Monitoring Report for Seafood Harvested in 2016 from the New Bedford Harbor Superfund Site

by

Massachusetts Department of Environmental Protection

and

Massachusetts Division of Marine Fisheries

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1. Introduction

This report documents the levels of PCBs (polychlorinated biphenyls) measured in edible seafood species caught in New Bedford Harbor and surrounding Buzzards Bay in southeastern Massachusetts in 2016. This seafood monitoring program is part of the ongoing PCB cleanup program for the New Bedford Harbor (NBH) Superfund Site, and was a collaborative effort involving the MA Department of Marine Fisheries (DMF), the MA Department of Environmental Protection, (MassDEP), and the U.S. Environmental Protection Agency Region I (EPA).

Due to the identification of high PCB levels in area seafood, the MA Department of Public Health in 1979 promulgated regulations restricting seafood consumption in three closure areas in and around NBH as shown on Figure 1 (MADPH, 1979). NBH was subsequently listed as a Superfund site in 1983. Per the 1998 Record of Decision (ROD) (EPA, 1998) for the Site, as modified by five Explanation of Significant Differences (ESDs), approximately 900,000 cubic yards (cy) of PCB-contaminated sediments are to be removed. Based on the 2013 supplemental Consent Decree settlement, the cleanup is estimated to take another five to seven years to complete. Consistent with the 1998 ROD, this seafood monitoring program will aid in the evaluation of the overall effectiveness of the harbor cleanup, as well as assist in the implementation of institutional controls and seafood restrictions.

2. Seafood Monitoring Program Design

Based on previous investigations and risk assessments performed for the NBH Site, a variety of species were selected for this monitoring program that are considered locally caught seafood; are generally available for field collection; and which bracket potential worse case tissue levels (MassDEP, 2016a). In previous sampling rounds, these species include lobster (*Homarus americanus*), blue crabs (*Carcinus maenas*), quahog (i.e., hard shelled clam, *Mercenaria mercenaria*), alewife (*Alosa pseudoharengus*), American eel (*Anguilla rostrata*), black sea bass (*Centropristes striatus*), winter flounder (*Pseudopleuronectes americanus*), and scup (*Stenotomus chrysops).* The goal of this seafood monitoring program is to acquire annual collections of these species in sufficient numbers from all three closure areas to enable statistical comparisons between them, but with the understanding that some species may not necessarily be caught in sufficient numbers every year.

To meet this goal, the monitoring design calls for five composite samples for each species from each of the three closure areas. Based on previous site sampling experience, modifications have been made to the original sampling approach. The specie collected for 2016 were pre-spawn quahog and conch.

Each composite sample consists of legally harvestable organisms. The quahog composited sample generally consists of 12 to 13 organisms per location. The conch composited sample consists of 10 to 12 organisms per location in Area II and 4 to 7 organisms in Area III.

In addition to comparing the results of this monitoring to past and future seafood monitoring results, the results of this seafood monitoring program will be compared to the current U.S. Food and Drug Administration's (FDA's) criteria for PCBs in commercial seafood of 2 parts per million (ppm). It was exceedances of the FDA criteria in NBH seafood which prompted promulgation of the state's seafood closure areas in 1979 (the FDA criteria at that time was 5 ppm). In addition to comparisons to the current FDA level, and as explained in the 1998 ROD, EPA will compare the results of the seafood monitoring program to a risk-based site-specific threshold of 0.02 ppm PCBs. Consistent with CERCLA and the NCP, the selected remedy for the Site (EPA, 1998, Section X) uses a health-based seafood criteria of 0.02 ppm PCBs based on local patterns of seafood consumption which involve more frequent consumption of local PCB-contaminated seafood than that used by the FDA standard.

3. 2016 Field Collection

The DMF on-site field sampling program included the collection of quahog and conch. The Sampling Report for species collected in 2016 by DMF is in Appendix C (MA DMF, 2017).

The quahogs were collected pre-spawn in May (Figure 2) using a rake and diver. The conchs were collected in December (Figure 3) using conch pots.

Complete collection information including the dates fished, identification information, species, station identification, latitude and longitude, and collection method are included on the Field Collection Forms in Appendix C. All samples were delivered frozen to Alpha Woods Hole Labs (Alpha) in Mansfield, MA for analysis.

4. Analytical Chemistry

The seafood samples were analyzed for 136 PCB congeners by GC/MS-SIM (gas chromatography/mass spectrometry-selective ion monitoring) based on EPA Methods 680 and 8270D. This approach was used to allow comparisons with previous site data. The 136 congeners measured included the eighteen NOAA (National Oceanic and Atmospheric Administration) list congeners and the twelve WHO '98 (1998 World Health Organization) list of dioxin-like congeners. Two congeners, BZ #105 and #118, appear on both lists. The NOAA congener list was used by the MA DMF in its analysis of Area III lobsters from 1988 - 1998, while Aroclors had been used previous to this. The NOAA list typically represents approximately 45% of the total PCB in marine tissue (NOAA, 1993).

The congeners quantitated in this effort are listed in the New Bedford Harbor Superfund Site Quality Assurance Project Plan Revision 12 (MassDEP, 2016c). The WHO '98 congeners were included to enable the evaluation of risks to human health due to the presence of any dioxin-like PCB congeners, if deemed necessary.

Tissue from the collected specimens was filleted, sub-sampled and/or composited as necessary for sample homogenization, extraction and analysis. The first step in the analytical process for the quahog samples was the compositing of thirteen individual samples from each

location; these were combined to form one composite sample per location. For each group, approximately five grams of wet sample tissue was homogenized using a tissumizer. Samples were then extracted using EPA method 3570 Microscale Solvent Extraction (MSE) techniques (spin extraction with acetone/methylene chloride in a sealed vessel).

The extract was then cleaned up to remove the lipid portion and separate the PCB Analytes from the lipid. Following sample cleanup, extracts were dried and concentrated using the Kuderna-Danish (K-D) method, brought up to final volume and analyzed. Extract cleanup was performed using Gel Permeation Chromatography (GPC) and Sulfuric Acid Cleanup. Silica Gel Cleanup was also employed as appropriate, based on the sample extracts.

Sample analysis using GC/MS-SIM allowed identification and quantitation of congeners using selected PCB congeners from BZ1 to BZ209. The identification of the specific congeners was accomplished by comparing their mass spectra with the electron impact spectra of the calibration standards. Congener concentrations were determined using mean relative response factors from a multi-level calibration curve. Response factors for congeners were determined relative to internal standard technique. A multi-point curve was used for the individual congeners to demonstrate the linear range of the instrument. Continuing calibrations assured linearity remained for the duration of the analysis. Laboratory SOPs are available in the Quality Assurance Project Plan Revision 12 (MassDEP, 2016b) should further details on chromatographic conditions, quality control criteria, and other elements of the analysis be needed. While lipid content was reported, the wet weight PCB concentrations reported herein are not lipid normalized.

The data validation summary for the laboratory analysis is presented in Appendix B (AMEC, 2017).

5. Results and Discussion

As with previous studies of sediments, water column, seafood, and air at the NBH Site, the current data set demonstrates a generally decreasing trend (north to south) of PCB levels in locally caught seafood. In other words, tissue PCB levels decrease proportionally with the distance from the primary source of PCBs to the upper harbor (the Aerovox facility). Figures 4 and 5 graphically summarize the current data, and Tables 1 and 2 tabulates the totals and averages of the congener sample results.

PCBs are a group of similar organic molecules featuring a "figure-eight" structure of two bonded benzene rings with chlorine atoms attached at up to ten different attachment sites. Theoretically, up to 209 different PCB congeners (or molecular variations) are possible, yet only about 120 of these are found in the natural environment. Furthermore, NOAA has demonstrated that 18 specific congeners are the most pervasive and generally make up almost half of the PCB mass in marine tissues. In addition, WHO considers the twelve specific dioxin-like congeners to present the greatest risk to human health. As noted above in Section 4, two congeners, BZ #105 and BZ #118, are included in both the NOAA

3

and the WHO congener sets.

Overall, the current data set indicate continued levels of PCBs in NBH area seafood above the 1998 ROD's site-specific target level of 0.02 ppm.

It should be noted that these PCB levels do not apply to seafood caught by the harbor's commercial fishing fleet, as this seafood is caught significantly further offshore than the three PCB closure areas at the New Bedford Harbor Superfund Site. However, these results do indicate the need to continue the outreach program to inform and educate the local communities and recreational sport fishermen about the fishing bans.

The seafood sampling program has been on-going since 2002, the previous year's reports can be found at the EPA's web site at www.epa.gov/new-bedford-harbor under "Technical Documents".

6. References

AMEC, 2017. Data Validation Summary, MassDEP, NBH Superfund Site, Seafood Contaminant Survey Monitoring 2016 Sampling, May 8, 2017

EPA, 1998. Record of Decision for the Upper and Lower Harbor Operable Unit, New Bedford Harbor Superfund Site, New Bedford, Massachusetts. U.S. EPA - Region I New England. September 1998.

MADPH, 1979. Massachusetts Department of Public Health Regulations 105 CMR 260.000. 1979

MassDEP, 2016a. Seafood Monitoring and Field Sampling Work Plan, New Bedford Harbor Superfund Site, Massachusetts Department of Environmental Protection. May 2016

MassDEP, 2016b. Quality Assurance Project Plan Revision 12, New Bedford Harbor Superfund Site, New Bedford, Massachusetts. Massachusetts Department of Environmental Protection. June 2016.

MADMF, 2017. Seafood Monitoring - Field Sampling Activities for the New Bedford Harbor Superfund Site 2016 Annual Report, Vin Malkoski, Senior Marine Fisheries Biologist, Massachusetts Division of Marine Fisheries, June 2017

NOAA, 1993. NOAA Technical Memorandum NOA ORCA 71. National Status and Trends Program for Marine Environmental Quality. Sampling and Analytical Methods of the National Status and Trends Program National Benthic Surveillance and Mussel Watch Projects, 1984-1992. Volume 1. Silver Springs, Maryland. July 1993

FIGURES

Figure 1 Fish Closure Areas I to III
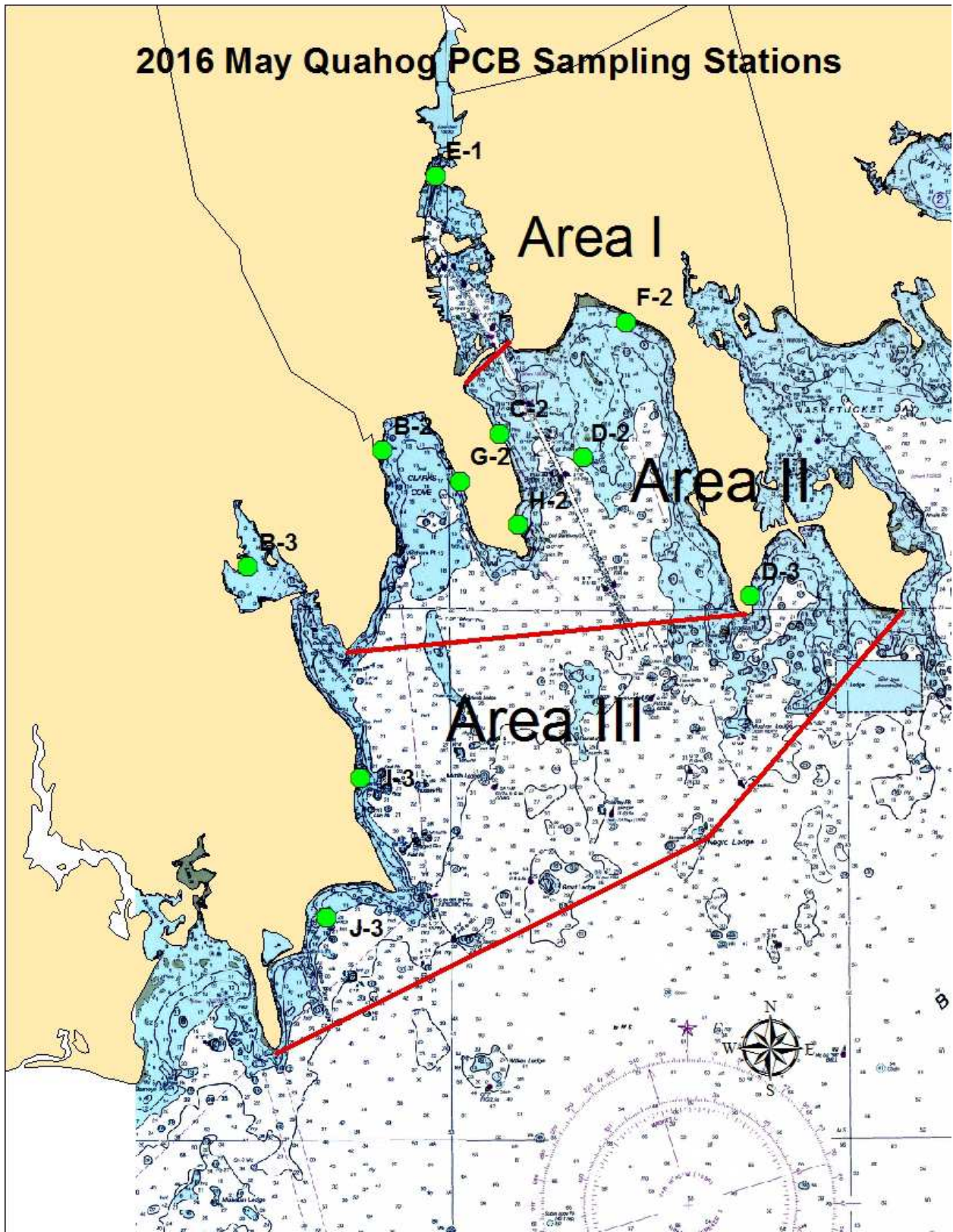
Figure 2 Quahog (Pre-spawn) Sample Locations Areas I to III
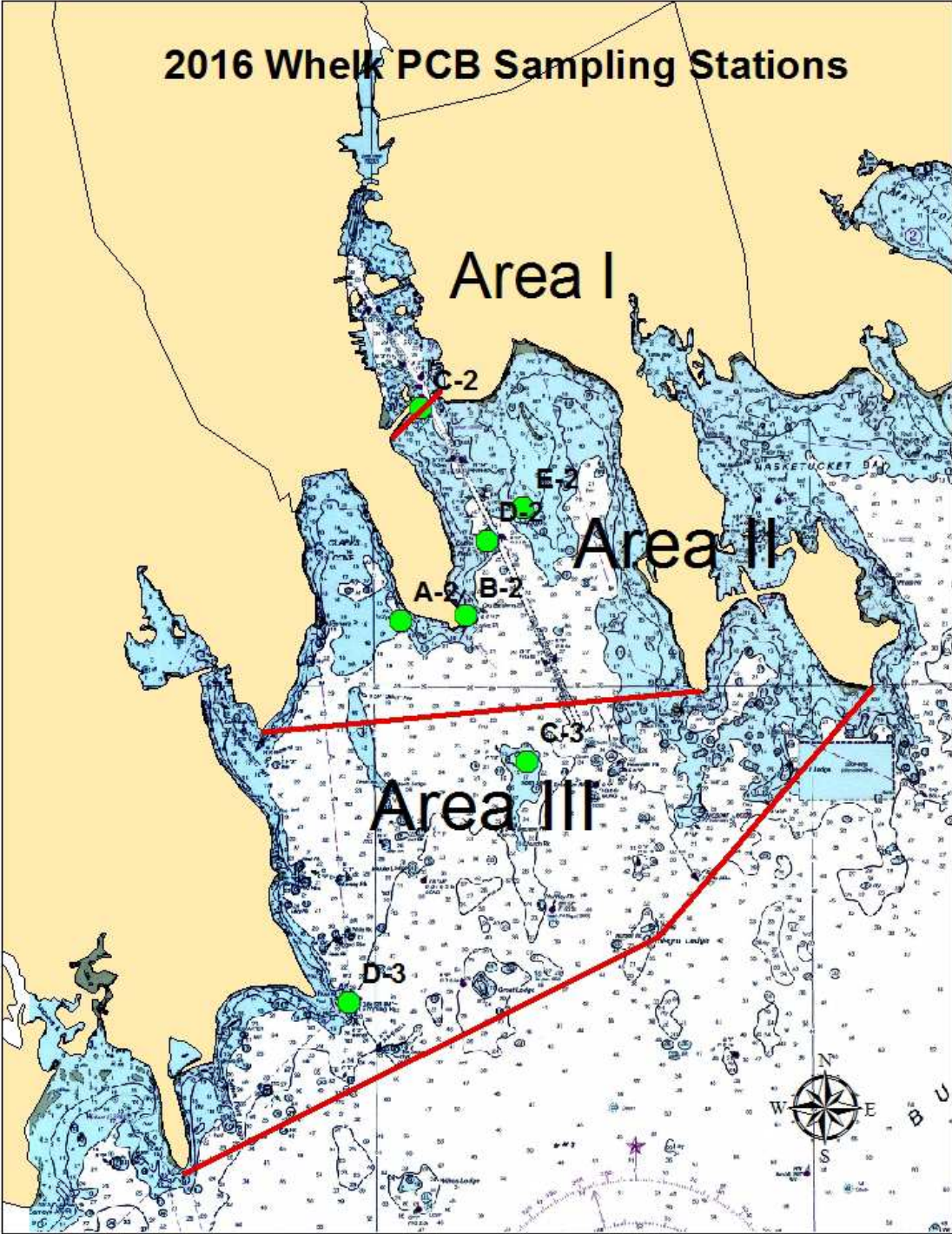
Figure 3 Conch Sample Locations Areas II and III
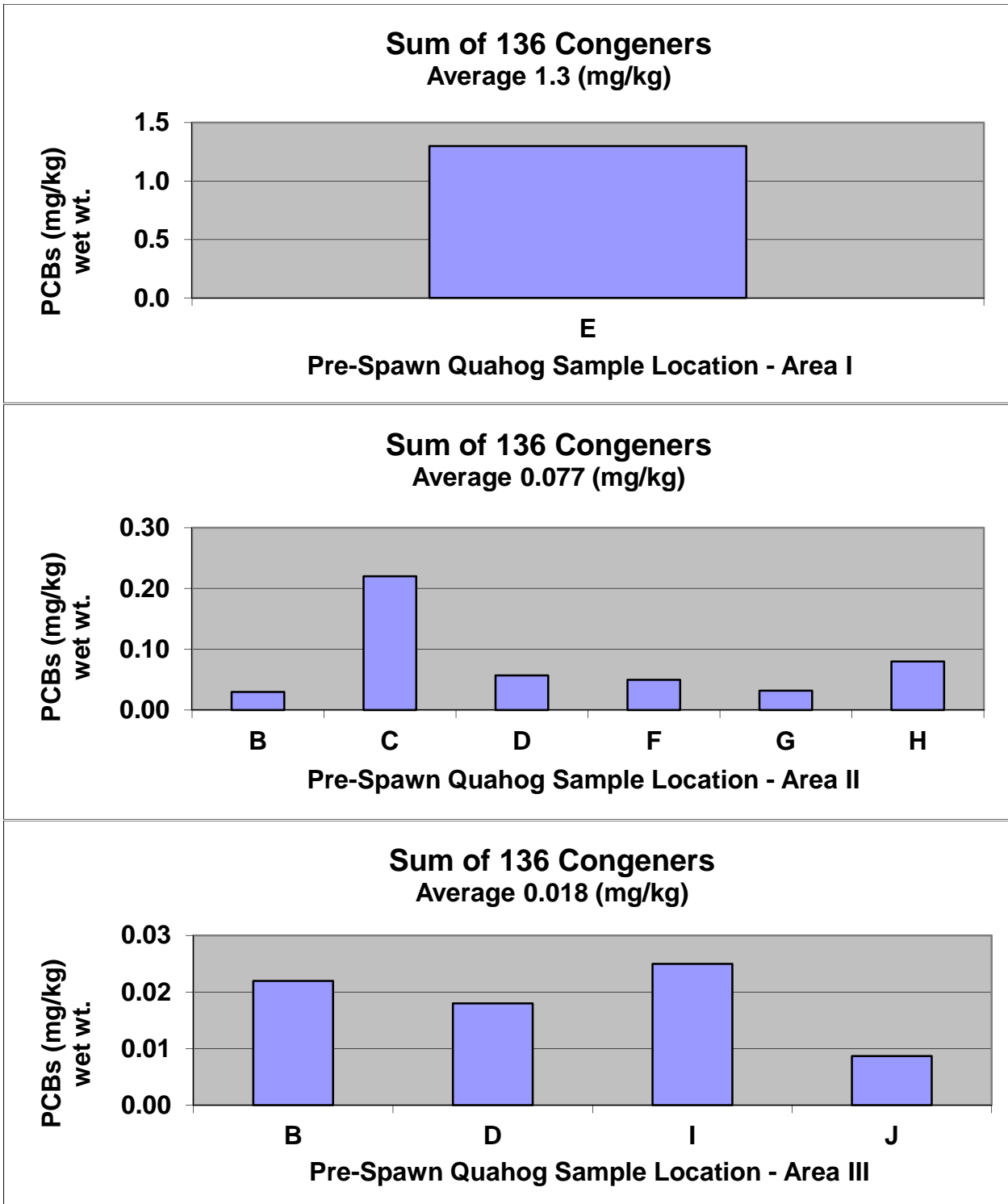
Figure 4 PCBs Concentrations in Pre-Spawn Quahog Areas I to III - 2016

Note: The PCBs concentrations are the detected values as reported on Column 4 of Table 1, and do not included the ½ detection limits.

Sum of 136 Congeners
Average 0.92 (mg/kg)

Conch Sample Location - Area II

Sum of 136 Congeners
Average 0.3 (mg/kg)

Conch Sample Location - Area III
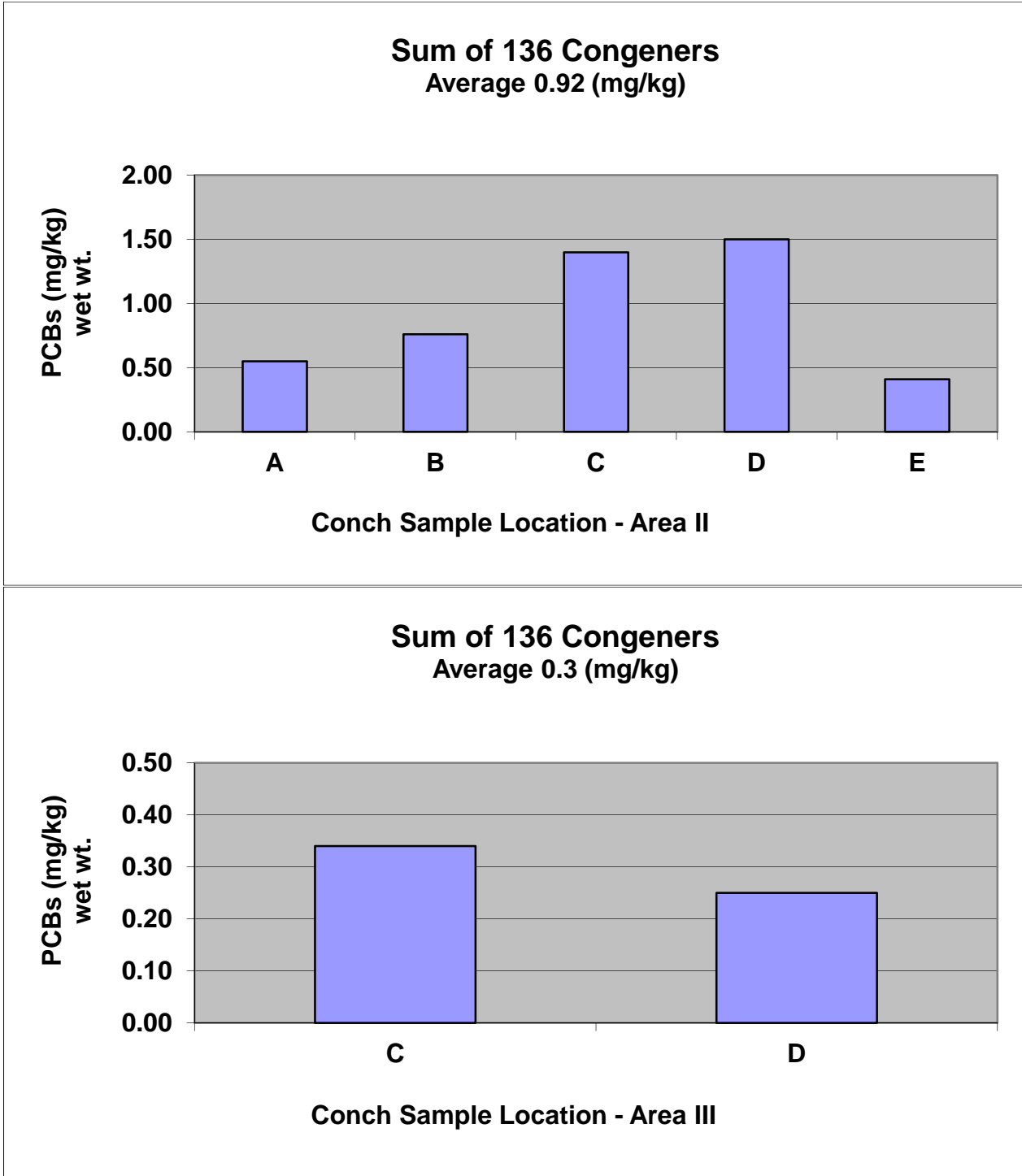
Figure 5 PCBs Concentrations in Conch Areas II and III - 2016

Note: The PCBs concentrations are the detected values as reported on Column 4 of Table 1, and do not included the ½ detection limits.

TABLES

Table 1 Summary of Sample Data for Pre-Spawn Quahogs Areas 1, 2, 3 - 2016

Parameter	Lipids	Total PCB Congeners[1]	Total PCB Congeners Hits[2]	Total NOAA Congeners[3]	Total WHO Congeners[4]	Total WHO+NOAA Congeners[5]
Units	PERCENT	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Station						
1E	0.38	1.3 J4	1.3	0.54 J4	0.060 J3	0.55 J4
2B	0.24	0.050 J2	0.030	0.017 J2	0.0044 J1	0.019 J2
2C	0.23	0.23 J3	0.22	0.093 J4	0.015 J3	0.096 J3
2D	0.19	0.077 J2	0.057	0.028 J3	0.0055 J2	0.030 J2
2F	0.21	0.069 J2	0.050	0.026 J3	0.0052 J2	0.028 J2
2G	0.20	0.052 J2	0.032	0.018 J2	0.0048 J2	0.020 J2
2H	0.21	0.094 J2	0.080	0.037 J3	0.0071 J2	0.039 J3
Average	0.21	0.095	0.077	0.036	0.0071	0.039
3B	0.29	0.046 J1	0.022	0.014 J2	0.0043 J1	0.016 J2
3D	0.34	0.041 J1	0.018	0.012 J2	0.0039 J1	0.014 J2
3I	0.36	0.048 J2	0.025	0.015 J2	0.0044 J1	0.017 J2
3J	0.22	0.036 J1	0.0087	0.0090 J2	0.0035 J1	0.011 J2
Average	0.30	0.043	0.018	0.013 J2	0.0040 J1	0.015 J2

Table 2 Summary of Sample Data for Conch Areas 2 & 3 - 2016

Parameter	Lipids	Total PCB Congeners[1]	Total PCB Congeners Hits[2]	Total NOAA Congeners[3]	Total WHO Congeners[4]	Total WHO+NOAA Congeners[5]
Units	PERCENT	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Station						
2A	0.99	0.56 J3	0.55	0.31 J4	0.071 J3	0.32 J4
2B	1.2	0.77 J3	0.76	0.41 J4	0.10 J4	0.43 J4
2C	0.65	1.4 J4	1.4	0.69 J4	0.15 J4	0.71 J4
2D	0.88	1.5 J4	1.5	0.73 J4	0.12 J4	0.74 J4
2E	0.76	0.42 J3	0.41	0.21 J4	0.037 J3	0.22 J3
Average	0.88	0.93	0.92	0.47 J4	0.10	0.48
3C	0.85	0.35 J3	0.34	0.22 J4	0.054 J3	0.22 J4
3D	0.89	0.27 J3	0.25	0.16 J4	0.036 J3	0.17 J3
Average	0.87	0.31	0.30	0.19 J4	0.045 J3	0.20

Notes:

[1] = summation of 136 PCB congener results (1/2 sample quantitation limit [SQL] used for non-detected results)

[2] = summation of detected 136 PCB congeners

[3] = summation of 18 NOAA PCB congener results (1/2 sample quantitation limit [SQL] used for non-detected results)

[4] = summation of 12 WHO PCB congener results (1/2 sample quantitation limit [SQL] used for non-detected results)

[5] = summation of 18 NOAA & 12 WHO PCB congener results (1/2 sample quantitation limit [SQL] used for non-detected results);

    duplicative congeners (BZ# 105, #118, #167/128) subtracted from total for one data set

** = Fork Length of fish in centimeters (cm) is shown in the Station Identifier

U = not detected; value represents SQL

J = estimated

J1 = concentration of detected congeners contributes < 50% of total congener result

J2 = concentration of detected congeners contributes > 50% of total congener result

J3 = concentration of detected congeners contributes > 90% of total congener result

J4 = concentration of detected congeners contributes > 99% of total congener result

MG/KG = milligrams per kilogram wet weight

Prepared by: BJS 9/14/2016

Checked by: JAR 9/21/2016

Revised by: KMS 4/19/2017

Revisions Checked by: BJS 4/19/2017

Appendices

Appendix A

Laboratory Data On-Site

TABLE 1a - SUMMARY OF SAMPLE DATA FOR PRE-SPAWN QUAHOG (MG/KG WET WEIGHT) AREA 1 - 2016

	Sample#	NBH16-SF-E-1
	Species	Quahogs
	Species Type	Meat
	Area	1
	Station	Station E
	Sample Date	5/25/2016
Parameter	**Units**	
Lipids	PERCENT	0.38
Total PCB Congeners[1]	MG/KG	1.3 J4
Total PCB Congeners Hits[2]	MG/KG	1.3
Total NOAA Congeners[3]	MG/KG	0.54 J4
Total WHO Congeners[4]	MG/KG	0.060 J3
Total NOAA / WHO Combined[5]	MG/KG	0.55 J4
Cl1-BZ#1	MG/KG	0.00047 U
Cl1-BZ#3	MG/KG	0.00047 U
Cl2-BZ#4/#10	MG/KG	0.0026
Cl2-BZ#5/#8	MG/KG	0.0055
Cl2-BZ#6	MG/KG	0.0072
Cl2-BZ#7	MG/KG	0.00070 J
Cl2-BZ#12/#13	MG/KG	0.0056
Cl2-BZ#15	MG/KG	0.0049
Cl3-BZ#16/#32	MG/KG	0.016
Cl3-BZ#17	MG/KG	0.014
Cl3-BZ#18	MG/KG	0.033
Cl3-BZ#19	MG/KG	0.0025
Cl3-BZ#21/#33	MG/KG	0.0058
Cl3-BZ#22	MG/KG	0.0086
Cl3-BZ#24/#27	MG/KG	0.0061
Cl3-BZ#25	MG/KG	0.037
Cl3-BZ#26	MG/KG	0.066 J
Cl3-BZ#28/#31	MG/KG	0.13 J
Cl3-BZ#29	MG/KG	0.00047 U
Cl3-BZ#37	MG/KG	0.0035
Cl4-BZ#40	MG/KG	0.0055 J
Cl4-BZ#41/#71	MG/KG	0.028
Cl4-BZ#42	MG/KG	0.011
Cl4-BZ#43/#49	MG/KG	0.11
Cl4-BZ#44	MG/KG	0.030
Cl4-BZ#45	MG/KG	0.0029
Cl4-BZ#46	MG/KG	0.0042 J
Cl4-BZ#47/#48	MG/KG	0.043
Cl4-BZ#50	MG/KG	0.00028 J
Cl4-BZ#51	MG/KG	0.0038
Cl4-BZ#52	MG/KG	0.12
Cl4-BZ#53	MG/KG	0.0097
Cl4-BZ#54	MG/KG	0.00047 U
Cl4-BZ#56/#60	MG/KG	0.011
Cl4-BZ#63	MG/KG	0.0028
Cl4-BZ#64	MG/KG	0.018
Cl4-BZ#66	MG/KG	0.024
Cl4-BZ#70	MG/KG	0.020
Cl4-BZ#74	MG/KG	0.019
Cl4-BZ#76	MG/KG	0.00047 U
Cl4-BZ#77	MG/KG	0.0027

TABLE 1a - SUMMARY OF SAMPLE DATA FOR PRE-SPAWN QUAHOG (MG/KG WET WEIGHT) AREA 1 - 2016

	Sample#	NBH16-SF-E-1
	Species	Quahogs
	Species Type	Meat
	Area	1
	Station	Station E
	Sample Date	5/25/2016
Parameter	**Units**	
Cl4-BZ#81	MG/KG	0.00040 J
Cl5-BZ#82	MG/KG	0.0017
Cl5-BZ#83	MG/KG	0.0030 J
Cl5-BZ#85	MG/KG	0.0037
Cl5-BZ#87	MG/KG	0.011 J
Cl5-BZ#89	MG/KG	0.00047 U
Cl5-BZ#91	MG/KG	0.016
Cl5-BZ#92	MG/KG	0.015
Cl5-BZ#95	MG/KG	0.030 J
Cl5-BZ#97	MG/KG	0.012
Cl5-BZ#99	MG/KG	0.048
Cl5-BZ#100	MG/KG	0.0021
Cl5-BZ#101/#84	MG/KG	0.063
Cl5-BZ#104	MG/KG	0.00047 U
Cl5-BZ#105	MG/KG	0.0074
Cl5-BZ#107	MG/KG	0.0045 J
Cl5-BZ#110	MG/KG	0.050
Cl5-BZ#114	MG/KG	0.00087
Cl5-BZ#118	MG/KG	0.037 J
Cl5-BZ#119	MG/KG	0.0065
Cl5-BZ#123	MG/KG	0.0020
Cl5-BZ#124	MG/KG	0.0014
Cl5-BZ#126	MG/KG	0.00047 U
Cl6-BZ#129	MG/KG	0.00083
Cl6-BZ#130	MG/KG	0.0020
Cl6-BZ#131	MG/KG	0.00044 J
Cl6-BZ#132/#168	MG/KG	0.0047
Cl6-BZ#134	MG/KG	0.0032 J
Cl6-BZ#135/#144	MG/KG	0.0057
Cl6-BZ#136	MG/KG	0.0039
Cl6-BZ#137	MG/KG	0.0021
Cl6-BZ#138/#163	MG/KG	0.028
Cl6-BZ#141	MG/KG	0.0023
Cl6-BZ#146	MG/KG	0.0081 J
Cl6-BZ#147	MG/KG	0.0033
Cl6-BZ#149	MG/KG	0.032 J
Cl6-BZ#151	MG/KG	0.0033
Cl6-BZ#153	MG/KG	0.038
Cl6-BZ#154	MG/KG	0.0022
Cl6-BZ#155	MG/KG	0.00047 U
Cl6-BZ#156	MG/KG	0.0029
Cl6-BZ#157	MG/KG	0.00050
Cl6-BZ#158	MG/KG	0.0022 J
Cl6-BZ#167/#128	MG/KG	0.0054
Cl6-BZ#169	MG/KG	0.00047 U
Cl7-BZ#170/#190	MG/KG	0.0021
Cl7-BZ#171	MG/KG	0.00042 J
Cl7-BZ#172	MG/KG	0.00056

TABLE 1a - SUMMARY OF SAMPLE DATA FOR PRE-SPAWN QUAHOG (MG/KG WET WEIGHT) AREA 1 - 2016

	Sample#	NBH16-SF-E-1
	Species	Quahogs
	Species Type	Meat
	Area	1
	Station	Station E
	Sample Date	5/25/2016
Parameter	Units	
Cl7-BZ#173	MG/KG	0.00047 U
Cl7-BZ#174	MG/KG	0.0015
Cl7-BZ#175	MG/KG	0.00047 U
Cl7-BZ#176	MG/KG	0.00047 U
Cl7-BZ#177	MG/KG	0.0017
Cl7-BZ#178	MG/KG	0.00087
Cl7-BZ#180	MG/KG	0.0046
Cl7-BZ#182/#187	MG/KG	0.0056
Cl7-BZ#183	MG/KG	0.0011
Cl7-BZ#184	MG/KG	0.00047 U
Cl7-BZ#185	MG/KG	0.00047 U
Cl7-BZ#188	MG/KG	0.00047 U
Cl7-BZ#189	MG/KG	0.00047 U
Cl7-BZ#191	MG/KG	0.00047 U
Cl7-BZ#193	MG/KG	0.00045 J
Cl8-BZ#194	MG/KG	0.00084
Cl8-BZ#195	MG/KG	0.00047 U
Cl8-BZ#196/203	MG/KG	0.00072 J
Cl8-BZ#197	MG/KG	0.00047 U
Cl8-BZ#199	MG/KG	0.00047 U
Cl8-BZ#200	MG/KG	0.00047 U
Cl8-BZ#201	MG/KG	0.00072
Cl8-BZ#202	MG/KG	0.00036 J
Cl8-BZ#205	MG/KG	0.00047 U
Cl9-BZ#206	MG/KG	0.00042 J
Cl9-BZ#207	MG/KG	0.00047 U
Cl9-BZ#208	MG/KG	0.00036 J
Cl10-BZ#209	MG/KG	0.00047 U

Parameter	Sample# Species Species Type Area Station Sample Date Units	Station B Quahogs Meat 2 NBH16-SF-B-2 5/19/2016	Station C Quahogs Meat 2 NBH16-SF-C-2 5/19/2016	Station D Quahogs Meat 2 NBH16-SF-D-2 5/25/2016	Station F Quahogs Meat 2 NBH16-SF-F-2 5/25/2016	Station G Quahogs Meat 2 NBH16-SF-G-2 5/19/2016	Station H Quahogs Meat 2 NBH16-SF-H-2 5/19/2016
Lipids	PERCENT	0.24	0.23	0.19	0.21	0.20	0.21
Total PCB Congeners[1]	MG/KG	0.050 J2	0.23 J3	0.077 J2	0.069 J2	0.052 J2	0.094 J2
Total PCB Congeners Hits[2]	MG/KG	0.030	0.22	0.057	0.050	0.032	0.080
Total NOAA Congeners[3]	MG/KG	0.017 J2	0.093 J4	0.028 J3	0.026 J3	0.018 J2	0.037 J3
Total WHO Congeners[4]	MG/KG	0.0044 J1	0.015 J3	0.0055 J2	0.0052 J2	0.0048 J2	0.0071 J2
Total NOAA / WHO Combined[5]	MG/KG	0.019 J2	0.096 J3	0.030 J2	0.028 J2	0.020 J2	0.039 J3
Cl1-BZ#1	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl1-BZ#3	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl2-BZ#4/#10	MG/KG	0.00085 U	0.00094 U	0.00096 U	0.00086 U	0.00084 U	0.00088 U
Cl2-BZ#5/#8	MG/KG	0.00085 U	0.00070 J	0.00096 U	0.00086 U	0.00084 U	0.00088 U
Cl2-BZ#6	MG/KG	0.00043 U	0.00069	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl2-BZ#7	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl2-BZ#12/#13	MG/KG	0.00085 U	0.00068 J	0.00096 U	0.00086 U	0.00084 U	0.00088 U
Cl2-BZ#15	MG/KG	0.00043 U	0.00076	0.00024 J	0.00043 U	0.00042 U	0.00026 J
Cl3-BZ#16/#32	MG/KG	0.00085 U	0.0018	0.00096 U	0.00086 U	0.00084 U	0.00058 J
Cl3-BZ#17	MG/KG	0.00043 U	0.0014	0.00034 J	0.00043 U	0.00042 U	0.00049
Cl3-BZ#18	MG/KG	0.00030 J	0.0038	0.00096	0.00060	0.00033 J	0.0012
Cl3-BZ#19	MG/KG	0.00043 U	0.00032 J	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl3-BZ#21/#33	MG/KG	0.00085 U	0.0011	0.00096 U	0.00086 U	0.00084 U	0.00045 J
Cl3-BZ#22	MG/KG	0.00043 U	0.0012	0.00036 J	0.00026 J	0.00042 U	0.00046
Cl3-BZ#24/#27	MG/KG	0.00085 U	0.00070 J	0.00096 U	0.00086 U	0.00084 U	0.00088 U
Cl3-BZ#25	MG/KG	0.00027 J	0.0037	0.0011	0.00071	0.00028 J	0.0013
Cl3-BZ#26	MG/KG	0.00061	0.0070	0.0022	0.0016	0.00070	0.0025
Cl3-BZ#28/#31	MG/KG	0.0013	0.016	0.0044	0.0033	0.0014	0.0054
Cl3-BZ#29	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl3-BZ#37	MG/KG	0.00043 U	0.00071	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl4-BZ#40	MG/KG	0.00043 U	0.00091 J	0.00029 J	0.00043 U	0.00042 U	0.00036 J
Cl4-BZ#41/#71	MG/KG	0.00043 J	0.0043	0.0011	0.00086 J	0.00051 J	0.0014
Cl4-BZ#42	MG/KG	0.00022 J	0.0015	0.00048	0.00038 J	0.00025 J	0.00055
Cl4-BZ#43/#49	MG/KG	0.0015	0.014	0.0041	0.0034	0.0016	0.0050
Cl4-BZ#44	MG/KG	0.00054	0.0047	0.0013	0.0010	0.00063	0.0017
Cl4-BZ#45	MG/KG	0.00043 U	0.00055	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl4-BZ#46	MG/KG	0.00043 U	0.00064 J	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl4-BZ#47/#48	MG/KG	0.00072 J	0.0060	0.0016	0.0014	0.00073 J	0.0022
Cl4-BZ#50	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl4-BZ#51	MG/KG	0.00043 U	0.00041 J	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl4-BZ#52	MG/KG	0.0019	0.017	0.0049	0.0042	0.0019	0.0059
Cl4-BZ#53	MG/KG	0.00043 U	0.0012	0.00030 J	0.00043 U	0.00042 U	0.00039 J
Cl4-BZ#54	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl4-BZ#56/#60	MG/KG	0.00085 U	0.0023	0.00063 J	0.00050 J	0.00084 U	0.00087 J
Cl4-BZ#63	MG/KG	0.00043 U	0.00060	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl4-BZ#64	MG/KG	0.00024 J	0.0023	0.00066	0.00052	0.00023 J	0.00088

Prepared by: KMS 4/19/2017
Checked by: BJS 4/26/2017

	Sample#	Station B	Station C	Station D	Station F	Station G	Station H
	Species	Quahogs	Quahogs	Quahogs	Quahogs	Quahogs	Quahogs
	Species Type	Meat	Meat	Meat	Meat	Meat	Meat
	Area	2	2	2	2	2	2
	Station	NBH16-SF-B-2	NBH16-SF-C-2	NBH16-SF-D-2	NBH16-SF-F-2	NBH16-SF-G-2	NBH16-SF-H-2
	Sample Date	5/19/2016	5/19/2016	5/25/2016	5/25/2016	5/19/2016	5/19/2016
Parameter	Units						
Cl4-BZ#66	MG/KG	0.00084	0.0049	0.0013	0.0011	0.00092	0.0017
Cl4-BZ#70	MG/KG	0.00068	0.0042	0.0012	0.0011	0.00071	0.0016
Cl4-BZ#74	MG/KG	0.00040 J	0.0035	0.00092	0.00081	0.00044	0.0012
Cl4-BZ#76	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl4-BZ#77	MG/KG	0.00043 U	0.00060	0.00048 U	0.00043 U	0.00042 U	0.00026 J
Cl4-BZ#81	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl5-BZ#82	MG/KG	0.00043 U	0.00060	0.00048 U	0.00043 U	0.00042 U	0.00029 J
Cl5-BZ#83	MG/KG	0.00026 J	0.00072 J	0.00025 J	0.00043 U	0.00042 U	0.00035 J
Cl5-BZ#85	MG/KG	0.00032 J	0.0010	0.00027 J	0.00028 J	0.00029 J	0.00048
Cl5-BZ#87	MG/KG	0.00051 J	0.0028 J	0.00081 J	0.00068 J	0.00055 J	0.0011 J
Cl5-BZ#89	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl5-BZ#91	MG/KG	0.00038 J	0.0022	0.00075	0.00051	0.00036 J	0.00092
Cl5-BZ#92	MG/KG	0.00067	0.0031	0.00094	0.00095	0.00063	0.0012
Cl5-BZ#95	MG/KG	0.00093 J	0.0057 J	0.0016 J	0.0014 J	0.00099 J	0.0022 J
Cl5-BZ#97	MG/KG	0.00053	0.0025	0.00085	0.00070	0.00055	0.0010
Cl5-BZ#99	MG/KG	0.0020	0.0089	0.0028	0.0029	0.0021	0.0038
Cl5-BZ#100	MG/KG	0.00043 U	0.00038 J	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl5-BZ#101/#84	MG/KG	0.0028	0.013	0.0041	0.0040	0.0029	0.0053
Cl5-BZ#104	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl5-BZ#105	MG/KG	0.00034 J	0.0022	0.00053	0.00045	0.00042 J	0.00079
Cl5-BZ#107	MG/KG	0.00039 J	0.0012 J	0.00046 J	0.00048 J	0.00034 J	0.00060 J
Cl5-BZ#110	MG/KG	0.0016	0.0092	0.0029	0.0023	0.0018	0.0037
Cl5-BZ#114	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl5-BZ#118	MG/KG	0.0017 J	0.0083 J	0.0024 J	0.0024 J	0.0020 J	0.0035 J
Cl5-BZ#119	MG/KG	0.00043 U	0.0011	0.00039 J	0.00033 J	0.00021 J	0.00042 J
Cl5-BZ#123	MG/KG	0.00043 U	0.00046 J	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl5-BZ#124	MG/KG	0.00043 U	0.00035 J	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl5-BZ#126	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl6-BZ#129	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl6-BZ#130	MG/KG	0.00043 U	0.00066	0.00026 J	0.00043 U	0.00025 J	0.00033 J
Cl6-BZ#131	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl6-BZ#132/#168	MG/KG	0.00085 U	0.0015	0.00048 J	0.00044 J	0.00045 J	0.00063 J
Cl6-BZ#134	MG/KG	0.00043 U	0.00078 J	0.00027 J	0.00028 J	0.00042 U	0.00032 J
Cl6-BZ#135/#144	MG/KG	0.00085 U	0.0014	0.00096 U	0.00048 J	0.00084 U	0.00059 J
Cl6-BZ#136	MG/KG	0.00043 U	0.00074	0.00048 U	0.00043 U	0.00042 U	0.00028 J
Cl6-BZ#137	MG/KG	0.00043 U	0.00059	0.00048 U	0.00043 U	0.00042 U	0.00025 J
Cl6-BZ#138/#163	MG/KG	0.0021	0.0075	0.0024	0.0024	0.0022	0.0032
Cl6-BZ#141	MG/KG	0.00043 U	0.00062	0.00048 U	0.00043 U	0.00042 U	0.00026 J
Cl6-BZ#146	MG/KG	0.00070 J	0.0022 J	0.00077 J	0.00086 J	0.00068 J	0.0010 J
Cl6-BZ#147	MG/KG	0.00043 U	0.00064	0.00024 J	0.00043 U	0.00042 U	0.00028 J
Cl6-BZ#149	MG/KG	0.0013 J	0.0061 J	0.0020 J	0.0018 J	0.0013 J	0.0026 J
Cl6-BZ#151	MG/KG	0.00043 U	0.00071	0.00048 U	0.00025 J	0.00042 U	0.00036 J
Cl6-BZ#153	MG/KG	0.0025	0.0091	0.0029	0.0034	0.0025	0.0042
Cl6-BZ#154	MG/KG	0.00043 U	0.00037 J	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl6-BZ#155	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl6-BZ#156	MG/KG	0.00043 U	0.00083	0.00048 U	0.00043 U	0.00042 U	0.00033 J
Cl6-BZ#157	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl6-BZ#158	MG/KG	0.00043 U	0.00059 J	0.00048 U	0.00043 U	0.00042 U	0.00024 J

Prepared by: KMS 4/19/2017
Checked by: BJS 4/26/2017

TABLE 1b - SUMMARY OF SAMPLE DATA FOR PRE-SPAWN QUAHOG (MG/KG WET WEIGHT) AREA 2 - 2016

	Sample#	Station B	Station C	Station D	Station F	Station G	Station H
	Species	Quahogs	Quahogs	Quahogs	Quahogs	Quahogs	Quahogs
	Species Type	Meat	Meat	Meat	Meat	Meat	Meat
	Area	2	2	2	2	2	2
	Station	NBH16-SF-B-2	NBH16-SF-C-2	NBH16-SF-D-2	NBH16-SF-F-2	NBH16-SF-G-2	NBH16-SF-H-2
	Sample Date	5/19/2016	5/19/2016	5/25/2016	5/25/2016	5/19/2016	5/19/2016
Parameter	Units						
Cl6-BZ#167/#128	MG/KG	0.00085 U	0.0015	0.00096 U	0.00048 J	0.00084 U	0.00071 J
Cl6-BZ#169	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl7-BZ#170/#190	MG/KG	0.00085 U	0.00066 J	0.00096 U	0.00086 U	0.00084 U	0.00088 U
Cl7-BZ#171	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl7-BZ#172	MG/KG	0.00043 U	0.00024 J	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl7-BZ#173	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl7-BZ#174	MG/KG	0.00043 U	0.00054	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl7-BZ#175	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl7-BZ#176	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl7-BZ#177	MG/KG	0.00024 J	0.00069	0.00048 U	0.00043 U	0.00025 J	0.00035 J
Cl7-BZ#178	MG/KG	0.00043 U	0.00025 J	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl7-BZ#180	MG/KG	0.00039 J	0.0014	0.00044 J	0.00038 J	0.00040 J	0.00059
Cl7-BZ#182/#187	MG/KG	0.00085 U	0.0014	0.00096 U	0.00050 J	0.00084 U	0.00066 J
Cl7-BZ#183	MG/KG	0.00043 U	0.00035 J	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl7-BZ#184	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl7-BZ#185	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl7-BZ#188	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl7-BZ#189	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl7-BZ#191	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl7-BZ#193	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl8-BZ#194	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl8-BZ#195	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl8-BZ#196/203	MG/KG	0.00085 U	0.00094 U	0.00096 U	0.00086 U	0.00084 U	0.00088 U
Cl8-BZ#197	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl8-BZ#199	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl8-BZ#200	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl8-BZ#201	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl8-BZ#202	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl8-BZ#205	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl9-BZ#206	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl9-BZ#207	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl9-BZ#208	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U
Cl10-BZ#209	MG/KG	0.00043 U	0.00047 U	0.00048 U	0.00043 U	0.00042 U	0.00044 U

	Sample#	NBH16-SF-B-3	NBH16-SF-D-3	NBH16-SF-I-3	NBH16-SF-J-3
	Species	Quahogs	Quahogs	Quahogs	Quahogs
	Species Type	Meat	Meat	Meat	Meat
	Area	3	3	3	3
	Station	Station B	Station D	Station I	Station J
	Sample Date	5/19/2016	5/25/2016	5/19/2016	5/19/2016
Parameter	Units				
Lipids	PERCENT	0.29	0.34	0.36	0.22
Total PCB Congeners[1]	MG/KG	0.046 J1	0.041 J1	0.048 J2	0.036 J1
Total PCB Congeners Hits[2]	MG/KG	0.022	0.018	0.025	0.0087
Total NOAA Congeners[3]	MG/KG	0.014 J2	0.012 J2	0.015 J2	0.0090 J2
Total WHO Congeners[4]	MG/KG	0.0043 J1	0.0039 J1	0.0044 J1	0.0035 J1
Total NOAA / WHO Combined[5]	MG/KG	0.016 J2	0.014 J2	0.017 J2	0.011 J2
Cl1-BZ#1	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl1-BZ#3	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl2-BZ#4/#10	MG/KG	0.00091 U	0.00084 U	0.00091 U	0.00092 U
Cl2-BZ#5/#8	MG/KG	0.00091 U	0.00084 U	0.00091 U	0.00092 U
Cl2-BZ#6	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl2-BZ#7	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl2-BZ#12/#13	MG/KG	0.00091 U	0.00084 U	0.00091 U	0.00092 U
Cl2-BZ#15	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl3-BZ#16/#32	MG/KG	0.00091 U	0.00084 U	0.00091 U	0.00092 U
Cl3-BZ#17	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl3-BZ#18	MG/KG	0.00026 J	0.00024 J	0.00045 U	0.00037 J
Cl3-BZ#19	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl3-BZ#21/#33	MG/KG	0.00091 U	0.00084 U	0.00091 U	0.00092 U
Cl3-BZ#22	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl3-BZ#24/#27	MG/KG	0.00091 U	0.00084 U	0.00091 U	0.00092 U
Cl3-BZ#25	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl3-BZ#26	MG/KG	0.00045 U	0.00042 U	0.00055	0.00046 U
Cl3-BZ#28/#31	MG/KG	0.00098	0.00099	0.0010	0.00057 J
Cl3-BZ#29	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl3-BZ#37	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl4-BZ#40	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl4-BZ#41/#71	MG/KG	0.00091 U	0.00084 U	0.00091 U	0.00092 U
Cl4-BZ#42	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl4-BZ#43/#49	MG/KG	0.0011	0.0013	0.0014	0.00071 J
Cl4-BZ#44	MG/KG	0.00051	0.00049	0.00046	0.00040 J
Cl4-BZ#45	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl4-BZ#46	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl4-BZ#47/#48	MG/KG	0.00049 J	0.00050 J	0.00064 J	0.00092 U
Cl4-BZ#50	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl4-BZ#51	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl4-BZ#52	MG/KG	0.0014	0.0012	0.0017	0.00070
Cl4-BZ#53	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl4-BZ#54	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl4-BZ#56/#60	MG/KG	0.00091 U	0.00084 U	0.00091 U	0.00092 U
Cl4-BZ#63	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl4-BZ#64	MG/KG	0.00045 U	0.00042 U	0.00025 J	0.00046 U
Cl4-BZ#66	MG/KG	0.00072	0.00058	0.00070	0.00043 J
Cl4-BZ#70	MG/KG	0.00058	0.00048	0.00056	0.00046 U
Cl4-BZ#74	MG/KG	0.00037 J	0.00026 J	0.00033 J	0.00046 U
Cl4-BZ#76	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl4-BZ#77	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U

TABLE 1c - SUMMARY OF SAMPLE DATA FOR PRE-SPAWN QUAHOG (MG/KG WET WEIGHT) AREA 3 - 2016

Parameter	Sample# Species Species Type Area Station Sample Date Units	NBH16-SF-B-3 Quahogs Meat 3 Station B 5/19/2016	NBH16-SF-D-3 Quahogs Meat 3 Station D 5/25/2016	NBH16-SF-I-3 Quahogs Meat 3 Station I 5/19/2016	NBH16-SF-J-3 Quahogs Meat 3 Station J 5/19/2016
Cl4-BZ#81	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl5-BZ#82	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl5-BZ#83	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl5-BZ#85	MG/KG	0.00027 J	0.00042 U	0.00045 U	0.00046 U
Cl5-BZ#87	MG/KG	0.00054 J	0.00045 J	0.00058 J	0.00046 U
Cl5-BZ#89	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl5-BZ#91	MG/KG	0.00045 U	0.00022 J	0.00035 J	0.00046 U
Cl5-BZ#92	MG/KG	0.00058	0.00036 J	0.00059	0.00046 U
Cl5-BZ#95	MG/KG	0.00080 J	0.00051 J	0.00076 J	0.00046 U
Cl5-BZ#97	MG/KG	0.00043 J	0.00034 J	0.00040 J	0.00046 U
Cl5-BZ#99	MG/KG	0.0016	0.0012	0.0018	0.00052
Cl5-BZ#100	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl5-BZ#101/#84	MG/KG	0.0022	0.0019	0.0023	0.00098
Cl5-BZ#104	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl5-BZ#105	MG/KG	0.00034 J	0.00029 J	0.00041 J	0.00031 J
Cl5-BZ#107	MG/KG	0.00035 J	0.00026 J	0.00039 J	0.00046 U
Cl5-BZ#110	MG/KG	0.0012	0.00093	0.0015	0.00043 J
Cl5-BZ#114	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl5-BZ#118	MG/KG	0.0015 J	0.0013 J	0.0015 J	0.00068 J
Cl5-BZ#119	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl5-BZ#123	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl5-BZ#124	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl5-BZ#126	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl6-BZ#129	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl6-BZ#130	MG/KG	0.00045 U	0.00042 U	0.00024 J	0.00046 U
Cl6-BZ#131	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl6-BZ#132/#168	MG/KG	0.00091 U	0.00084 U	0.00091 U	0.00092 U
Cl6-BZ#134	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl6-BZ#135/#144	MG/KG	0.00091 U	0.00084 U	0.00091 U	0.00092 U
Cl6-BZ#136	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl6-BZ#137	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl6-BZ#138/#163	MG/KG	0.0016	0.0012	0.0019	0.00078 J
Cl6-BZ#141	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl6-BZ#146	MG/KG	0.00055 J	0.00048 J	0.00063 J	0.00025 J
Cl6-BZ#147	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl6-BZ#149	MG/KG	0.0011 J	0.00079 J	0.0012 J	0.00039 J
Cl6-BZ#151	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl6-BZ#153	MG/KG	0.0020	0.0018	0.0022	0.00094
Cl6-BZ#154	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl6-BZ#155	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl6-BZ#156	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl6-BZ#157	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl6-BZ#158	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl6-BZ#167/#128	MG/KG	0.00091 U	0.00084 U	0.00091 U	0.00092 U
Cl6-BZ#169	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl7-BZ#170/#190	MG/KG	0.00091 U	0.00084 U	0.00091 U	0.00092 U
Cl7-BZ#171	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl7-BZ#172	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U

Prepared by: KMS 4/19/2017
Checked by: BJS 4/26/2017

Parameter	Sample# Species Species Type Area Station Sample Date Units	NBH16-SF-B-3 Quahogs Meat 3 Station B 5/19/2016	NBH16-SF-D-3 Quahogs Meat 3 Station D 5/25/2016	NBH16-SF-I-3 Quahogs Meat 3 Station I 5/19/2016	NBH16-SF-J-3 Quahogs Meat 3 Station J 5/19/2016
Cl7-BZ#173	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl7-BZ#174	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl7-BZ#175	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl7-BZ#176	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl7-BZ#177	MG/KG	0.00045 U	0.00042 U	0.00027 J	0.00046 U
Cl7-BZ#178	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl7-BZ#180	MG/KG	0.00031 J	0.00024 J	0.00031 J	0.00025 J
Cl7-BZ#182/#187	MG/KG	0.00091 U	0.00084 U	0.00091 U	0.00092 U
Cl7-BZ#183	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl7-BZ#184	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl7-BZ#185	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl7-BZ#188	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl7-BZ#189	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl7-BZ#191	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl7-BZ#193	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl8-BZ#194	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl8-BZ#195	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl8-BZ#196/203	MG/KG	0.00091 U	0.00084 U	0.00091 U	0.00092 U
Cl8-BZ#197	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl8-BZ#199	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl8-BZ#200	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl8-BZ#201	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl8-BZ#202	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl8-BZ#205	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl9-BZ#206	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl9-BZ#207	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl9-BZ#208	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U
Cl10-BZ#209	MG/KG	0.00045 U	0.00042 U	0.00045 U	0.00046 U

Parameter	Sample#	NBH16-SF-A-2	NBH16-SF-B-2	NBH16-SF-C-2	NBH16-SF-D-2	NBH16-SF-E-2
	Species	Conch	Conch	Conch	Conch	Conch
	Species Type	Meat	Meat	Meat	Meat	Meat
	Area	2	2	2	2	2
	Station	Station A	Station B	Station C	Station D	Station E
	Sample Date	12/1/2016	12/1/2016	12/20/2016	12/1/2016	12/1/2016
	Units					
Lipids	PERCENT	0.99	1.2	0.65	0.88	0.76
Total PCB Congeners[1]	MG/KG	0.56 J3	0.77 J3	1.4 J4	1.5 J4	0.42 J3
Total PCB Congeners Hits[2]	MG/KG	0.55	0.76	1.4	1.5	0.41
Total NOAA Congeners[3]	MG/KG	0.31 J4	0.41 J4	0.69 J4	0.73 J4	0.21 J4
Total WHO Congeners[4]	MG/KG	0.071 J3	0.10 J4	0.15 J4	0.12 J4	0.037 J3
Total NOAA / WHO Combined[5]	MG/KG	0.32 J4	0.43 J4	0.71 J4	0.74 J4	0.22 J3
Cl1-BZ#1	MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl1-BZ#3	MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl10-BZ#209	MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl2-BZ#12/#13	MG/KG	0.00085 U	0.00099 U	0.00095 U	0.00088 U	0.00087 U
Cl2-BZ#15	MG/KG	0.00027 J	0.00035 J	0.0012	0.00052	0.00043 U
Cl2-BZ#4/#10	MG/KG	0.00085 U	0.00099 U	0.00053 J	0.00088 U	0.00087 U
Cl2-BZ#5/#8	MG/KG	0.00085 U	0.00099 U	0.00095 U	0.00088 U	0.00087 U
Cl2-BZ#6	MG/KG	0.00032 J	0.0011	0.0032	0.0021	0.00072
Cl2-BZ#7	MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl3-BZ#16/#32	MG/KG	0.00085 U	0.00075 J	0.0022	0.0018	0.00048 J
Cl3-BZ#17	MG/KG	0.00043 U	0.00045 J	0.0010	0.00048	0.00043 U
Cl3-BZ#18	MG/KG	0.0011	0.0033	0.0096	0.0090	0.0021
Cl3-BZ#19	MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl3-BZ#21/#33	MG/KG	0.00085 U	0.00059 J	0.0021	0.0014	0.00048 J
Cl3-BZ#22	MG/KG	0.00039 J	0.00084	0.0026	0.0021	0.00049
Cl3-BZ#24/#27	MG/KG	0.00085 U	0.00057 J	0.0016	0.0017	0.00087 U
Cl3-BZ#25	MG/KG	0.00043 U	0.00086	0.0030	0.0020	0.00043 J
Cl3-BZ#26	MG/KG	0.0034	0.010	0.035	0.032	0.0068
Cl3-BZ#28/#31	MG/KG	0.0084	0.018	0.058	0.057	0.012
Cl3-BZ#29	MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl3-BZ#37	MG/KG	0.00071	0.0010	0.0022	0.0013	0.00046
Cl4-BZ#40	MG/KG	0.0010	0.0021	0.0049	0.0050	0.0015
Cl4-BZ#41/#71	MG/KG	0.0050	0.0083	0.024	0.028	0.0070
Cl4-BZ#42	MG/KG	0.00078	0.0017	0.0058	0.0069	0.0014
Cl4-BZ#43/#49	MG/KG	0.019	0.032	0.093	0.13	0.026
Cl4-BZ#44	MG/KG	0.0041	0.0094	0.023	0.026	0.0067
Cl4-BZ#45	MG/KG	0.00043 U	0.00039 J	0.00086	0.00083	0.00027 J
Cl4-BZ#46	MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl4-BZ#47/#48	MG/KG	0.0039	0.0033	0.013	0.016	0.0021
Cl4-BZ#50	MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl4-BZ#51	MG/KG	0.00043 U	0.00050 U	0.00045 J	0.00058	0.00043 U
Cl4-BZ#52	MG/KG	0.019	0.037	0.098	0.13	0.026
Cl4-BZ#53	MG/KG	0.00043 U	0.00036 J	0.00057	0.0016	0.00043 U
Cl4-BZ#54	MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl4-BZ#56/#60	MG/KG	0.0017	0.0029	0.0077	0.0065	0.0017
Cl4-BZ#63	MG/KG	0.0010	0.0016	0.0030	0.0032	0.00093
Cl4-BZ#64	MG/KG	0.00055	0.0016	0.0048	0.0072	0.00083
Cl4-BZ#66	MG/KG	0.010	0.011	0.027	0.024	0.0075
Cl4-BZ#70	MG/KG	0.0069	0.012	0.022	0.022	0.0071
Cl4-BZ#74	MG/KG	0.0050	0.0067	0.019	0.017	0.0038
Cl4-BZ#76	MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U

Prepared by: KMS 4/19/2017
Checked by: BJS 4/26/2017

TABLE 2a - SUMMARY OF SAMPLE DATA FOR CONCH (MG/KG WET WEIGHT) AREA 2 - 2016

		Sample#	NBH16-SF-A-2	NBH16-SF-B-2	NBH16-SF-C-2	NBH16-SF-D-2	NBH16-SF-E-2
		Species	Conch	Conch	Conch	Conch	Conch
		Species Type	Meat	Meat	Meat	Meat	Meat
		Area	2	2	2	2	2
		Station	Station A	Station B	Station C	Station D	Station E
		Sample Date	12/1/2016	12/1/2016	12/20/2016	12/1/2016	12/1/2016
Parameter		Units					
Cl4-BZ#77		MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl4-BZ#81		MG/KG	0.00043 U	0.00050 U	0.00049	0.00045	0.00043 U
Cl5-BZ#100		MG/KG	0.00052	0.00039 J	0.0012	0.0018	0.00030 J
Cl5-BZ#101/#84		MG/KG	0.035	0.055	0.092	0.11	0.033
Cl5-BZ#104		MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl5-BZ#105		MG/KG	0.008	0.013	0.020	0.018	0.0053
Cl5-BZ#107		MG/KG	0.0068	0.012	0.010	0.011	0.0043
Cl5-BZ#110		MG/KG	0.016	0.027	0.056	0.072	0.020
Cl5-BZ#114		MG/KG	0.00052	0.00070	0.0014	0.0012	0.00041 J
Cl5-BZ#118		MG/KG	0.040	0.061	0.090	0.068	0.019
Cl5-BZ#119		MG/KG	0.0032	0.0025	0.0063	0.0083	0.0018
Cl5-BZ#123		MG/KG	0.0015	0.0016	0.0031	0.0034	0.0010
Cl5-BZ#124		MG/KG	0.00084	0.0017	0.0022	0.0024	0.00082
Cl5-BZ#126		MG/KG	0.00043 UJ	0.00050 UJ	0.00048 UJ	0.00044 UJ	0.00043 UJ
Cl5-BZ#82		MG/KG	0.00058	0.00083	0.0016	0.0017	0.00046
Cl5-BZ#83		MG/KG	0.0021	0.0037	0.0050	0.0057	0.0017
Cl5-BZ#85		MG/KG	0.0040	0.0044	0.0081	0.0081	0.0028
Cl5-BZ#87		MG/KG	0.0066	0.0099	0.017	0.018	0.0054
Cl5-BZ#89		MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl5-BZ#91		MG/KG	0.0033	0.0065	0.015	0.023	0.0048
Cl5-BZ#92		MG/KG	0.012	0.018	0.023	0.026	0.0075
Cl5-BZ#95		MG/KG	0.0059	0.011	0.021	0.032	0.0064
Cl5-BZ#97		MG/KG	0.0047	0.0085	0.021	0.024	0.0072
Cl5-BZ#99		MG/KG	0.034	0.029	0.071	0.071	0.020
Cl6-BZ#129		MG/KG	0.00043	0.0010	0.0014	0.0015	0.00054
Cl6-BZ#130		MG/KG	0.0034	0.0062	0.0055	0.0061	0.0023
Cl6-BZ#131		MG/KG	0.00043 U	0.00037 J	0.00048 U	0.00069	0.00043 U
Cl6-BZ#132/#168		MG/KG	0.0025	0.0040	0.0065	0.0074	0.0027
Cl6-BZ#134		MG/KG	0.0039	0.0063	0.0065	0.0080	0.0023
Cl6-BZ#135/#144		MG/KG	0.0029	0.0052	0.0063	0.0082	0.0021
Cl6-BZ#136		MG/KG	0.00047	0.00096	0.0015	0.0031	0.00052
Cl6-BZ#137		MG/KG	0.0019	0.0024	0.0039	0.0038	0.0014
Cl6-BZ#138/#163		MG/KG	0.057	0.072	0.088	0.093	0.032
Cl6-BZ#141		MG/KG	0.0014	0.0033	0.0041	0.0048	0.0015
Cl6-BZ#146		MG/KG	0.016	0.025	0.023	0.024	0.0089
Cl6-BZ#147		MG/KG	0.0025	0.0031	0.0047	0.0054	0.0016
Cl6-BZ#149		MG/KG	0.014	0.023	0.044	0.058	0.016
Cl6-BZ#151		MG/KG	0.0044	0.0065	0.0076	0.0097	0.0023
Cl6-BZ#153		MG/KG	0.093	0.086	0.14	0.14	0.047
Cl6-BZ#154		MG/KG	0.0014	0.0013	0.0030	0.0037	0.00091
Cl6-BZ#155		MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl6-BZ#156		MG/KG	0.0049 J	0.0081 J	0.0082 J	0.0082 J	0.0026 J
Cl6-BZ#157		MG/KG	0.0012	0.0019	0.0016	0.0017	0.00062
Cl6-BZ#158		MG/KG	0.0036	0.0038	0.0079	0.0082	0.0025
Cl6-BZ#167/#128		MG/KG	0.013	0.017	0.021	0.021	0.0071
Cl6-BZ#169		MG/KG	0.00043 UJ	0.00050 UJ	0.00048 UJ	0.00044 UJ	0.00043 UJ
Cl7-BZ#170/#190		MG/KG	0.0043	0.0057	0.0056	0.0065	0.0021
Cl7-BZ#171		MG/KG	0.0011	0.00093	0.0017	0.0018	0.00059

TABLE 2a - SUMMARY OF SAMPLE DATA FOR CONCH (MG/KG WET WEIGHT) AREA 2 - 2016

	Sample#	NBH16-SF-A-2	NBH16-SF-B-2	NBH16-SF-C-2	NBH16-SF-D-2	NBH16-SF-E-2
	Species	Conch	Conch	Conch	Conch	Conch
	Species Type	Meat	Meat	Meat	Meat	Meat
	Area	2	2	2	2	2
	Station	Station A	Station B	Station C	Station D	Station E
	Sample Date	12/1/2016	12/1/2016	12/20/2016	12/1/2016	12/1/2016
Parameter	Units					
Cl7-BZ#172	MG/KG	0.00095	0.0015	0.0011	0.0014	0.00046
Cl7-BZ#173	MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl7-BZ#174	MG/KG	0.00079	0.0019	0.0018	0.0028	0.00090
Cl7-BZ#175	MG/KG	0.00043 U	0.00027 J	0.00030 J	0.00034 J	0.00043 U
Cl7-BZ#176	MG/KG	0.00043 U	0.00050 U	0.00025 J	0.00033 J	0.00043 U
Cl7-BZ#177	MG/KG	0.0028	0.0040	0.0029	0.0035	0.0013
Cl7-BZ#178	MG/KG	0.0019	0.0027	0.0024	0.0028	0.00092
Cl7-BZ#180	MG/KG	0.0085	0.011	0.011	0.012	0.0040
Cl7-BZ#182/#187	MG/KG	0.0099	0.012	0.013	0.014	0.0047
Cl7-BZ#183	MG/KG	0.0029	0.0028	0.0050	0.0056	0.0020
Cl7-BZ#184	MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl7-BZ#185	MG/KG	0.00043 U	0.00050 U	0.00027 J	0.00042 J	0.00043 U
Cl7-BZ#188	MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl7-BZ#189	MG/KG	0.00043 J	0.00056 J	0.00047 J	0.00049 J	0.00043 UJ
Cl7-BZ#191	MG/KG	0.00022 J	0.00050 U	0.00027 J	0.00029 J	0.00043 U
Cl7-BZ#193	MG/KG	0.00075	0.0011	0.00083	0.00099	0.00033 J
Cl8-BZ#194	MG/KG	0.0014	0.0017	0.0012	0.0016	0.00053
Cl8-BZ#195	MG/KG	0.00043 U	0.00027 J	0.00048 U	0.00044 U	0.00043 U
Cl8-BZ#196/203	MG/KG	0.0010	0.00097 J	0.0011	0.0016	0.00052 J
Cl8-BZ#197	MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl8-BZ#199	MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl8-BZ#200	MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00028 J	0.00043 U
Cl8-BZ#201	MG/KG	0.0014	0.0018	0.0012	0.0016	0.00061
Cl8-BZ#202	MG/KG	0.00061	0.00068	0.00060	0.00077	0.00027 J
Cl8-BZ#205	MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl9-BZ#206	MG/KG	0.00032 J	0.00040 J	0.00034 J	0.00069	0.00043 U
Cl9-BZ#207	MG/KG	0.00043 U	0.00050 U	0.00048 U	0.00044 U	0.00043 U
Cl9-BZ#208	MG/KG	0.00022 J	0.00025 J	0.00048 U	0.00031 J	0.00043 U

TABLE 2b - SUMMARY OF SAMPLE DATA FOR CONCH (MG/KG WET WEIGHT) AREA 3 - 2016

		NBH16-SF-C-3	NBH16-SF-D-3
	Sample#		
	Species	Conch	Conch
	Species Type	Meat	Meat
	Area	3	3
	Station	Station C	Station D
	Sample Date	12/20/2016	12/20/2016
Parameter	**Units**		
Lipids	PERCENT	0.85	0.89
Total PCB Congeners[1]	MG/KG	0.35 J3	0.27 J3
Total PCB Congeners Hits[2]	MG/KG	0.34	0.25
Total NOAA Congeners[3]	MG/KG	0.22 J4	0.16 J4
Total WHO Congeners[4]	MG/KG	0.054 J3	0.036 J3
Total NOAA / WHO Combined[5]	MG/KG	0.22 J4	0.17 J3
Cl1-BZ#1	MG/KG	0.00046 U	0.00044 U
Cl1-BZ#3	MG/KG	0.00046 U	0.00044 U
Cl10-BZ#209	MG/KG	0.00046 U	0.00044 U
Cl2-BZ#12/#13	MG/KG	0.00092 U	0.00089 U
Cl2-BZ#15	MG/KG	0.00046 U	0.00044 U
Cl2-BZ#4/#10	MG/KG	0.00092 U	0.00089 U
Cl2-BZ#5/#8	MG/KG	0.00092 U	0.00089 U
Cl2-BZ#6	MG/KG	0.00046 U	0.00044 U
Cl2-BZ#7	MG/KG	0.00046 U	0.00044 U
Cl3-BZ#16/#32	MG/KG	0.00092 U	0.00089 U
Cl3-BZ#17	MG/KG	0.00046 U	0.00044 U
Cl3-BZ#18	MG/KG	0.00038 J	0.00027 J
Cl3-BZ#19	MG/KG	0.00046 U	0.00044 U
Cl3-BZ#21/#33	MG/KG	0.00092 U	0.00089 U
Cl3-BZ#22	MG/KG	0.00046 U	0.00044 U
Cl3-BZ#24/#27	MG/KG	0.00092 U	0.00089 U
Cl3-BZ#25	MG/KG	0.00046 U	0.00044 U
Cl3-BZ#26	MG/KG	0.00071	0.00055
Cl3-BZ#28/#31	MG/KG	0.0015	0.0011
Cl3-BZ#29	MG/KG	0.00046 U	0.00044 U
Cl3-BZ#37	MG/KG	0.00033 J	0.00044 U
Cl4-BZ#40	MG/KG	0.00041 J	0.00039 J
Cl4-BZ#41/#71	MG/KG	0.0013	0.0011
Cl4-BZ#42	MG/KG	0.00025 J	0.00044 U
Cl4-BZ#43/#49	MG/KG	0.0050	0.0041
Cl4-BZ#44	MG/KG	0.0011	0.00099
Cl4-BZ#45	MG/KG	0.00046 U	0.00044 U
Cl4-BZ#46	MG/KG	0.00046 U	0.00044 U
Cl4-BZ#47/#48	MG/KG	0.00063 J	0.00089 U
Cl4-BZ#50	MG/KG	0.00046 U	0.00044 U
Cl4-BZ#51	MG/KG	0.00046 U	0.00044 U
Cl4-BZ#52	MG/KG	0.0058	0.0039
Cl4-BZ#53	MG/KG	0.00046 U	0.00044 U
Cl4-BZ#54	MG/KG	0.00046 U	0.00044 U
Cl4-BZ#56/#60	MG/KG	0.00082 J	0.00054 J
Cl4-BZ#63	MG/KG	0.00049	0.00031 J
Cl4-BZ#64	MG/KG	0.00046 U	0.00044 U
Cl4-BZ#66	MG/KG	0.0048	0.0030
Cl4-BZ#70	MG/KG	0.0033	0.0020
Cl4-BZ#74	MG/KG	0.0021	0.0012
Cl4-BZ#76	MG/KG	0.00046 U	0.00044 U

TABLE 2b - SUMMARY OF SAMPLE DATA FOR CONCH (MG/KG WET WEIGHT) AREA 3 - 2016

	Sample#	NBH16-SF-C-3	NBH16-SF-D-3
	Species	Conch	Conch
	Species Type	Meat	Meat
	Area	3	3
	Station	Station C	Station D
	Sample Date	12/20/2016	12/20/2016
Parameter	**Units**		
Cl4-BZ#77	MG/KG	0.00046	0.00044 U
Cl4-BZ#81	MG/KG	0.00046 U	0.00044 U
Cl5-BZ#100	MG/KG	0.00046 U	0.00044 U
Cl5-BZ#101/#84	MG/KG	0.017	0.016
Cl5-BZ#104	MG/KG	0.00046 U	0.00044 U
Cl5-BZ#105	MG/KG	0.0059	0.0043
Cl5-BZ#107	MG/KG	0.0054	0.0037
Cl5-BZ#110	MG/KG	0.0045	0.0063
Cl5-BZ#114	MG/KG	0.00041 J	0.00029 J
Cl5-BZ#118	MG/KG	0.030	0.017
Cl5-BZ#119	MG/KG	0.0012	0.00083
Cl5-BZ#123	MG/KG	0.00081	0.00088
Cl5-BZ#124	MG/KG	0.00058	0.00041 J
Cl5-BZ#126	MG/KG	0.00046 UJ	0.00044 UJ
Cl5-BZ#82	MG/KG	0.00035 J	0.00044 U
Cl5-BZ#83	MG/KG	0.0012	0.00080
Cl5-BZ#85	MG/KG	0.0025	0.0024
Cl5-BZ#87	MG/KG	0.0033	0.0022
Cl5-BZ#89	MG/KG	0.00046 U	0.00044 U
Cl5-BZ#91	MG/KG	0.0012	0.0014
Cl5-BZ#92	MG/KG	0.0065	0.0031
Cl5-BZ#95	MG/KG	0.0021	0.0016
Cl5-BZ#97	MG/KG	0.0022	0.0033
Cl5-BZ#99	MG/KG	0.018	0.011
Cl6-BZ#129	MG/KG	0.00040 J	0.00036 J
Cl6-BZ#130	MG/KG	0.0024	0.0021
Cl6-BZ#131	MG/KG	0.00026 J	0.00044 U
Cl6-BZ#132/#168	MG/KG	0.0010	0.0014
Cl6-BZ#134	MG/KG	0.0031	0.0018
Cl6-BZ#135/#144	MG/KG	0.0017	0.0012
Cl6-BZ#136	MG/KG	0.00046 U	0.00044 U
Cl6-BZ#137	MG/KG	0.0014	0.0012
Cl6-BZ#138/#163	MG/KG	0.047	0.035
Cl6-BZ#141	MG/KG	0.0010	0.00094
Cl6-BZ#146	MG/KG	0.014	0.0099
Cl6-BZ#147	MG/KG	0.0015	0.0012
Cl6-BZ#149	MG/KG	0.0071	0.011
Cl6-BZ#151	MG/KG	0.0033	0.0016
Cl6-BZ#153	MG/KG	0.072	0.057
Cl6-BZ#154	MG/KG	0.00057	0.00078
Cl6-BZ#155	MG/KG	0.00046 U	0.00044 U
Cl6-BZ#156	MG/KG	0.0041 J	0.0024 J
Cl6-BZ#157	MG/KG	0.0011	0.00074
Cl6-BZ#158	MG/KG	0.0024	0.0021
Cl6-BZ#167/#128	MG/KG	0.011	0.0089
Cl6-BZ#169	MG/KG	0.00046 UJ	0.00044 UJ
Cl7-BZ#170/#190	MG/KG	0.0033	0.0023
Cl7-BZ#171	MG/KG	0.00080	0.00057

TABLE 2b - SUMMARY OF SAMPLE DATA FOR CONCH (MG/KG WET WEIGHT) AREA 3 - 2016

	Sample#	NBH16-SF-C-3	NBH16-SF-D-3
	Species	Conch	Conch
	Species Type	Meat	Meat
	Area	3	3
	Station	Station C	Station D
	Sample Date	12/20/2016	12/20/2016
Parameter	Units		
Cl7-BZ#172	MG/KG	0.00081	0.00049
Cl7-BZ#173	MG/KG	0.00046 U	0.00044 U
Cl7-BZ#174	MG/KG	0.00050	0.00068
Cl7-BZ#175	MG/KG	0.00046 U	0.00044 U
Cl7-BZ#176	MG/KG	0.00046 U	0.00044 U
Cl7-BZ#177	MG/KG	0.0027	0.0012
Cl7-BZ#178	MG/KG	0.0020	0.00093
Cl7-BZ#180	MG/KG	0.0066	0.0045
Cl7-BZ#182/#187	MG/KG	0.0090	0.0053
Cl7-BZ#183	MG/KG	0.0024	0.0023
Cl7-BZ#184	MG/KG	0.00046 U	0.00044 U
Cl7-BZ#185	MG/KG	0.00046 U	0.00044 U
Cl7-BZ#188	MG/KG	0.00046 U	0.00044 U
Cl7-BZ#189	MG/KG	0.00033 J	0.00044 UJ
Cl7-BZ#191	MG/KG	0.00046 U	0.00044 U
Cl7-BZ#193	MG/KG	0.00068	0.00029 J
Cl8-BZ#194	MG/KG	0.0012	0.00057
Cl8-BZ#195	MG/KG	0.00046 U	0.00044 U
Cl8-BZ#196/203	MG/KG	0.00076 J	0.00047 J
Cl8-BZ#197	MG/KG	0.00046 U	0.00044 U
Cl8-BZ#199	MG/KG	0.00046 U	0.00044 U
Cl8-BZ#200	MG/KG	0.00046 U	0.00044 U
Cl8-BZ#201	MG/KG	0.0014	0.00065
Cl8-BZ#202	MG/KG	0.00064	0.00029 J
Cl8-BZ#205	MG/KG	0.00046 U	0.00044 U
Cl9-BZ#206	MG/KG	0.00032 J	0.00044 U
Cl9-BZ#207	MG/KG	0.00046 U	0.00044 U
Cl9-BZ#208	MG/KG	0.00046 U	0.00044 U

Notes for 2016 Appendix Tables:

[1] = summation of 136 PCB congener results (1/2 sample quantitation limit [SQL] used for non-detected results)

[2] = summation of detected 136 PCB congeners

[3] = summation of 18 NOAA PCB congener results (1/2 sample quantitation limit [SQL] used for non-detected results)

[4] = summation of 12 WHO PCB congener results (1/2 sample quantitation limit [SQL] used for non-detected results)

[5] = summation of 18 NOAA and 12 WHO PCB congener results (1/2 sample quantitation limit [SQL] used for non-detected results);
duplicative congeners (BZ# 105, 118, 167/128) subtracted from one set

U = not detected (ND); value represents SQL

J = estimated value

J1 = concentration of detected congeners contributes < 50% of total congener result

J2 = concentration of detected congeners contributes > 50% of total congener result

J3 = concentration of detected congeners contributes > 90% of total congener result

J4 = concentration of detected congeners contributes > 99% of total congener result

mg/kg = milligrams per kilogram (wet weight)

Prepared by: BJS 9/14/2016

Checked by: JAR 9/21/2016

Revised by: KMS 4/19/2017

Revisions Checked by: BJS 4/19/2017

Appendix B

Data Validation Summary
Massachusetts Department of Environmental Protection
New Bedford Harbor Seafood Contaminant Survey Monitoring
2016 Sampling
May 8, 2017

Data Validation Summary
Massachusetts Department of Environmental Protection
New Bedford Harbor Superfund Site
Seafood Contaminant Survey Monitoring 2016 Sampling
New Bedford, Massachusetts

INTRODUCTION

Eleven pre-spawn quahog tissue samples and seven conch tissue samples were collected as part of the New Bedford Harbor Superfund Site's Seafood Contaminant Survey Monitoring.   Samples were collected in May and December 2016. All samples were collected by the Massachusetts Department of Marine Fisheries (MADMF). Samples were submitted to Alpha Analytical Laboratory located in Mansfield, Massachusetts, for processing and analysis. Tissue samples were analyzed for percent lipids and polychlorinated biphenyls (PCBs) by gas chromatography/mass spectrometry (GC/MS) Selected Ion Monitoring (SIM).

Tissue samples were analyzed in Sample Delivery Groups (SDGs): L1623326 (quahogs – pre-spawn) and L1704503 (conch). The data packages were validated using Region I EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses (USEPA, 1996), Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses (USEPA, 2004), Alpha Analytical Laboratory Standard Operating Procedure (SOP) O-015/2162 (Alpha, 2016), and the Quality Assurance Project Plan, Seafood Contaminant Survey, New Bedford Harbor Superfund Site, Revision 12.0 (MADEP, 2016). As specified in the QAPP, Tier I+ data validation is performed on 95 percent of the samples, and Tier II data validation is performed on 5 percent of the samples. For the May 2016 sampling event, Tier II validation was performed on sample NBH16-SF-E-1. Because this sample was analyzed in the same analytical sequence with additional samples, a Tier II validation was also performed for samples NBH16-SF-B-2, NBH16-SF-C-2, and NBH16-SF-D-2. For the December 2016 sampling event (SDG L1704503), the laboratory reported analytical delays due to sample reanalyses for instrument calibration issues. Based on professional judgment, Tier II validation was performed for the samples in SDG L1704503 to evaluate instrument calibration associated with final sample results.

For Tier I+ data validation, data were evaluated for the following parameters:

*   Collection and Preservation
*   Holding Times
*   Data Completeness
*   Initial Calibration (for Tier I+ only if problems noted in case narrative)
        Continuing Calibration (for Tier I+ only if problems noted in case narrative or as noted above)
*   Blanks
*   Surrogate Standards
*   Standard Reference Material (SRM)
        Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)
        Matrix Spike/Matrix Spike Duplicates (MS/MSD)
*   Laboratory Duplicates
*   Internal Standards (for Tier I+ only if problems noted in case narrative)
*   Target Compound Quantitation (for Tier I+ only if problems noted in case narrative)
*   Miscellaneous

* - all criteria were met for this parameter

For Tier II data validation, the above checks were completed along with evaluations of initial calibrations, continuing calibrations, instrument tuning, and internal standards using summary forms provided in the data package.

DATA VALIDATION SUMMARY

In general, laboratory performance is considered acceptable and all results are usable. The following qualifying statements have been applied to the 2016 data.

Continuing Calibration

PCB (L1704503) - The continuing calibration associated with all samples had percent differences that were greater than the control limit of 20 for the following congeners:

- BZ 126
- BZ 156
- BZ 169
- BZ 189

Positive and non-detect results for these congeners were qualified estimated (J/UJ) in associated samples.

LCS/LCSD

PCB (L1623326) – The LCS/LCSD associated with all samples had percent recoveries greater than the 40-140 control limits for the following congeners, indicating potential high biases.

- BZ 7
- BZ 40
- BZ 134
- BZ 118
- BZ 131
- BZ 146

Positive detections of these congeners were qualified estimated (J) and may represent potential high biases.

In addition, the narrative states that the LCS/LCSD associated with all samples was spiked with the laboratory's standard 209 congener spiking solution, instead of the project-specific reduced list of 136 congeners. As a result, a subset of target compound congeners were reported to be co-eluting with other congeners present in the spiking solution. High biases were reported for the following coeluting congeners in the LCS/LCSD, and true concentrations could not be determined.

- BZ 46
- BZ 95
- BZ 83
- BZ 87
- BZ 107

- BZ 149
- BZ 158

Since the project target list includes only 136 congeners the data review was unable to determine the potential for high biases in the samples due to possible coelution of multiple target and/or non-target congeners. Based on professional judgment, positive detections of the above target compound congeners were qualified estimated (J) and may represent potential high biases.

<u>MS/MSD</u>

PCB (L1623326) – The MS associated with sample NBH16-SF-E-1 had percent recoveries greater than the 40-140 control limits for the following congeners, indicating potential high biases.

- BZ 40 (216)
- BZ 134 (172)
- BZ 118 (146)
- BZ 131 (180)
- BZ 146 (141)

Positive detections of these congeners were reported in sample NBH16-SF-E-1 and were qualified estimated (J).

MS percent recoveries less than the 40-140 control limits were reported for the following congeners, indicating potential low biases.

- BZ 26 (25)
- BZ 28/31 (34)

Positive detections of these congeners were reported in sample NBH16-SF-E-1 and were qualified estimated (J).

In addition, the narrative states that the MS associated with sample NBH16-SF-E-1 was spiked with the laboratory's standard 209 congener spiking solution, instead of the project-specific reduced list of 136 congeners. As a result, a subset of target compound congeners were reported to be co-eluting with other congeners present in the spiking solution. High biases were reported for the following coeluting congeners in the MS, and true concentrations could not be determined.

- BZ 46
- BZ 95
- BZ 83
- BZ 87
- BZ 107
- BZ 149
- BZ 158

Since the project target list includes only 136 congeners the data review was unable to determine the potential for high biases in the samples due to possible coelution of multiple target and/or non-target congeners. Based on professional judgment, positive detections of the above target compound

congeners were qualified estimated (J) in sample NBH16-SF-E-1 and may represent potential high biases.

Reference:

U.S. Environmental Protection Agency (USEPA), 1996. "Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses, Parts I and II," Quality Assurance Unit Staff; Office of Environmental Measurement and Evaluation; December, 1996.

U.S. Environmental Protection Agency (USEPA), 2004. "Region I, Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses;" Hazardous Site Evaluation Division; Draft, February, 2004.

Alpha Analytical, Inc., 2016. "Determination of PCB Homologs and 136/209 Individual Congeners by GC/MS-SIM," Alpha Analytical, Inc.; March, 2016.

MADEP, 2016. "Quality Assurance Project Plan, Seafood Contaminant Survey, New Bedford Harbor Superfund Site, Revision 12.0", Massachusetts Department of Environmental Protection; June, 2016.

Data Validator: Julie Ricardi
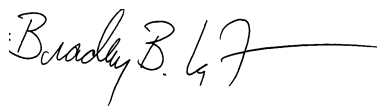
Signature: _____   Date: May 8, 2017

Reviewed by: Wolfgang D. Calicchio

Signature: _____   Date: September 9, 2016

Reviewed by: Bradley B. LaForest, NRCC-EAC

Signature: _____   Date: May 8, 2017

Appendix C

Seafood Monitoring - Field Sampling Activities
for
the New Bedford Harbor Superfund Site
2016 Annual Report
June 2017

Seafood Monitoring - Field Sampling Activities for the New Bedford Harbor Superfund Site
2016 Annual Report

Vin Malkoski, Senior Marine Fisheries Biologist
Massachusetts Division of Marine Fisheries
June 2017

The Massachusetts Division of Marine Fisheries (*MarineFisheries*) under an agreement with the Massachusetts Department of Environmental Protection (MassDEP) collects legal-size fish and shellfish from the three New Bedford Harbor fish closure areas. At the end of the collection period, these frozen samples were delivered to the Alpha Woods Hole Laboratories in Mansfield, Massachusetts for analysis. MassDEP provides the results of the analyses to EPA to monitor and support the site remediation project. This report describes *MarineFisheries*' field activities in 2015 in accordance with the Seafood Monitoring and Field Sampling Work Plan and makes recommendations for the upcoming 2017 field season based on results obtained during the previous field season.

Sample Sites

The three Fish Closure Areas are identified in Attachment 1 from the EPA Record of Decision for the Upper and Lower Operable Unit, New Bedford Harbor Superfund Site, New Bedford, Massachusetts, dated September 25, 1998. These three Fish Closure Areas were designated by the Mass. Dept. of Public Health in 1979. Area 1 includes the waters of the Acushnet River and the New Bedford/Fairhaven Inner Harbor north of the Hurricane Barrier. Area 2 comprises the waters of the Outer Harbor and Clarks Cove south of the Hurricane Barrier and north of a line drawn from Wilbur Point in Fairhaven to Ricketsons Point in Dartmouth. Area 3 is that portion of Buzzards Bay south of the line drawn from Wilbur Point in Fairhaven to Ricketsons Point in Dartmouth and north of a line drawn from Rocky Point on West Island in Fairhaven to the Negro Ledge C3 buoy then to Mishaum Point in Dartmouth.

There are five original sample stations in each of the three fish closure areas in the waters of the City of New Bedford and the Towns of Dartmouth and Fairhaven. Station locations within each area vary for different species as what may be suitable habitat for one species may not be suitable for another (Attachment 1 – Figure 1 to 3). During the 2016 collection season, the only species collected from Area 1 were quahog and striped bass.

2016 Field Collections

Complete information including the harvest dates, collection identification information, species, and station identification information, location by latitude and longitude, and collection method is appended to this report as Attachment 2 – Collection Sheets 1 & 2. Data Form 1 contains length and weight information for the fish species collected.

Channeled whelk (*Busycon canaliculatum)* and knobbed whelk *(Busycon carica)*
We collected channeled and knobbed whelk from seven stations in Areas 2 and 3 during December using conch pots. Despite numerous attempts, we were unable to obtain conch at Stations SF A-3 (Great Ledge), SF B-3 (Negro Ledge), or SF E-3 (Angelica Rock) in 2016.

Quahog (*Mercenaria mercenaria*)
Marine Fisheries collected pre-spawn quahog samples from eleven stations in Areas 1, 2, and 3 during May by rake and diver. We harvested a minimum of 12 quahogs per station, with the exception of Station SF F2 (Priests Cove), in each collection in order to provide sufficient sample sizes for the Work Plan. DMF samplers were only able to collect four quahogs from the Priests Cove station. No quahogs were found at four stations in Area 1 – SF A-1 (West of the Barrier Opening), SF B-1 (Palmer Island), SF C-1 (Crow's Island), and SF D-1 (Giffords' Marina). As noted in previous years, Station SF A-1 has become a permanent loss due to dredging and construction in support of the maritime terminal. It is unclear why we could not find quahogs at the other Area 1 station and we will try to identify new sites in 2017.

Striped Bass (*Morone saxatilis)*
Striped bass collections were attempted from June through November in Areas 1, 2, and 3 using rod and reel. Two fish were collected from Station FF B-1 (Palmer Island) in August, three from Station FF C-1 (Crow's Island) in November, and one from FF E-2 (Egg Island) in August.

<div align="center">

Planning for 2017 Field Collections

</div>

DMF will collect pre-spawn quahogs, striped bass, and whelks in 2017. In addition, DMF will attempt to search for additional quahog stations in Area 1.

ATTACHMENT 1
DMF HARVEST SITE MAPS

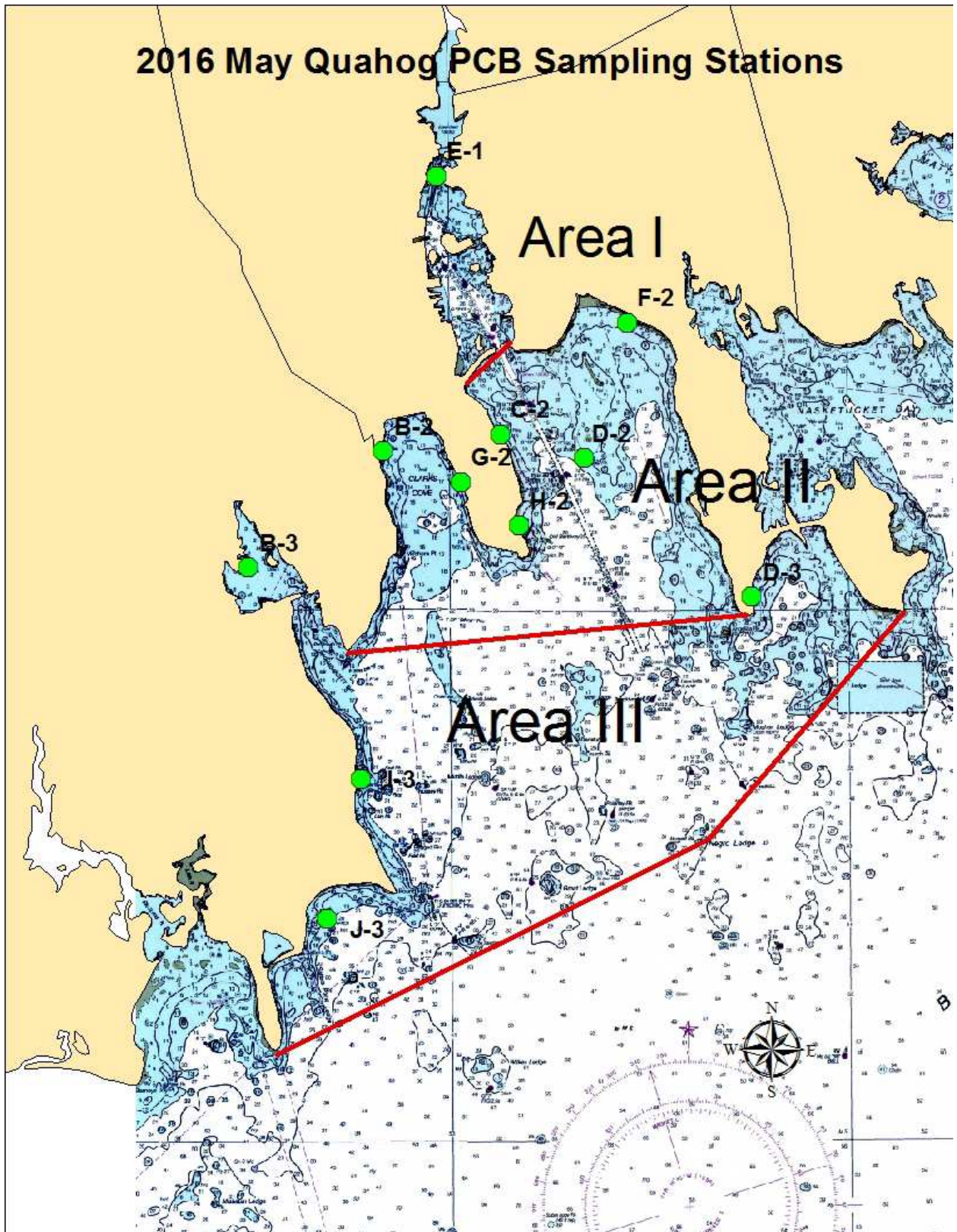**Figure 1 PCB Sample Areas I to III**

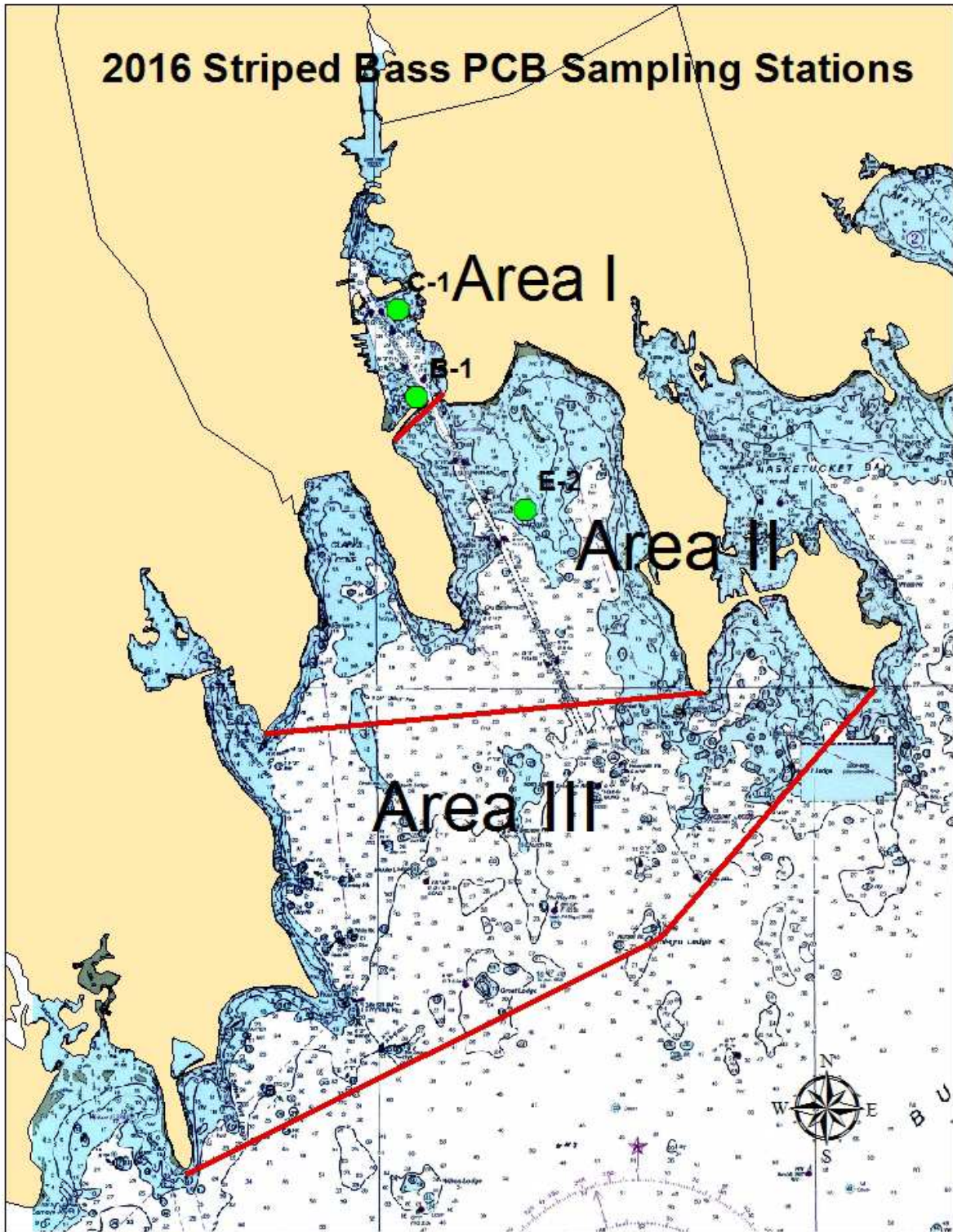**Figure 2 Quahog (Pre-spawn May), Areas I, II, & III**

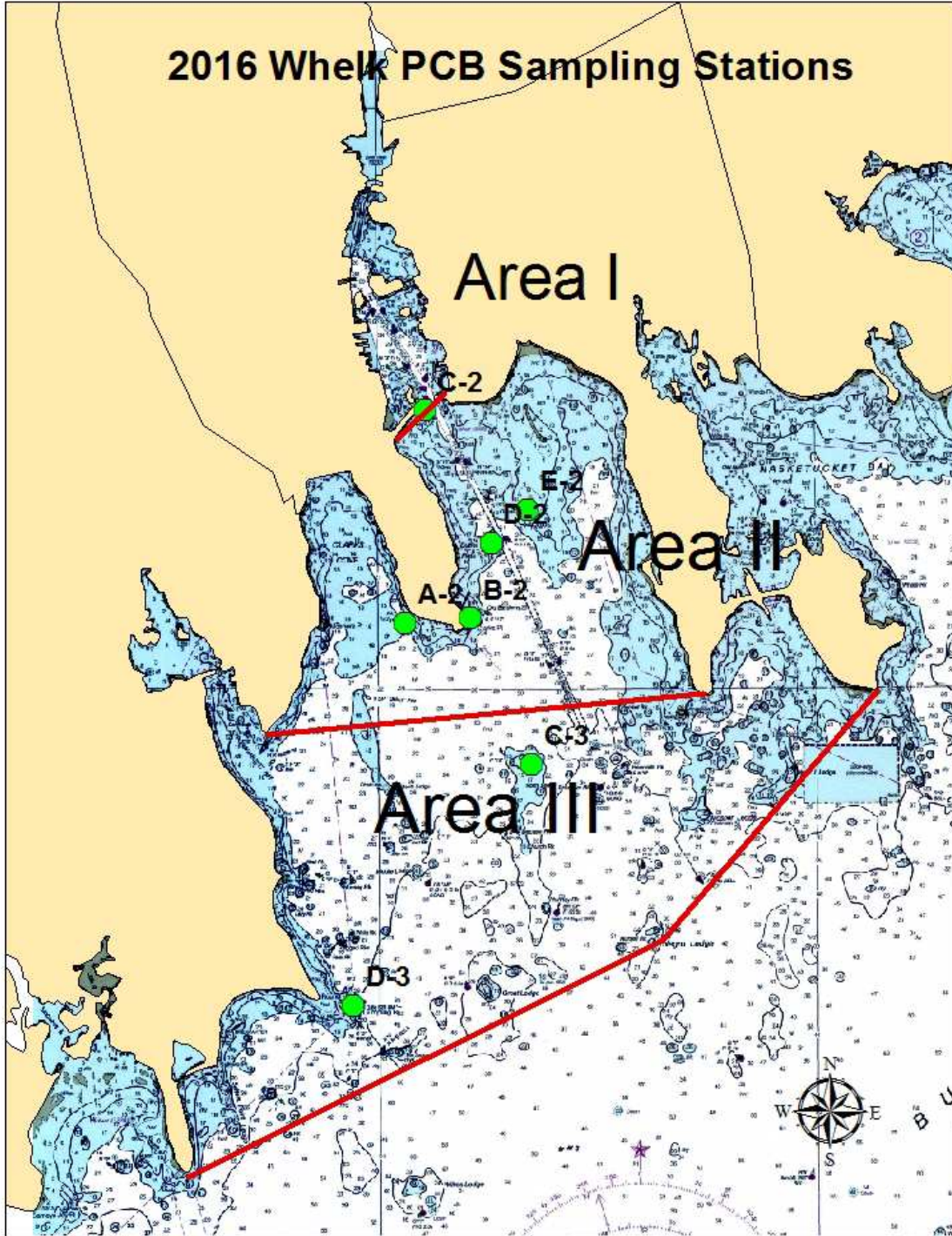**Figure 3 Striped Bass, Areas I & II**

Figure 4 Whelk, Areas II, & III

ATTACHMENT 2
DMF FIELD COLLECTION SHEETS

Field Collection Form 1 Quahog Pre-spawn
Field Collection Form 2 Striped bass
Field Collection Form 3 Whelk

Field Data Form 1 – Length and weight data by species

FIELD COLLECTION FORM 1: DIVISION MARINE FISHERIES, NEW BEDFORD OFFICE, 1213 PURCHASE ST, NEW BEDFORD, MA 02740

PROJECT #: NBH16   REQUESTED BY/AGENCY: Paul Craffey / Dept. Environmental Protection   ANALYSIS REQUESTED:

COLLECTOR: MDMF Vin Malkoski   SHIPPER: MDMF Vin Malkoski   SAMPLE CONDITION: FRESH____ FROZEN X

COLLECTION DATE DDMMYY	COLLECTION/TAG #	SPECIES & # IN SAMPLE	STATION I.D.	LOCATION	LAT/LONG DEG. MIN.	COLLECTION METHOD	RESERVED FOR OFFICE USE
5/25/2016	NBH16-SF-E-1	12 Quahogs (Prespawn)	Tin Can Island	NBH Area 1	41º 39.092' 070º 55.122'	Rake	
5/19/2016	NBH16-SF-B-2	12 Quahogs (Prespawn)	Rogers Street	NBH Area 2	041º 36.500' 070º 55.820'	Dive	
5/19/2016	NBH16-SF-C-2	13 Quahogs(Prespawn)	S of Fredrick St Ramp	NBH Area 2	041º 36.650' 070º 54.345'	Dive	
5/25/2016	NBH16-SF-D-2	13 Quahogs (Prespawn)	Egg Island	NBH Area 2	041º 36.422 070º 53.290'	Dive	
5/25/2016	NBH16-SF-F-2	4 Quahogs (Prespawn)	Priest's Cove	NBH Area 2	041º 37.700' 070º 52.740'	Dive	
5/19/2016	NBH16-SF-G-2	12 Quahogs (Prespawn)	W Rodney Family Area	NBH Area 2	041º 36.205' 070º 54.842'	Dive	
5/19/2016	NBH16-SF-H-2	12 Quahogs (Prespawn)	E Rodney Family Area	NBH Area 2	041º 35.790' 070º 54.108'	Dive	
5/19/2016	NBH16-SF-B-3	12 Quahogs (Prespawn)	Star of the Sea	NBH Area 3	041º 35.410' 070º 57.524'	Rake	
5/25/2016	NBH16-SF-D-3	13 Quahogs (Prespawn)	Nakata Beach	NBH Area 3	041º 35.102' 070º 51.192'	Dive	
5/19/2016	NBH16-SF-I-3	12 Quahogs (Prespawn)	Nonquit	NBH Area 3	041º 33.415' 070º 56.128'	Dive	
5/19/2016	NBH16-SF-J-3	12 Quahogs (Prespawn)	Salters Point	NBH Area 3	41° 32.09' 070 56.56'	Dive	

FIELD COLLECTION FORM 2: DIVISION MARINE FISHERIES, NEW BEDFORD OFFICE, 1213 PURCHASE ST, NEW BEDFORD, MA 02740

PROJECT #: NBH16   REQUESTED BY/AGENCY: Paul Craffey / Dept. Environmental Protection   ANALYSIS REQUESTED:

COLLECTOR: MDMF   Vin Malkoski   SHIPPER: MDMF Vin Malkoski   SAMPLE CONDITION: FRESH____   FROZEN__X__

COLLECTION DATE DDMMYY	COLLECTION/TAG #	SPECIES & # IN SAMPLE	STATION I.D.	LOCATION	LAT/LONG DEG. MIN.	COLLECTION METHOD	RESERVED FOR OFFICE USE
8/9/2016	NBH16-FF-B-1	2 Striped bass	Palmer Island	NBH Area 1	041º 37.500' 070º 54.506'	Rod & reel	
11/30/2016	NBH16-FF-C-1	3 Striped bass	Crow Island	NBH Area 1	041º 38.251' 070º 54.710'	Rod & reel	
8/9/2016	NBH16-FF-E-2	1 Striped bass	Egg Island	NBH Area 2	041º 36.523' 070º 53.258'	Rod & reel	

FIELD COLLECTION FORM 3: DIVISION MARINE FISHERIES, NEW BEDFORD OFFICE, 1213 PURCHASE ST, NEW BEDFORD, MA 02740

PROJECT #:__NBH16___   REQUESTED BY/AGENCY:_ Paul Craffey / Dept. Environmental Protection _____   ANALYSIS REQUESTED:

COLLECTOR:___MDMF Vin Malkoski_____   SHIPPER:____MDMF Vin Malkoski_____   SAMPLE CONDITION: FRESH_____   FROZEN__X__

COLLECTION DATE DDMMYY	COLLECTION/TAG #	SPECIES & # IN SAMPLE	STATION I.D.	LOCATION	LAT/LONG DEG. MIN.	COLLECTION METHOD	RESERVED FOR OFFICE USE
12/1/2016	NBH16-SF-A-2	10 Whelk	SMAST Pier	NBH Area 2	041º 35.556' 070º 54.669'	Pots	
12/1/2016	NBH16-SF-B-2	11 Whelk	E of Fort Rodman	NBH Area 2	041º 35.596' 070º 53.922'	Pots	
12/20/2016	NBH16 SF-C-2	11 Whelk	W of Opening	NBH Area 2	041º 37.380' 070º 54.430'	Pots	
12/1/2016	NBH16-SF-D-2	12 Whelk	Lighthouse	NBH Area 2	041º 36.242' 070º 53.683'	Pots	
12/1/2016	NBH16-SF-E-2	11 Whelk	Egg Island	NBH Area 2	041º 36.523' 070º 53.258'	Pots	
12/20/2016	NBH16-SF-C-3	4 Whelk	North Ledge	NBH Area 3	041º 34.341' 070º 53.234'	Pots	
12/20/2016	NBH16-SF-D-3	7 Whelk	Radome	NBH Area 3	041º 32.281' 070º 55.292'	Pots	

Field Data Form 1 – Fish Length & Weight Data by Species

New Bedford Harbor PCB Sampling Stations				
	DEP Sample Number	**DEP Sample Location**	**Lat/Lon**	**Length & Weight**
Striped Bass				
Area 1				
Station B	NBH16-FF-B-1	Palmer Island	41º 37.500' / 070º 54.506'	8/9/2016 - 47 cm FL, 17 kg; 58 cm FL, 18 kg
Station C	NBH16-FF-C-1	Crow's Island	41º 38.251' / 070º 54.710'	11/30/2016 - 36 cm, 0.5 kg; 32 cm FL, 0.3 kg; 34 cm FL, 0.4 kg
Area 2				
Station E	NBH16-FF-E-2	Egg Island	41º 36.523' / 070º 53.258'	8//2016 - 54 cm FL, 18 kg;