ng
26)	Cl3(18) #2	13.71	4167312m	0.01147	ng
28)	Cl3(28) #2	16.44	7417340m	0.01319	ng
29)	Cl4(52) #2	17.81	5180470m	0.01094	ng
30)	Cl4(44) #2	18.61	6577311m	0.01090	ng
31)	Cl4(66) #2	20.99	7232969m	0.01048	ng
32)	Cl5(101) #2	21.86	6533171m	0.01079	ng
35)	Cl5(118) #2	25.00	6572451m	0.00919	ng
36)	Cl6(153) #2	25.72	8350674m	0.01290	ng
37)	Cl5(105) #2	26.03	8265007m	0.01090	ng
38)	Cl6(138) #2	26.72	7308379m	0.00985	ng
39)	Cl7(187) #2	27.13	7375775m	0.01155	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8528.D\ECD1A.CH Vial: 2
Signal #2 : I:\L\DATA\SL0418\L8528.D\ECD2B.CH
Acq On : 5-6-2014 09:37:45 AM Operator: RR
Sample : IB47 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 09:25:55 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 09:25:50 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.56	9324520m	0.01110	ng
41)	Cl7(180) #2	28.71	9062261m	0.01173	ng
42)	Cl7(170) #2	29.37	9490502m	0.01158	ng
43)	Cl8(195) #2	30.28	9702501m	0.01172	ng
44)	Cl9(206) #2	31.41	10006496m	0.01246	ng
45)	Cl10(209) #2	31.85	8218283m	0.01259	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8529.D\ECD1A.CH Vial: 3
Signal #2 : I:\L\DATA\SL0418\L8529.D\ECD2B.CH
Acq On : 06 May 2014 10:41 am Operator: RR
Sample : IB48 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 09:25:59 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 09:25:54 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.91	2664674m	0.10000	ng
10) I	Cl6(161)	25.79	6034332m	0.10000	ng
24) I	Cl5(96) #2	19.15	48627512m	0.10000	ng
33) I	Cl6(161) #2	25.55	102032359m	0.10000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.80	556715m	0.02635	ng
Spiked Amount	0.0200		Recovery	= 131.75%	
11) s	Cl6(152)	23.04	650425m	0.02789	ng
Spiked Amount	0.0201		Recovery	= 138.89%	
27) s	Cl3(34) #2	15.18	10528655m	0.02282	ng
Spiked Amount	0.0200		Recovery	= 114.10%	
34) s	Cl6(152) #2	22.24	12676409m	0.02590	ng
Spiked Amount	0.0201		Recovery	= 128.98%	
	Target Compounds				
2)	Cl2(8)	12.47	384507m	0.02441	ng
3)	Cl3(18)	14.49	476057m	0.02385	ng
5)	Cl3(28)	16.63	847143m	0.02397	ng
6)	Cl4(52)	18.29	633937m	0.02360	ng
7)	Cl4(44)	19.18	780096m	0.02401	ng
8)	Cl4(66)	21.12	906127m	0.02356	ng
9)	Cl5(101)	22.24	805824m	0.02384	ng
12)	Cl5(118)	24.97	909605m	0.02573	ng
13)	Cl6(153)	25.96	895158m	0.02775	ng
14)	Cl5(105)	26.04	1029806m	0.02456	ng
15)	Cl6(138)	26.95	1009107m	0.02529	ng
16)	Cl7(187)	27.50	974261	0.02719	ng
17)	Cl6(128)	27.76	1095505m	0.02608	ng
18)	Cl7(180)	28.91	1066295m	0.02678	ng
19)	Cl7(170)	29.60	1095866m	0.02689	ng
20)	Cl8(195)	30.57	1090084m	0.02760	ng
21)	Cl9(206)	31.73	1045515m	0.02792	ng
22)	Cl10(209)	32.30	793313m	0.02782	ng
25)	Cl2(8) #2	11.87	6740409m	0.02198	ng
26)	Cl3(18) #2	13.71	9008342m	0.02143	ng
28)	Cl3(28) #2	16.45	16603291m	0.02742	ng
29)	Cl4(52) #2	17.82	11785242m	0.02438	ng
30)	Cl4(44) #2	18.61	14732881m	0.02377	ng
31)	Cl4(66) #2	20.99	16594742m	0.02467	ng
32)	Cl5(101) #2	21.86	16973442m	0.02714	ng
35)	Cl5(118) #2	24.99	15524146m	0.02450	ng
36)	Cl6(153) #2	25.73	17480629m	0.02473	ng
37)	Cl5(105) #2	26.04	19966341m	0.02726	ng
38)	Cl6(138) #2	26.72	17208621m	0.02500	ng
39)	Cl7(187) #2	27.14	16855625m	0.02551	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8529.D\ECD1A.CH Vial: 3
Signal #2 : I:\L\DATA\SL0418\L8529.D\ECD2B.CH
Acq On : 06 May 2014 10:41 am Operator: RR
Sample : IB48 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 09:25:59 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 09:25:54 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.57	21515909m	0.02541	ng
41)	Cl7(180) #2	28.72	20351154m	0.02565	ng
42)	Cl7(170) #2	29.37	21504367m	0.02615	ng
43)	Cl8(195) #2	30.28	21639685m	0.02645	ng
44)	Cl9(206) #2	31.41	21520887m	0.02669	ng
45)	Cl10(209) #2	31.86	17646300m	0.02626	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8530.D\ECD1A.CH Vial: 4
Signal #2 : I:\L\DATA\SL0418\L8530.D\ECD2B.CH
Acq On : 06 May 2014 11:26 am Operator: RR
Sample : IB49 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 09:26:02 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 09:25:58 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.89	2702738	0.10000	ng
10) I	Cl6(161)	25.78	6408623m	0.10000	ng
24) I	Cl5(96) #2	19.15	45625834m	0.10000	ng
33) I	Cl6(161) #2	25.55	91362275m	0.10000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.77	1014666m	0.04825	ng
Spiked Amount	0.0400		Recovery	= 120.63%	
11) s	Cl6(152)	23.03	1282919	0.04945	ng
Spiked Amount	0.0402		Recovery	= 123.13%	
27) s	Cl3(34) #2	15.18	18165331m	0.04537	ng
Spiked Amount	0.0400		Recovery	= 113.43%	
34) s	Cl6(152) #2	22.24	20974672m	0.04723	ng
Spiked Amount	0.0402		Recovery	= 117.60%	
	Target Compounds				
2)	Cl2(8)	12.45	710307m	0.04517	ng
3)	Cl3(18)	14.45	881264	0.04481	ng
5)	Cl3(28)	16.61	1678733m	0.04585	ng
6)	Cl4(52)	18.27	1146647m	0.04488	ng
7)	Cl4(44)	19.17	1506798	0.04546	ng
8)	Cl4(66)	21.10	1832726	0.04551	ng
9)	Cl5(101)	22.22	1563062m	0.04442	ng
12)	Cl5(118)	24.95	1812214m	0.04675	ng
13)	Cl6(153)	25.96	1501408m	0.04234	ng
14)	Cl5(105)	26.03	2105673m	0.04486	ng
15)	Cl6(138)	26.93	2064124	0.04582	ng
16)	Cl7(187)	27.49	1871041m	0.04607	ng
17)	Cl6(128)	27.75	2214612	0.04624	ng
18)	Cl7(180)	28.91	2164254	0.04706	ng
19)	Cl7(170)	29.59	2201564m	0.04691	ng
20)	Cl8(195)	30.56	2171827m	0.04759	ng
21)	Cl9(206)	31.73	2046411m	0.04793	ng
22)	Cl10(209)	32.30	1534381m	0.04783	ng
25)	Cl2(8) #2	11.86	12144474m	0.04367	ng
26)	Cl3(18) #2	13.71	15913183m	0.04273	ng
28)	Cl3(28) #2	16.44	28402317m	0.04947	ng
29)	Cl4(52) #2	17.82	21003666m	0.04772	ng
30)	Cl4(44) #2	18.61	25220351m	0.04478	ng
31)	Cl4(66) #2	20.99	28812878m	0.04614	ng
32)	Cl5(101) #2	21.86	27385535m	0.04666	ng
35)	Cl5(118) #2	25.00	25844749m	0.04629	ng
36)	Cl6(153) #2	25.73	28247295m	0.04605	ng
37)	Cl5(105) #2	26.04	33758876m	0.04920	ng
38)	Cl6(138) #2	26.72	28937959m	0.04693	ng
39)	Cl7(187) #2	27.13	27305029m	0.04588	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8530.D\ECD1A.CH Vial: 4
Signal #2 : I:\L\DATA\SL0418\L8530.D\ECD2B.CH
Acq On : 06 May 2014 11:26 am Operator: RR
Sample : IB49 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 09:26:02 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 09:25:58 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.57	35764990m	0.04649	ng
41)	Cl7(180) #2	28.72	33001991m	0.04611	ng
42)	Cl7(170) #2	29.37	34964115m	0.04666	ng
43)	Cl8(195) #2	30.28	34542155m	0.04670	ng
44)	Cl9(206) #2	31.41	33750980m	0.04711	ng
45)	Cl10(209) #2	31.86	27520702m	0.04679	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8531.D\ECD1A.CH Vial: 5
Signal #2 : I:\L\DATA\SL0418\L8531.D\ECD2B.CH
Acq On : 06 May 2014 12:11 pm Operator: RR
Sample : IB50 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 09:26:06 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 09:26:01 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1)	I Cl5(96)	19.89	2906075m	0.10000	ng
10)	I Cl6(161)	25.78	7273333m	0.10000	ng
24)	I Cl5(96) #2	19.16	43913169m	0.10000	ng
33)	I Cl6(161) #2	25.54	85157401m	0.10000	ng
	System Monitoring Compounds				
4)	s Cl3(34)	15.77	2088776	0.07934	ng
	Spiked Amount 0.0800		Recovery	= 99.17%	
11)	s Cl6(152)	23.03	2819072	0.07923	ng
	Spiked Amount 0.0803		Recovery	= 98.64%	
27)	s Cl3(34) #2	15.17	32219787m	0.07827	ng
	Spiked Amount 0.0800		Recovery	= 97.84%	
34)	s Cl6(152) #2	22.24	37992124m	0.07781	ng
	Spiked Amount 0.0803		Recovery	= 96.88%	
	Target Compounds				
2)	Cl2(8)	12.44	1486237m	0.07761	ng
3)	Cl3(18)	14.46	1839796	0.07781	ng
5)	Cl3(28)	16.61	3643903	0.07749	ng
6)	Cl4(52)	18.26	2380541m	0.07680	ng
7)	Cl4(44)	19.16	3279606	0.07773	ng
8)	Cl4(66)	21.10	4038630	0.07757	ng
9)	Cl5(101)	22.22	3523406	0.07787	ng
12)	Cl5(118)	24.95	3986369m	0.07599	ng
13)	Cl6(153)	25.95	4199650m	0.08198	ng
14)	Cl5(105)	26.03	5082468m	0.07605	ng
15)	Cl6(138)	26.93	4950036	0.07754	ng
16)	Cl7(187)	27.49	4469642	0.07738	ng
17)	Cl6(128)	27.75	5316099	0.07733	ng
18)	Cl7(180)	28.91	5141856	0.07697	ng
19)	Cl7(170)	29.59	5213245m	0.07664	ng
20)	Cl8(195)	30.56	5070451m	0.07665	ng
21)	Cl9(206)	31.73	4612081m	0.07613	ng
22)	Cl10(209)	32.30	3427279m	0.07617	ng
25)	Cl2(8) #2	11.86	23025460m	0.07917	ng
26)	Cl3(18) #2	13.71	29459339m	0.07829	ng
28)	Cl3(28) #2	16.44	54839799m	0.08439	ng
29)	Cl4(52) #2	17.82	38834919m	0.08149	ng
30)	Cl4(44) #2	18.61	47004968m	0.07714	ng
31)	Cl4(66) #2	20.99	53300869m	0.07693	ng
32)	Cl5(101) #2	21.86	48253808m	0.07674	ng
35)	Cl5(118) #2	24.99	48184792m	0.07821	ng
36)	Cl6(153) #2	25.73	49765614m	0.07620	ng
37)	Cl5(105) #2	26.03	59974313m	0.07764	ng
38)	Cl6(138) #2	26.72	51465091m	0.07606	ng
39)	Cl7(187) #2	27.13	50313353m	0.07646	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8531.D\ECD1A.CH Vial: 5
Signal #2 : I:\L\DATA\SL0418\L8531.D\ECD2B.CH
Acq On : 06 May 2014 12:11 pm Operator: RR
Sample : IB50 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 09:26:06 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 09:26:01 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.57	66184071m	0.07697	ng
41)	Cl7(180) #2	28.72	61139974m	0.07662	ng
42)	Cl7(170) #2	29.37	64467199m	0.07653	ng
43)	Cl8(195) #2	30.28	63515563m	0.07655	ng
44)	Cl9(206) #2	31.41	59706705m	0.07596	ng
45)	Cl10(209) #2	31.85	48683387m	0.07677	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8532.D\ECD1A.CH Vial: 6
Signal #2 : I:\L\DATA\SL0418\L8532.D\ECD2B.CH
Acq On : 06 May 2014 12:57 pm Operator: RR
Sample : IB51 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 09:26:09 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 09:26:05 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.		Response	Conc	Units
	Internal Standards					
1) I	Cl5(96)	19.89		3090151	0.10000	ng
10) I	Cl6(161)	25.78		7517650m	0.10000	ng
24) I	Cl5(96) #2	19.16		57288399m	0.10000	ng
33) I	Cl6(161) #2	25.54		108763258m	0.10000	ng
	System Monitoring Compounds					
4) s	Cl3(34)	15.77		6777731m	0.15991	ng
Spiked Amount	0.1600			Recovery	= 99.94%	
11) s	Cl6(152)	23.03		9522133	0.16158	ng
Spiked Amount	0.1606			Recovery	= 100.59%	
27) s	Cl3(34) #2	15.17		118109254m	0.16730	ng
Spiked Amount	0.1600			Recovery	= 104.56%	
34) s	Cl6(152) #2	22.24		152109149m	0.15916	ng
Spiked Amount	0.1606			Recovery	= 99.08%	
	Target Compounds					
2)	Cl2(8)	12.44	e	4641174m	0.16079	ng
3)	Cl3(18)	14.45		5606781	0.16100	ng
5)	Cl3(28)	16.61	e	12484120	0.16130	ng
6)	Cl4(52)	18.26		7713931m	0.15989	ng
7)	Cl4(44)	19.16		10999905	0.16097	ng
8)	Cl4(66)	21.10		13715048	0.16065	ng
9)	Cl5(101)	22.22		11643692	0.16062	ng
12)	Cl5(118)	24.96	e	14209265m	0.16255	ng
13)	Cl6(153)	25.95	e	14074636m	0.16791	ng
14)	Cl5(105)	26.03		18765262m	0.16121	ng
15)	Cl6(138)	26.94		17543136	0.16170	ng
16)	Cl7(187)	27.50		16094696	0.16170	ng
17)	Cl6(128)	27.75		19442093	0.16169	ng
18)	Cl7(180)	28.91		19598334	0.16170	ng
19)	Cl7(170)	29.59		19943414m	0.16145	ng
20)	Cl8(195)	30.56	e	19714939m	0.16181	ng
21)	Cl9(206)	31.73	e	17806069m	0.16164	ng
22)	Cl10(209)	32.30		13018067m	0.16168	ng
25)	Cl2(8) #2	11.86		76841268m	0.16004	ng
26)	Cl3(18) #2	13.71	e	95864261m	0.16216	ng
28)	Cl3(28) #2	16.44	e	218893171m	0.17262	ng
29)	Cl4(52) #2	17.82	e	143823996m	0.16615	ng
30)	Cl4(44) #2	18.61		182647939m	0.16181	ng
31)	Cl4(66) #2	20.99		216726371m	0.16051	ng
32)	Cl5(101) #2	21.86		185079147m	0.16154	ng
35)	Cl5(118) #2	25.00	e	196749535m	0.16118	ng
36)	Cl6(153) #2	25.73		202143924m	0.16081	ng
37)	Cl5(105) #2	26.04	e	265547084m	0.16265	ng
38)	Cl6(138) #2	26.72	e	224985993m	0.16251	ng
39)	Cl7(187) #2	27.14		210092275m	0.15926	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8532.D\ECD1A.CH Vial: 6
Signal #2 : I:\L\DATA\SL0418\L8532.D\ECD2B.CH
Acq On : 06 May 2014 12:57 pm Operator: RR
Sample : IB51 Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 09:26:09 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 09:26:05 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.		Response	Conc	Units
40)	Cl6(128) #2	27.57		281900073m	0.16057	ng
41)	Cl7(180) #2	28.72	e	264979652m	0.16148	ng
42)	Cl7(170) #2	29.38		283253548m	0.16076	ng
43)	Cl8(195) #2	30.28		280162890m	0.16083	ng
44)	Cl9(206) #2	31.41		262067526m	0.16083	ng
45)	Cl10(209) #2	31.86	e	203688173m	0.16163	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8533.D\ECD1A.CH Vial: 7
Signal #2 : I:\L\DATA\SL0418\L8533.D\ECD2B.CH
Acq On : 5-6-2014 01:42:11 PM Operator: RR
Sample : IB52 ICC Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:02:26 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:02:14 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
	Internal Standards					
1) I	Cl5(96)	19.89	3034093m	0.10000	ng	
10) I	Cl6(161)	25.78	7425180m	0.10000	ng	
24) I	Cl5(96) #2	19.16	45918493m	0.10000	ng	
33) I	Cl6(161) #2	25.55	90643929m	0.10000	ng	
	System Monitoring Compounds					
4) s	Cl3(34)	15.77	1124324m	0.04456	ng	11.4
Spiked Amount	0.0400		Recovery	= 111.40%		
11) s	Cl6(152)	23.03	1486998m	0.04622	ng	15.1
Spiked Amount	0.0402		Recovery	= 115.09%		
27) s	Cl3(34) #2	15.18	17931529m	0.04413	ng	10.3
Spiked Amount	0.0400		Recovery	= 110.33%		
34) s	Cl6(152) #2	22.24	21095000m	0.04607	ng	14.7
Spiked Amount	0.0402		Recovery	= 114.72%		
	Target Compounds					
2)	Cl2(8)	12.45	751475m	0.04220	ng	5.5
3)	Cl3(18)	14.45	948057	0.04261	ng	6.5
5)	Cl3(28)	16.61	1826791m	0.04437	ng	10.9
6)	Cl4(52)	18.27	1258099m	0.04394	ng	9.8
7)	Cl4(44)	19.16	1672989m	0.04463	ng	11.6
8)	Cl4(66)	21.10	1999698m	0.04408	ng	10.2
9)	Cl5(101)	22.22	1745283m	0.04392	ng	9.8
12)	Cl5(118)	24.95	2031474m	0.04590	ng	14.8
13)	Cl6(153)	25.96	1567760m	0.03708	ng	-7.3
14)	Cl5(105)	26.04	2417371m	0.04557	ng	13.9
15)	Cl6(138)	26.93	2346403	0.04480	ng	12.0
16)	Cl7(187)	27.50	2150249m	0.04527	ng	13.2
17)	Cl6(128)	27.75	2500764m	0.04500	ng	12.5
18)	Cl7(180)	28.91	2435506m	0.04575	ng	14.4
19)	Cl7(170)	29.59	2472721m	0.04575	ng	14.4
20)	Cl8(195)	30.56	2370553m	0.04525	ng	13.1
21)	Cl9(206)	31.73	2144343m	0.04416	ng	10.4
22)	Cl10(209)	32.30	1615219m	0.04423	ng	10.6
25)	Cl2(8) #2	11.86	11542315m	0.04041	ng	1.0
26)	Cl3(18) #2	13.71	15704134m	0.04203	ng	5.1
28)	Cl3(28) #2	16.44	28295883m	0.04412	ng	10.3
29)	Cl4(52) #2	17.82	20835108m	0.04393	ng	9.8
30)	Cl4(44) #2	18.61	25254739m	0.04470	ng	11.7
31)	Cl4(66) #2	20.99	28264118m	0.04468	ng	11.7
32)	Cl5(101) #2	21.86	27412196m	0.04549	ng	13.7
35)	Cl5(118) #2	25.00	24921508m	0.04423	ng	10.6
36)	Cl6(153) #2	25.73	26888876m	0.04449	ng	11.2
37)	Cl5(105) #2	26.04	30960114m	0.04459	ng	11.5
38)	Cl6(138) #2	26.72	27183654m	0.04526	ng	13.2
39)	Cl7(187) #2	27.13	26841196m	0.04537	ng	13.4

(f)=RT Delta > 1/2 Window (m)=manual int.-------
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

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Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8533.D\ECD1A.CH Vial: 7
Signal #2 : I:\L\DATA\SL0418\L8533.D\ECD2B.CH
Acq On : 5-6-2014 01:42:11 PM Operator: RR
Sample : IB52 ICC Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:02:26 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:02:14 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
40)	Cl6(128) #2	27.57	34468176m	0.04497	ng	12.4
41)	Cl7(180) #2	28.72	31996878m	0.04529	ng	13.2
42)	Cl7(170) #2	29.38	33785368m	0.04549	ng	13.7
43)	Cl8(195) #2	30.28	33261574m	0.04536	ng	13.4
44)	Cl9(206) #2	31.41	31397925m	0.04447	ng	11.2
45)	Cl10(209) #2	31.86	26558760m	0.04523	ng	13.1

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8544.D\ECD1A.CH Vial: 11
Signal #2 : I:\L\DATA\SL0418\L8544.D\ECD2B.CH
Acq On : 5-6-2014 09:59:21 PM Operator: RR
Sample : IB49 mid Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:22:52 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:22:47 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.88	2944330m	0.10000	ng
10) I	Cl6(161)	25.78	7728879m	0.10000	ng
24) I	Cl5(96) #2	19.15	48192135m	0.10000	ng
33) I	Cl6(161) #2	25.54	99404116m	0.10000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.77	1071245	0.04381	ng
Spiked Amount	0.0400		Recovery	= 109.53%	
11) s	Cl6(152)	23.02	1452160	0.04375	ng
Spiked Amount	0.0402		Recovery	= 108.94%	
27) s	Cl3(34) #2	15.18	18686522m	0.04383	ng
Spiked Amount	0.0400		Recovery	= 109.58%	
34) s	Cl6(152) #2	22.24	22579776m	0.04509	ng
Spiked Amount	0.0402		Recovery	= 112.28%	
	Target Compounds				
2)	Cl2(8)	12.44	713300m	0.04135	ng
3)	Cl3(18)	14.45	895635	0.04155	ng
5)	Cl3(28)	16.61	1769367m	0.04430	ng
6)	Cl4(52)	18.26	1207874m	0.04351	ng
7)	Cl4(44)	19.16	1610378	0.04432	ng
8)	Cl4(66)	21.10	1944898	0.04416	ng
9)	Cl5(101)	22.22	1693256m	0.04391	ng
12)	Cl5(118)	24.95	1994020m	0.04375	ng
13)	Cl6(153)	25.95	2010363m	0.04441	ng
14)	Cl5(105)	26.03	2490254m	0.04521	ng
15)	Cl6(138)	26.93	2407229	0.04429	ng
16)	Cl7(187)	27.49	2242794m	0.04535	ng
17)	Cl6(128)	27.75	2634100m	0.04541	ng
18)	Cl7(180)	28.90	2635211	0.04708	ng
19)	Cl7(170)	29.59	2669058m	0.04700	ng
20)	Cl8(195)	30.55	2637141m	0.04754	ng
21)	Cl9(206)	31.72	2401218m	0.04672	ng
22)	Cl10(209)	32.30	1798854m	0.04664	ng
25)	Cl2(8) #2	11.86	12146206m	0.04051	ng
26)	Cl3(18) #2	13.71	16066952m	0.04098	ng
28)	Cl3(28) #2	16.44	30126562m	0.04468	ng
29)	Cl4(52) #2	17.82	21921860m	0.04403	ng
30)	Cl4(44) #2	18.61	26588669m	0.04482	ng
31)	Cl4(66) #2	20.99	30382057m	0.04564	ng
32)	Cl5(101) #2	21.86	28942816m	0.04574	ng
35)	Cl5(118) #2	25.00	26753167m	0.04342	ng
36)	Cl6(153) #2	25.73	30211173m	0.04545	ng
37)	Cl5(105) #2	26.04	34648638m	0.04534	ng
38)	Cl6(138) #2	26.71	29788340m	0.04523	ng
39)	Cl7(187) #2	27.13	29233962m	0.04511	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8544.D\ECD1A.CH Vial: 11
Signal #2 : I:\L\DATA\SL0418\L8544.D\ECD2B.CH
Acq On : 5-6-2014 09:59:21 PM Operator: RR
Sample : IB49 mid Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:22:52 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:22:47 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.56	37622495m	0.04479	ng
41)	Cl7(180) #2	28.72	34899585m	0.04508	ng
42)	Cl7(170) #2	29.37	36963741m	0.04540	ng
43)	Cl8(195) #2	30.28	36683690m	0.04557	ng
44)	Cl9(206) #2	31.41	35828094m	0.04603	ng
45)	Cl10(209) #2	31.85	28978959m	0.04503	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8554.D\ECD1A.CH Vial: 21
Signal #2 : I:\L\DATA\SL0418\L8554.D\ECD2B.CH
Acq On : 5-7-2014 05:30:52 AM Operator: RR
Sample : IB50 mid Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:12:29 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:12:23 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.87	3317554m	0.10000	ng
10) I	Cl6(161)	25.77	9411778m	0.10000	ng
24) I	Cl5(96) #2	19.15	55307363m	0.10000	ng
33) I	Cl6(161) #2	25.54	116322810m	0.10000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.76	2370545m	0.07634	ng
Spiked Amount	0.0800		Recovery	= 95.43%	
11) s	Cl6(152)	23.02	3367388m	0.07224	ng
Spiked Amount	0.0803		Recovery	= 89.94%	
27) s	Cl3(34) #2	15.17	39728303m	0.07525	ng
Spiked Amount	0.0800		Recovery	= 94.06%	
34) s	Cl6(152) #2	22.23	50175756m	0.07499	ng
Spiked Amount	0.0803		Recovery	= 93.36%	
	Target Compounds				
2)	Cl2(8)	12.44	1588681m	0.07315	ng
3)	Cl3(18)	14.45	1905632	0.07163	ng
5)	Cl3(28)	16.60	4101007m	0.07626	ng
6)	Cl4(52)	18.26	2666688m	0.07573	ng
7)	Cl4(44)	19.15	3726026	0.07690	ng
8)	Cl4(66)	21.09	4581149m	0.07675	ng
9)	Cl5(101)	22.21	3937065m	0.07633	ng
12)	Cl5(118)	24.94	4841793m	0.07291	ng
13)	Cl6(153)	25.95	4327415m	0.06799	ng
14)	Cl5(105)	26.02	6587716m	0.07693	ng
15)	Cl6(138)	26.93	6029867	0.07410	ng
16)	Cl7(187)	27.49	5773378m	0.07677	ng
17)	Cl6(128)	27.75	6843606m	0.07663	ng
18)	Cl7(180)	28.90	7205742	0.08036	ng
19)	Cl7(170)	29.59	7410655m	0.08099	ng
20)	Cl8(195)	30.55	7562433m	0.08304	ng
21)	Cl9(206)	31.72	6815696m	0.08216	ng
22)	Cl10(209)	32.29	5016247m	0.08193	ng
25)	Cl2(8) #2	11.86	26334612m	0.07206	ng
26)	Cl3(18) #2	13.71	32598966m	0.06985	ng
28)	Cl3(28) #2	16.44	65179788m	0.07408	ng
29)	Cl4(52) #2	17.81	46517867m	0.07406	ng
30)	Cl4(44) #2	18.61	59452751m	0.07726	ng
31)	Cl4(66) #2	20.98	69013188m	0.07817	ng
32)	Cl5(101) #2	21.85	62360017m	0.07748	ng
35)	Cl5(118) #2	24.99	62852426m	0.07469	ng
36)	Cl6(153) #2	25.72	66928058m	0.07522	ng
37)	Cl5(105) #2	26.03	81948501m	0.07591	ng
38)	Cl6(138) #2	26.71	69829531m	0.07570	ng
39)	Cl7(187) #2	27.13	66540370m	0.07504	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8554.D\ECD1A.CH Vial: 21
Signal #2 : I:\L\DATA\SL0418\L8554.D\ECD2B.CH
Acq On : 5-7-2014 05:30:52 AM Operator: RR
Sample : IB50 mid Inst : INST. L
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:12:29 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:12:23 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.56	88277710m	0.07544	ng
41)	Cl7(180) #2	28.71	82762576m	0.07614	ng
42)	Cl7(170) #2	29.37	89469065m	0.07726	ng
43)	Cl8(195) #2	30.28	88900779m	0.07766	ng
44)	Cl9(206) #2	31.40	86658981m	0.07901	ng
45)	Cl10(209) #2	31.85	69046693m	0.07832	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8534.D\ECD1A.CH Vial: 1
Signal #2 : I:\L\DATA\SL0418\L8534.D\ECD2B.CH
Acq On : 5-6-2014 02:27:18 PM Operator: RR
Sample : CC128PB-P(0) Inst : INST. L
Misc : Procedural Blank 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:31:59 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:01:29 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.88	2520661m	50.00000	ng
10) I	Cl6(161)	25.77	6455078m	50.00000	ng
24) I	Cl5(96) #2	19.16	45690841m	50.00000	ng
33) I	Cl6(161) #2	25.55	98456043m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.77	1662809m	35.96221	ng
Spiked Amount	50.0000		Recovery	= 71.92%	
11) s	Cl6(152)	23.03	2472545m	37.89306	ng
Spiked Amount	50.2000		Recovery	= 75.48%	
27) s	Cl3(34) #2	15.17	30633541m	35.58985	ng
Spiked Amount	50.0000		Recovery	= 71.18%	
34) s	Cl6(152) #2	22.24	43191574m	37.95565	ng
Spiked Amount	50.2000		Recovery	= 75.61%	
	Target Compounds				
2)	Cl2(8)	0.00	0d	N.D.	ng
3)	Cl3(18)	0.00	0d	N.D.	ng
5)	Cl3(28)	0.00	0d	N.D.	ng
6)	Cl4(52)	0.00	0d	N.D.	ng
7)	Cl4(44)	0.00	0d	N.D.	ng
8)	Cl4(66)	0.00	0d	N.D.	ng
9)	Cl5(101)	0.00	0d	N.D.	ng
12)	Cl5(118)	0.00	0d	N.D.	ng
13)	Cl6(153)	0.00	0d	N.D.	ng
14)	Cl5(105)	0.00	0d	N.D.	ng
15)	Cl6(138)	0.00	0d	N.D.	ng
16)	Cl7(187)	0.00	0d	N.D.	ng
17)	Cl6(128)	0.00	0d	N.D.	ng
18)	Cl7(180)	0.00	0d	N.D.	ng
19)	Cl7(170)	0.00	0d	N.D.	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	0.00	0d	N.D.	ng
26)	Cl3(18) #2	0.00	0d	N.D.	ng
28)	Cl3(28) #2	0.00	0d	N.D.	ng
29)	Cl4(52) #2	0.00	0d	N.D.	ng
30)	Cl4(44) #2	0.00	0d	N.D.	ng
31)	Cl4(66) #2	0.00	0d	N.D.	ng
32)	Cl5(101) #2	0.00	0d	N.D.	ng
35)	Cl5(118) #2	0.00	0d	N.D.	ng
36)	Cl6(153) #2	0.00	0d	N.D.	ng
37)	Cl5(105) #2	0.00	0d	N.D.	ng
38)	Cl6(138) #2	0.00	0d	N.D.	ng
39)	Cl7(187) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8534.D\ECD1A.CH Vial: 1
Signal #2 : I:\L\DATA\SL0418\L8534.D\ECD2B.CH
Acq On : 5-6-2014 02:27:18 PM Operator: RR
Sample : CC128PB-P(0) Inst : INST. L
Misc : Procedural Blank 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:31:59 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:01:29 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	0.00	0d	N.D.	ng
41)	Cl7(180) #2	0.00	0d	N.D.	ng
42)	Cl7(170) #2	0.00	0d	N.D.	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8535.D\ECD1A.CH Vial: 2
Signal #2 : I:\L\DATA\SL0418\L8535.D\ECD2B.CH
Acq On : 5-6-2014 03:12:27 PM Operator: RR
Sample : CC129LCS-P(0) Inst : INST. L
Misc : Laboratory Control Sample 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:03 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:31:59 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
	Internal Standards					
1) I	Cl5(96)	19.88	2610471m	50.00000	ng	
10) I	Cl6(161)	25.78	6994618	50.00000	ng	
24) I	Cl5(96) #2	19.15	44374160m	50.00000	ng	
33) I	Cl6(161) #2	25.55	86631120m	50.00000	ng	
	System Monitoring Compounds					
4) s	Cl3(34)	15.77	1862745m	38.13143	ng	76%
Spiked Amount	50.0000		Recovery	= 76.26%		
11) s	Cl6(152)	23.03	2807297	39.13867	ng	78%
Spiked Amount	50.2000		Recovery	= 77.97%		
27) s	Cl3(34) #2	15.17	31784240m	37.54037	ng	75%
Spiked Amount	50.0000		Recovery	= 75.08%		
34) s	Cl6(152) #2	22.21	40234563m	39.53338	ng	79%
Spiked Amount	50.2000		Recovery	= 78.75%		
	Target Compounds					
2)	Cl2(8)	12.44	952867m	29.52092	ng	79%
3)	Cl3(18)	14.46	1260772	31.16454	ng	83%
5)	Cl3(28)	16.61	2626793m	32.98113	ng	88%
6)	Cl4(52)	18.27	1798126m	33.69793	ng	90%
7)	Cl4(44)	19.16	2497577m	34.30067	ng	91%
8)	Cl4(66)	21.10	3019789m	33.89692	ng	90%
9)	Cl5(101)	22.22	2519005m	32.90215	ng	88%
12)	Cl5(118)	24.96	3270088m	34.15941	ng	91%
13)	Cl6(153)	25.95	3192923m	33.82797	ng	90%
14)	Cl5(105)	26.03	4071486m	34.20026	ng	91%
15)	Cl6(138)	26.94	4065607	34.74217	ng	93%
16)	Cl7(187)	27.50	3799579	35.46589	ng	95%
17)	Cl6(128)	27.75	4363724m	34.72487	ng	93%
18)	Cl7(180)	28.91	4446786	35.83221	ng	96%
19)	Cl7(170)	29.59	4397346m	35.24929	ng	94%
20)	Cl8(195)	30.56	4495041m	36.25805	ng	97%
21)	Cl9(206)	31.73	3966113m	35.30670	ng	94%
22)	Cl10(209)	32.30	3146889m	36.84454	ng	98%
25)	Cl2(8) #2	11.86	15453857m	27.41470	ng	73%
26)	Cl3(18) #2	13.71	25656540m	34.33859	ng	92%
28)	Cl3(28) #2	16.44	40073013m	30.29333	ng	81%
29)	Cl4(52) #2	17.82	32030642m	32.78603	ng	87%
30)	Cl4(44) #2	18.62	39416434m	33.40400	ng	89%
31)	Cl4(66) #2	20.99	46583259m	34.44650	ng	92%
32)	Cl5(101) #2	21.87	53697663m	40.87642	ng	109%
35)	Cl5(118) #2	25.02	43373490m	35.37766	ng	94%
36)	Cl6(153) #2	25.73	44771439m	34.77438	ng	93%
37)	Cl5(105) #2	26.04	54324358m	35.09635	ng	94%
38)	Cl6(138) #2	26.73	37144662m	29.90019	ng	80%
39)	Cl7(187) #2	27.14	46971913m	36.14225	ng	96%

(f)=RT Delta > 1/2 Window (m)=manual int.-------
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8535.D\ECD1A.CH Vial: 2
Signal #2 : I:\L\DATA\SL0418\L8535.D\ECD2B.CH
Acq On : 5-6-2014 03:12:27 PM Operator: RR
Sample : CC129LCS-P(0) Inst : INST. L
Misc : Laboratory Control Sample 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:03 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:31:59 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
40)	Cl6(128) #2	27.57	61309916m	35.95782	ng	96%
41)	Cl7(180) #2	28.72	58576230m	36.78681	ng	98%
42)	Cl7(170) #2	29.37	60782387m	36.33410	ng	97%
43)	Cl8(195) #2	30.28	61525939m	36.98387	ng	99%
44)	Cl9(206) #2	31.41	59832307m	37.54392	ng	100%
45)	Cl10(209) #2	31.86	49583538m	38.17627	ng	102%

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8536.D\ECD1A.CH Vial: 3
Signal #2 : I:\L\DATA\SL0418\L8536.D\ECD2B.CH
Acq On : 5-6-2014 03:57:36 PM Operator: RR
Sample : CC130LCSD-P(0) Inst : INST. L
Misc : Laboratory Control Sample Duplicate 5-12 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:07 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:03 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
	Internal Standards					
1) I	Cl5(96)	19.88	2638879m	50.00000	ng	
10) I	Cl6(161)	25.78	7086221m	50.00000	ng	
24) I	Cl5(96) #2	19.16	44816931m	50.00000	ng	
33) I	Cl6(161) #2	25.54	93340318m	50.00000	ng	
	System Monitoring Compounds					
4) s	Cl3(34)	15.77	1708698m	35.46002	ng	71%
Spiked Amount	50.0000		Recovery	= 70.92%		
11) s	Cl6(152)	23.03	2635801m	37.12421	ng	74%
Spiked Amount	50.2000		Recovery	= 73.95%		
27) s	Cl3(34) #2	15.17	29292750m	34.85783	ng	70%
Spiked Amount	50.0000		Recovery	= 69.72%		
34) s	Cl6(152) #2	22.22	35847424m	34.44016	ng	69%
Spiked Amount	50.2000		Recovery	= 68.61%		
	Target Compounds					
2)	Cl2(8)	12.44	801587m	25.30677	ng	67%
3)	Cl3(18)	14.45	1073277m	26.98081	ng	72%
5)	Cl3(28)	16.61	2279566m	29.48615	ng	79%
6)	Cl4(52)	18.27	1559776m	29.86071	ng	80%
7)	Cl4(44)	19.16	2214180m	31.14037	ng	83%
8)	Cl4(66)	21.10	2753406m	31.46447	ng	84%
9)	Cl5(101)	22.22	2287231m	30.38466	ng	81%
12)	Cl5(118)	24.96	3102197m	32.63879	ng	87%
13)	Cl6(153)	25.96	3585607m	36.28307	ng	97%
14)	Cl5(105)	26.04	3812212m	32.48145	ng	87%
15)	Cl6(138)	26.93	3769736	32.72998	ng	87%
16)	Cl7(187)	27.50	3495150m	33.25975	ng	89%
17)	Cl6(128)	27.75	4106668	33.08425	ng	88%
18)	Cl7(180)	28.91	4189860	34.23046	ng	91%
19)	Cl7(170)	29.59	4144841m	33.67521	ng	90%
20)	Cl8(195)	30.56	4282085m	34.89677	ng	93%
21)	Cl9(206)	31.73	3831064m	34.25104	ng	91%
22)	Cl10(209)	32.30	3027413m	35.64603	ng	95%
25)	Cl2(8) #2	11.86	13112515m	23.35532	ng	62%
26)	Cl3(18) #2	13.71	22053739m	29.71185	ng	79%
28)	Cl3(28) #2	16.44	35329097m	27.18167	ng	72%
29)	Cl4(52) #2	17.82	27930535m	29.04237	ng	77%
30)	Cl4(44) #2	18.61	35909802m	30.78641	ng	82%
31)	Cl4(66) #2	20.99	43011872m	32.18926	ng	86%
32)	Cl5(101) #2	21.87	54771253m	41.18132	ng	110%
35)	Cl5(118) #2	25.01	44498633m	34.14997	ng	91%
36)	Cl6(153) #2	25.73	41768989m	31.19728	ng	83%
37)	Cl5(105) #2	26.04	51234649m	32.00131	ng	85%
38)	Cl6(138) #2	26.73	32651567m	25.62800	ng	68%
39)	Cl7(187) #2	27.13	44129006m	32.76573	ng	87%

(f)=RT Delta > 1/2 Window (m)=manual int.-------
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8536.D\ECD1A.CH Vial: 3
Signal #2 : I:\L\DATA\SL0418\L8536.D\ECD2B.CH
Acq On : 5-6-2014 03:57:36 PM Operator: RR
Sample : CC130LCSD-P(0) Inst : INST. L
Misc : Laboratory Control Sample Duplicate 5-12 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:07 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:03 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
40)	Cl6(128) #2	27.57	56900515m	32.37358	ng	86%
41)	Cl7(180) #2	28.72	54990518m	33.45326	ng	89%
42)	Cl7(170) #2	29.38	56592782m	32.86929	ng	88%
43)	Cl8(195) #2	30.28	57263265m	33.46924	ng	89%
44)	Cl9(206) #2	31.41	55310845m	33.77051	ng	90%
45)	Cl10(209) #2	31.85	46134721m	34.37550	ng	92%

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8537.D\ECD1A.CH Vial: 4
Signal #2 : I:\L\DATA\SL0418\L8537.D\ECD2B.CH
Acq On : 5-6-2014 04:42:40 PM Operator: RR
Sample : M2925-P(0) Inst : INST. L
Misc : WQ-DPC-001-042214 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:10 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.88	2582122m	50.00000	ng
10) I	Cl6(161)	25.78	6960043m	50.00000	ng
24) I	Cl5(96) #2	19.15	40417992m	50.00000	ng
33) I	Cl6(161) #2	25.54	85904231m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.77	1532987m	33.17646	ng
Spiked Amount	50.0000		Recovery	= 66.35%	
11) s	Cl6(152)	23.03	2473955	35.95536	ng
Spiked Amount	50.2000		Recovery	= 71.62%	
27) s	Cl3(34) #2	15.17	23258963m	31.34450	ng
Spiked Amount	50.0000		Recovery	= 62.69%	
34) s	Cl6(152) #2	22.24	36011147m	36.72931	ng
Spiked Amount	50.2000		Recovery	= 73.17%	
	Target Compounds				
2)	Cl2(8)	12.46	38229m	BelowCal	ng
3)	Cl3(18)	14.45	144175m	0.35076	ng
5)	Cl3(28)	16.60	33124m	BelowCal	ng
6)	Cl4(52)	18.26	83640m	BelowCal	ng
7)	Cl4(44)	0.00	0d	N.D.	ng
8)	Cl4(66)	0.00	0d	N.D.	ng
9)	Cl5(101)	0.00	0d	N.D.	ng
12)	Cl5(118)	24.96	17970m	BelowCal	ng
13)	Cl6(153)	0.00	0d	N.D.	ng
14)	Cl5(105)	0.00	0d	N.D.	ng
15)	Cl6(138)	26.96	16230m	BelowCal	ng
16)	Cl7(187)	0.00	0d	N.D.	ng
17)	Cl6(128)	0.00	0d	N.D.	ng
18)	Cl7(180)	28.92	27417	BelowCal	ng
19)	Cl7(170)	0.00	0d	N.D.	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	0.00	0d	N.D.	ng
26)	Cl3(18) #2	13.71	5516391m	7.30878	ng
28)	Cl3(28) #2	16.39	1248481m	BelowCal	ng
29)	Cl4(52) #2	17.81	844405m	BelowCal	ng
30)	Cl4(44) #2	0.00	0d	N.D.	ng
31)	Cl4(66) #2	0.00	0d	N.D.	ng
32)	Cl5(101) #2	0.00	0d	N.D.	ng
35)	Cl5(118) #2	25.02	432316m	BelowCal	ng
36)	Cl6(153) #2	0.00	0d	N.D.	ng
37)	Cl5(105) #2	0.00	0d	N.D.	ng
38)	Cl6(138) #2	0.00	0d	N.D.	ng
39)	Cl7(187) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8537.D\ECD1A.CH Vial: 4
Signal #2 : I:\L\DATA\SL0418\L8537.D\ECD2B.CH
Acq On : 5-6-2014 04:42:40 PM Operator: RR
Sample : M2925-P(0) Inst : INST. L
Misc : WQ-DPC-001-042214 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:10 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	0.00	0d	N.D.	ng
41)	Cl7(180) #2	0.00	0d	N.D.	ng
42)	Cl7(170) #2	0.00	0d	N.D.	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8538.D\ECD1A.CH Vial: 5
Signal #2 : I:\L\DATA\SL0418\L8538.D\ECD2B.CH
Acq On : 5-6-2014 05:27:45 PM Operator: RR
Sample : M2926-P(0) Inst : INST. L
Misc : WQ-DPC-002-042214 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:13 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:10 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.88	2628210m	50.00000	ng
10) I	Cl6(161)	25.78	7214210m	50.00000	ng
24) I	Cl5(96) #2	19.16	43725844m	50.00000	ng
33) I	Cl6(161) #2	25.55	96921819m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.77	1870550	38.05855	ng
Spiked Amount	50.0000		Recovery	= 76.12%	
11) s	Cl6(152)	23.03	2949989	39.64431	ng
Spiked Amount	50.2000		Recovery	= 78.97%	
27) s	Cl3(34) #2	15.17	30161138m	36.41958	ng
Spiked Amount	50.0000		Recovery	= 72.84%	
34) s	Cl6(152) #2	22.24	46552957m	40.48399	ng
Spiked Amount	50.2000		Recovery	= 80.65%	
	Target Compounds				
2)	Cl2(8)	12.45	253655m	7.01627	ng
3)	Cl3(18)	14.45	1116595	28.00481	ng
5)	Cl3(28)	16.60	124677m	BelowCal	ng
6)	Cl4(52)	18.26	347071m	3.63167	ng
7)	Cl4(44)	19.16	87186m	BelowCal	ng
8)	Cl4(66)	21.15	38656m	BelowCal	ng
9)	Cl5(101)	22.22	24107	BelowCal	ng
12)	Cl5(118)	24.95	18085m	BelowCal	ng
13)	Cl6(153)	25.97	19661m	BelowCal	ng
14)	Cl5(105)	0.00	0d	N.D.	ng
15)	Cl6(138)	26.92	35511m	BelowCal	ng
16)	Cl7(187)	0.00	0d	N.D.	ng
17)	Cl6(128)	0.00	0d	N.D.	ng
18)	Cl7(180)	28.91	26534m	BelowCal	ng
19)	Cl7(170)	0.00	0d	N.D.	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.86	3534679m	5.33893	ng
26)	Cl3(18) #2	13.71	22268280m	30.65422	ng
28)	Cl3(28) #2	16.39	3223597m	BelowCal	ng
29)	Cl4(52) #2	17.81	5672019m	4.44576	ng
30)	Cl4(44) #2	18.61	1738961m	BelowCal	ng
31)	Cl4(66) #2	20.95	421927m	BelowCal	ng
32)	Cl5(101) #2	21.89	282392m	BelowCal	ng
35)	Cl5(118) #2	25.01	616605m	BelowCal	ng
36)	Cl6(153) #2	25.68	1581193m	BelowCal	ng
37)	Cl5(105) #2	0.00	0d	N.D.	ng
38)	Cl6(138) #2	0.00	0d	N.D.	ng
39)	Cl7(187) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8538.D\ECD1A.CH Vial: 5
Signal #2 : I:\L\DATA\SL0418\L8538.D\ECD2B.CH
Acq On : 5-6-2014 05:27:45 PM Operator: RR
Sample : M2926-P(0) Inst : INST. L
Misc : WQ-DPC-002-042214 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:13 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:10 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	0.00	0d	N.D.	ng
41)	Cl7(180) #2	0.00	0d	N.D.	ng
42)	Cl7(170) #2	0.00	0d	N.D.	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8539.D\ECD1A.CH Vial: 6
Signal #2 : I:\L\DATA\SL0418\L8539.D\ECD2B.CH
Acq On : 5-6-2014 06:12:43 PM Operator: RR
Sample : M2927-P(0) Inst : INST. L
Misc : WQ-DPC-003-042214 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:16 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:13 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.89	2552974m	50.00000	ng
10) I	Cl6(161)	25.78	7010239m	50.00000	ng
24) I	Cl5(96) #2	19.15	45107831m	50.00000	ng
33) I	Cl6(161) #2	25.54	96613282m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.77	1602161	34.62583	ng
Spiked Amount	50.0000		Recovery	= 69.25%	
11) s	Cl6(152)	23.03	2496692m	36.00536	ng
Spiked Amount	50.2000		Recovery	= 71.72%	
27) s	Cl3(34) #2	15.17	27353962m	32.76012	ng
Spiked Amount	50.0000		Recovery	= 65.52%	
34) s	Cl6(152) #2	22.24	41756751m	37.55082	ng
Spiked Amount	50.2000		Recovery	= 74.80%	
	Target Compounds				
2)	Cl2(8)	12.45	220397m	5.82617	ng
3)	Cl3(18)	14.45	746097	19.99909	ng
5)	Cl3(28)	16.59	129074m	BelowCal	ng
6)	Cl4(52)	18.27	317078m	2.87230	ng
7)	Cl4(44)	19.16	124728m	BelowCal	ng
8)	Cl4(66)	21.15	77898m	BelowCal	ng
9)	Cl5(101)	22.23	46720m	BelowCal	ng
12)	Cl5(118)	24.95	35951m	BelowCal	ng
13)	Cl6(153)	25.97	43465m	BelowCal	ng
14)	Cl5(105)	0.00	0d	N.D.	ng
15)	Cl6(138)	26.93	68092	BelowCal	ng
16)	Cl7(187)	0.00	0d	N.D.	ng
17)	Cl6(128)	0.00	0d	N.D.	ng
18)	Cl7(180)	28.91	37810m	BelowCal	ng
19)	Cl7(170)	29.59	22251m	BelowCal	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.86	3018665m	3.95093	ng
26)	Cl3(18) #2	13.71	16713431m	22.73956	ng
28)	Cl3(28) #2	16.39	6359532m	1.82846	ng
29)	Cl4(52) #2	17.82	5302926m	3.60316	ng
30)	Cl4(44) #2	18.61	2391555m	BelowCal	ng
31)	Cl4(66) #2	20.93	1081382m	BelowCal	ng
32)	Cl5(101) #2	21.86	773841m	BelowCal	ng
35)	Cl5(118) #2	25.01	947063m	BelowCal	ng
36)	Cl6(153) #2	25.72	2082628m	BelowCal	ng
37)	Cl5(105) #2	0.00	0d	N.D.	ng
38)	Cl6(138) #2	26.72	359256m	BelowCal	ng
39)	Cl7(187) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8539.D\ECD1A.CH Vial: 6
Signal #2 : I:\L\DATA\SL0418\L8539.D\ECD2B.CH
Acq On : 5-6-2014 06:12:43 PM Operator: RR
Sample : M2927-P(0) Inst : INST. L
Misc : WQ-DPC-003-042214 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:16 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:13 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	0.00	0d	N.D.	ng
41)	Cl7(180) #2	0.00	0d	N.D.	ng
42)	Cl7(170) #2	0.00	0d	N.D.	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8540.D\ECD1A.CH Vial: 7
Signal #2 : I:\L\DATA\SL0418\L8540.D\ECD2B.CH
Acq On : 5-6-2014 06:58:00 PM Operator: RR
Sample : M2928-P(0) Inst : INST. L
Misc : WQ-DPC-004-042214 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:19 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:16 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.88	2629775m	50.00000	ng
10) I	Cl6(161)	25.78	7165494	50.00000	ng
24) I	Cl5(96) #2	19.15	40692573m	50.00000	ng
33) I	Cl6(161) #2	25.54	112867002	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.77	1694816	35.33386	ng
Spiked Amount	50.0000		Recovery	= 70.67%	
11) s	Cl6(152)	23.03	2803779	38.45806	ng
Spiked Amount	50.2000		Recovery	= 76.61%	
27) s	Cl3(34) #2	15.17	25184339m	33.32173	ng
Spiked Amount	50.0000		Recovery	= 66.64%	
34) s	Cl6(152) #2	22.24	52557989	39.60746	ng
Spiked Amount	50.2000		Recovery	= 78.90%	
	Target Compounds				
2)	Cl2(8)	12.45	110579	BelowCal	ng
3)	Cl3(18)	14.45	327811m	7.26976	ng
5)	Cl3(28)	16.60	72532m	BelowCal	ng
6)	Cl4(52)	18.26	169035	BelowCal	ng
7)	Cl4(44)	19.16	57689	BelowCal	ng
8)	Cl4(66)	21.15	23836m	BelowCal	ng
9)	Cl5(101)	0.00	0d	N.D.	ng
12)	Cl5(118)	0.00	0d	N.D.	ng
13)	Cl6(153)	0.00	0d	N.D.	ng
14)	Cl5(105)	0.00	0d	N.D.	ng
15)	Cl6(138)	0.00	0d	N.D.	ng
16)	Cl7(187)	0.00	0d	N.D.	ng
17)	Cl6(128)	0.00	0d	N.D.	ng
18)	Cl7(180)	0.00	0d	N.D.	ng
19)	Cl7(170)	0.00	0d	N.D.	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.86	1023868m	BelowCal	ng
26)	Cl3(18) #2	13.71	7391502m	10.54997	ng
28)	Cl3(28) #2	16.40	1517765m	BelowCal	ng
29)	Cl4(52) #2	17.81	2038382m	BelowCal	ng
30)	Cl4(44) #2	18.61	763552m	BelowCal	ng
31)	Cl4(66) #2	20.96	221253m	BelowCal	ng
32)	Cl5(101) #2	0.00	0d	N.D.	ng
35)	Cl5(118) #2	0.00	0d	N.D.	ng
36)	Cl6(153) #2	0.00	0d	N.D.	ng
37)	Cl5(105) #2	0.00	0d	N.D.	ng
38)	Cl6(138) #2	0.00	0d	N.D.	ng
39)	Cl7(187) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8540.D\ECD1A.CH Vial: 7
Signal #2 : I:\L\DATA\SL0418\L8540.D\ECD2B.CH
Acq On : 5-6-2014 06:58:00 PM Operator: RR
Sample : M2928-P(0) Inst : INST. L
Misc : WQ-DPC-004-042214 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:19 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:16 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response		Conc	Units
40)	Cl6(128) #2	0.00		0d	N.D.	ng
41)	Cl7(180) #2	0.00		0d	N.D.	ng
42)	Cl7(170) #2	0.00		0d	N.D.	ng
43)	Cl8(195) #2	0.00		0d	N.D.	ng
44)	Cl9(206) #2	0.00		0d	N.D.	ng
45)	Cl10(209) #2	0.00		0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8541.D\ECD1A.CH Vial: 8
Signal #2 : I:\L\DATA\SL0418\L8541.D\ECD2B.CH
Acq On : 5-6-2014 07:43:16 PM Operator: RR
Sample : M3119-P(0) Inst : INST. L
Misc : WQ-DPC-001-042314 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:22 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:19 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.88	2692338m	50.00000	ng
10) I	Cl6(161)	25.77	8108055	50.00000	ng
24) I	Cl5(96) #2	19.15	44785559m	50.00000	ng
33) I	Cl6(161) #2	25.54	102280851m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.77	1810141	36.47977	ng
Spiked Amount	50.0000		Recovery	= 72.96%	
11) s	Cl6(152)	23.02	3105234	37.88911	ng
Spiked Amount	50.2000		Recovery	= 75.48%	
27) s	Cl3(34) #2	15.17	27917828m	33.52183	ng
Spiked Amount	50.0000		Recovery	= 67.04%	
34) s	Cl6(152) #2	22.24	47165199m	39.33366	ng
Spiked Amount	50.2000		Recovery	= 78.35%	
	Target Compounds				
2)	Cl2(8)	12.45	89461	BelowCal	ng
3)	Cl3(18)	14.45	320149m	6.74744	ng
5)	Cl3(28)	16.60	83680m	BelowCal	ng
6)	Cl4(52)	18.26	161923m	BelowCal	ng
7)	Cl4(44)	19.17	65659m	BelowCal	ng
8)	Cl4(66)	21.15	53079m	BelowCal	ng
9)	Cl5(101)	22.21	51853m	BelowCal	ng
12)	Cl5(118)	0.00	0d	N.D.	ng
13)	Cl6(153)	0.00	0d	N.D.	ng
14)	Cl5(105)	0.00	0d	N.D.	ng
15)	Cl6(138)	0.00	0d	N.D.	ng
16)	Cl7(187)	0.00	0d	N.D.	ng
17)	Cl6(128)	0.00	0d	N.D.	ng
18)	Cl7(180)	0.00	0d	N.D.	ng
19)	Cl7(170)	0.00	0d	N.D.	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.85	1134423m	BelowCal	ng
26)	Cl3(18) #2	13.70	11039347m	14.95937	ng
28)	Cl3(28) #2	16.40	23235047m	18.84289	ng
29)	Cl4(52) #2	17.82	2172067m	BelowCal	ng
30)	Cl4(44) #2	18.60	953839m	BelowCal	ng
31)	Cl4(66) #2	20.95	314689m	BelowCal	ng
32)	Cl5(101) #2	21.86	463483m	BelowCal	ng
35)	Cl5(118) #2	0.00	0d	N.D.	ng
36)	Cl6(153) #2	0.00	0d	N.D.	ng
37)	Cl5(105) #2	0.00	0d	N.D.	ng
38)	Cl6(138) #2	0.00	0d	N.D.	ng
39)	Cl7(187) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8541.D\ECD1A.CH Vial: 8
Signal #2 : I:\L\DATA\SL0418\L8541.D\ECD2B.CH
Acq On : 5-6-2014 07:43:16 PM Operator: RR
Sample : M3119-P(0) Inst : INST. L
Misc : WQ-DPC-001-042314 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:22 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:19 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response		Conc	Units
40)	Cl6(128) #2	0.00		0d	N.D.	ng
41)	Cl7(180) #2	0.00		0d	N.D.	ng
42)	Cl7(170) #2	0.00		0d	N.D.	ng
43)	Cl8(195) #2	0.00		0d	N.D.	ng
44)	Cl9(206) #2	0.00		0d	N.D.	ng
45)	Cl10(209) #2	0.00		0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8542.D\ECD1A.CH Vial: 9
Signal #2 : I:\L\DATA\SL0418\L8542.D\ECD2B.CH
Acq On : 5-6-2014 08:28:35 PM Operator: RR
Sample : M3120-P(0) Inst : INST. L
Misc : WQ-DPC-002-042314 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:24 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:22 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.89	2653357m	50.00000	ng
10) I	Cl6(161)	25.78	7707085	50.00000	ng
24) I	Cl5(96) #2	19.16	42942304m	50.00000	ng
33) I	Cl6(161) #2	25.55	93830483m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.77	2010582m	39.84694	ng
Spiked Amount	50.0000		Recovery	= 79.69%	
11) s	Cl6(152)	23.03	3180397	39.89289	ng
Spiked Amount	50.2000		Recovery	= 79.47%	
27) s	Cl3(34) #2	15.17	31526160m	38.28570	ng
Spiked Amount	50.0000		Recovery	= 76.57%	
34) s	Cl6(152) #2	22.24	46110481m	41.13941	ng
Spiked Amount	50.2000		Recovery	= 81.95%	
	Target Compounds				
2)	Cl2(8)	12.45	87440m	BelowCal	ng
3)	Cl3(18)	14.45	489377m	12.29230	ng
5)	Cl3(28)	16.60	176024m	BelowCal	ng
6)	Cl4(52)	18.27	269076m	0.47565	ng
7)	Cl4(44)	19.17	82320m	BelowCal	ng
8)	Cl4(66)	21.14	61009m	BelowCal	ng
9)	Cl5(101)	22.22	62127m	BelowCal	ng
12)	Cl5(118)	24.94	28675m	BelowCal	ng
13)	Cl6(153)	25.97	26673m	BelowCal	ng
14)	Cl5(105)	0.00	0d	N.D.	ng
15)	Cl6(138)	0.00	0d	N.D.	ng
16)	Cl7(187)	0.00	0d	N.D.	ng
17)	Cl6(128)	0.00	0d	N.D.	ng
18)	Cl7(180)	0.00	0d	N.D.	ng
19)	Cl7(170)	0.00	0d	N.D.	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.86	1280714m	0.06936	ng
26)	Cl3(18) #2	13.71	11370762m	16.15728	ng
28)	Cl3(28) #2	16.40	40050338m	31.06308	ng
29)	Cl4(52) #2	17.82	3238252m	0.49274	ng
30)	Cl4(44) #2	18.61	1346735m	BelowCal	ng
31)	Cl4(66) #2	20.95	671021m	BelowCal	ng
32)	Cl5(101) #2	21.87	329653m	BelowCal	ng
35)	Cl5(118) #2	25.01	1463234m	BelowCal	ng
36)	Cl6(153) #2	25.73	755354m	BelowCal	ng
37)	Cl5(105) #2	0.00	0d	N.D.	ng
38)	Cl6(138) #2	0.00	0d	N.D.	ng
39)	Cl7(187) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8542.D\ECD1A.CH Vial: 9
Signal #2 : I:\L\DATA\SL0418\L8542.D\ECD2B.CH
Acq On : 5-6-2014 08:28:35 PM Operator: RR
Sample : M3120-P(0) Inst : INST. L
Misc : WQ-DPC-002-042314 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:24 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:22 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	0.00	0d	N.D.	ng
41)	Cl7(180) #2	0.00	0d	N.D.	ng
42)	Cl7(170) #2	0.00	0d	N.D.	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8543.D\ECD1A.CH Vial: 10
Signal #2 : I:\L\DATA\SL0418\L8543.D\ECD2B.CH
Acq On : 5-6-2014 09:13:58 PM Operator: RR
Sample : M3121-P(0) Inst : INST. L
Misc : WQ-DPC-003-042314 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:27 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:24 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.89	2643646m	50.00000	ng
10) I	Cl6(161)	25.78	7570931	50.00000	ng
24) I	Cl5(96) #2	19.16	44134525m	50.00000	ng
33) I	Cl6(161) #2	25.54	98082971m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.77	1797394	36.78653	ng
Spiked Amount	50.0000		Recovery	= 73.57%	
11) s	Cl6(152)	23.03	3029446	39.05736	ng
Spiked Amount	50.2000		Recovery	= 77.80%	
27) s	Cl3(34) #2	15.17	30239418m	36.22246	ng
Spiked Amount	50.0000		Recovery	= 72.44%	
34) s	Cl6(152) #2	22.24	46348597m	40.02091	ng
Spiked Amount	50.2000		Recovery	= 79.72%	
	Target Compounds				
2)	Cl2(8)	12.45	197261m	4.39487	ng
3)	Cl3(18)	14.46	680586m	17.65824	ng
5)	Cl3(28)	16.60	429166m	4.13545	ng
6)	Cl4(52)	18.27	530102	9.31190	ng
7)	Cl4(44)	19.16	237908	BelowCal	ng
8)	Cl4(66)	21.15	190999m	BelowCal	ng
9)	Cl5(101)	22.22	183564m	BelowCal	ng
12)	Cl5(118)	24.95	140626m	BelowCal	ng
13)	Cl6(153)	25.97	178648m	BelowCal	ng
14)	Cl5(105)	0.00	0d	N.D.	ng
15)	Cl6(138)	26.92	157807m	BelowCal	ng
16)	Cl7(187)	27.49	31880m	BelowCal	ng
17)	Cl6(128)	27.76	18543m	BelowCal	ng
18)	Cl7(180)	28.91	59375m	BelowCal	ng
19)	Cl7(170)	29.59	58353m	BelowCal	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.85	2874361m	3.76949	ng
26)	Cl3(18) #2	13.71	14271878m	19.87139	ng
28)	Cl3(28) #2	16.42	14275067m	11.32737	ng
29)	Cl4(52) #2	17.82	8674847m	8.73967	ng
30)	Cl4(44) #2	18.61	4192429m	BelowCal	ng
31)	Cl4(66) #2	20.94	2240773m	BelowCal	ng
32)	Cl5(101) #2	21.86	3013789m	BelowCal	ng
35)	Cl5(118) #2	25.00	2438499m	BelowCal	ng
36)	Cl6(153) #2	25.74	3425079m	BelowCal	ng
37)	Cl5(105) #2	0.00	0d	N.D.	ng
38)	Cl6(138) #2	26.71	758119m	BelowCal	ng
39)	Cl7(187) #2	27.13	622561m	BelowCal	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8543.D\ECD1A.CH Vial: 10
Signal #2 : I:\L\DATA\SL0418\L8543.D\ECD2B.CH
Acq On : 5-6-2014 09:13:58 PM Operator: RR
Sample : M3121-P(0) Inst : INST. L
Misc : WQ-DPC-003-042314 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:27 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:24 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.57	398229m	BelowCal	ng
41)	Cl7(180) #2	28.72	519640m	BelowCal	ng
42)	Cl7(170) #2	29.38	275994m	BelowCal	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8545.D\ECD1A.CH Vial: 12
Signal #2 : I:\L\DATA\SL0418\L8545.D\ECD2B.CH
Acq On : 06 May 2014 10:44 pm Operator: RR
Sample : M3121MS-P(0) Inst : INST. L
Misc : Matrix Spike of WQ-DPC-003-042314 5-128 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:30 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:27 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.88	2822849m	50.00000	ng
10) I	Cl6(161)	25.77	8149598	50.00000	ng
24) I	Cl5(96) #2	19.15	41630476m	50.00000	ng
33) I	Cl6(161) #2	25.55	84189800m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.77	2046894	38.58509	ng
Spiked Amount	50.0000		Recovery	= 77.17%	
11) s	Cl6(152)	23.02	3465375	40.71805	ng
Spiked Amount	50.2000		Recovery	= 81.11%	
27) s	Cl3(34) #2	15.17	28301547m	35.99369	ng
Spiked Amount	50.0000		Recovery	= 71.99%	
34) s	Cl6(152) #2	22.21	41707125m	41.37183	ng
Spiked Amount	50.2000		Recovery	= 82.41%	
	Target Compounds				
2)	Cl2(8)	12.45	981717	28.36933	ng
3)	Cl3(18)	14.45	1470550	33.13902	ng
5)	Cl3(28)	16.61	2877378	33.28874	ng
6)	Cl4(52)	18.26	1971122	34.05384	ng
7)	Cl4(44)	19.16	2710258m	34.38797	ng
8)	Cl4(66)	21.10	3153204m	33.05800	ng
9)	Cl5(101)	22.22	2803885	33.60466	ng
12)	Cl5(118)	24.95	3504685m	32.23398	ng
13)	Cl6(153)	25.95	4124085m	36.28551	ng
14)	Cl5(105)	26.03	4524220	33.15955	ng
15)	Cl6(138)	26.93	4494592	33.53915	ng
16)	Cl7(187)	27.49	4384957	35.24358	ng
17)	Cl6(128)	27.75	4948430	34.11587	ng
18)	Cl7(180)	28.90	5245979	36.11239	ng
19)	Cl7(170)	29.59	5259111	35.83170	ng
20)	Cl8(195)	30.56	5591168m	37.74448	ng
21)	Cl9(206)	31.72	4777781m	36.05858	ng
22)	Cl10(209)	32.29	3748943m	37.36805	ng
25)	Cl2(8) #2	11.86	14339882m	27.14388	ng
26)	Cl3(18) #2	13.71	26271644m	37.07082	ng
28)	Cl3(28) #2	16.44	39693107m	31.59727	ng
29)	Cl4(52) #2	17.81	27264682m	30.27203	ng
30)	Cl4(44) #2	18.61	37595060m	33.83648	ng
31)	Cl4(66) #2	20.98	42660166m	33.82903	ng
32)	Cl5(101) #2	21.86	52227273m	41.99841	ng
35)	Cl5(118) #2	25.01	44118427m	36.54674	ng
36)	Cl6(153) #2	25.73	42513381m	34.18201	ng
37)	Cl5(105) #2	26.03	50976056m	34.26440	ng
38)	Cl6(138) #2	26.72	41650868m	33.13589	ng
39)	Cl7(187) #2	27.13	42881907m	34.57542	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8545.D\ECD1A.CH Vial: 12
Signal #2 : I:\L\DATA\SL0418\L8545.D\ECD2B.CH
Acq On : 06 May 2014 10:44 pm Operator: RR
Sample : M3121MS-P(0) Inst : INST. L
Misc : Matrix Spike of WQ-DPC-003-042314 5-128 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:30 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:27 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.56	56459711m	34.63677	ng
41)	Cl7(180) #2	28.72	53470838m	35.24668	ng
42)	Cl7(170) #2	29.37	55283171m	34.73474	ng
43)	Cl8(195) #2	30.28	55793586m	35.29454	ng
44)	Cl9(206) #2	31.41	53987600m	35.68520	ng
45)	Cl10(209) #2	31.85	45437329m	36.62449	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8546.D\ECD1A.CH Vial: 13
Signal #2 : I:\L\DATA\SL0418\L8546.D\ECD2B.CH
Acq On : 06 May 2014 11:29 pm Operator: RR
Sample : M3121MSD-P(0) Inst : INST. L
Misc : Matrix Spike Duplicate of WQ-DPC-003-042 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:33 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:30 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.88	2583492m	50.00000	ng
10) I	Cl6(161)	25.77	7530874	50.00000	ng
24) I	Cl5(96) #2	19.15	44156608m	50.00000	ng
33) I	Cl6(161) #2	25.54	87087935m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.77	2003163	40.51654	ng
Spiked Amount	50.0000		Recovery	= 81.03%	
11) s	Cl6(152)	23.02	3293319	41.50011	ng
Spiked Amount	50.2000		Recovery	= 82.67%	
27) s	Cl3(34) #2	15.17	32099565m	37.98632	ng
Spiked Amount	50.0000		Recovery	= 75.97%	
34) s	Cl6(152) #2	22.22	40235376m	39.38663	ng
Spiked Amount	50.2000		Recovery	= 78.46%	
	Target Compounds				
2)	Cl2(8)	12.44	969610	30.19661	ng
3)	Cl3(18)	14.45	1427185	34.72741	ng
5)	Cl3(28)	16.61	2812817	34.89123	ng
6)	Cl4(52)	18.26	1914420	35.63147	ng
7)	Cl4(44)	19.16	2623401m	35.80376	ng
8)	Cl4(66)	21.10	3307321	36.41183	ng
9)	Cl5(101)	22.22	2730220	35.14556	ng
12)	Cl5(118)	24.95	3581281m	34.56094	ng
13)	Cl6(153)	25.94	3970283m	37.29407	ng
14)	Cl5(105)	26.03	4618252	35.37076	ng
15)	Cl6(138)	26.93	4471447	35.23802	ng
16)	Cl7(187)	27.49	4299822	36.64273	ng
17)	Cl6(128)	27.75	4999087	36.14879	ng
18)	Cl7(180)	28.90	5327778	38.28794	ng
19)	Cl7(170)	29.59	5400702	38.25254	ng
20)	Cl8(195)	30.55	5740684	40.23070	ng
21)	Cl9(206)	31.72	5127414m	39.56600	ng
22)	Cl10(209)	32.29	4040497m	41.13381	ng
25)	Cl2(8) #2	11.86	16602260m	29.36000	ng
26)	Cl3(18) #2	13.71	29423067m	38.85094	ng
28)	Cl3(28) #2	16.44	45835826m	33.71094	ng
29)	Cl4(52) #2	17.81	33274477m	33.94270	ng
30)	Cl4(44) #2	18.61	43020003m	35.87201	ng
31)	Cl4(66) #2	20.98	48885879m	35.83148	ng
32)	Cl5(101) #2	21.86	56920508m	42.85706	ng
35)	Cl5(118) #2	25.01	52220102m	40.15180	ng
36)	Cl6(153) #2	25.72	46769905m	35.77132	ng
37)	Cl5(105) #2	26.03	62101563m	38.26262	ng
38)	Cl6(138) #2	26.72	51428615m	37.43353	ng
39)	Cl7(187) #2	27.13	51426927m	38.35597	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8546.D\ECD1A.CH Vial: 13
Signal #2 : I:\L\DATA\SL0418\L8546.D\ECD2B.CH
Acq On : 06 May 2014 11:29 pm Operator: RR
Sample : M3121MSD-P(0) Inst : INST. L
Misc : Matrix Spike Duplicate of WQ-DPC-003-042 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:33 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:30 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	27.56	66562599m	37.90368	ng
41)	Cl7(180) #2	28.71	61505069m	37.88327	ng
42)	Cl7(170) #2	29.37	64534616m	37.68891	ng
43)	Cl8(195) #2	30.28	65342116m	38.36097	ng
44)	Cl9(206) #2	31.40	62458397m	38.51105	ng
45)	Cl10(209) #2	31.85	52366545m	39.51194	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8547.D\ECD1A.CH Vial: 14
Signal #2 : I:\L\DATA\SL0418\L8547.D\ECD2B.CH
Acq On : 07 May 2014 12:14 am Operator: RR
Sample : M3122-P(0) Inst : INST. L
Misc : WQ-DPC-003-042314-REP 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:36 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:33 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.88	2638278m	50.00000	ng
10) I	Cl6(161)	25.77	7532494	50.00000	ng
24) I	Cl5(96) #2	19.15	46894207m	50.00000	ng
33) I	Cl6(161) #2	25.54	104687528m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.77	1792355m	36.76522	ng
Spiked Amount	50.0000		Recovery	= 73.53%	
11) s	Cl6(152)	23.02	3004413	38.97104	ng
Spiked Amount	50.2000		Recovery	= 77.63%	
27) s	Cl3(34) #2	15.17	30569307m	34.78213	ng
Spiked Amount	50.0000		Recovery	= 69.56%	
34) s	Cl6(152) #2	22.24	50762591m	40.75525	ng
Spiked Amount	50.2000		Recovery	= 81.19%	
	Target Compounds				
2)	Cl2(8)	12.44	141898m	1.64954	ng
3)	Cl3(18)	14.45	595794	15.41881	ng
5)	Cl3(28)	16.60	103792m	BelowCal	ng
6)	Cl4(52)	18.26	282131	1.08742	ng
7)	Cl4(44)	19.16	107142	BelowCal	ng
8)	Cl4(66)	21.14	66951m	BelowCal	ng
9)	Cl5(101)	0.00	0d	N.D.	ng
12)	Cl5(118)	0.00	0d	N.D.	ng
13)	Cl6(153)	25.97	45702m	BelowCal	ng
14)	Cl5(105)	0.00	0d	N.D.	ng
15)	Cl6(138)	0.00	0d	N.D.	ng
16)	Cl7(187)	0.00	0d	N.D.	ng
17)	Cl6(128)	0.00	0d	N.D.	ng
18)	Cl7(180)	0.00	0d	N.D.	ng
19)	Cl7(170)	0.00	0d	N.D.	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.86	2063168m	1.58563	ng
26)	Cl3(18) #2	13.71	13066528m	17.05137	ng
28)	Cl3(28) #2	16.39	7865925m	3.49184	ng
29)	Cl4(52) #2	17.82	5080448m	2.94889	ng
30)	Cl4(44) #2	18.61	1908644m	BelowCal	ng
31)	Cl4(66) #2	20.95	626124m	BelowCal	ng
32)	Cl5(101) #2	0.00	0d	N.D.	ng
35)	Cl5(118) #2	0.00	0d	N.D.	ng
36)	Cl6(153) #2	25.73	1489997m	BelowCal	ng
37)	Cl5(105) #2	0.00	0d	N.D.	ng
38)	Cl6(138) #2	0.00	0d	N.D.	ng
39)	Cl7(187) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8547.D\ECD1A.CH Vial: 14
Signal #2 : I:\L\DATA\SL0418\L8547.D\ECD2B.CH
Acq On : 07 May 2014 12:14 am Operator: RR
Sample : M3122-P(0) Inst : INST. L
Misc : WQ-DPC-003-042314-REP 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:36 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:33 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	0.00	0d	N.D.	ng
41)	Cl7(180) #2	0.00	0d	N.D.	ng
42)	Cl7(170) #2	0.00	0d	N.D.	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8548.D\ECD1A.CH Vial: 15
Signal #2 : I:\L\DATA\SL0418\L8548.D\ECD2B.CH
Acq On : 07 May 2014 12:59 am Operator: RR
Sample : M3123-P(0) Inst : INST. L
Misc : WQ-DPC-003-042314-EB 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:39 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:36 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.88	2615069m	50.00000	ng
10) I	Cl6(161)	25.77	7790473	50.00000	ng
24) I	Cl5(96) #2	19.16	44598078m	50.00000	ng
33) I	Cl6(161) #2	25.54	99025227m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.77	1779358	36.80807	ng
Spiked Amount	50.0000		Recovery	= 73.62%	
11) s	Cl6(152)	23.02	2916876	37.29559	ng
Spiked Amount	50.2000		Recovery	= 74.29%	
27) s	Cl3(34) #2	15.17	31364154m	36.99228	ng
Spiked Amount	50.0000		Recovery	= 73.98%	
34) s	Cl6(152) #2	22.24	44677115m	38.72623	ng
Spiked Amount	50.2000		Recovery	= 77.14%	
	Target Compounds				
2)	Cl2(8)	0.00	0d	N.D.	ng
3)	Cl3(18)	0.00	0d	N.D.	ng
5)	Cl3(28)	0.00	0d	N.D.	ng
6)	Cl4(52)	0.00	0d	N.D.	ng
7)	Cl4(44)	0.00	0d	N.D.	ng
8)	Cl4(66)	0.00	0d	N.D.	ng
9)	Cl5(101)	0.00	0d	N.D.	ng
12)	Cl5(118)	0.00	0d	N.D.	ng
13)	Cl6(153)	0.00	0d	N.D.	ng
14)	Cl5(105)	0.00	0d	N.D.	ng
15)	Cl6(138)	0.00	0d	N.D.	ng
16)	Cl7(187)	0.00	0d	N.D.	ng
17)	Cl6(128)	0.00	0d	N.D.	ng
18)	Cl7(180)	0.00	0d	N.D.	ng
19)	Cl7(170)	0.00	0d	N.D.	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	0.00	0d	N.D.	ng
26)	Cl3(18) #2	0.00	0d	N.D.	ng
28)	Cl3(28) #2	0.00	0d	N.D.	ng
29)	Cl4(52) #2	0.00	0d	N.D.	ng
30)	Cl4(44) #2	0.00	0d	N.D.	ng
31)	Cl4(66) #2	0.00	0d	N.D.	ng
32)	Cl5(101) #2	0.00	0d	N.D.	ng
35)	Cl5(118) #2	0.00	0d	N.D.	ng
36)	Cl6(153) #2	0.00	0d	N.D.	ng
37)	Cl5(105) #2	0.00	0d	N.D.	ng
38)	Cl6(138) #2	0.00	0d	N.D.	ng
39)	Cl7(187) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8548.D\ECD1A.CH Vial: 15
Signal #2 : I:\L\DATA\SL0418\L8548.D\ECD2B.CH
Acq On : 07 May 2014 12:59 am Operator: RR
Sample : M3123-P(0) Inst : INST. L
Misc : WQ-DPC-003-042314-EB 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:39 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:36 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	0.00	0d	N.D.	ng
41)	Cl7(180) #2	0.00	0d	N.D.	ng
42)	Cl7(170) #2	0.00	0d	N.D.	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8549.D\ECD1A.CH Vial: 16
Signal #2 : I:\L\DATA\SL0418\L8549.D\ECD2B.CH
Acq On : 5-7-2014 01:44:49 AM Operator: RR
Sample : M3124-P(0) Inst : INST. L
Misc : WQ-DPC-004-042314 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:42 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:39 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.88	2786979m	50.00000	ng
10) I	Cl6(161)	25.77	8306336	50.00000	ng
24) I	Cl5(96) #2	19.15	47984276m	50.00000	ng
33) I	Cl6(161) #2	25.54	109369298m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.76	2180581m	40.78215	ng
Spiked Amount	50.0000		Recovery	= 81.56%	
11) s	Cl6(152)	23.02	3462143	40.16686	ng
Spiked Amount	50.2000		Recovery	= 80.01%	
27) s	Cl3(34) #2	15.17	35469413m	38.49423	ng
Spiked Amount	50.0000		Recovery	= 76.99%	
34) s	Cl6(152) #2	22.23	54106868m	41.33228	ng
Spiked Amount	50.2000		Recovery	= 82.34%	
	Target Compounds				
2)	Cl2(8)	12.44	138774m	1.08884	ng
3)	Cl3(18)	14.45	547532m	13.22591	ng
5)	Cl3(28)	16.59	131319m	BelowCal	ng
6)	Cl4(52)	18.26	260411m	BelowCal	ng
7)	Cl4(44)	19.16	106870m	BelowCal	ng
8)	Cl4(66)	21.13	70020m	BelowCal	ng
9)	Cl5(101)	22.22	53360m	BelowCal	ng
12)	Cl5(118)	0.00	0d	N.D.	ng
13)	Cl6(153)	25.96	37729m	BelowCal	ng
14)	Cl5(105)	0.00	0d	N.D.	ng
15)	Cl6(138)	0.00	0d	N.D.	ng
16)	Cl7(187)	0.00	0d	N.D.	ng
17)	Cl6(128)	0.00	0d	N.D.	ng
18)	Cl7(180)	0.00	0d	N.D.	ng
19)	Cl7(170)	0.00	0d	N.D.	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.85	1936923m	1.20135	ng
26)	Cl3(18) #2	13.71	13211871m	16.83918	ng
28)	Cl3(28) #2	16.40	27282212m	20.52048	ng
29)	Cl4(52) #2	17.81	3654067m	0.55036	ng
30)	Cl4(44) #2	18.60	1835763m	BelowCal	ng
31)	Cl4(66) #2	20.95	419801m	BelowCal	ng
32)	Cl5(101) #2	21.86	396307m	BelowCal	ng
35)	Cl5(118) #2	0.00	0d	N.D.	ng
36)	Cl6(153) #2	25.70	1955234m	BelowCal	ng
37)	Cl5(105) #2	0.00	0d	N.D.	ng
38)	Cl6(138) #2	0.00	0d	N.D.	ng
39)	Cl7(187) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8549.D\ECD1A.CH Vial: 16
Signal #2 : I:\L\DATA\SL0418\L8549.D\ECD2B.CH
Acq On : 5-7-2014 01:44:49 AM Operator: RR
Sample : M3124-P(0) Inst : INST. L
Misc : WQ-DPC-004-042314 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:42 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:39 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	0.00	0d	N.D.	ng
41)	Cl7(180) #2	0.00	0d	N.D.	ng
42)	Cl7(170) #2	0.00	0d	N.D.	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8550.D\ECD1A.CH Vial: 17
Signal #2 : I:\L\DATA\SL0418\L8550.D\ECD2B.CH
Acq On : 5-7-2014 02:29:51 AM Operator: RR
Sample : M3183-P(0) Inst : INST. L
Misc : WQ-DPC-001-042414 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:45 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:42 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.88	2936652m	50.00000	ng
10) I	Cl6(161)	25.77	8676608	50.00000	ng
24) I	Cl5(96) #2	19.15 T	46555336m	50.00000	ng
33) I	Cl6(161) #2	25.53	105040865m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.76	2152447m	38.89100	ng
Spiked Amount	50.0000		Recovery	= 77.78%	
11) s	Cl6(152)	23.02	3533262	39.53130	ng
Spiked Amount	50.2000		Recovery	= 78.75%	
27) s	Cl3(34) #2	15.17	32418344m	36.69890	ng
Spiked Amount	50.0000		Recovery	= 73.40%	
34) s	Cl6(152) #2	22.23	51977156m	41.33876	ng
Spiked Amount	50.2000		Recovery	= 82.35%	
	Target Compounds				
2)	Cl2(8)	12.44	154606m	1.49102	ng
3)	Cl3(18)	14.45	682211m	15.88760	ng
5)	Cl3(28)	16.60	289099m	BelowCal	ng
6)	Cl4(52)	18.26	381402m	3.42397	ng
7)	Cl4(44)	19.15	119867m	BelowCal	ng
8)	Cl4(66)	21.13	133315m	BelowCal	ng
9)	Cl5(101)	22.21	74953	BelowCal	ng
12)	Cl5(118)	24.94	50175	BelowCal	ng
13)	Cl6(153)	25.96	49199m	BelowCal	ng
14)	Cl5(105)	0.00	0d	N.D.	ng
15)	Cl6(138)	0.00	0d	N.D.	ng
16)	Cl7(187)	0.00	0d	N.D.	ng
17)	Cl6(128)	0.00	0d	N.D.	ng
18)	Cl7(180)	0.00	0d	N.D.	ng
19)	Cl7(170)	0.00	0d	N.D.	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.86	2004436m	1.48625	ng
26)	Cl3(18) #2	13.71	16607263m	21.91045	ng
28)	Cl3(28) #2	16.40	10009826m	6.14670	ng
29)	Cl4(52) #2	17.81	5520397m	3.67443	ng
30)	Cl4(44) #2	18.60	2260791m	BelowCal	ng
31)	Cl4(66) #2	20.95	645009m	BelowCal	ng
32)	Cl5(101) #2	21.85	787015m	BelowCal	ng
35)	Cl5(118) #2	25.00	1625315m	BelowCal	ng
36)	Cl6(153) #2	25.72	1890599m	BelowCal	ng
37)	Cl5(105) #2	0.00	0d	N.D.	ng
38)	Cl6(138) #2	0.00	0d	N.D.	ng
39)	Cl7(187) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8550.D\ECD1A.CH Vial: 17
Signal #2 : I:\L\DATA\SL0418\L8550.D\ECD2B.CH
Acq On : 5-7-2014 02:29:51 AM Operator: RR
Sample : M3183-P(0) Inst : INST. L
Misc : WQ-DPC-001-042414 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:45 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:42 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	0.00	0d	N.D.	ng
41)	Cl7(180) #2	0.00	0d	N.D.	ng
42)	Cl7(170) #2	0.00	0d	N.D.	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8551.D\ECD1A.CH Vial: 18
Signal #2 : I:\L\DATA\SL0418\L8551.D\ECD2B.CH
Acq On : 5-7-2014 03:15:13 AM Operator: RR
Sample : M3184-P(0) Inst : INST. L
Misc : WQ-DPC-002-042414 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:48 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:45 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1)	I Cl5(96)	19.88	2681738m	50.00000	ng
10)	I Cl6(161)	25.77	7842003	50.00000	ng
24)	I Cl5(96) #2	19.15	62585655	50.00000	ng
33)	I Cl6(161) #2	25.54	102597137m	50.00000	ng
	System Monitoring Compounds				
4)	s Cl3(34)	15.77	1987612m	39.20926	ng
	Spiked Amount 50.0000		Recovery	= 78.42%	
11)	s Cl6(152)	23.02	3279596	40.25908	ng
	Spiked Amount 50.2000		Recovery	= 80.20%	
27)	s Cl3(34) #2	15.17	33799723m	29.68300	ng
	Spiked Amount 50.0000		Recovery	= 59.37%	
34)	s Cl6(152) #2	22.24	52483068m	42.30746	ng
	Spiked Amount 50.2000		Recovery	= 84.28%	
	Target Compounds				
2)	Cl2(8)	12.44	115960m	0.13946	ng
3)	Cl3(18)	14.45	571535m	14.48439	ng
5)	Cl3(28)	16.60	117538m	BelowCal	ng
6)	Cl4(52)	18.26	271565m	0.45930	ng
7)	Cl4(44)	19.16	84854m	BelowCal	ng
8)	Cl4(66)	21.14	48082m	BelowCal	ng
9)	Cl5(101)	22.22	36535m	BelowCal	ng
12)	Cl5(118)	0.00	0d	N.D.	ng
13)	Cl6(153)	25.96	20687m	BelowCal	ng
14)	Cl5(105)	0.00	0d	N.D.	ng
15)	Cl6(138)	0.00	0d	N.D.	ng
16)	Cl7(187)	0.00	0d	N.D.	ng
17)	Cl6(128)	0.00	0d	N.D.	ng
18)	Cl7(180)	0.00	0d	N.D.	ng
19)	Cl7(170)	0.00	0d	N.D.	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.86	1919964m	0.16191	ng
26)	Cl3(18) #2	13.71	12810060m	12.14731	ng
28)	Cl3(28) #2	16.40	9025504m	2.03651	ng
29)	Cl4(52) #2	17.81	4731995m	0.50820	ng
30)	Cl4(44) #2	18.61	1731897m	BelowCal	ng
31)	Cl4(66) #2	20.94	493775m	BelowCal	ng
32)	Cl5(101) #2	21.86	428351m	BelowCal	ng
35)	Cl5(118) #2	0.00	0d	N.D.	ng
36)	Cl6(153) #2	25.69	913544m	BelowCal	ng
37)	Cl5(105) #2	0.00	0d	N.D.	ng
38)	Cl6(138) #2	0.00	0d	N.D.	ng
39)	Cl7(187) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8551.D\ECD1A.CH Vial: 18
Signal #2 : I:\L\DATA\SL0418\L8551.D\ECD2B.CH
Acq On : 5-7-2014 03:15:13 AM Operator: RR
Sample : M3184-P(0) Inst : INST. L
Misc : WQ-DPC-002-042414 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:48 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:45 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	0.00	0d	N.D.	ng
41)	Cl7(180) #2	0.00	0d	N.D.	ng
42)	Cl7(170) #2	0.00	0d	N.D.	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8552.D\ECD1A.CH Vial: 19
Signal #2 : I:\L\DATA\SL0418\L8552.D\ECD2B.CH
Acq On : 5-7-2014 04:00:38 AM Operator: RR
Sample : M3185-P(0) Inst : INST. L
Misc : WQ-DPC-003-042414 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:52 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:48 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.88	2708044m	50.00000	ng
10) I	Cl6(161)	25.77	7994418	50.00000	ng
24) I	Cl5(96) #2	19.15	44108696m	50.00000	ng
33) I	Cl6(161) #2	25.54	98528721m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.77	2061124	39.97531	ng
Spiked Amount	50.0000		Recovery	= 79.95%	
11) s	Cl6(152)	23.02	3373127	40.50350	ng
Spiked Amount	50.2000		Recovery	= 80.68%	
27) s	Cl3(34) #2	15.17	32584099m	38.47499	ng
Spiked Amount	50.0000		Recovery	= 76.95%	
34) s	Cl6(152) #2	22.23	50481007m	42.35357	ng
Spiked Amount	50.2000		Recovery	= 84.37%	
	Target Compounds				
2)	Cl2(8)	12.45	73001	BelowCal	ng
3)	Cl3(18)	14.45	432133	10.28680	ng
5)	Cl3(28)	16.61	62908m	BelowCal	ng
6)	Cl4(52)	18.26	154500m	BelowCal	ng
7)	Cl4(44)	19.16	45817m	BelowCal	ng
8)	Cl4(66)	21.14	26157m	BelowCal	ng
9)	Cl5(101)	0.00	0d	N.D.	ng
12)	Cl5(118)	0.00	0d	N.D.	ng
13)	Cl6(153)	25.96	19115	BelowCal	ng
14)	Cl5(105)	0.00	0d	N.D.	ng
15)	Cl6(138)	0.00	0d	N.D.	ng
16)	Cl7(187)	0.00	0d	N.D.	ng
17)	Cl6(128)	0.00	0d	N.D.	ng
18)	Cl7(180)	0.00	0d	N.D.	ng
19)	Cl7(170)	0.00	0d	N.D.	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.86	779333m	BelowCal	ng
26)	Cl3(18) #2	13.71	9888451m	13.47238	ng
28)	Cl3(28) #2	16.39	6993248m	2.93559	ng
29)	Cl4(52) #2	17.81	2069696m	BelowCal	ng
30)	Cl4(44) #2	18.59	697068m	BelowCal	ng
31)	Cl4(66) #2	20.95	246021m	BelowCal	ng
32)	Cl5(101) #2	0.00	0d	N.D.	ng
35)	Cl5(118) #2	0.00	0d	N.D.	ng
36)	Cl6(153) #2	25.69	1108622m	BelowCal	ng
37)	Cl5(105) #2	0.00	0d	N.D.	ng
38)	Cl6(138) #2	0.00	0d	N.D.	ng
39)	Cl7(187) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8552.D\ECD1A.CH Vial: 19
Signal #2 : I:\L\DATA\SL0418\L8552.D\ECD2B.CH
Acq On : 5-7-2014 04:00:38 AM Operator: RR
Sample : M3185-P(0) Inst : INST. L
Misc : WQ-DPC-003-042414 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:52 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:48 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	0.00	0d	N.D.	ng
41)	Cl7(180) #2	0.00	0d	N.D.	ng
42)	Cl7(170) #2	0.00	0d	N.D.	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8553.D\ECD1A.CH Vial: 20
Signal #2 : I:\L\DATA\SL0418\L8553.D\ECD2B.CH
Acq On : 5-7-2014 04:45:44 AM Operator: RR
Sample : M3186-P(0) Inst : INST. L
Misc : WQ-DPC-004-042414 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:55 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:51 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	Cl5(96)	19.88	2515737m	50.00000	ng
10) I	Cl6(161)	25.77	7556409	50.00000	ng
24) I	Cl5(96) #2	19.15	43491461m	50.00000	ng
33) I	Cl6(161) #2	25.54	99640489m	50.00000	ng
	System Monitoring Compounds				
4) s	Cl3(34)	15.77	2017049	41.50530	ng
Spiked Amount	50.0000		Recovery	= 83.01%	
11) s	Cl6(152)	23.02	3279913	41.29085	ng
Spiked Amount	50.2000		Recovery	= 82.25%	
27) s	Cl3(34) #2	15.17	34323191m	40.53045	ng
Spiked Amount	50.0000		Recovery	= 81.06%	
34) s	Cl6(152) #2	22.23	47928831m	40.52570	ng
Spiked Amount	50.2000		Recovery	= 80.73%	
	Target Compounds				
2)	Cl2(8)	12.44	112299m	0.34514	ng
3)	Cl3(18)	14.45	776405	21.06049	ng
5)	Cl3(28)	16.59	92030m	BelowCal	ng
6)	Cl4(52)	18.26	303280m	2.50941	ng
7)	Cl4(44)	19.15	93168	BelowCal	ng
8)	Cl4(66)	21.15	45641m	BelowCal	ng
9)	Cl5(101)	0.00	0d	N.D.	ng
12)	Cl5(118)	0.00	0d	N.D.	ng
13)	Cl6(153)	25.97	18062	BelowCal	ng
14)	Cl5(105)	0.00	0d	N.D.	ng
15)	Cl6(138)	0.00	0d	N.D.	ng
16)	Cl7(187)	0.00	0d	N.D.	ng
17)	Cl6(128)	0.00	0d	N.D.	ng
18)	Cl7(180)	0.00	0d	N.D.	ng
19)	Cl7(170)	0.00	0d	N.D.	ng
20)	Cl8(195)	0.00	0d	N.D.	ng
21)	Cl9(206)	0.00	0d	N.D.	ng
22)	Cl10(209)	0.00	0d	N.D.	ng
25)	Cl2(8) #2	11.86	1450159m	0.45002	ng
26)	Cl3(18) #2	13.71	16391888m	23.11988	ng
28)	Cl3(28) #2	16.38	5516048m	0.88763	ng
29)	Cl4(52) #2	17.81	4597668m	2.76022	ng
30)	Cl4(44) #2	18.60	1357617m	BelowCal	ng
31)	Cl4(66) #2	20.95	343557m	BelowCal	ng
32)	Cl5(101) #2	0.00	0d	N.D.	ng
35)	Cl5(118) #2	0.00	0d	N.D.	ng
36)	Cl6(153) #2	25.70	1159019m	BelowCal	ng
37)	Cl5(105) #2	0.00	0d	N.D.	ng
38)	Cl6(138) #2	0.00	0d	N.D.	ng
39)	Cl7(187) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

Quantitation Report (QT Reviewed)

Signal #1 : I:\L\DATA\SL0418\L8553.D\ECD1A.CH Vial: 20
Signal #2 : I:\L\DATA\SL0418\L8553.D\ECD2B.CH
Acq On : 5-7-2014 04:45:44 AM Operator: RR
Sample : M3186-P(0) Inst : INST. L
Misc : WQ-DPC-004-042414 5-128 14-0176 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: May 07 10:32:55 2014 Quant Results File: ML0418A.RES

Quant Method : I:\L\DATA\ML0418A.M (Chemstation Integrator)
Title : NBH
Last Update : Wed May 07 10:32:51 2014
Response via : Initial Calibration
DataAcq Meth : 5-128S.M
RIS/SIS Mult : NA
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
40)	Cl6(128) #2	0.00	0d	N.D.	ng
41)	Cl7(180) #2	0.00	0d	N.D.	ng
42)	Cl7(170) #2	0.00	0d	N.D.	ng
43)	Cl8(195) #2	0.00	0d	N.D.	ng
44)	Cl9(206) #2	0.00	0d	N.D.	ng
45)	Cl10(209) #2	0.00	0d	N.D.	ng

(f)=RT Delta > 1/2 Window (m)=manual int.
(E) = > 2 * high standard response (e) = > 1 * high standard response
(T) = Match R.T. (TW) = Near Match R.T.
(*) = Not Verified to LIMS

G1701DA Version D.00.00.38 19-Nov-2001
Battelle Duxbury Enviroquant Macros 23-August-2008 Version: 5.0.4.8

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Appendix D

Data Validation Reports

(Provided on CD only)

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June 12, 2014

Battelle
397 Washington St.
Duxbury, MA 02332
Attn: Ms. Deirdre Dahlen

Subject: NBH 2014 Data Validation

Dear Ms. Dahlen,

Enclosed are the final validation reports for the fractions listed below. These sample delivery groups (SDGs) were received on May 28, 2014.

SDG #	**Fraction**
L1408516	TSS & Turbidity
14-0175, 14-0176	PCBs – Total and Dissolved

The data validation was performed at the Tier I Stage 1 and Tier 1 Stage 2A levels using the following guidelines, as applicable to each method:

- EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013
- EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010

Please feel free to contact me if you have any questions.

Sincerely,

Betsy Cutié
Battelle Columbus

Data Validation Report

Project Name: New Bedford Harbor 2014

Collection Date: April 22 - 24, 2014

Report Date: June 12, 2014

Matrix: Water

Parameters: TSS & Turbidity

Validation Level: Tier I Stage 1

Laboratory: Alpha Analytical

Sample Delivery Group (SDG): L1408516

Sample Identification:

WQ-TUR-001-042214 to WQ-TUR-004-042214
WQ-TSS-001-042214 to WQ-TSS-004-042214
WQ-TUR-001-042314 to WQ-TUR-004-042314
WQ-TSS-001-042314 toWQ-TSS-004-042314
WQ-TUR-001-042414 to WQ-TUR-004-042414
WQ-TSS-001-042414 to WQ-TSS-004-042414
WQ-TUR-003-042314-REP
WQ-TSS-003-042314-REP

Introduction

This data review covers 26 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were performed according to methods SM 2540D (TSS) and EPA 180.0 (Turbidity).

A qualification summary is provided at the end of this report which details any data validation qualifiers that were assigned.

An EPA Tier I Stage 1 review was performed on all of the samples.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

New Bedford Harbor 2014
TSS & Turbidity - Data Qualification Summary - SDG L1408516

SDG	Sample IDs	Compound	Flag	Reason
L1408516	WQ-TSS-003-042314 WQ-TSS-003-042314-REP	TSS	J (all detects) UJ (all non-detects)	RPD = 42.9% for field replicates WQ-TSS-003-042314 and WQ-TSS-003-042314-REP. Duplicate sample results were qualified.

Attachment 1
Tier I Stage 1 Data Validation Checklist

Project: New Bedford Harbor 2014

Laboratory: Alpha Analytical **Laboratory Batch:** L1408516

Analysis: TSS and Turbidity

Matrix: Surface Water **Date Sampled:** April 22-24, 2014

Reviewer: Betsy Cutie **Date Reviewed:** June 10, 2014

Data Element	Acceptance Criteria	Acceptable (Yes/No)/Comment
Total Suspended Solids		
Preservation and technical holding times	Ice, 4°C ± 2°C. Analyze within 7 days	Yes
Method Blank	1 per extraction batch Target analytes < ssRL or 5X rule	Yes
Laboratory Control Sample	1 per extraction batch; 85-115% R	Yes
Lab Duplicate	1 per 20 samples or per batch; whichever is more frequent RPD ≤ 20% for results >5x ssRL	Yes
Field Duplicates	RPD ≤ 30%	No; RPD = 42.9% for field duplicate pair WQ-TSS-003-042314 and WQ-TSS-003-042314-REP. Duplicate sample results were qualified.
Turbidity		
Preservation and technical holding times	Ice, 4°C ± 2°C. Analyze within 48 hours.	Yes
Method Blank	1 per extraction batch Target analytes < ssRL or 5X rule	Yes
Laboratory Control Sample	1 per extraction batch; 90-110 %R	Yes
Lab Duplicate	1 per 20 samples or per batch; whichever is more frequent RPD ≤ 20% for results >5x ssRL	Yes
Field Duplicates	RPD ≤ 30%	Yes

Attachment 1
Tier I Stage 1 Data Validation Checklist

QUALIFIER ACTIONS:

Preservation	Ice, 4°C ± 2°C. If temperature outside criteria, use professional judgment. TSS:analyze within 7 days; Turbidity: analyze within 48 hr HT exceeded, J detects/J non-detects
Laboratory Control Sample	%Rec<10%, J det/ R NDs LCS below range, J detects/ J NDs LCS above range, J detects/Accept NDs
Field Duplicates	RPD > 30% for results > 2 x RL, J detects/UJ NDs Use professional judgment for values < 2 x RL.
Laboratory Blanks	If contamination in matrix-matched blank(s) exists, Blank Action Level (BAL) = 5X Level in Blank. If a sample result is < RL and < BAL, negate (U) result at RL; if value > RL but < BAL, negate (U) result at level reported; if value > BAL, no Action.
Reporting Limits	Verify RLs are sample-specific and meet specifications in QAPP Worksheet #15. If result > upper calibration range, J result; if result < lowest calibration standard, J result. Verify all J data reported properly, if applicable. Note any non-detects at values > PALs.
Other	Data qualified J by lab stays as J; data qualified E by lab becomes J; data qualified U by lab stays U; data qualified P by lab becomes J; data qualified B by lab becomes either U or J based on actions taken for Method Blank (MB).

Qualifiers:

U = analyte is non-detect at the sample-specific RL and data is usable

UJ = non-detect is usable as an estimated value

J = result is usable as an estimated value

R = result is rejected due to severe QC exceedance and unusable

References:

Final Quality Assurance Project Plan Addendum 7.0, Environmental Monitoring, Sampling and Analysis, New Bedford harbor Superfund Site, New Bedford, MA, April 2014.

EPA-NE Environmental Data Review Supplement, Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013.

Data Validation Report

Project Name: New Bedford Harbor 2014

Collection Date: April 22 - 24, 2014

Report Date: June 10, 2014

Matrix: Water

Parameters: PCB Congeners (Total)

Validation Level: Tier I Stage 2A

Laboratory: Battelle

Sample Delivery Group (SDG): 14-0175

Sample Identification:

WQ-TPC-001-042214
WQ-TPC-002-042214
WQ-TPC-003-042214
WQ-TPC-004-042214
WQ-TPC-001-042314
WQ-TPC-002-042314
WQ-TPC-003-042314
WQ-TPC-003-042314- REP
WQ-TPC-003-042314-EB
WQ-TPC-004-042314
WQ-TPC-001-042414
WQ-TPC-002-042414
WQ-TPC-003-042414
WQ-TPC-004-042414

Introduction

This data review covers 14 water samples listed on the cover sheet including duplicate samples and field blanks. The analyses were performed according to EPA method 8081B/8082A (Total PCB Congeners).

A qualification summary is provided at the end of this report which details any data validation qualifiers that were assigned.

An EPA Tier I Stage 2A review was performed on all of the samples.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

New Bedford Harbor 2014
PCB Congeners (Total) - Data Qualification Summary - SDG 14-0175

No Sample Data Qualified in this SDG

Attachment 1
Tier I Stage 2A Data Validation Checklist

Project: New Bedford Harbor 2014

Laboratory: Battelle Duxbury **Laboratory Batch:** BDO-14-0175

Analysis: PCB Congeners (Total, Whole Water)

Reviewer: B. Cutie **Review Date:** 6/10/2014

Matrix: Surface Water **Collection Date:** 4/22-4/24, 2014

Data Element	Acceptance Criteria	Acceptable (Yes/No)/Comment
Preservation and technical holding times	Ice, 4°C ± 2°C, filter 0.45 µm at lab. Extract within 7 days and analyze within 40 days.	Yes/ All samples met preservation and HT requirements.
Equipment Blank	1 per sampling event Target analytes < ssRL or 5X rule	Yes/EB was non-detect for all compounds.
Procedural Blank	Results in the Procedural Blank are less than the ssRL (<ssRL) Samples must be greater than five times the blank concentration (>5xPB)	Yes/PB was non-detect for all compounds.
Laboratory Control Sample/ Laboratory Control Sample Duplicate	Recovery values 40-120%, Organics results less than 30% Relative Percent Difference (RPD)	Yes
Matrix Spike/Matrix Spike Duplicate	Organics 40-120%. Analyte concentration in MS must be greater than 5x reported background concentration. Organics results less than 30% Relative Percent Difference (RPD). Spike must be >5x background concentration	Yes
Internal Standards	Per sample, -50% to 100% of area counts of initial calibration standard L3	Yes
Field Duplicates	Organics results less than 30% Relative Percent Difference (RPD). Concentrations must be >2X the MDL	Yes/Duplicate samples IDs WQ-TPC-003-042314 and WQ-TPC-003-042314-REP
Surrogates	Recoveries between 40% and 120%.	Yes
Instrument Calibration	R-squared greater than or equal to 0.995.	Yes

Attachment 1
Tier I Stage 2A Data Validation Checklist

Data Element	Acceptance Criteria	Acceptable (Yes/No)/Comment
Independent Calibration Check Solution	Individual percent difference less than or equal to 20%. Mean Percent Difference less than or equal to 20%.	Yes
Continuing Calibration Verification	Individual percent difference less than or equal to 20%. Mean Percent Difference less than or equal to 15%.	Yes

Attachment 1
Tier I Stage 2A Data Validation Checklist

QUALIFIER ACTIONS:

Preservation & Holding Time	Ice, 4°C ± 2°C,filter 0.45 µm at lab. If temperature outside criteria, use professional judgment. HT: Extract within 7d Analyze within 40 days, HT > 40 days, J detects/J non-detects
Surrogates	% Rec > 120%, J detects/Accept NDs 10% ≤ % Recovery < 40%, J: detects/J NDs Recovery < 10%, J detects/R NDs.
Laboratory Control Sample/ Laboratory Control Sample Duplicate	%Rec<10%, J det/ R NDs 10% <%Rec<40%, J detects/ J NDs %Rec >120%, J detects/Accept NDs RPD > 30%, J detects/UJ NDs
Matrix Spike/Matrix Spike Duplicate	%Rec<10%, J detects/ R NDs 10% <%Rec<40%, J detects/ J NDs %Rec >120%, J detects/accept NDs- unspiked sample only RPD > 30%, J detects/UJ NDs
Field Duplicates	RPD > 30% for pairs with both results > 2 x RL, J detects/UJ NDs Use professional judgment for values < 2 x RL. Both samples must be detects.
Blanks	If contamination in matrix-matched blank(s) exists, Blank Action Level (BAL) = 5X Level in Blank. If a sample result is < RL and < BAL , negate (U) result at RL; if value > RL but < BAL, negate (U) result at level reported; if value > BAL, no Action.
Reporting Limits	Verify RLs are sample-specific and meet specifications in QAPP Worksheet #15. If result > upper calibration range, J result; if result < lowest calibration standard, J result. Verify all J data reported properly, if applicable. Note any non-detects at values > PALs.
Other	Data qualified J by lab stays as J; data qualified U by lab stays U; data qualified P by lab stays as P; data qualified N or n by lab becomes either U or J based on actions taken for the PB.

Qualifiers:

U = analyte is non-detect at the sample-specific RL and data is usable.

UJ = non-detect is usable as an estimated value

J = result is usable as an estimated value

R = result is rejected due to severe QC exceedance and unusable

References:

Final Quality Assurance Project Plan Addendum 7.0, Environmental Monitoring, Sampling and Analysis, New Bedford Harbor Superfund Site, New Bedford, MA, April 2014.

EPA-NE Environmental Data Review Supplement, Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013.

Data Validation Report

Project Name: New Bedford Harbor 2014

Collection Date: April 22 - 24, 2014

Report Date: June 12, 2014

Matrix: Water

Parameters: PCB Congeners (Dissolved)

Validation Level: Tier I Stage 2A

Laboratory: Battelle

Sample Delivery Group (SDG): 14-0176

Sample Identification:

WQ-DPC-001-042214
WQ-DPC-002-042214
WQ-DPC-003-042214
WQ-DPC-004-042214
WQ-DPC-001-042314
WQ-DPC-002-042314
WQ-DPC-003-042314
WQ-DPC-003-042314-REP
WQ-DPC-003-042314-EB
WQ-DPC-004-042314
WQ-DPC-001-042414
WQ-DPC-002-042414
WQ-DPC-003-042414
WQ-DPC-004-042414

Introduction

This data review covers 14 water samples listed on the cover sheet including duplicate samples and field blanks. The analyses were performed according to EPA method 8081B/8082A (Dissolved PCB Congeners).

A qualification summary is provided at the end of this report which details any data validation qualifiers that were assigned.

An EPA Tier I Stage 2A review was performed on all of the samples.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

New Bedford Harbor 2014
PCB Congeners (Dissolved) - Data Qualification Summary - SDG 14-0176

SDG	Sample IDs	Compound	Flag	Reason
14-0176	WQ-DPC-003-042314 WQ-DPC-003-042314-REP	PCB 52	J (all detects) UJ (all non-detects)	Duplicate sample IDs WQ-DPC-003-042314 and WQ-DPC-003-042314-REP. RSD= 57.9% (PCB 52) with both results >2X the RL. PCB 52 results for duplicate samples were qualified.

Attachment 1
Tier I Stage 2A Data Validation Checklist

Laboratory: Battelle Duxbury **Laboratory Batch:** BDO-14-0176

Analysis: PCB Congeners (Dissolved)

Reviewer: B. Cutie **Review Date:** 6/10/2014

Matrix: Surface Water **Collection Date:** 4/22-4/24,2014

Data Element	Acceptance Criteria	Acceptable (Yes/No)/Comment
Preservation and technical holding times	Ice, 4°C ± 2°C, filter 0.45 µm at lab. Extract within 7 days and analyze within 40 days	Yes/ All samples met preservation and HT requirements.
Equipment Blank	1 per sampling event Target analytes < ssRL or 5X rule	Yes/EB was non-detect for all compounds.
Procedural Blank	Results in the Procedural Blank are less than the ssRL (<ssRL) Samples must be greater than five times the blank concentration (>5xPB)	Yes/PB was non-detect for all compounds.
Laboratory Control Sample/ Laboratory Control Sample Duplicate	Recovery values 40-120%, Organics results less than 30% Relative Percent Difference (RPD)	Yes
Matrix Spike/Matrix Spike Duplicate	Organics 40-120%. Analyte concentration in MS must be greater than 5x reported background concentration. Organics results less than 30% Relative Percent Difference (RPD). Spike must be >5x background concentration	Yes
Internal Standards	Per sample, -50% to 100% of area counts of initial calibration standard L3	Yes
Field Duplicates	Organics results less than 30% Relative Percent Difference (RPD). Concentrations must be >2X the ssRL	No; Duplicate sample IDs WQ-DPC-003-042314 and WQ-DPC-003-042314-REP. RSD= 57.9% (PCB 52) with both results >2X the RL. PCB 52 results for duplicate samples were qualified.
Surrogate Compound Recovery	Recovery results between 40% and 120%.	Yes

Attachment 1
Tier I Stage 2A Data Validation Checklist

Data Element	Acceptance Criteria	Acceptable (Yes/No)/Comment
Instrument Calibration	R-squared greater than or equal to 0.995.	Yes
Independent Calibration Check Solution	Individual PD less than or equal to 20%. Mean Percent Difference less than or equal to 20%.	Yes
Continuing Calibration Verification	Individual PD less than or equal to 20%. Mean Percent Difference less than or equal to 15%.	Yes

Attachment 1
Tier I Stage 2A Data Validation Checklist

QUALIFIER ACTIONS:

Preservation & Holding Time	Ice, 4°C ± 2°C,filter 0.45 µm at lab. If temperature outside criteria, use professional judgment. HT: Extract within 7d Analyze within 40 days, HT > 40 days, J detects/J non-detects
Surrogates	% Rec > 120%, J detects/Accept NDs 10% ≤ % Recovery < 40%, J: detects/J NDs Recovery < 10%, J detects/R NDs.
Laboratory Control Sample/ Laboratory Control Sample Duplicate	%Rec<10%, J det/ R NDs 10% <%Rec<40%, J detects/ J NDs %Rec >120%, J detects/Accept NDs RPD > 30%, J detects/UJ NDs
Matrix Spike/Matrix Spike Duplicate	%Rec<10%, J detects/ R NDs 10% <%Rec<40%, J detects/ J NDs %Rec >120%, J detects/accept NDs- unspiked sample only RPD > 30%, J detects/UJ NDs
Field Duplicates	RPD > 30% for pairs with both results > 2 x RL, J detects/UJ NDs Use professional judgment for values < 2 x RL. Both samples must be detects.
Blanks	If contamination in matrix-matched blank(s) exists, Blank Action Level (BAL) = 5X Level in Blank. If a sample result is < RL and < BAL , negate (U) result at RL; if value > RL but < BAL, negate (U) result at level reported; if value > BAL, no Action.
RLs	Verify RLs are sample-specific and meet specifications in QAPP Worksheet #15. If result > upper calibration range, J result; if result < lowest calibration standard, J result. Verify all J data reported properly, if applicable. Note any non-detects at values > PALs.
Other	Data qualified J by lab stays as J; data qualified U by lab stays U; data qualified P by lab stays as P; data qualified N or n by lab becomes either U or J based on actions taken for the PB.

Qualifiers:

U = analyte is non-detect at the sample-specific RL and data is usable.

UJ = non-detect is usable as an estimated value

J = result is usable as an estimated value

R = result is rejected due to severe QC exceedance and unusable

References:

Final Quality Assurance Project Plan Addendum 7.0, Environmental Monitoring, Sampling and Analysis, New Bedford Harbor Superfund Site, New Bedford, MA, April 2014.

EPA-NE Environmental Data Review Supplement, Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013.