APPENDIX H

2022-2023 WINTER MONITORING RESULTS TECHNICAL MEMORANDUM



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Subject: Results from the 2022 and 2023 Winter Monitoring Events for the SIYB Dissolved Copper TMDL

Introduction

This technical memorandum presents the results from the winter water quality monitoring events conducted in Shelter Island Yacht Basin (SIYB) in March 2022 and January 2023. These winter monitoring events were conducted to supplement the annual SIYB Dissolved Copper Total Maximum Daily Load (TMDL) compliance monitoring, which occurs in the summer. The purpose of the winter monitoring was to understand the seasonal variability of dissolved copper levels in SIYB and at the reference stations during a period of cooler water temperatures, and lower frequencies of hull cleaning and vessel usage relative to the summer months.

Sampling and Analysis Methods

The 2022 and 2023 SIYB TMDL winter monitoring events were conducted on March 22, 2022 and January 25, 2023, respectively¹. During each monitoring event, field water quality readings and surface water samples (1-meter below the surface) were collected from six stations within SIYB (SIYB-1 at the head of the basin through SIYB-6 at the mouth of the basin) and two reference stations in the main channel of San Diego Bay (SIYB-REF-1 and SIYB-REF-2). In addition, quality control samples were collected, which included an independent replicate sample at Station SIYB-1 (SIYB-1 [Rep]), a field blank, and an equipment rinsate blank. Sampling was conducted in accordance with procedures described in the Monitoring Plan (Wood Environment & Infrastructure Solutions, Inc. [Wood], 2021a and 2022a) and Quality Assurance Project Plan (QAPP; Wood, 2021b and 2022b). Sampling locations and methods were also consistent with those employed during the annual summer TMDL compliance monitoring. Field data sheets from each event, which include field measurements and field notes, are provided in Appendix A.

After collection, each water sample was sent to Weck Laboratories to be analyzed for dissolved and total copper and zinc, dissolved organic carbon (DOC), total organic carbon (TOC), and total suspended solids (TSS). Samples were analyzed following certified United States Environmental Protection Agency (USEPA) methods or Standard Methods (SM) in accordance with the Monitoring Plan and QAPP. Analytical methods, method detection limits, and reporting limits for each analysis are provided in the analytical chemistry laboratory reports in Appendix B.

A subset of samples (SIYB-1 through SIYB-6 and SIYB-REF-1) were also sent to the WSP Environmental Toxicology Laboratory (formerly known as the Wood Aquatic Toxicology Laboratory) for toxicity testing, as follows:

¹ Monitoring dates were selected based on tides (i.e., sampling to bracket slack high tide) and weather (i.e., <0.1-inch of rain and minimal flow in the 72 hours prior to sampling) in accordance with the SIYB TMDL Monitoring Plan (Wood, 2021a and 2022a). In addition, the 2022 winter monitoring event was not conducted until the end of March to allow sufficient time for dissolved copper levels to return to baseline conditions following completion of the In-Water Hull Cleaning Pause Study.

- 1. For the 2022 winter monitoring event, toxicity tests consisted of (1) a 48-hour chronic bioassay test using mussel larvae (*Mytilus galloprovincialis*) and (2) a 96-hour acute bioassay test using Pacific topsmelt (*Atherinops affinis*).
- 2. For the 2023 winter monitoring event, the 48-hour chronic bioassay test was conducted using mussel larvae (*Mytilus galloprovincialis*), consistent with all prior monitoring events. However, due to the many challenges experienced using Pacific topsmelt for toxicity testing in previous monitoring years (e.g., limited organism supply and availability, poor organism health and sensitivity), the acute bioassay test for the 2023 winter monitoring event was performed using the inland silverside (*Menidia beryllina*).²

As a follow-up to the Phase I toxicity identification evaluation (TIE) performed for Station SIYB-1 in August 2022, additional toxicant identification and confirmation (Phase II/III TIE) procedures, including a copper spiking study, were also conducted on the SIYB-1 sample collected during the 2023 winter monitoring event.

Toxicity tests were conducted in accordance with procedures described in USEPA 1995 and 2002. Test methods and specifications for each bioassay are included in the toxicity laboratory reports in Appendix C and the technical memorandum summarizing TIE efforts in Appendix D.

Monitoring Results - March 22, 2022

Chemistry

All chemistry results for the 2022 winter monitoring event are summarized in Table 1 and included in the analytical chemistry laboratory report in Appendix B-1. During the March 2022 event, dissolved copper concentrations in SIYB ranged from 2.6 μ g/L at the outermost station (SIYB-6) to 11 μ g/L at the innermost station (SIYB-1). Five of the six stations in SIYB had dissolved copper concentrations exceeding the USEPA National Recommended Water Quality Criterion Continuous Concentration (CCC) water quality objective (3.1 μ g/L; Table 1). The 2022 winter basin-wide average dissolved copper concentration was 5.7 μ g/L.

Chronic Toxicity

Results of the chronic mussel development tests conducted for the 2022 winter monitoring event are summarized in Table 2 and Appendix C-1. The greatest effect to mussel development was observed in the unfiltered and undiluted sample (i.e., 100% concentration) from Station SIYB-1, with a 12% decrease in the combined survival and normal mussel development endpoint relative to the laboratory control. While the effect was statistically significant using the USEPA 1995 traditional flow-chart statistical methods (i.e., Dunnett multiple comparison test), the effect was not significant using the Test of Significant Toxicity (TST) approach (USEPA, 2010). No statistically significant effects to mussel development were observed in any of the other unfiltered or 1.2-micrometer (μ m) filtered samples (Table 2).

Acute Toxicity

Results of the acute topsmelt survival tests conducted for the 2022 winter monitoring event are summarized in Table 3 and Appendix C-1. There were no statistically significant effects to Pacific topsmelt survival observed in any samples tested, indicating that surface water samples collected in SIYB and at the reference station (SIYB-REF-1) were not acutely toxic to Pacific topsmelt.

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² In previous monitoring years, there have been many challenges with using Pacific topsmelt for toxicity testing including limited test organism supply and availability, as well as poor organism health and sensitivity due to difficulties culturing these organisms in a laboratory setting. The inland silverside (*Menidia beryllina*) is a USEPA-approved alternate test species for Pacific topsmelt that is commonly used in environmental compliance testing nationwide (40 CFR Part 136).

Table 1. Chemistry Results for SIYB Surface Waters - March 22, 2022 Event

Station	Dissolved Copper (µg/L)	Total Copper (µg/L)	Dissolved Zinc (µg/L)	Total Zinc (µg/L)	DOC (mg/L)	TOC (mg/L)	TSS (mg/L)
SIYB-1	11	12	30	31	1.0	1.2	3 J
SIYB-2	5.4	6.1	15	17	0.91	1.0	7
SIYB-3	5.7	6.5	16	17	0.91	1.1	6
SIYB-4	5.3	6.0	16	17	1.0	1.1	6
SIYB-5	4.3	4.8	12	13	0.96	1.4	6
SIYB-6	2.6	3.0	8.2	8.7	0.92	1.1	4 J
SIYB-REF-1	2.2	2.5	6.9	7.6	0.91	0.95	10
SIYB-REF-2	2.5	2.8	7.7	8.4	0.95	0.97	9

Notes:

Values in **bold** are above the USEPA National Recommended Water Quality Criterion Continuous Concentration (CCC) for dissolved copper of 3.1 µg/L in marine waters. No values were above the CCC for dissolved zinc of 81 µg/L.

µg/L = microgram(s) per liter; DOC = dissolved organic carbon; J = estimated value; mg/L = milligram(s) per liter; REF = reference; SIYB = Shelter Island Yacht Basin; TOC = total organic carbon; TSS = total suspended solids; USEPA = United States Environmental Protection Agency

Table 2. Results of the 48-Hour Bivalve Larvae Bioassay – March 22, 2022 Event

Concentration	9	Station/Com	bined Surv	vival and No	rmal Deve	lopment (%)	
Concentration (% Sample)	SIYB-1	SIYB-2	SIYB-3	SIYB-4	SIYB-5	SIYB-6	SIYB- REF-1
Laboratory Control	90.8	85.0	89.1	91.0	91.6	89.6	91.1
6.25	93.4	88.2	86.0	89.9	91.7	88.7	90.9
12.5	90.4	90.6	85.2	87.2	89.4	90.0	92.6
25	92.8	89.1	88.4	92.1	89.7	89.3	90.3
50	92.3	89.5	88.5	91.8	90.7	90.4	92.3
100	79.9*	86.5	90.5	92.3	91.4	93.0	88.5
Filter Control	89.4	91.3	84.0	83.4	88.0	90.5	89.2
100 (1.2-µm filtered) ^a	83.2	89.2	88.5	89.1	90.3	89.3	91.6
		Test Resu	lts – Unfilte	red Sample)		
NOEC (%)	50	100	100	100	100	100	100
% Effect	12.0	-1.8	-1.6	-1.5	0.2	-3.8	2.9
TST Result	Pass	Pass	Pass	Pass	Pass	Pass	Pass
		Test Res	ults – Filter	ed Sample			
NOEC (%)	100	100	100	100	100	100	100
% Effect	6.9	2.3	-5.4	-6.9	-2.6	1.4	-2.8
TST Result	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Notes:

µm = micrometer(s); % = percent; % effect = the percent effect in the 100% sample compared to the laboratory control (a negative % effect value represents a positive effect); NOEC = no observed effect concentration; REF = reference; SIYB = Shelter Island Yacht Basin; TST (Pass/Fail) = test of significant toxicity; TST Pass = sample is nontoxic according to the TST calculation; USEPA = United States Environmental Protection Agency

a. Tests were also performed on undiluted samples that were filtered through a 1.2-µm filter to remove potentially harmful native algae that might interfere with test organism performance.

^{*} Indicates a statistically significant decrease compared to control using the traditional USEPA flow-chart statistical methods (i.e., Dunnett multiple comparison test). Effect was not significant using the TST approach.

Station/Mean Survival (%) Concentration SIYB-(% Sample) SIYB-1 SIYB-2 SIYB-3 SIYB-4 SIYB-5 SIYB-6 REF-1 96.7 **Laboratory Control** 100 100 100 96.7 100 100 100 96.7 100 100 100 100 100 25 100 93.3 100 100 100 100 100 50 100 100 96.7 100 100 96.7 100 100 **Test Results** NOEC (%) 100 100 100 100 100 100 100 % Effect -3.5 0.0 0.0 0.0 3.3 0.0 0.0 TST Result **Pass** Pass Pass **Pass** Pass Pass Pass

Table 3. Results of the 96-Hour Pacific Topsmelt Bioassay - March 22, 2022 Event

Notes:

Monitoring Results – January 25, 2023

Chemistry

All chemistry results for the 2023 winter monitoring event are summarized in Table 4 and included in the analytical chemistry laboratory report in Appendix B-2. During the 2023 winter monitoring event, dissolved copper concentrations in SIYB ranged from 2.3 μ g/L at the outermost station (SIYB-6) to 7.7 μ g/L at the innermost station (SIYB-1). Five of the six stations in SIYB had dissolved copper concentrations exceeding the CCC water quality objective (3.1 μ g/L; Table 4). The 2023 winter basin-wide average dissolved copper concentration was 5.2 μ g/L.

Chronic Toxicity

Results of the chronic mussel development tests conducted for the 2023 winter monitoring event are summarized in Table 5 and Appendix C-2. Using the USEPA 1995 traditional flow-chart statistical methods (i.e., Dunnett multiple comparison test), significant effects to mussel development were observed in unfiltered and undiluted samples from Stations SIYB-1 (9.7% effect) and SIYB-2 (9.3% effect). However, these effects were not significant using the TST approach (USEPA, 2010).

Interestingly, the greatest effect to mussel development was observed in the undiluted sample from Station SIYB-1 that was filtered through a 1.2-µm mesh screen (28% effect). This effect was statistically significant using both the USEPA 1995 methods and the TST approach. During each chronic bioassay test performed for the SIYB TMDL, samples are filtered to remove potentially harmful native algae that might interfere with test organism performance; however, during the January 2023 event, the toxicity of the sample from Station SIYB-1 increased after filtration for unknown reasons. Further testing would be required to evaluate potential causes of the increased toxicity observed in the filtered sample.

No statistically significant effects to mussel development were observed in any of the other unfiltered or filtered samples collected in SIYB or at the reference station during the 2023 winter monitoring event (Table 5).

Toxicity Identification Evaluation for Chronic Toxicity at Station SIYB-1

Because chronic toxicity has been observed at Station SIYB-1 in almost every monitoring event during the SIYB TMDL Monitoring Program, a Phase I TIE was conducted during the August 2022

^{% =} percent; % effect = the percent effect in the 100% sample compared to the laboratory control (a negative % effect value represents a positive effect); NOEC = no observed effect concentration; REF = reference; SIYB = Shelter Island Yacht Basin; TST (Pass/Fail) = test of significant toxicity; TST Pass = sample is nontoxic according to the TST calculation

event to identify the likely class(es) of contaminants causing toxicity. Results of the Phase I TIE indicated that the observed toxicity was likely due to a cationic trace metal (WSP, 2023). Additional toxicant identification and confirmation (Phase II/III TIE) procedures were conducted on the SIYB-1 sample collected during the 2023 winter monitoring event.

Based on the results of the TIEs conducted in August 2022 and January 2023, multiple lines of evidence indicate that dissolved copper is a principal cause of toxicity to mussel embryos exposed to samples from Station SIYB-1. Key observations supporting this conclusion are as follows:

- The addition of ethylenediaminetetraacetic acid (EDTA) during both the summer 2022 and winter 2023 monitoring events successfully removed toxicity in water from SIYB-1. This treatment is highly specific at chelating and thus reducing the toxicity of cationic trace metals, including copper.
- 2. Concentrations of dissolved copper are consistently elevated at SIYB-1 above values found to cause toxicity to mussel embryos as reported in the literature and based on results from the TMDL Monitoring Program.
- 3. Addition of copper to clean laboratory water and site water from SIYB-1 (Phase II/III TIE) resulted in comparable dose response curves and median effect concentration (EC_{50}) values. If another toxicant was present, these curves and EC_{50} values would be expected to diverge from each other.
- 4. Toxicity of water from SIYB is consistently observed above a threshold of approximately $8 \mu g/L$. The dissolved copper measurement of 7.7 $\mu g/L$ at SIYB-1 during the winter 2023 sampling event is just below this threshold, thus likely explaining why there was only subtle chronic toxicity observed during this event.
- 5. The statistical correlation between dissolved copper and % effect on mussel embryo development over time is also strong and statistically significant.

Detailed methods and results from the TIE efforts conducted in January 2023 are presented in a technical memorandum in Appendix D.

Acute Toxicity

Results of the acute inland silverside survival tests conducted for the 2023 winter monitoring event are summarized in Table 6 and in Appendix C-2. There were no statistically significant effects to inland silverside survival observed in any samples tested, indicating that surface water samples collected in SIYB and at the reference station (SIYB-REF-1) were not acutely toxic to inland silversides.

Table 4. Chemistry Results for SIYB Surface Waters – January 25, 2023 Event

Station	Dissolved Copper (µg/L)	Total Copper (µg/L)	Dissolved Zinc (µg/L)	Total Zinc (µg/L)	DOC (mg/L)	TOC (mg/L)	TSS (mg/L)
SIYB-1	7.7	7.3	26	23	1.3	1.2	9
SIYB-2	6.9	7.3	28	26	1.3	1.3	10
SIYB-3	5.3	5.3	20	19	1.4	1.2	5
SIYB-4	5.2	5.4	19	19	1.3	1.2	5
SIYB-5	3.7	3.7	14	13	1.4	1.2	5
SIYB-6	2.3	2.3	8.9	8.1	1.2	1.2	5
SIYB-REF-1	1.6	1.6	6.1	5.9	1.3	1.2	6
SIYB-REF-2	2.2	2.5	14	14	1.4	1.4	4 J

Notes:

Values in **bold** are above the USEPA National Recommended Water Quality Criterion Continuous Concentration (CCC) for dissolved copper of 3.1 µg/L in marine waters. No values were above the CCC for dissolved zinc of 81 µg/L.

µg/L = microgram(s) per liter; DOC = dissolved organic carbon; J = estimated value; mg/L = milligram(s) per liter; REF = reference; SIYB = Shelter Island Yacht Basin; TOC = total organic carbon; TSS = total suspended solids; USEPA = United States Environmental Protection Agency

Table 5. Results of the 48-Hour Bivalve Larvae Bioassay – January 25, 2023 Event

Concentration	9	Station/Com	bined Surv	vival and No	ormal Deve	lopment (%))
Concentration (% Sample)	SIYB-1	SIYB-2	SIYB-3	SIYB-4	SIYB-5	SIYB-6	SIYB- REF-1
Laboratory Control	84.0	87.7	85.9	85.4	76.4	88.1	83.9
6.25	86.3	85.2	87.4	87.9	82.1	87.1	87.4
12.5	87.0	84.9	88.8	84.7	83.5	87.4	87.3
25	87.0	84.8	86.3	87.4	76.0	88.8	85.2
50	85.0	86.0	88.1	86.7	86.0	87.8	82.7
100	75.9*	79.6*	89.5	84.6	82.0	89.0	85.9
Filter Control	85.1	85.0	84.9	88.8	75.6	82.0	83.3
100 (1.2-µm filtered)ª	<u>61.2*</u>	75.6	87.2	82.7	83.9	87.3	83.4
		Test Resu	lts – Unfilte	red Sample)		
NOEC (%)	50	50	100	100	100	100	100
% Effect	9.7	9.3	-4.2	0.9	-7.4	-1.0	-2.4
TST Result	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Test Results – Filtered Sample							
NOEC (%)	<100	100	100	100	100	100	100
% Effect	28.1	11.0	-2.8	7.0	-11.0	-6.5	-0.1
TST Result	Fail	Pass	Pass	Pass	Pass	Pass	Pass

Notes

<u>Bold underline</u>* indicates a statistically significant decrease compared to control using both the traditional USEPA flow-chart statistical methods and the TST approach.

μm = micrometer(s); % = percent; % effect = the percent effect in the 100% sample compared to the laboratory control (a negative % effect value represents a positive effect); NOEC = no observed effect concentration; REF = reference; SIYB = Shelter Island Yacht Basin; TST (Pass/Fail) = test of significant toxicity; TST Fail = sample is toxic according to the TST calculation; TST Pass = sample is nontoxic according to the TST calculation; USEPA = United States Environmental Protection Agency

a. Tests were also performed on undiluted samples that were filtered through a 1.2-µm filter to remove potentially harmful native algae that might interfere with test organism performance.

^{*} Indicates a statistically significant decrease compared to control using the traditional USEPA flow-chart statistical methods (i.e., Dunnett multiple comparison test). Effect was not significant using the TST approach.

Station/Mean Survival (%) Concentration SIYB-(% Sample) SIYB-1 SIYB-2 SIYB-3 SIYB-4 SIYB-5 SIYB-6 REF-1 **Laboratory Control** 93.3 93.3 96.7 96.7 100 100 100 96.7 96.7 93.3 96.7 100 100 100 25 50 100 96.7 96.7 96.7 100 96.7 100 100 100 100 97.2 96.7 93.3 100 100 **Test Results** NOEC (%) 100 100 100 100 100 100 100 % Effect -7.1 -7.1 -0.6 0.0 6.7 0.0 0.0 TST Result Pass Pass Pass Pass Pass Pass Pass

Table 6. Results of the 96-Hour Inland Silverside Bioassay – January 25, 2023 Event

Notes:

% = percent; % effect = the percent effect in the 100% sample compared to the laboratory control (a negative % effect value represents a positive effect); NOEC = no observed effect concentration; REF = reference; SIYB = Shelter Island Yacht Basin; TST (Pass/Fail) = test of significant toxicity; TST Pass = sample is nontoxic according to the TST calculation

Quality Assurance and Quality Control Summary

Rigorous quality assurance (QA) and quality control (QC) procedures were implemented from the sample collection stage through the analysis and reporting stages, as described in the QAPP (Wood, 2021b and 2022b). Field QA checklists were used during each monitoring event to ensure that sample collection procedures were consistent at each station and all required field data were recorded properly (see Appendix A). Following sample collection, proper chain-of-custody (COC) procedures were used to identify sample analyses to be conducted, as well as document sample possession, transport, and condition upon receipt at the laboratory. COC forms are included with the laboratory reports in Appendices B and C.

All samples collected during the 2022 and 2023 winter monitoring events were submitted to the appropriate laboratory on the day of collection (toxicity) or the day after collection (chemistry). Samples were received in good condition at Weck Laboratories and WSP Environmental Toxicology Laboratory and analyzed within the required holding times. Both laboratories are accredited by the National Environmental Laboratory Accreditation Program (NELAP) and/or California Environmental Laboratory Accreditation Program (ELAP) for all analyses performed at the time they were conducted.

Analytical and toxicity results from both monitoring events underwent a thorough QA/QC evaluation and were deemed acceptable for reporting purposes, with qualifications noted in the laboratory reports in Appendices B and C. A summary of this evaluation and any potential impacts to data quality is provided below.

Chemistry

- Low-level detections of metals, organic carbon, and TSS were measured in the field and equipment rinsate blanks for both monitoring events.
 - This may indicate trace contamination from the field, Niskin sampler, and/or laboratory. The low-level concentrations of these analytes were negligible relative to the sample concentrations measured within SIYB and therefore not considered a significant data bias.

- DOC and TOC spike recoveries were outside of performance-based recovery limits for the 2022 winter monitoring event.
 - Matrix spike and matrix spike duplicate recoveries were below the laboratory's performance-based recovery limits for DOC and TOC, indicating possible matrix interference. These results are consistent with historical concentrations and are reported as measured. The data are flagged to indicate possible matrix interference. The laboratory control samples were within acceptance limits, indicating that the laboratory was in control and the data is acceptable.
- Dissolved zinc concentrations were slightly higher than the corresponding total zinc concentrations in several samples collected during the 2023 winter monitoring event.
 - Review of the method blank, equipment rinsate blank, and field blank results for zinc did not indicate any significant contamination that may have resulted during field filtration, and the corresponding dissolved copper analytical sequence did not show the same trend. Deviations likely resulted from slight differences in calibration when the samples were analyzed. These slight deviations are not considered significant enough to warrant resampling or retesting. The results were reported within acceptance criteria determined by the test method and standard operating procedure and therefore considered usable for their intended purposes and reported as provided by the laboratory.
- TSS was detected at low levels in method blanks analyzed for the 2023 winter monitoring event.
 - o These low-level detections were estimated (i.e., below the reporting limit) and not considered a significant data bias.
- DOC values in several cases were higher than the TOC values reported for the same sample collected during the 2023 winter monitoring event.
 - Water samples for TOC and DOC analyses are dispensed to separate sample vials in the field, and laboratory analyses are conducted separately. Since the DOC and TOC are tested separately, they can have slight differences in calibration that can sometimes result in TOC levels being slightly lower than DOC levels. The magnitudes of these minor differences are in general agreement with results from previous events. Corresponding laboratory QA/QC samples met all QAPP limits, and concentrations measured in the associated laboratory blanks were non-detect. All results are considered usable for their intended data purposes and are reported as provided by the laboratory.

Raw analytical chemistry QC results and applicable data qualifiers are provided in the laboratory reports in Appendix B.

Toxicity

 Laboratory controls for the chronic mussel development tests conducted for the 2022 and 2023 winter monitoring events met the USEPA test acceptability criteria (TAC) of 50% or greater survival and 90% or greater proportion normal. All laboratory controls also met the ASTM TAC of 70% or greater for the combined survival and proportion normal endpoint. Chronic tests were performed in accordance with USEPA protocol guidelines, and no major deviations were required. All chronic mussel development test results from the 2022

- and 2023 winter monitoring events were therefore considered valid and acceptable for reporting purposes.
- Acute toxicity tests conducted with Pacific topsmelt (winter 2022) and inland silversides (winter 2023) met the USEPA method TAC, with greater than 90% survival in the laboratory controls. Tests were performed in accordance with USEPA protocol guidelines, and no major deviations were required. All acute toxicity test results from the 2022 and 2023 winter monitoring events were therefore considered valid and acceptable for reporting purposes.
- Concurrent reference toxicant tests were conducted with both test organisms for the 2022 and 2023 winter monitoring events. All reference toxicant tests met the corresponding minimum TAC and were deemed valid. The calculated EC₅₀ values for the bivalve tests and median lethal effect concentration (LC₅₀) values for the Pacific topsmelt/inland silverside tests were within the acceptable range (i.e., within two standard deviations of the laboratory historical mean), indicating that the test organisms used during the 2022 and 2023 winter monitoring events were healthy and exhibited typical sensitivity to copper.

Detailed QA/QC summaries for the toxicity testing, including raw data and applicable qualifiers, are provided in each laboratory report in Appendix C.

References

- United States Environmental Protection Agency (USEPA). 1995. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms. EPA-600-R-95-136. EPA Office of Research and Development. Narragansett, RI.
- USEPA. 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. EPA-821-R-02-012. October 2002.
- USEPA. 2010. National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document. EPA-833-R-10-003. June 2010.
- Wood Environment & Infrastructure Solutions, Inc. (Wood). 2021a. Shelter Island Yacht Basin Dissolved Copper Total Maximum Daily Load Monitoring Plan (Revision 7). August 2021.
- Wood. 2021b. Quality Assurance Project Plan for Shelter Island Yacht Basin Dissolved Copper Total Maximum Daily Load. August 2021.
- Wood. 2022a. Shelter Island Yacht Basin Dissolved Copper Total Maximum Daily Load Monitoring Plan (Revision 8). August 2022.
- Wood. 2022b. Quality Assurance Project Plan for Shelter Island Yacht Basin Dissolved Copper Total Maximum Daily Load Monitoring Plan. August 2022.
- WSP USA Environment & Infrastructure Inc. (WSP). 2023. Mussel Embryo Toxicity Identification Evaluation (TIE) Results for 2022 Annual Summer Compliance Monitoring for the SIYB Dissolved Copper TMDL Site SIYB-1.

		B Dissolved Copper TMDL

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Appendix A

Field Data Sheets and QA Checklists



Station Identification:	SIYB-ER		
Date: (mm/dd/yyyy)	03/22/2022	Time on Station: (hh:mm)	0735
Time of Sample Collection:	0745	Time of CTD Cast:	NA
GPS: (WGS84)	Lat. transient d	امرد Long.	transient dock
Tide (ft):	MA	Time of Slack High Tide:	NA
Water Depth (ft):	Ala	Wind (mph):	& mph
Weather conditions:	Sunny, CA	lm_	· · · · · · · · · · · · · · · · · · ·
Surface Water Conditions:	NIA	.	
Water Visibility (ft):	n /A		

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	pН	DO (mg/L)
Upon arrival on station					
During sample collection			NIA		
End of sample collection					
Average value					

^{*}Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Notes: Equipment Ringe Collected @ transient dock
prior to sample collection

Station

Identification:

SIYB-REF-Z

Date:

(mm/dd/yyyy)

Time on Station:

(hh:mm)

Time of

Time of Sample

Collection:

CTD Cast:

GPS:

(WGS84)

Long. -117, 22544

Tide (ft):

Time of Slack

High Tide:

Water Depth (ft):

Wind (mph): _ ~ 2 mph S

Weather

conditions:

Surface Water

Conditions:

light texture, current direction E

Water Visibility

(ft):

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station	16.7	50567	33.21	7.97	7.61
During sample collection	16.7	50594	33.23	7.95	7.62
End of sample collection	14.7	50600	33.24	7.95	7.62
Average value	16.7	50587	33.23	7.96	7.62

^{*}Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Notes: Walchemonly, no tox, no CTD cast

drifted over site w/ motor off; did not anchor

Station

Identification:

SIYB-REE-1

Date:

(mm/dd/yyyy)

03/22/2022

Time on Station:

(hh:mm) <u>08:55</u>

Time of Sample

Collection:

19:30

Time of CTD Cast:

09:58

GPS:

(WGS84)

Lat. 32. +0404

Long. -117, 23235

Tide (ft):

+1.23 ft.

Time of Slack

High Tide: |3.03

Water Depth (ft):

67.4

Wind (mph):

-0.2 mon SW

Weather

conditions:

Junny, Calm

Surface Water

Conditions:

light texture, incoming tide

Water Visibility

(ft):

16/8"

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station	16.3	50811	33.38	B.01	7.47
During sample collection	16.3	50822	33.39	8.05	7.46
End of sample collection	16.1	50849	33.40	7.98	7.40
Average value	16.2	50827	33.39	8.01	7.44

^{*}Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Notes:

Station

Identification:

SIYB-6

Date:

(mm/dd/yyyy)

03/22/2022

Time on Station:

(hh:mm) () '

Time of Sample

Collection:

10:30

Time of CTD Cast:

10:45

GPS:

(WGS84)

Lat. 32.70877

Long. -117, 23511

Tide (ft):

+2.0

Time of Slack

High Tide:

13:03

Water Depth (ft):

15.5

Wind (mph): ∽

-0.2mph N

Weather

conditions:

Sunny calm

Surface Water

Conditions:

mostly calm, incoming tide

Water Visibility

(ft):

15'6"

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station	16.3	50864	33.43	8.01	7.28
During sample collection	16.4	50845	33.41	8.01	7,40
End of sample collection	16.4	50914	33.44	7.99	7.34
Average value	16.4	50874	33.43	8.00	7.34

^{*}Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Notes:

SIYB-5 Identification: Date: Time on Station: 13/22/2022 (hh:mm) (mm/dd/yyyy) Time of Sample Time of 1:50 Collection: CTD Cast: GPS: Long. -117.23300 Lat. 32.71213 (WGS84) Time of Slack

13:03 +3.22 ft. High Tide: Tide (ft):

Water Depth (ft): 22.2 ft. Wind (mph): 1-4 MOHNW

Weather sunny light breeze conditions:

Surface Water Slight texture in coming tide Conditions:

Water Visibility 16'6" (ft):

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station	17.1	50896	33,47	8.06	7.52
During sample collection	17.0	50867	33,45	8.03	7.56
End of sample collection	17.0	50893	33.45	8.03	7.58
Average value	17.0	50885	33.46	8.04	7.55

^{*}Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Station

Notes: Topside cleaning observed -15 yds SW Hull cleaner observed leaving slip -50 yds W (not actively dearing) @ 1142

TWO other hull cleaners observed walking ancks (not actively aganing) e

Station

Identification:

SIYB-4

Date:

(mm/dd/yyyy)

Time on Station:

(hh:mm)

Time of Sample

Collection:

13:00

Time of CTD Cast:

GPS:

(WGS84)

Lat. 32.71681

Long. 117, 23202

Tide (ft):

+3.63 Ft.

Time of Slack

High Tide:

Water Depth (ft):

16.0

Wind (mph): 12-12-MDH NNW

Weather

conditions:

sunny, light breeze

Surface Water

Conditions:

textured conditions, Slackhigh tide

Water Visibility

(ft):

13'6"

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station	17.1	508.99	33.46	8.05	7.44
During sample collection	17.1	50906	33.47	8.01	7.53
End of sample collection	17.1	50899	33.46	8.04	7.87
Average value	17.1	20901	33.46	8.03	7.52

^{*}Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Notes:

sample collected @ slack high tide

Station SIYB-3

Date: (mm/dd/yyyy) 03 22 2022

Time on Station: (hh:mm) 13:45

Time of Sample

Collection:

13:50

Time of CTD Cast:

GPS:

(WGS84)

Lat. 32.71549

Long. - 117.22986

Tide (ft):

+3.5BF+

Time of Slack

Water Depth (ft): \\ \frac{1}{2} \cdot 0 \cdot \frac{1}{2}

Wind (mph): 8-12 MPHNW

Weather conditions:

Sunny, breezy

Surface Water

Conditions:

right chop, outgoing tide

Water Visibility

(ft):

1219"

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station	17.2	50898	33.46	8.04	7.56
During sample collection	17.2	50912	33.47	8.01	7.57
End of sample collection	17.1	50918	33.47	8.04	7.53
Average value	17.2	50909	33.47	8.03	7.55

^{*}Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Notes:

Identification: S1YB-ZDate: Time on Station: (hh:mm) H^{2}

GPS: (WGS84) <u>Lat. 32-71414</u> <u>Long. -117.22919</u>

Tide (ft): Time of Slack High Tide: 13:03

Water Depth (ft): 14.3 ft Wind (mph): 12-15mph NW

Weather conditions: Sunny, windy

Surface Water Mild Conditions: Woop, Some White capping outside Manna

Water Visibility (ft):

Station

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station	17.2	50943	33.52	8.04	7.54
During sample collection	17.2	50928	33,49	8.02	7.54
End of sample collection	17.0	50932	33.48	8.00	7.52
Average value	17.1	50934	33.50	8.02	7.53

^{*}Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Notes: Freshwater observed leaking from hose 50yds E @ ~ 1440.

Tied to dock on LOW, not anchored due to wind (see depiction)

Station

Identification:

S14B-1

Date:

(mm/dd/yyyy)

03/22/2022

Time on Station:

15:35 (hh:mm)

Time of Sample

Collection:

15:50

Time of CTD Cast:

GPS:

(WGS84)

Lat. 32,71820

- 117.22600 Long.

Tide (ft):

+2.79 ft.

Time of Slack

High Tide:

Water Depth (ft):

Wind (mph): <u>5-7mph</u> NW

Weather

conditions:

Surface Water

Conditions:

light texture, outgoing tide

Water Visibility

(ft):

1313"

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station	17.9	50900	33.48	8.03	7.36
During sample collection	17.8	50912	33.48	8.00	7.36
End of sample collection	17.8	50898	33,47	පි.00	7.38
Average value	17.8	50903	33.48	8.01	7.37

^{*}Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Notes:

extra volume collected for ms/msp

Station

Identification:

SIYB-I-REP

Date:

(mm/dd/yyyy)

Time on Station:

(hh:mm) 15:35

Time of Sample

Collection:

16:30

Time of CTD Cast:

NIA

GPS:

(WGS84)

Lat. 32.71918

Long. <u>~117.22593</u>

Tide (ft):

42.35 ft.

Time of Slack

High Tide:

Water Depth (ft):

Wind (mph): 8-12-mph NW

Weather

conditions:

Surface Water

Conditions:

light texture, out going tide

Water Visibility

(ft):

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station	17.7	50948	33.50	8.00	7.39
During sample collection	17.8	50978	33.44	7.99	7.35
End of sample collection	17.8	50909	33.49	8.00	7.36
Average value	17.8	50912	33.48	8.00	7.37

^{*}Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Notes:

independent surface grab taken at SIYB-1 for field replicate (chemical analysis only; no toxicity)

Station Identification:	SIYB-FB			
Date: (mm/dd/yyyy)	03/22/202	Time on Station: (hh:mm)	NIA	
Time of Sample Collection:	_16:55	Time of CTD Cast:	NIA	
GPS: (WGS84)	Lat. NA	c Long.	MA	
Tide (ft):	NIA	Time of Slack High Tide:	13:03	
Water Depth (ft):	NIA	Wind (mph):	1-4 mph	NW
Weather conditions:	_sunny.	breczy		
Surface Water Conditions:	N/R	I		
Water Visibility (ft):	NIA			

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station	The same of the sa				
During sample collection	PALT LIA	Will was seen take man the was and he was a little and was here	NA		
End of sample collection			-Constant	***	
Average value		-			

^{*}Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Notes: Boat anchored, motor off during sample collection. field blank collected while anchored at SIYB-1

station Location: 5778 -	R	Date/Time: 3/22/22 0745	
Mark each box with Y, N, or NA	PD = police docke	I slick around dock	
Field Procedures	(= significal fiel	of stick around dock	

1. Station Occupation:

Vessel has been anchored (or tied off)	4
Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded	P.D.
Tide recorded	NA
Weather conditions recorded	Y
Surface water conditions (incl. currents) recorded (including H ₂ O clarity by Secchi disk)	0
Time of sampling recorded	4
Water depth at sample site recorded	NS
General site observations recorded	7
Check for boat cleaning operations in the area – if active, move to a new station	int

Field staff wearing fresh, powder-free nitrile gloves	×
Vessel engine has been shut off for 3-5 minutes prior to sampling	7
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	7
Sampling instrument given site water rinse prior to deployment	M
Sample bottles correctly labeled and match the station identification	7
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	Y
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	7
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	7
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	Y
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	NA
Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	in
Sampling depth recorded	NA
Sample bottles filled in the following order: metals, organics, toxicity	Y
Staff avoided contaminating samples at all times	Y
Equipment rinsate blank and field blank have been collected (if applicable)	Y
Site replicate (i.e., duplicate) collected (if applicable)	ars
PPE properly removed and disposed of upon station completion	7
	,

3. Data Recording:

Field notes have been recorded for this site before moving to the next	7
Water samples properly logged on COC form	Υ
Proper persons have signed the COC	Y

4. Sample Storage:

Water samples properly stored on ice in a cooler		7
Cooler and samples hand delivered to labs		Υ
Completed COC included with courier to hand deliver to labs	•	Y

Additional Notes:

Signature of QA/QC Personnel: Date/Time: -3/23/zz 1005

Print Name/Company: 100 | Date/Time: -3/23/zz 1005

station Location:	517B-REF2	Date/Time: 3/22/02-0845
-		

Mark each box with Y, N, or NA

Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off) - stay on status up trelling inter	NA
Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded	4
Tide recorded	Y
Weather conditions recorded	Y
Surface water conditions (incl. currents) recorded (including H ₂ O clarity by Secchi disk)	Y
Time of sampling recorded	7
Water depth at sample site recorded	7
General site observations recorded	Y
Check for boat cleaning operations in the area – if active, move to a new station	NA

Sampling instrument given site water rinse prior to deployment Sample bottles correctly labeled and match the station identification Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxisity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) MA	Field staff wearing fresh newdor free pitrile gloves	U
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique) Sampling instrument given site water rinse prior to deployment Sample bottles correctly labeled and match the station identification Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxisity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) MA		/
Sampling instrument given site water rinse prior to deployment Sample bottles correctly labeled and match the station identification Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxisity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) MA	Vessel engine has been shut off for 3-5 minutes prior to sampling	7
Sample bottles correctly labeled and match the station identification Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxisity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	7
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxisity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) MA Site replicate (i.e., duplicate) collected (if applicable)	Sampling instrument given site water rinse prior to deployment	7
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxisity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sample bottles correctly labeled and match the station identification	y
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	7
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	7
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	y
occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable)	Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	7
Collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	Y
Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	Y
Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sampling depth recorded	7
Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sample bottles filled in the following order: metals, organics, toxicity	7
Site replicate (i.e., duplicate) collected (if applicable)	Staff avoided contaminating samples at all times	9
	Equipment rinsate blank and field blank have been collected (if applicable)	YNA
PPE properly removed and disposed of upon station completion	Site replicate (i.e., duplicate) collected (if applicable)	M
	PPE properly removed and disposed of upon station completion	7

3. Data Recording:

Field notes have been recorded for this site before moving to the next	
Water samples properly logged on COC form	Υ
Proper persons have signed the COC	۲

4. Sample Storage:

Water samples properly stored on ice in a cooler	7
Cooler and samples hand delivered to labs	Y
Completed COC included with courier to hand deliver to labs	Υ

Additional Notes:

Signature of QA/QC Personnel: Date/Time: 3/22/22 1005

Print Name/Company: Will Mat Sclottle

station Location:	SIYD-REF 1	Date/Time:	3/22/22	0930
Mark each box with	Y, N, or NA			

Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off)	7
Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded	Y
Tide recorded	Y
Weather conditions recorded	7
Surface water conditions (incl. currents) recorded (including H ₂ O clarity by Secchi disk)	y
Time of sampling recorded	7
Water depth at sample site recorded	Y
General site observations recorded	- Y
Check for boat cleaning operations in the area – if active, move to a new station	4

Field staff wearing fresh, powder-free nitrile gloves	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling	7
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	4
Sampling instrument given site water rinse prior to deployment	Y
Sample bottles correctly labeled and match the station identification	\ \
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	7
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	7
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	4
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	4
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	×
Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	9
Sampling depth recorded	7
Sample bottles filled in the following order: metals, organics, toxicity	4
Staff avoided contaminating samples at all times	7
Equipment rinsate blank and field blank have been collected (if applicable)	NA
Site replicate (i.e., duplicate) collected (if applicable)	Mez
PPE properly removed and disposed of upon station completion	14

3. Data Recording:

Field notes have been recorded for this site before moving to the next	
Water samples properly logged on COC form	Y
Proper persons have signed the COC	7

4. Sample Storage:

Water samples properly stored on ice in a cooler	7
Cooler and samples hand delivered to labs	Y
Completed COC included with courier to hand deliver to labs	Y

Additional Notes:

Signature of QA/QC Personnel:

Print Name/Company: //

Date/Time:

3/23/21 60

station Location:	5140-6	Date/Time: 3/22/22 1030

Mark each box with Y, N, or NA

Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off)	7
Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded	Y
Tide recorded	4
Weather conditions recorded	Y
Surface water conditions (incl. currents) recorded (including H ₂ O clarity by Secchi disk)	Y
Time of sampling recorded	7
Water depth at sample site recorded	Y
General site observations recorded	Y
Check for boat cleaning operations in the area – if active, move to a new station	Y

Field staff wearing fresh, powder-free nitrile gloves	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling	Y
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	Y
Sampling instrument given site water rinse prior to deployment	Y
Sample bottles correctly labeled and match the station identification	Y
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	Y
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	Y
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	Y
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	Y
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	Y
Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	Y
Sampling depth recorded	7
Sample bottles filled in the following order: metals, organics, toxicity	Y
Staff avoided contaminating samples at all times	Y
Equipment rinsate blank and field blank have been collected (if applicable)	NA
Site replicate (i.e., duplicate) collected (if applicable)	ag-
PPE properly removed and disposed of upon station completion	7

3. Data Recording:

Field notes have been recorded for this site before moving to the next	7
Water samples properly logged on COC form	7
Proper persons have signed the COC	7

4. Sample Storage:

Water samples properly stored on ice in a cooler	7
Cooler and samples hand delivered to labs	7
Completed COC included with courier to hand deliver to labs	7

Additional Notes:

Signature of QA/QC Personnel: Date/Time: 423/22 1605

Print Name/Company: Polit Saistle Uosa

station Location:	5148-5	Date/Time:	3/22/22 1150

Mark each box with Y, N, or NA

Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off)	7
Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded	4
Tide recorded	Y
Weather conditions recorded	7
Surface water conditions (incl. currents) recorded (including H₂O clarity by Secchi disk)	7
Time of sampling recorded	Y
Water depth at sample site recorded	7
General site observations recorded	Y
Check for boat cleaning operations in the area – if active, move to a new station	7

Field staff wearing fresh, powder-free nitrile gloves	
Vessel engine has been shut off for 3-5 minutes prior to sampling	Y
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	7
Sampling instrument given site water rinse prior to deployment	~
Sample bottles correctly labeled and match the station identification	
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	7
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	7
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	7
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	7
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	Y
Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	Y
Sampling depth recorded	Y
Sample bottles filled in the following order: metals, organics, toxicity	Y
Staff avoided contaminating samples at all times	9
Equipment rinsate blank and field blank have been collected (if applicable)	14/5
Site replicate (i.e., duplicate) collected (if applicable)	W/A
PPE properly removed and disposed of upon station completion	Y

3. Data Recording:

Field notes have been recorded for this site before moving to the next	Y
Water samples properly logged on COC form	4
Proper persons have signed the COC	7

4. Sample Storage:

Water samples properly stored on ice in a cooler	7
Cooler and samples hand delivered to labs	7.
Completed COC included with courier to hand deliver to labs	7

Additional Notes:

Signature of QA/QC Personnel:

Date/Time: 3/23/222/015

Print Name/Company: /36/4/2/ / South /

station Location: $5/7B-4$ Date/Time: $3/22/22$ 130

Mark each box with Y, N, or NA

Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off)	7
Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded	4
Tide recorded	7
Weather conditions recorded	Y
Surface water conditions (incl. currents) recorded (including H ₂ O clarity by Secchi disk)	Y
Time of sampling recorded	Y
Water depth at sample site recorded	Y
General site observations recorded	Y
Check for boat cleaning operations in the area – if active, move to a new station	Y

Field staff wearing fresh, powder-free nitrile gloves	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling	Y
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	Y
Sampling instrument given site water rinse prior to deployment	Y
Sample bottles correctly labeled and match the station identification	Y
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	Y
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	7
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	7
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	Y
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	Y
Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	7
Sampling depth recorded	7
Sample bottles filled in the following order: metals, organics, toxicity	Y
Staff avoided contaminating samples at all times	7,
Equipment rinsate blank and field blank have been collected (if applicable)	MA
Site replicate (i.e., duplicate) collected (if applicable)	NA
PPE properly removed and disposed of upon station completion	Y

Data Recordii	ng
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Field notes have been recorded for this site before moving to the next	X
Water samples properly logged on COC form	۶
Proper persons have signed the COC	7

4. Sample Storage:

Water samples properly stored on ice in a cooler	7
Cooler and samples hand delivered to labs	7
Completed COC included with courier to hand deliver to labs	7

Additional Notes:

Signature of QA/QC Personnel: Date/Time: 3/25/22 1005

Print Name/Company: Deff Palo Hile | Name/Company: Date/Time: 3/25/22 1005

station Location:	5170-3	Date/Time:	3/22/22	1350
			7 7	

Mark each box with Y, N, or NA

Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off) Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded Tide recorded Weather conditions recorded Surface water conditions (incl. currents) recorded (including H₂O clarity by Secchi disk) Time of sampling recorded Water depth at sample site recorded General site observations recorded Check for boat cleaning operations in the area – if active, move to a new station		
Tide recorded Weather conditions recorded Surface water conditions (incl. currents) recorded (including H ₂ O clarity by Secchi disk) Time of sampling recorded Water depth at sample site recorded General site observations recorded	Vessel has been anchored (or tied off)	Y
Weather conditions recorded Surface water conditions (incl. currents) recorded (including H₂O clarity by Secchi disk) Time of sampling recorded Water depth at sample site recorded General site observations recorded	Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded	7
Surface water conditions (incl. currents) recorded (including H ₂ O clarity by Secchi disk) Time of sampling recorded Water depth at sample site recorded General site observations recorded	Tide recorded	Y
Time of sampling recorded Water depth at sample site recorded General site observations recorded	Weather conditions recorded	Y
Water depth at sample site recorded General site observations recorded	Surface water conditions (incl. currents) recorded (including H₂O clarity by Secchi disk)	Y
General site observations recorded	Time of sampling recorded	7
7	Water depth at sample site recorded	Y
Check for boat cleaning operations in the area – if active, move to a new station	General site observations recorded	7
eneck for boat creaming operations in the area. In active, move to a new station	Check for boat cleaning operations in the area – if active, move to a new station	7

	$\overline{}$
Field staff wearing fresh, powder-free nitrile gloves	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling	Y
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	Y
Sampling instrument given site water rinse prior to deployment	Y
Sample bottles correctly labeled and match the station identification	Y
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	Y
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	Y
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	Y
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	>
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	7
Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	Y
Sampling depth recorded	Y
Sample bottles filled in the following order: metals, organics, toxicity	Y
Staff avoided contaminating samples at all times	7,
Equipment rinsate blank and field blank have been collected (if applicable)	MA
Site replicate (i.e., duplicate) collected (if applicable)	NA
PPE properly removed and disposed of upon station completion	Y
	/

3. Data Recording:

Field notes have been recorded for this site before moving to the next	7
Water samples properly logged on COC form	Y
Proper persons have signed the COC	Ý

4. Sample Storage:

Water samples properly stored on ice in a cooler	7
Cooler and samples hand delivered to labs	7
Completed COC included with courier to hand deliver to labs	if

Additional Notes:

large tilter issue vik bubbles neitified in the field.

_____ Date/Time: 3/23/22 10 55 Signature of QA/QC Personnel: Print Name/Company:__

tation Location:	5178-2	Date/Time: 3/22/2?	1500
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Mark each box with Y, N, or NA

Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off)	
Station GPS coordinates (approx: ± 3 m) and station identification verified and recorded	'Y
Tide recorded	Y
Weather conditions recorded	7
Surface water conditions (incl. currents) recorded (including H ₂ O clarity by Secchi disk)	7
Time of sampling recorded	4
Water depth at sample site recorded	7
General site observations recorded	7
Check for boat cleaning operations in the area – if active, move to a new station	7

Vessel engine has been shut off for 3-5 minutes prior to sampling SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique) Sampling instrument given site water rinse prior to deployment Sample bottles correctly labeled and match the station identification Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)		
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique) Sampling instrument given site water rinse prior to deployment Sample bottles correctly labeled and match the station identification Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable)	Field staff wearing fresh, powder-free nitrile gloves	14
Sampling instrument given site water rinse prior to deployment Sample bottles correctly labeled and match the station identification Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable)	Vessel engine has been shut off for 3-5 minutes prior to sampling	7
Sample bottles correctly labeled and match the station identification Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	Y
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sampling instrument given site water rinse prior to deployment	Ι Υ
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sample bottles correctly labeled and match the station identification	Ÿ
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	4
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	7
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	Ÿ
occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	7
Collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	7
Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	Ÿ
Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sampling depth recorded	7
Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sample bottles filled in the following order: metals, organics, toxicity	7
Site replicate (i.e., duplicate) collected (if applicable)	Staff avoided contaminating samples at all times	Ϋ́
	Equipment rinsate blank and field blank have been collected (if applicable)	MA
PPE properly removed and disposed of upon station completion	Site replicate (i.e., duplicate) collected (if applicable)	MA
	PPE properly removed and disposed of upon station completion	4

3. Data Recording:

Field notes have been recorded for this site before moving to the next	<u>ک</u>
Water samples properly logged on COC form	4
Proper persons have signed the COC	9

4. Sample Storage:

Water samples properly stored on ice in a cooler	Y
Cooler and samples hand delivered to labs	7
Completed COC included with courier to hand deliver to labs	4

Additional Notes:

Signature of QA/QC Personnel: Date/Time: 3/24/22 1025

Print Name/Company: Rolf Schottle, Wood

Mark each box with Y, N, or NA

Field Procedures

1. Station Occupation:

Vessel has been anchored/(or tied off)	1 4
Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded.	\top \forall
Tide recorded	$\overline{\top Y}$
Weather conditions recorded	\top \forall
Surface water conditions (incl. currents) recorded (including H₂O clarity by Secchi disk)	TY
Time of sampling recorded	TŸ
Water depth at sample site recorded	Y
General site observations recorded	7
Check for boat cleaning operations in the area – if active, move to a new station	TY

Field staff wearing fresh, powder-free nitrile gloves Vessel engine has been shut off for 3-5 minutes prior to sampling	
vessel engine has been shut off for 3-5 minutes prior to sampling	
	<u> </u>
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	<u>Y</u>
Sampling instrument given site water rinse prior to deployment	7
Sample bottles correctly labeled and match the station identification	γ
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP 7	7
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	7
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	Y
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	, /
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	7
Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	Υ "
Sampling depth recorded	Y
Sample bottles filled in the following order/ metals, organics toxicity	Ÿ
Staff avoided contaminating samples at all times	7
Equipment rinsate blank and field blank have been collected (if applicable)	Ψ
Site replicate (i.e., duplicate) collected (if applicable) Ms/NSD extra w/w-c	_
PPE properly removed and disposed of upon station completion	٣

3. Data Recording:

Field notes have been recorded for this site before moving to the next	7
Water samples properly logged on COC form	۲
Proper persons have signed the COC	7

4. Sample Storage:

Water samples properly stored on ice in a cooler	7
Cooler and samples hand delivered to labs	4
Completed COC included with courier to hand deliver to labs	7

Additional Notes:

Signature of QA/QC Personnel:

Print Name/Company:

Date/Time: 3/23/22 1105

_tation Location:	ک	7%	13 -	-/-Di	up	108	ep		Date/Time: 3/22/22	1630
	_				/	C	7	,	•	

Mark each box with Y, N, or NA

Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off)	7
Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded	7
Tide recorded	7
Weather conditions recorded	14
Surface water conditions (incl. currents) recorded (including H₂O clarity by Secchi disk)	Y
Time of sampling recorded	4
Water depth at sample site recorded	$\overline{\gamma}$
General site observations recorded	7
Check for boat cleaning operations in the area – if active, move to a new station	7

Field staff wearing fresh, powder-free nitrile gloves Vessel engine has been shut off for 3-5 minutes prior to sampling SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique) Sampling instrument given site water rinse prior to deployment Sample bottles correctly labeled and match the station identification Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Samples bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, texicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable) FPE properly removed and disposed of upon station complétion		
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique) Sampling instrument given site water rinse prior to deployment Sample bottles correctly labeled and match the station identification Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, texicity and following order: metals, organics, texicity	Field staff wearing fresh, powder-free nitrile gloves	Y
Sampling instrument given site water rinse prior to deployment Sample bottles correctly labeled and match the station identification Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, texicity and the following samples at all times Y Staff avoided contaminating samples at all times Figure pricate (i.e., duplicate) collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Vessel engine has been shut off for 3-5 minutes prior to sampling	4
Sample bottles correctly labeled and match the station identification Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, texicity and the following samples at all times Y Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)		9
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, texicity and the following	Sampling instrument given site water rinse prior to deployment	4
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, texicity and the following samples at all times Figure provided to the following samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sample bottles correctly labeled and match the station identification	\mathcal{F}
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, texicity and the following samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	Y
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, texicity a sample sample with Table 10 in the following order with Table 10 in the following must occur within 1 m of surface) Y Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	7
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, texicity of the content	Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	7
occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, texicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)		7
Sampling depth recorded Sample bottles filled in the following order: metals, organics, texicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	, , , , , , , , , , , , , , , , , , , ,	Y
Sample bottles filled in the following order: metals, organics, texicity a staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable) Applicate		7
Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable) Juplicate	Sampling depth recorded	7
Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable) Juplicate	Sample bottles filled in the following order: metals, organics, texicity a not when the	Ý
Site replicate (i.e., duplicate) collected (if applicable) duplicate		Y
	Equipment rinsate blank and field blank have been collected (if applicable)	WA
PPE properly removed and disposed of upon station complétion	Site replicate (i.e., duplicate) collected (if applicable)	4
	PPE properly removed and disposed of upon station complétion	7

3. Data Recording:

Field notes have been recorded for this site before moving to the next	Y
Water samples properly logged on COC form	У
Proper persons have signed the COC	Y

4. Sample Storage:

Water samples properly stored on ice in a cooler	7
Cooler and samples hand delivered to labs	7
Completed COC included with courier to hand deliver to labs	$\overline{\gamma}$

Additional Notes:

Signature of QA/QC Personnel: _______ Date/Time: 3/23/22 1005

Print Name/Company: ____/25/ff Schtle -_______ Lowd

tation Location:	SIYB-FB	Date/Time:	3/22/22	1655
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Mark each box with Y, N, or NA

Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off) @/	. 4
Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded	NA
Tide recorded	
Weather conditions recorded	
Surface water conditions (incl. currents) recorded (including H ₂ O clarity by Secchi disk)	
Time of sampling recorded	
Water depth at sample site recorded	
General site observations recorded	
Check for boat cleaning operations in the area – if active, move to a new station	1

Field staff wearing fresh, powder-free nitrile gloves	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling	Y
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	Y
Sampling instrument given site water rinse prior to deployment	7
Sample bottles correctly labeled and match the station identification	7
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	7
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	Y
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	7
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	Y
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	MA
Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	NA
Sampling depth recorded	NA
Sample bottles filled in the following order: metals, organics, texicity • 🖚 👆 🕦	14
Staff avoided contaminating samples at all times	Y
Equipment rinsate blank and field blank have been collected (if applicable)	Y
Site replicate (i.e., duplicate) collected (if applicable)	14
PPE properly removed and disposed of upon station completion	7

3. Data Recording:

Field notes have been recorded for this site before moving to the next	nf
Water samples properly logged on COC form	4
Proper persons have signed the COC	Y

4. Sample Storage:

Water samples properly stored on ice in a cooler	Y
Cooler and samples hand delivered to labs	8
Completed COC included with courier to hand deliver to labs	7

Additional Notes:

Signature of QA/QC Personnel:

Print Name/Company:

Date/Time: 3/23/22 10 8

Memo: Results from the 2022 and 2023 Winter Monitoring Events for the SIYB Dissolved Copper TMDL	April 2023
A-2: January 25, 2023 Event	

Station ID:	SIYB-ER		
Date: (mm/dd/yyyy)	01/25/2023	Time on Station: (hh:mm) _	06:00
Time of Sample Collection:	06:25	Time of CTD Cast: _	NIK
GPS: (WGS84)	Lat. NIR	Long.	NA
Tide (ft):	41.4	Time of Slack High Tide: _	11:21
Water Depth (ft):	NIA	Wind (mph): _	0 mph
Weather conditions:	Clear calm	3 .	
Surface Water Conditions:	NIA		
Water Visibility (ft):	NIA		

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station					
During sample collection	/		NIA		
End of sample collection					
Average value					Name of the last o

^{*}Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Station ID:	SIMB-REF-2		
Date: (mm/dd/yyyy)	01/25/2023	Time on Station: (hh:mm) _	07:15
Time of Sample Collection:	07:20	Time of CTD Cast: _	NIA
GPS: (WGS84)	Lat. 32.70929	Long.	117.22539
Tide (ft):	+2.1	Time of Slack High Tide: _	11:17
Water Depth (ft):	46.3"	Wind (mph): _	Omph
Weather conditions:	Sunny, clear	calm	
Surface Water Conditions:	light texture,	in coming tid	e current
Water Visibility (ft):	15/5"	V	

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station	14.0	49920	32.68	7.94	8.03
During sample collection					make and the state of the state
End of sample collection	·				
Average value					

^{*}Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

SIYB-REF-1

Station ID:

Weather

Time on Station: Date: (hh:mm) (mm/dd/yyyy) Time of Time of Sample CTD Cast: Collection: GPS: 32.70406 117.23232 (WGS84) Time of Slack High Tide: Tide (ft): Water Depth (ft): $_ 68$ $^{\prime}$ $_{7}$ Wind (mph): ∠\mph

Surface Water Conditions: 19nt texture incoming tide current

Water Visibility (ft):

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station	(4.1	50482	33.07	7.97	7.81
During sample collection	14.1	50713	33.26	8.00	7.80
End of sample collection	14.1	50882	33.38	8.02	7.80
Average value	14.1	50692.3	33,236	7.096	7.803

^{*}Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Station ID: S1YB-6

Date: (mm/dd/yyyy) 01 25 2023 Time on Station: (hh:mm) 0835

Time of Sample
Collection:

Time of
CTD Cast: N /A

GPS: (WGS84) Lat. 32.70880 Long. -117.23510

Tide (ft): Time of Slack High Tide: 1117

Water Depth (ft): $\frac{1}{\sqrt{2}}$ Wind (mph): $\frac{1}{\sqrt{2}}$

Weather conditions: SUNNY, Clear, CAIM

Surface Water Conditions: light texture in coming tide awent

Water Visibility (ft):

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station	14.1	50662	33.22	8.03	7.73
During sample collection	14.1	50709	33.26	8.03	7.70
End of sample collection	14.1	50740	33.28	8.07	7.78
Average value	14.1	50703.6	33.25	8.043	7.736

*Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Notes:

TO 2/13/23

Station ID:

SIYB-5

Date:

(mm/dd/yyyy)

01/25/2023

Time on Station:

(hh:mm)

Time of Sample

Collection:

1000

Time of

CTD Cast:

GPS:

(WGS84)

Lat. 32.71216

Long. -117. 2329 7

Tide (ft):

+4.7 ft

Time of Slack

High Tide:

Water Depth (ft): 2413"

Wind (mph): < \ Wph

Weather

conditions:

Sunny, Clear, calm

Surface Water

Conditions:

light texture, in coming tide current

Water Visibility

(ft):

15'9"

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station	14.1	50608	33.18	8.08	7.93
During sample collection	14.1	50639	33.21	70,8	7.92
End of sample collection	14.2	50592	33.17	8.15	7.90
Average value	14.13	50613	33.186	8.10	7,916

*Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Notes:

* water quality measurements taken every 1-M With YSI pro DSS.

Hull cleaner motoring into ba basin ~0935.

Station ID:	S14B-4		
Date: (mm/dd/yyyy)	01/25/2023	Time on Station: (hh:mm)	
Time of Sample Collection:	1100	Time of CTD Cast: N/A *	
GPS: (WGS84)	Lat. 32, 71683	Long 117. 23205) }
Tide (ft):	+5.3 ft	Time of Slack High Tide: ///7	
Water Depth (ft)	: 17/611	Wind (mph):/ Mph_	
Weather conditions:	sunny, clear,	calm	
Surface Water Conditions:	calm, slack	ide	
Water Visibility (ft):	141511		

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station	14.5	50753	33.30	8.08	7.95
During sample collection	14,4	50755	33.30	8:07	7.95
End of sample collection	14.4	50770	33.30	8.11	7.96
Average value	14.43	50759.3	33 30	8.085	7,953

TD 2113123

*Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Notes:

* Water quality measurements taken every 1-m with YSI pro DSS

Two boats anchored in anchorage ~ 150 ft from Site. Harbor police amused willo. Vessels leaving anchorage at 1120.

 Date:
(mm/dd/yyyy)
 01/25/2073
 Time on Station:
(hh:mm)
 1155

 Time of Sample Collection:
 1200
 Time of CTD Cast:
 N / A ★

 GPS:
(WGS84)
 Lat. 32.71549
 Long. − 117.22990

Time of Slack
Tide (ft): +5.3 F+ High Tide: 1117

Water Depth (ft): 211111 Wind (mph): 5mph SSW

Weather

Sunny, clear, calm/light breeze

Surface Water Conditions:

conditions:

Station ID:

mostly calm, outgoing tide

Water Visibility (ft):

14'0"

SIYB-3

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station	14,4	50775	33.31	8.13	7.96
During sample collection	14.4	50768	33.31	8.11	7.99
End of sample collection	14.7	50738	33.29	8.10	7.95
Average value	14.5	50760.3	32.636	8.113	7.96

7TD 2/13/23

Notes: product quality measurements taken every 1-m with

^{*}Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

SIYB-Z Station ID: Time on Station: Date: 01/25/2023 (hh:mm) (mm/dd/yyyy) Time of Time of Sample 1300 CTD Cast: Collection: GPS: Long. 117.22918 Lat. 32.71412 (WGS84) Time of Slack +4.9 High Tide: Tide (ft): Wind (mph): 4mph W Weather Sunny, clear, light breeze conditions: light texture, outgoing tide Surface Water Conditions: Water Visibility 15'0" (ft):

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station	14.5	50792	33.33	8.07	7.60
During sample collection	14.5	50795	33.32	8,07	7.60
End of sample collection	14,5	50792	33.33	8.09	7.59
Average value	14.5	50793	33376	8.076	7.596

^{*}Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Notes: * water quality measurements taken every 1-M with YSIPRODSS.

Station ID:

SIYB-

Date:

(mm/dd/yyyy)

Time on Station:

1330 (hh:mm)

Time of Sample

Collection:

1400

Time of CTD Cast:

GPS:

(WGS84)

Lat. 32, 71 821

Tide (ft):

+4.0 ft

Time of Slack

High Tide:

Water Depth (ft):

Wind (mph): 4-8 MPh W

Weather

conditions:

Sunny clear, light breeze

Surface Water

Conditions:

light texture, outgoing tide

Water Visibility

(ft):

11/04

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station	14.8	50744	33.31	80,8	7.B8
During sample collection	14.8	50760	33.31	8.07	7.83
End of sample collection	14.8	50754	33.31	8.10	7.85
Average value	14.8	50753.3	33.31	8.083	7.853

*Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Notes: of Waterquality measurements taken every 1-M with YSI Prodes.

Boat cleaning observed ~80 ft. from sampling location after chemistry samples were collected (~ 1420).

SIYB-1 (Rep) Station ID: Time on Station: Date: 01/25/2023 1330 (hh:mm) (mm/dd/yyyy) Time of Time of Sample 450 NIA CTD Cast: Collection: GPS: Long. - 17 . 22601 Lat. 32,71920 (WGS84) Time of Slack 1117 +2.8 /1 High Tide: Tide (ft): Water Depth (ft): ____\&_\u03bb Wind (mph): 4-5 mph W Weather sunny, clear, light breeze conditions: Surface Water light texture, outgoing tide Conditions: Water Visibility 11/2"

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station	14.8	50750	33.30	8.07	7.84
During sample collection	14.7	50730	33.29	8.07	7.84
End of sample collection	14.8	50728	33.29	8.07	7-85
Average value	14.76	50736	33.293	8.07	7.843

*Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Notes:

(ft):

Boat cleaning + spraying occurring within ~50 ft of sampling location (~1440) prior to collecting chamisty sampus

Station ID:	SITB-FB			
Date: (mm/dd/yyyy)	01/25/2023	Time on Station: (hh:mm) _	NA	
Time of Sample Collection:	1520	Time of CTD Cast:	NIV	
GPS: (WGS84)	Lat. N/A	Long.	NIA	
Tide (ft):	NIA	Time of Slack High Tide:	NIA	
Water Depth (ft):	N/A	Wind (mph):	4-8 mph	WNW
Weather conditions:	sunny i Cle	ar, light bre	eze	
Surface Water Conditions:	NIA			
Water Visibility (ft):	NIA			

Time of Measurement	Temperature (°C)	Sp. Cond. (µS/cm)	Salinity (ppt)	рН	DO (mg/L)
Upon arrival on station					
During sample collection			NIF	+	
End of sample collection					
Average value			- Carlotte		

^{*}Water quality measured at the same depth as sample collection (i.e., within 1 meter from the surface).

Station Location:	TRANSIT DOCK	1 Eg Benk	Date/Time:	1/25	23	0625	
				7			

Mark each box with Y, N, or NA

Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off)	an
Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded	an
Tide recorded	M
Weather conditions recorded	4
Surface water conditions (incl. currents) recorded (including H ₂ O clarity by Secchi disk)	WA
Time of sampling recorded	4
Water depth at sample site recorded	M
General site observations recorded	4
Check for boat cleaning operations in the area – if active, move to a new station	OK

Field staff wearing fresh, powder-free nitrile gloves	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling	4
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	<u></u> Y
Sampling instrument given site water rinse prior to deployment	114
Sample bottles correctly labeled and match the station identification	Y
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	7
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	Y
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	Y
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	Y
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	an
Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	NA
Sampling depth recorded	M
Sample bottles filled in the following order: metals, organics, toxicity	7
Staff avoided contaminating samples at all times	Y
Equipment rinsate blank and field blank have been collected (if applicable)	4
Site replicate (i.e., duplicate) collected (if applicable)	NA
PPE properly removed and disposed of upon station completion	4

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3. Data Recording:

Field notes have been recorded for this site before moving to the next	Y
Water samples properly logged on COC form	7
Proper persons have signed the COC	Y

4. Sample Storage:

Water samples properly stored on ice in a cooler	7
Cooler and samples hand delivered to labs	4
Completed COC included with courier to hand deliver to labs	4

Additional Notes:

Station Location:	517B-REF-Z	Date/Time: 1/25/23	0720

Mark each box with Y, N, or NA

Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off) - used e leading make to s key on station	~
Station GPS coordinates (approx. <u>+</u> 3 m) and station identification verified and recorded	ソ
Tide recorded	1
Weather conditions recorded	Y
Surface water conditions (incl. currents) recorded (including H ₂ O clarity by Secchi disk)	4
Time of sampling recorded	4
Water depth at sample site recorded	Y
General site observations recorded	/
Check for boat cleaning operations in the area – if active, move to a new station	YOK)

Field staff wearing fresh, powder-free nitrile gloves	4
Vessel engine has been shut off for 3-5 minutes prior to sampling	ケ
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	7
Sampling instrument given site water rinse prior to deployment	Y
Sample bottles correctly labeled and match the station identification	P
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	P
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	7
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	Y
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	7
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	Y
Field water quality readings taken a times: when arriving on station, while water samples are collected and again while sample bottles are being filled	Y
Sampling depth recorded	5/
Sample bottles filled in the following order: metals, organics, toxicity	4
Staff avoided contaminating samples at all times	Ý
Equipment rinsate blank and field blank have been collected (if applicable)	M
Site replicate (i.e., duplicate) collected (if applicable)	M
PPE properly removed and disposed of upon station completion	Y
	<u> </u>

SIYB-REF-Z

3. Data Recording:

Field notes have been recorded for this site before moving to the next	Y
Water samples properly logged on COC form	7
Proper persons have signed the COC	9

4. Sample Storage:

Water samples properly stored on ice in a cooler	1
Cooler and samples hand delivered to labs	7
Completed COC included with courier to hand deliver to labs	7

Additional Notes:

Station Location:	51	143-REF-1	Date/Time:	1/2:	5/28	080
		,				

Mark each box with Y, N, or NA

Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off) on electric motor ton anchor	·M
Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded	7
Tide recorded	7
Weather conditions recorded	7
Surface water conditions (incl. currents) recorded (including H ₂ O clarity by Secchi disk)	7
Time of sampling recorded	4
Water depth at sample site recorded	7
General site observations recorded	4
Check for boat cleaning operations in the area – if active, move to a new station	7

Field staff wearing fresh, powder-free nitrile gloves	P
Vessel engine has been shut off for 3-5 minutes prior to sampling	Y
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	4
Sampling instrument given site water rinse prior to deployment	7
Sample bottles correctly labeled and match the station identification	<u>, A</u>
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	7
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	$\overline{}$
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	Y
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	×
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	7
Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	×
Sampling depth recorded	7
Sample bottles filled in the following order: metals, organics, toxicity	7
Staff avoided contaminating samples at all times	7
Equipment rinsate blank and field blank have been collected (if applicable)	WA
Site replicate (i.e., duplicate) collected (if applicable)	NA
PPE properly removed and disposed of upon station completion	7

S19B-REF-1

FIELD SAMPLING QA CHECKLIST

3. Data Recording:

Field notes have been recorded for this site before moving to the next	9
Water samples properly logged on COC form	Y
Proper persons have signed the COC	7

4. Sample Storage:

Water samples properly stored on ice in a cooler	1
Cooler and samples hand delivered to labs	1
Completed COC included with courier to hand deliver to labs	9

Additional Notes:

Station Location:	5/43-6	Date/Time:	1/25/23	0900
	• (/ /	

Mark each box with Y, N, or NA

Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off)	7
Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded	15
Tide recorded	7
Weather conditions recorded	1
Surface water conditions (incl. currents) recorded (including H ₂ O clarity by Secchi disk)	7
Time of sampling recorded	1
Water depth at sample site recorded	4
General site observations recorded	7
Check for boat cleaning operations in the area – if active, move to a new station	on

Field staff wearing fresh, powder-free nitrile gloves	4
Vessel engine has been shut off for 3-5 minutes prior to sampling	4
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	4
Sampling instrument given site water rinse prior to deployment	Y
Sample bottles correctly labeled and match the station identification	4
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	7
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	Y
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	7
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	7
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	Y
Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	4
Sampling depth recorded	7
Sample bottles filled in the following order: metals, organics, toxicity	7
Staff avoided contaminating samples at all times	4
Equipment rinsate blank and field blank have been collected (if applicable)	M
Site replicate (i.e., duplicate) collected (if applicable)	M
PPE properly removed and disposed of upon station completion	Y

0148-	6

3. Data Recording:

Field notes have been recorded for this site before moving to the next	1	
Water samples properly logged on COC form	P	
Proper persons have signed the COC	4	

4. Sample Storage:

Water samples properly stored on ice in a cooler	Y
Cooler and samples hand delivered to labs	7
Completed COC included with courier to hand deliver to labs	7

Additional Notes:

Signature of QA/QC Personnel: Date/Time: 1/25/23 9:42

Print Name/Company: Anna helle. Burnuss Port

Rolf Schottle/WS/

1/26/23 10:00

Station Location:	S14B-5	Date/Time: //25/23 @100
		, ,

Mark each box with Y, N, or NA

Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off)	4.
Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded	4
Tide recorded	Ý
Weather conditions recorded	4
Surface water conditions (incl. currents) recorded (including H ₂ O clarity by Secchi disk)	Y
Time of sampling recorded	7
Water depth at sample site recorded	4
General site observations recorded	4
Check for boat cleaning operations in the area – if active, move to a new station	7

Field staff wearing fresh, powder-free nitrile gloves	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling	1
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	Y
Sampling instrument given site water rinse prior to deployment	Y
Sample bottles correctly labeled and match the station identification	4
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	4
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	7
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	7
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	Y
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	Y
Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	Y
Sampling depth recorded	7
Sample bottles filled in the following order: metals, organics, toxicity	7
Staff avoided contaminating samples at all times	>
Equipment rinsate blank and field blank have been collected (if applicable)	NH
Site replicate (i.e., duplicate) collected (if applicable)	rot
PPE properly removed and disposed of upon station completion	7

C1717 (
2/10-5	

3. Data Recording:

Field notes have been recorded for this site before moving to the next	Y
Water samples properly logged on COC form	ý
Proper persons have signed the COC	19

4. Sample Storage:

Water samples properly stored on ice in a cooler	4
Cooler and samples hand delivered to labs	9.
Completed COC included with courier to hand deliver to labs	7

Additional Notes:

Date/Time: 1/25/23 10:17 Signature of QA/QC Personnel: Print Name/Company: /

FIELD SAMPLING QA CHECKLIS	FI	IELD	SAMP	LING	QA	CHE	CKL	_IS
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Station Location: シリャスーイ	Date/Time: 1/25/23 ///00

Mark each box with Y, N, or NA

Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off)	Y
Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded	
Tide recorded	6
Weather conditions recorded	4
Surface water conditions (incl. currents) recorded (including H ₂ O clarity by Secchi disk)	7
Time of sampling recorded	7
Water depth at sample site recorded	1
General site observations recorded	7
Check for boat cleaning operations in the area – if active, move to a new station	+9
	1

Field staff wearing fresh, powder-free nitrile gloves	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling	7
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	Y
Sampling instrument given site water rinse prior to deployment	مز
Sample bottles correctly labeled and match the station identification	4
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	5
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	19
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	4
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	7
Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	4
Sampling depth recorded	7
Sample bottles filled in the following order: metals, organics, toxicity	
Staff avoided contaminating samples at all times	
Equipment rinsate blank and field blank have been collected (if applicable)	1 con
Site replicate (i.e., duplicate) collected (if applicable)	NA
PPE properly removed and disposed of upon station completion	>
	<i> </i>

ل	7	70	13-	y
				7

3. Data Recording:

	1 -
Field notes have been recorded for this site before moving to the next	7
Water samples properly logged on COC form	7
Proper persons have signed the COC	7

4. Sample Storage:

	(- 1
Water samples properly stored on ice in a cooler	\mathcal{L}	-
Cooler and samples hand delivered to labs	7	
Completed COC included with courier to hand deliver to labs	4	

Additional Notes:

2 anchared boats both @ 150 away to west inorth of station SIB-4

Signature of QA/QC Personnel:

Date/Time: 1/25/23 11:23

Print Name/Company: Hnnabelle Buryss/

Rolf Schotth / USP

1/2/23 1000

Station	Location:	5/1/	? - '

Date/Time:

1200

Mark each box with Y, N, or NA

Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off)	7
Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded	7
Tide recorded	Ý
Weather conditions recorded	7
Surface water conditions (incl. currents) recorded (including H ₂ O clarity by Secchi disk)	4
Time of sampling recorded	7
Water depth at sample site recorded	7
General site observations recorded	7
Check for boat cleaning operations in the area – if active, move to a new station	1

Field staff wearing fresh, powder-free nitrile gloves	y
Vessel engine has been shut off for 3-5 minutes prior to sampling	4
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	Y
Sampling instrument given site water rinse prior to deployment	4
Sample bottles correctly labeled and match the station identification	4
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	7
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	Y
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	4
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	4
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	Y
Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	7
Sampling depth recorded	y
Sample bottles filled in the following order: metals, organics, toxicity	7
Staff avoided contaminating samples at all times	9
Equipment rinsate blank and field blank have been collected (if applicable)	NA
Site replicate (i.e. duplicate) collected (if applicable)	M
PPE properly removed and disposed of upon station completion	7

5143-3

FIELD SAMPLING QA CHECKLIST

3. Data Recording:

Field notes have been recorded for this site before moving to the next	4
Water samples properly logged on COC form	7
Proper persons have signed the COC	7

4. Sample Storage:

	9	П
Water samples properly stored on ice in a cooler		
Cooler and samples hand delivered to labs	4	
Completed COC included with courier to hand deliver to labs	4	

Additional Notes:

Station Location:	5143-2	Date/Time:	1/25	5/23	130
				/	

Mark each box with Y, N, or NA

Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off) - maks to on ly / electric motor -	
Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded	7
Tide recorded	Ý
Weather conditions recorded	5
Surface water conditions (incl. currents) recorded (including H ₂ O clarity by Secchi disk)	7
Time of sampling recorded	7
Water depth at sample site recorded	Y
General site observations recorded	7
Check for boat cleaning operations in the area – if active, move to a new station	7

Field staff wearing fresh, powder-free nitrile gloves	7
Vessel engine has been shut off for 3-5 minutes prior to sampling	8
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	4
Sampling instrument given site water rinse prior to deployment	7
Sample bottles correctly labeled and match the station identification	Y
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	7
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	7
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	Y
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	Y
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	Y
Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	4
Sampling depth recorded	7
Sample bottles filled in the following order: metals, organics, toxicity	7
Staff avoided contaminating samples at all times	4
Equipment rinsate blank and field blank have been collected (if applicable)	NA
Site replicate (i.e., duplicate) collected (if applicable)	in
PPE properly removed and disposed of upon station completion	4

. 5	1	713	-7_
		110	Commence

3. Data Recording:

Field notes have been recorded for this site before moving to the next	7_
Water samples properly logged on COC form	7
Proper persons have signed the COC	7_

4. Sample Storage:

Water samples properly stored on ice in a cooler	Y
Cooler and samples hand delivered to labs	Y
Completed COC included with courier to hand deliver to labs	7

Additional Notes:

Signature of QA/QC Personnel:	Date/Time: 1 25/2	+3 2:40pm
Print Name/Company:	•	
Rolf Schottle/WSC	1/26/23	1000

Station Location:	5148-1	Date/Time: 1/25/23	1400
			

Mark each box with Y, N, or NA

Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off) —	У
Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded	Y
Tide recorded	7
Weather conditions recorded	Y
Surface water conditions (incl. currents) recorded (including H ₂ O clarity by Secchi disk)	Ÿ
Time of sampling recorded	Ý
Water depth at sample site recorded	4
General site observations recorded	7
Check for boat cleaning operations in the area – if active, move to a new station	4

2. Sample Collection:

Field staff wearing fresh, powder-free nitrile gloves	7
Vessel engine has been shut off for 3-5 minutes prior to sampling	4
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	7
Sampling instrument given site water rinse prior to deployment	7
Sample bottles correctly labeled and match the station identification	7
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	Y
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	7
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	<i>'</i> '
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	7
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	Y
Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	5
Sampling depth recorded	7
Sample bottles filled in the following order: metals, organics, toxicity	7
Staff avoided contaminating samples at all times	4
Equipment rinsate blank and field blank have been collected (if applicable)	NA
Site replicate (i.e., duplicate) collected (if applicable)	NA
PPE properly removed and disposed of upon station completion	4

3. Data Recording:

Field notes have been recorded for this site before moving to the next	Y
Water samples properly logged on COC form	Y
Proper persons have signed the COC	4

4. Sample Storage:

Water samples properly stored on ice in a cooler		<u> </u>
Cooler and samples hand delivered to labs		7
Completed COC included with courier to hand deliver to labs	4	7

Additional Notes:

Signature of QA/QC Personnel:	Date/Time: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Print Name/Company: Post	

Station Location:	SIYB-/-REP	Date/Time: 1/25/23	450
•			

Mark each box with Y, N, or NA

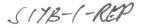
Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off)	Y
Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded	7
Tide recorded	7
Weather conditions recorded	4
Surface water conditions (incl. currents) recorded (including H ₂ O clarity by Secchi disk)	7
Time of sampling recorded	7
Water depth at sample site recorded	7
General site observations recorded	7
Check for boat cleaning operations in the area – if active, move to a new station ★	7

2. Sample Collection:

Site replicate (i.e., duplicate) collected (if applicable)		
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique) Sampling instrument given site water rinse prior to deployment Sample bottles correctly labeled and match the station identification Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable)	Field staff wearing fresh, powder-free nitrile gloves	4
Sampling instrument given site water rinse prior to deployment Sample bottles correctly labeled and match the station identification Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable)	Vessel engine has been shut off for 3-5 minutes prior to sampling	Y
Sample bottles correctly labeled and match the station identification Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)		7
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sampling instrument given site water rinse prior to deployment	7
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable)	Sample bottles correctly labeled and match the station identification	7
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	Ÿ
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	7
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	7
occur within 1 m of surface) Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	Y
Collected and again while sample bottles are being filled Sampling depth recorded Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)		7
Sample bottles filled in the following order: metals, organics, toxicity Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	A
Staff avoided contaminating samples at all times Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sampling depth recorded	Y
Equipment rinsate blank and field blank have been collected (if applicable) Site replicate (i.e., duplicate) collected (if applicable)	Sample bottles filled in the following order: metals, organics, toxicity	7
Site replicate (i.e., duplicate) collected (if applicable)	Staff avoided contaminating samples at all times	Ý
Site replicate (i.e., duplicate) collected (if applicable)	Equipment rinsate blank and field blank have been collected (if applicable)	WA
DDE proposition and the second		'''
PPE properly removed and disposed of upon station completion	PPE properly removed and disposed of upon station completion	7



3. Data Recording:

Field notes have been recorded for this site before moving to the next	Y
Water samples properly logged on COC form	Y
Proper persons have signed the COC	7

4. Sample Storage:

Water samples properly stored on ice in a cooler	4	
Cooler and samples hand delivered to labs	7	
Completed COC included with courier to hand deliver to labs	7	

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1930 = 1995 top side cleaning observed on 40'cat Morning Star" located conditie ~ 75 ft south of statism SIYB-1. outgoing tike)

Signature of QA/QC Personnel:_	Kelly	Date/	Time: 1/25/23
Print Name/Company:	808D		
11 Schottle	Just	Marco	1/26/23 1000

Station Location:	Field Blank	0/5/48-1/	Date/Time:	1/25	-/23	15Ze
				//	/	

Mark each box with Y, N, or NA

Field Procedures

1. Station Occupation:

Vessel has been anchored (or tied off)	7
Station GPS coordinates (approx. ± 3 m) and station identification verified and recorded	1
Tide recorded	4
Weather conditions recorded	150
Surface water conditions (incl. currents) recorded (including H₂O clarity by Seceni disk) •	1/2
Time of sampling recorded	7
Water depth at sample site recorded	ass
General site observations recorded	1
Check for boat cleaning operations in the area – if active, move to a new station	NA
	1

2. Sample Collection:

Field staff wearing fresh, powder-free nitrile gloves	7
Vessel engine has been shut off for 3-5 minutes prior to sampling	7
SWAMP protocols utilized to avoid sample contamination (i.e., clean hands/dirty hands technique)	7
Sampling instrument given site water rinse prior to deployment	M
Sample bottles correctly labeled and match the station identification	Y
Sample bottles correctly labeled with date and time in accordance with Table 10 in the QAPP	Y
Sample bottles are lab-certified, contaminant-free in accordance with Table 10 in the QAPP	7
Sample bottles contain correct preservative in accordance with Table 10 in the QAPP	Ÿ
Samples bottles and containers are the correct type in accordance with Table 10 in the QAPP	Y
Sampling depth delineated on sampling instrument with a clear marking (sampling must occur within 1 m of surface)	19
Field water quality readings taken 3 times: when arriving on station, while water samples are collected and again while sample bottles are being filled	M
Sampling depth recorded	419
Sample bottles filled in the following order: metals, organics, toxicity	7
Staff avoided contaminating samples at all times	Y
Equipment rinsate blank and field blank have been collected (if applicable)	Yes
Site replicate (i.e., duplicate) collected (if applicable)	M
PPE properly removed and disposed of upon station completion	7
	<u> </u>

3. Data Recording:

Field notes have been recorded for this site before moving to the next , carrier	一 Y
Water samples properly logged on COC form	7
Proper persons have signed the COC	4

4. Sample Storage:

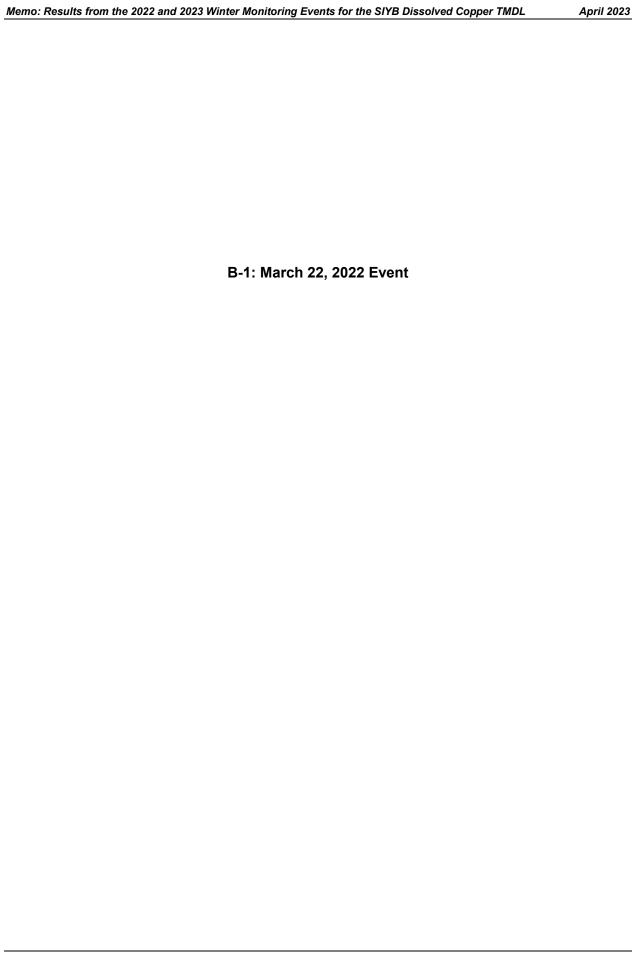
Water samples properly stored on ice in a cooler	Y
Cooler and samples hand delivered to labs	7
Completed COC included with courier to hand deliver to labs	17

Additional Notes:

Signature of QA/QC Personnel: \(\lambda \) Date/Time: \(\frac{1/25/3}{25} \)

Print Name/Company: \(\lambda \) OSD \(\lambda \) \(\lambda

Memo: Results from the 2022 and 2023 Winter Monitoring Events for the SIYB Dissolved Copper TMDL	April 2023
Appendix B	
Analytical Chemistry Laboratory Reports	





FINAL REPORT

Work Orders: 2C23057 4/12/2022 **Report Date:**

> 3/23/2022 **Received Date:**

Turnaround Time: Normal

> (858) 300-4324 **Phones:**

> > (858) 278-5300 Fax:

P.O. #:

Billing Code:

Project: Shelter Island Yacht Basin TMDL Winter Monitoring (Port of San

Marisa Swiderski

Client: Wood - San Diego

9177 Sky Park Court, Ste A San Diego, CA 92123

EPA-UCMR #CA00211 ● Guam-EPA #17-008R ● LACSD #10143 ● NJ-DEP #CA015 ● NV-DEP #NAC 445A ● SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Marisa Swiderski,

Enclosed are the results of analyses for samples received 3/23/22 with the Chain-of-Custody document. The samples were received in good condition, at 4.3 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Chris Samatmanakit Project Manager

1: State











FINAL REPORT

Wood - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123 Project Number: Shelter Island Yacht Basin TMDL Winter

Monitoring (Port of San Diego)

Reported: 04/12/2022 18:00

Project Manager: Marisa Swiderski



Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
SIYB-1	Marisa Swiderski/Kate Buckley	2C23057-01	Sea Water	03/22/22 15:50	
SIYB-1 (REP)	Marisa Swiderski/Kate Buckley	2C23057-02	Sea Water	03/22/22 16:30	
SIYB-2	Marisa Swiderski/Kate Buckley	2C23057-03	Sea Water	03/22/22 15:00	
SIYB-3	Marisa Swiderski/Kate Buckley	2C23057-04	Sea Water	03/22/22 13:50	
SIYB-4	Marisa Swiderski/Kate Buckley	2C23057-05	Sea Water	03/22/22 13:00	
SIYB-5	Marisa Swiderski/Kate Buckley	2C23057-06	Sea Water	03/22/22 11:50	
SIYB-6	Marisa Swiderski/Kate Buckley	2C23057-07	Sea Water	03/22/22 10:30	
SIYB-REF-1	Marisa Swiderski/Kate Buckley	2C23057-08	Sea Water	03/22/22 09:30	
SIYB-REF-2	Marisa Swiderski/Kate Buckley	2C23057-09	Sea Water	03/22/22 08:45	
SIYB-ER	Marisa Swiderski/Kate Buckley	2C23057-10	Water	03/22/22 07:45	
SIYB-FB	Marisa Swiderski/Kate Buckley	2C23057-11	Water	03/22/22 16:55	



FINAL REPORT

Wood - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123 Project Number: Shelter Island Yacht Basin TMDL Winter

Monitoring (Port of San Diego)

Reported: 04/12/2022 18:00

Project Manager: Marisa Swiderski

XX	Sample	Results
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Sample: SIYB-1			Sar	mpled: 03/22,	/22 15:50 b	y Marisa Swider	ski/Kate Buckley
2C23057-01 (Sea Water)							
Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
onventional Chemistry/Physical Paramet	ters by APHA/EPA/ASTM Methods						
Method: SM 2540D			Instr: _ANALYST				
Batch ID: W2C1847	Preparation: _NONE (WETCHEM)		Prepared: 03/28	3/22 09:35			Analyst: ttf
Total Suspended Solids			5	mg/l	1	03/28/22	J
Method: SM 5310B			Instr: TOC02				
Batch ID: W2C2118	Preparation: _NONE (TOC/TOX)		Prepared: 03/30	0/22 13:52			Analyst: mpw
Total Organic Carbon (TOC)	1.2	0.19	0.30	mg/l	1	04/01/22	
Method: SM 5310B			Instr: TOC02				
Batch ID: W2D0053	Preparation: _NONE (TOC/TOX)		Prepared: 04/04	4/22 09:00			Analyst: ajc
Dissolved Organic Carbon	1.0	0.15	0.30	mg/l	1	04/04/22	
etals - Low Level by 1600 Series Method	ls						
Method: EPA 1640			Instr: ICPMS03				
Batch ID: W2D0063	Preparation: EPA 1640#Preconcentration		Prepared: 04/01	1/22 16:15			Analyst: ALN
Copper, Total		0.0038	0.010	ug/l	1	04/02/22	
Zinc, Total	31	0.036	0.20	ug/l	1	04/02/22	
Method: EPA 1640			Instr: ICPMS03				
Batch ID: W2D0066	Preparation: EPA 1640#Preconcentration		Prepared: 04/01	1/22 16:24			Analyst: ALN
Copper, Dissolved		0.0038	0.010	ug/l	1	04/02/22	
Zinc, Dissolved		0.036	0.20	ug/l	1	04/02/22	



FINAL REPORT

Wood - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123

Project Number: Shelter Island Yacht Basin TMDL Winter

Monitoring (Port of San Diego)

Reported: 04/12/2022 18:00

Project Manager: Marisa Swiderski

Sample Results								(Continued)
Sample: SIYB-1 (REP)				Sa	ampled: 03/22,	/22 16:30 b	y Marisa Swider	rski/Kate Buckley
2C23057-02 (Sea Water)								
Analyte	Re	esult	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters	by APHA/EPA/ASTM Methods							
Method: SM 2540D				Instr: _ANALYS	T			
Batch ID: W2C1847	Preparation: _NONE (WETCHEM)			Prepared: 03/2	28/22 09:35			Analyst: ttf
Total Suspended Solids		- 4		5	mg/l	1	03/28/22	J
Method: SM 5310B				Instr: TOC02				
Batch ID: W2C2118	Preparation: _NONE (TOC/TOX)			Prepared: 03/3	30/22 13:52			Analyst: mpw
Total Organic Carbon (TOC)		1.2	0.19	0.30	mg/l	1	04/01/22	
Method: SM 5310B				Instr: TOC02				
Batch ID: W2D0053	Preparation: _NONE (TOC/TOX)			Prepared: 04/0	04/22 09:00			Analyst: ajc
Dissolved Organic Carbon		1.0	0.15	0.30	mg/l	1	04/04/22	
Metals - Low Level by 1600 Series Methods								
Method: EPA 1640				Instr: ICPMS03				
Batch ID: W2D0063	Preparation: EPA 1640#Preconcentr	ration		Prepared: 04/0	01/22 16:15			Analyst: ALN
Copper, Total		13	0.0038	0.010	ug/l	1	04/02/22	
Zinc, Total		32	0.036	0.20	ug/l	1	04/02/22	
Method: EPA 1640				Instr: ICPMS03				
Batch ID: W2D0066	Preparation: EPA 1640#Preconcentr	ration		Prepared: 04/0	01/22 16:24			Analyst: ALN
Copper, Dissolved		12	0.0038	0.010	ug/l	1	04/02/22	
Zinc, Dissolved		31	0.036	0.20	ug/l	1	04/02/22	



FINAL REPORT

Wood - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123

Project Number: Shelter Island Yacht Basin TMDL Winter

Monitoring (Port of San Diego)

Reported: 04/12/2022 18:00

Project Manager: Marisa Swiderski

Sample Results							(Continued)
Sample: SIYB-2			Sa	ampled: 03/22,	/22 15:00 b	y Marisa Swider	ski/Kate Buckley
2C23057-03 (Sea Water)						
Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parame	ters by APHA/EPA/ASTM Methods						
Method: SM 2540D			Instr: OVEN15				
Batch ID: W2C1767	Preparation: _NONE (WETCHEM)		Prepared: 03/2	25/22 09:20			Analyst: jao
Total Suspended Solids	7		5	mg/l	1	03/25/22	
Method: SM 5310B			Instr: TOC02				
Batch ID: W2C2118	Preparation: _NONE (TOC/TOX)		Prepared: 03/3	30/22 13:52			Analyst: mpw
Total Organic Carbon (TOC)	1.0	0.19	0.30	mg/l	1	04/01/22	
Method: SM 5310B			Instr: TOC02				
Batch ID: W2D0053	Preparation: _NONE (TOC/TOX)		Prepared: 04/0	04/22 09:00			Analyst: ajc
Dissolved Organic Carbon	0.91	0.15	0.30	mg/l	1	04/04/22	
Metals - Low Level by 1600 Series Method	ds						
Method: EPA 1640			Instr: ICPMS03	}			
Batch ID: W2D0063	Preparation: EPA 1640#Preconcentration		Prepared: 04/0	01/22 16:15			Analyst: ALN
Copper, Total	6.1	0.0038	0.010	ug/l	1	04/02/22	
Zinc, Total		0.036	0.20	ug/l	1	04/02/22	
Method: EPA 1640			Instr: ICPMS03	3			
Batch ID: W2D0066	Preparation: EPA 1640#Preconcentration		Prepared: 04/0	01/22 16:24			Analyst: ALN
Copper, Dissolved	5.4	0.0038	0.010	ug/l	1	04/02/22	
Zinc, Dissolved	15	0.036	0.20	ug/l	1	04/02/22	



FINAL REPORT

Wood - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123

Project Number: Shelter Island Yacht Basin TMDL Winter

Monitoring (Port of San Diego)

Reported: 04/12/2022 18:00

Project Manager: Marisa Swiderski

San	nple Results								(Continued)
Sample:	SIYB-3				Sa	ampled: 03/22,	/22 13:50 b	y Marisa Swider	ski/Kate Buckley
	2C23057-04 (Sea Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Che	emistry/Physical Parameters by	APHA/EPA/ASTM Methods							
Method: SM 25	40D				Instr: OVEN15				
Batch ID: W20	C1767	Preparation: _NONE (WETCHEM)		Prepared: 03/2	25/22 09:20			Analyst: jao
Total Suspen	nded Solids		6		5	mg/l	1	03/25/22	
Method: SM 53	10B				Instr: TOC02				
Batch ID: W20	C2118	Preparation: _NONE (TOC/TOX)			Prepared: 03/3	30/22 13:52			Analyst: mpw
Total Organic	c Carbon (TOC)		1.1	0.19	0.30	mg/l	1	04/01/22	
Method: SM 53	10B				Instr: TOC02				
Batch ID: W2	D0053	Preparation: _NONE (TOC/TOX)			Prepared: 04/0	04/22 09:00			Analyst: ajc
Dissolved Or	rganic Carbon		0.91	0.15	0.30	mg/l	1	04/04/22	
Metals - Low Lev	el by 1600 Series Methods								
Method: EPA 16	540				Instr: ICPMS03	3			
Batch ID: W2	D0063	Preparation: EPA 1640#Preconce	entration		Prepared: 04/0	01/22 16:15			Analyst: ALN
Copper, Tota	l		- 6.5	0.0038	0.010	ug/l	1	04/02/22	
Zinc, Total			17	0.036	0.20	ug/l	1	04/02/22	
Method: EPA 16	540				Instr: ICPMS03	3			
Batch ID: W2	D0066	Preparation: EPA 1640#Preconce	entration		Prepared: 04/0	01/22 16:24			Analyst: ALN
Copper, Diss	olved		- 5.7	0.0038	0.010	ug/l	1	04/02/22	
Zinc, Dissolv	/ed		16	0.036	0.20	ug/l	1	04/02/22	



FINAL REPORT

Wood - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123

Sample Results

Project Number: Shelter Island Yacht Basin TMDL Winter

Monitoring (Port of San Diego)

Reported: 04/12/2022 18:00

Project Manager: Marisa Swiderski

T/IV							
Sample: SIYB-4			Sa	ampled: 03/22	/22 13:00 b	y Marisa Swider	ski/Kate Buckle
2C23057-05 (Sea Wa	iter)						
Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
nventional Chemistry/Physical Para	meters by APHA/EPA/ASTM Methods						
Method: SM 2540D			Instr: OVEN15				
Batch ID: W2C1767	Preparation: _NONE (WETCHEM)		Prepared: 03/2	25/22 09:20			Analyst: jac
Total Suspended Solids	6		5	mg/l	1	03/25/22	
Method: SM 5310B			Instr: TOC02				
Batch ID: W2C2118	Preparation: _NONE (TOC/TOX)		Prepared: 03/3	30/22 13:52			Analyst: mpv
Total Organic Carbon (TOC)	1.1	0.19	0.30	mg/l	1	04/01/22	
Method: SM 5310B			Instr: TOC02				
Batch ID: W2D0053	Preparation: _NONE (TOC/TOX)		Prepared: 04/0	04/22 09:00			Analyst: aj
Dissolved Organic Carbon	1.0	0.15	0.30	mg/l	1	04/04/22	
etals - Low Level by 1600 Series Met	hods						
Method: EPA 1640			Instr: ICPMS03	3			
Batch ID: W2D0063	Preparation: EPA 1640#Preconcentration	า	Prepared: 04/0	01/22 16:15			Analyst: ALN
Copper, Total	6.0	0.0038	0.010	ug/l	1	04/02/22	
Zinc, Total		0.036	0.20	ug/l	1	04/02/22	
Method: EPA 1640			Instr: ICPMS03	3			
Batch ID: W2D0066	Preparation: EPA 1640#Preconcentration	า	Prepared: 04/0	01/22 16:24			Analyst: ALN
Copper, Dissolved	5.3	0.0038	0.010	ug/l	1	04/02/22	
Zinc, Dissolved		0.036	0.20	ug/l	1	04/02/22	



FINAL REPORT

Wood - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123

Project Number: Shelter Island Yacht Basin TMDL Winter

Monitoring (Port of San Diego)

Reported: 04/12/2022 18:00

Project Manager: Marisa Swiderski

Sample Results							(Continued)
Sample: SIYB-5			Sa	ampled: 03/22,	/22 11:50 b	y Marisa Swider	rski/Kate Buckley
2C23057-06 (Sea Water)							
Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameter	s by APHA/EPA/ASTM Methods						
Method: SM 2540D			Instr: OVEN15				
Batch ID: W2C1767	Preparation: _NONE (WETCHEM)		Prepared: 03/2	25/22 09:20			Analyst: jao
Total Suspended Solids	6		5	mg/l	1	03/25/22	
Method: SM 5310B			Instr: TOC02				
Batch ID: W2C2118	Preparation: _NONE (TOC/TOX)		Prepared: 03/3	30/22 13:52			Analyst: mpw
Total Organic Carbon (TOC)	1.4	0.19	0.30	mg/l	1	04/01/22	
Method: SM 5310B			Instr: TOC02				
Batch ID: W2D0053	Preparation: _NONE (TOC/TOX)		Prepared: 04/0	04/22 09:00			Analyst: ajc
Dissolved Organic Carbon	0.96	0.15	0.30	mg/l	1	04/04/22	
Metals - Low Level by 1600 Series Methods							
Method: EPA 1640			Instr: ICPMS03	3			
Batch ID: W2D0063	Preparation: EPA 1640#Preconcentration		Prepared: 04/0	01/22 16:15			Analyst: ALN
Copper, Total	4.8	0.0038	0.010	ug/l	1	04/02/22	
Zinc, Total	13	0.036	0.20	ug/l	1	04/02/22	
Method: EPA 1640			Instr: ICPMS03	3			
Batch ID: W2D0066	Preparation: EPA 1640#Preconcentration		Prepared: 04/0	01/22 16:24			Analyst: ALN
Copper, Dissolved	4.3	0.0038	0.010	ug/l	1	04/02/22	
Zinc, Dissolved		0.036	0.20	ug/l	1	04/02/22	



FINAL REPORT

Wood - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123

Project Number: Shelter Island Yacht Basin TMDL Winter

Monitoring (Port of San Diego)

Reported: 04/12/2022 18:00

Project Manager: Marisa Swiderski

Sample Results								(Continued)
Sample: SIYB-6				Sa	ampled: 03/22,	/22 10:30 b	y Marisa Swider	rski/Kate Buckley
2C23057-07 (Sea Water)								
Analyte	Re	esult	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by	APHA/EPA/ASTM Methods							
Method: SM 2540D				Instr: OVEN15				
Batch ID: W2C1767	Preparation: _NONE (WETCHEM)			Prepared: 03/2	25/22 09:20			Analyst: jao
Total Suspended Solids		4		5	mg/l	1	03/25/22	J
Method: SM 5310B				Instr: TOC02				
Batch ID: W2C2118	Preparation: _NONE (TOC/TOX)			Prepared: 03/3	30/22 13:52			Analyst: mpw
Total Organic Carbon (TOC)		1.1	0.19	0.30	mg/l	1	04/01/22	
Method: SM 5310B				Instr: TOC02				
Batch ID: W2D0053	Preparation: _NONE (TOC/TOX)			Prepared: 04/0	04/22 09:00			Analyst: ajc
Dissolved Organic Carbon	(0.92	0.15	0.30	mg/l	1	04/05/22	
Metals - Low Level by 1600 Series Methods								
Method: EPA 1640				Instr: ICPMS03	3			
Batch ID: W2D0063	Preparation: EPA 1640#Preconcentr	ation		Prepared: 04/0	01/22 16:15			Analyst: ALN
Copper, Total		3.0	0.0038	0.010	ug/l	1	04/02/22	
Zinc, Total		8.7	0.036	0.20	ug/l	1	04/02/22	
Method: EPA 1640				Instr: ICPMS03	}			
Batch ID: W2D0066	Preparation: EPA 1640#Preconcentr	ation		Prepared: 04/0	01/22 16:24			Analyst: ALN
Copper, Dissolved		2.6	0.0038	0.010	ug/l	1	04/02/22	
Zinc, Dissolved		8.2	0.036	0.20	ug/l	1	04/02/22	



FINAL REPORT

Wood - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123

Sample Results

Project Number: Shelter Island Yacht Basin TMDL Winter

Monitoring (Port of San Diego)

Reported: 04/12/2022 18:00

Project Manager: Marisa Swiderski

Sample: SIYB-REF	-1				S	Sampled: 03/22	/22 9:30 b	y Marisa Swider	ski/Kate Buckley
2C23057	08 (Sea Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
nventional Chemistry/P	hysical Parameters by	/ APHA/EPA/ASTM Methods							
Method: SM 2540D					Instr: OVEN15				
Batch ID: W2C1767		Preparation: _NONE (WETCHEM)		Prepared: 03/	25/22 09:20			Analyst: jao
Total Suspended Solid	ls		10		5	mg/l	1	03/25/22	
Method: SM 5310B					Instr: TOC02				
Batch ID: W2C2118		Preparation: _NONE (TOC/TOX)			Prepared: 03/	30/22 13:52			Analyst: mpw
Total Organic Carbon	(TOC)		0.95	0.19	0.30	mg/l	1	04/01/22	
Method: SM 5310B					Instr: TOC02				
Batch ID: W2D0053		Preparation: _NONE (TOC/TOX)			Prepared: 04/	04/22 09:00			Analyst: ajc
Dissolved Organic Ca	rbon		0.91	0.15	0.30	mg/l	1	04/05/22	
etals - Low Level by 160	Series Methods								
Method: EPA 1640					Instr: ICPMS03	3			
Batch ID: W2D0063		Preparation: EPA 1640#Preconc	entration		Prepared: 04/	01/22 16:15			Analyst: ALN
Copper, Total			- 2.5	0.0038	0.010	ug/l	1	04/02/22	
Zinc, Total			7.6	0.036	0.20	ug/l	1	04/02/22	
Method: EPA 1640					Instr: ICPMS03	3			
Batch ID: W2D0066		Preparation: EPA 1640#Preconc	entration		Prepared: 04/	01/22 16:24			Analyst: ALN
Copper, Dissolved			2.2	0.0038	0.010	ug/l	1	04/02/22	
Zinc, Dissolved			- 6.9	0.036	0.20	ug/l	1	04/02/22	



FINAL REPORT

Wood - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123

Project Number: Shelter Island Yacht Basin TMDL Winter

Monitoring (Port of San Diego)

Reported: 04/12/2022 18:00

Project Manager: Marisa Swiderski

Sample Results							(Continued)
Sample: SIYB-REF-2			S	Sampled: 03/22	/22 8:45 b	y Marisa Swider	ski/Kate Buckley
2C23057-09 (Sea Water)							
Analyte	Resul	t MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameter	ers by APHA/EPA/ASTM Methods						
Method: SM 2540D			Instr: OVEN15				
Batch ID: W2C1767	Preparation: _NONE (WETCHEM)		Prepared: 03/2	25/22 09:20			Analyst: jao
Total Suspended Solids		•	5	mg/l	1	03/25/22	
Method: SM 5310B			Instr: TOC02				
Batch ID: W2C2118	Preparation: _NONE (TOC/TOX)		Prepared: 03/	30/22 13:52			Analyst: mpw
Total Organic Carbon (TOC)	0.97	7 0.19	0.30	mg/l	1	04/01/22	
Method: SM 5310B			Instr: TOC02				
Batch ID: W2D0053	Preparation: _NONE (TOC/TOX)		Prepared: 04/	04/22 09:00			Analyst: ajc
Dissolved Organic Carbon	0.98	5 0.15	0.30	mg/l	1	04/05/22	
Metals - Low Level by 1600 Series Method	s						
Method: EPA 1640			Instr: ICPMS03	3			
Batch ID: W2D0063	Preparation: EPA 1640#Preconcentration	on	Prepared: 04/	01/22 16:15			Analyst: ALN
Copper, Total	2.8	0.0038	0.010	ug/l	1	04/02/22	
Zinc, Total	8.4	4 0.036	0.20	ug/l	1	04/02/22	
Method: EPA 1640			Instr: ICPMS03	3			
Batch ID: W2D0066	Preparation: EPA 1640#Preconcentration	on	Prepared: 04/	01/22 16:24			Analyst: ALN
Copper, Dissolved	2.5	5 0.0038	0.010	ug/l	1	04/02/22	
Zinc, Dissolved	7.7	7 0.036	0.20	ug/l	1	04/02/22	



FINAL REPORT

Wood - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123

Project Number: Shelter Island Yacht Basin TMDL Winter

Monitoring (Port of San Diego)

Reported: 04/12/2022 18:00

Project Manager: Marisa Swiderski

Samp	ple Results								(Continued)
Sample: SI	YB-ER				9	Sampled: 03/22	/22 7:45 b	y Marisa Swider	ski/Kate Buckley
20	C23057-10 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chem	nistry/Physical Parameters by	APHA/EPA/ASTM Methods							
Method: SM 2540)D				Instr: OVEN15				
Batch ID: W2C1	767	Preparation: _NONE (WETCHEM	1)		Prepared: 03/	25/22 09:20			Analyst: jao
Total Suspende	ed Solids		- 0.5		5	mg/l	1	03/25/22	J
Method: SM 5310	ОВ				Instr: TOC02				
Batch ID: W2C2	2118	Preparation: _NONE (TOC/TOX)			Prepared: 03/	30/22 13:52			Analyst: mpw
Total Organic C	Carbon (TOC)		- ND	0.19	0.30	mg/l	1	04/01/22	
Method: SM 5310	ОВ				Instr: TOC02				
Batch ID: W2D0	0053	Preparation: _NONE (TOC/TOX)			Prepared: 04/	04/22 09:00			Analyst: ajc
Dissolved Orga	anic Carbon		0.16	0.15	0.30	mg/l	1	04/05/22	J
Metals - Low Level	by 1600 Series Methods								
Method: EPA 1640	0				Instr: ICPMS03	3			
Batch ID: W2D0	0063	Preparation: EPA 1640#Preconc	entration		Prepared: 04/	01/22 16:15			Analyst: ALN
Copper, Total			0.039	0.0038	0.010	ug/l	1	04/02/22	
Zinc, Total			0.61	0.036	0.20	ug/l	1	04/02/22	
Method: EPA 1640	0				Instr: ICPMS03	3			
Batch ID: W2D0	0066	Preparation: EPA 1640#Preconc	entration		Prepared: 04/	01/22 16:24			Analyst: ALN
Copper, Dissol	lved		0.093	0.0038	0.010	ug/l	1	04/02/22	
Zinc, Dissolved	d		0.21	0.036	0.20	ug/l	1	04/02/22	



FINAL REPORT

Wood - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123

Sample Results

Project Number: Shelter Island Yacht Basin TMDL Winter

Monitoring (Port of San Diego)

Reported: 04/12/2022 18:00

Project Manager: Marisa Swiderski

Sample 1								
Sample: SIYB-FB				Sa	ampled: 03/22,	/22 16:55 b	y Marisa Swider	ski/Kate Buckley
2C23057-1	1 (Water)							
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
onventional Chemistry/Phy	rsical Parameters by APHA/EPA/A	ASTM Methods						
Method: SM 2540D				Instr: _ANALYS	т			
Batch ID: W2C1847	Preparatio	n: _NONE (WETCHEM)		Prepared: 03/2	28/22 09:35			Analyst: ttf
Total Suspended Solids		ND		5	mg/l	1	03/28/22	
Method: SM 5310B				Instr: TOC02				
Batch ID: W2C2118	Preparatio	n: _NONE (TOC/TOX)		Prepared: 03/3	30/22 13:52			Analyst: mpw
Total Organic Carbon (To	DC)	ND	0.19	0.30	mg/l	1	04/01/22	
Method: SM 5310B				Instr: TOC02				
Batch ID: W2D0053	Preparatio	n: _NONE (TOC/TOX)		Prepared: 04/0	04/22 09:00			Analyst: ajc
Dissolved Organic Carbo	n	ND	0.15	0.30	mg/l	1	04/05/22	
letals - Low Level by 1600 S	Series Methods							
Method: EPA 1640				Instr: ICPMS03				
Batch ID: W2D0063	Preparatio	n: EPA 1640#Preconcentration		Prepared: 04/0	01/22 16:15			Analyst: ALN
Copper, Total		0.49	0.0038	0.010	ug/l	1	04/02/22	
Zinc, Total		ND	0.036	0.20	ug/l	1	04/02/22	
Method: EPA 1640				Instr: ICPMS03	1			
Batch ID: W2D0066	Preparatio	n: EPA 1640#Preconcentration		Prepared: 04/0	01/22 16:24			Analyst: ALN
Copper, Dissolved		0.015	0.0038	0.010	ug/l	1	04/02/22	
Zinc. Dissolved		ND	0.036	0.20	ua/l	1	04/02/22	



FINAL REPORT

Wood - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123 Project Number: Shelter Island Yacht Basin TMDL Winter

Monitoring (Port of San Diego)

Reported: 04/12/2022 18:00

Project Manager: Marisa Swiderski

Quality Control Resu	lts
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Conventional Chemistry/Physical Parameters by	APHA/EPA/ASTI	M Methods	5								
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifie
atch: W2C1767 - SM 2540D											
Blank (W2C1767-BLK1)					Prepared & A	nalyzed: 03/2	25/22				
Total Suspended Solids	ND		5	mg/l							
LCS (W2C1767-BS1)					Prepared & A	nalyzed: 03/2	25/22				
Total Suspended Solids	50.0		5	mg/l	49.9		100	90-110			
Duplicate (W2C1767-DUP1)	Source: 20	04007-01			Prepared & A	nalvzed: 03/	25/22				
Total Suspended Solids	3.40		5	mg/l		3.60	•		6	10	
Duplicate (W2C1767-DUP2)	Source: 20	722026-01			Prepared & A	nalyzed: 03/	25/22				
Total Suspended Solids	98.0	222020 01	5	mg/l	Trepared & A	95.8	L3, LL		2	10	
D-4-b. W2C1047 CM 2540D											
Batch: W2C1847 - SM 2540D											
Blank (W2C1847-BLK1) Total Suspended Solids	ND		5	mg/l	Prepared & A	nalyzed: 03/	28/22				
lotal ousperided dollas			3	mg/i							
LCS (W2C1847-BS1)	50.0		_		Prepared & A	nalyzed: 03/2		00.440			
Total Suspended Solids	56.2		5	mg/l	55.4		101	90-110			
Duplicate (W2C1847-DUP1)	Source: 20	23032-01			Prepared & A	-	28/22				
Total Suspended Solids	192		5	mg/l		208			8	10	
Duplicate (W2C1847-DUP2)	Source: 20	23057-01			Prepared & A	nalyzed: 03/2	28/22				
Total Suspended Solids	3.30		5	mg/l		3.40			3	10	
Batch: W2C2118 - SM 5310B											
Blank (W2C2118-BLK1)				Pre	pared: 03/30/2	2 Analyzed:	03/31/2	2			
Total Organic Carbon (TOC)	ND	0.19	0.30	mg/l		•					
LCS (W2C2118-BS1)				Pre	pared: 03/30/2	2 Analyzed	03/31/2	,			
Total Organic Carbon (TOC)	1.86	0.19	0.30	mg/l	2.00	. Analyzea.	93	76-115		20	
Matrix Spiles (MOCO110 MC1)	C 20			Due	d. 02/20/2	2 Analonad	04/01/2	n			
Matrix Spike (W2C2118-MS1) Total Organic Carbon (TOC)	2.56	0.19	0.30	mg/l	pared: 03/30/2 2.00	1.16	70	7 6-115		20	MS-0
· ,				_				_			
Matrix Spike Dup (W2C2118-MSD1) Total Organic Carbon (TOC)	Source: 20	0.19	0.30	mg/l	pared: 03/30/2 2.00	2 Analyzed: 1.16	04/01/22 65	2 76-115	4	20	MS-0
Total Organic Garbon (1967)	2.10	0.10	0.00	mg/	2.00	1.10	00	70 110		20	inic o
Batch: W2D0053 - SM 5310B											
Blank (W2D0053-BLK1)					Prepared & A	nalyzed: 04/0	04/22				
Dissolved Organic Carbon	ND	0.15	0.30	mg/l							
LCS (W2D0053-BS1)					Prepared & A	nalyzed: 04/0	04/22				
Dissolved Organic Carbon	1.86	0.15	0.30	mg/l	2.00		93	74-120		20	
Matrix Spike (W2D0053-MS1)	Source: 20	23057-01			Prepared & A	nalyzed: 04/0	04/22				
Dissolved Organic Carbon	2.23	0.15	0.30	mg/l	2.00	1.04	60	74-120		20	MS-0
Matrix Spike Dup (W2D0053-MSD1)	Source: 20	23057-01		Pro	pared: 04/04/2	2 Analyzed	04/05/2	2			
Dissolved Organic Carbon	2.32	0.15	0.30	mg/l	2.00	1.04	64	74-120	4	20	MS-0



FINAL REPORT

Wood - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123 Project Number: Shelter Island Yacht Basin TMDL Winter

Monitoring (Port of San Diego)

Reported: 04/12/2022 18:00

Project Manager: Marisa Swiderski

Quality Control Results

Quality Control Results											
Metals - Low Level by 1600 Series Methods											
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualif
atch: W2D0063 - EPA 1640											
Blank (W2D0063-BLK1)				Pre	pared: 04/01/2	2 Analyzed:	04/02/22	2			
Copper, Total	- ND	0.0038	0.010	ug/l							
Zinc, Total	ND	0.036	0.20	ug/l							
LCS (W2D0063-BS1)				Pre	pared: 04/01/2	2 Analyzed:	04/02/22	2			
Copper, Total	10.4	0.0038	0.010	ug/l	10.0	•	104	83-109		25	
Zinc, Total	33.1	0.036	0.20	ug/l	30.0		110	68-132		30	
Matrix Spike (W2D0063-MS1)	ource: 2	C23057-01		Pre	pared: 04/01/2	2 Analyzed:	04/02/22	2			
Copper, Total	22.8	0.0038	0.010	ug/l	10.0	12.0	108	83-109		25	
Zinc, Total	63.4	0.036	0.20	ug/l	30.0	30.9	108	68-132		30	
Matrix Spike (W2D0063-MS2)	ource: 2	C23057-02		Pre	pared: 04/01/2	2 Analyzed:	04/02/22	2			
Copper, Total	23.9	0.0038	0.010	ug/l	10.0	13.0	109	83-109		25	
Zinc, Total	64.5	0.036	0.20	ug/l	30.0	31.8	109	68-132		30	
Matrix Spike Dup (W2D0063-MSD1) So	ource: 2	C23057-01		Pre	pared: 04/01/2	2 Analyzed:	04/02/22	2			
Copper, Total	22.8	0.0038	0.010	ug/l	10.0	12.0	108	83-109	0.1	25	
Zinc, Total	63.8	0.036	0.20	ug/l	30.0	30.9	110	68-132	0.7	30	
Matrix Spike Dup (W2D0063-MSD2) So	ource: 2	C23057-02		Pre	pared: 04/01/2	2 Analyzed:	04/02/22	2			
Copper, Total	23.3	0.0038	0.010	ug/l	10.0	13.0	104	83-109	2	25	
Zinc, Total	64.6	0.036	0.20	ug/l	30.0	31.8	109	68-132	0.06	30	
atch: W2D0066 - EPA 1640											
Blank (W2D0066-BLK1)				Pre	pared: 04/01/2	2 Analyzed:	04/02/22	2			
Copper, Dissolved	- ND	0.0038	0.010	ug/l							
Zinc, Dissolved	ND	0.036	0.20	ug/l							
LCS (W2D0066-BS1)				Pre	pared: 04/01/2	2 Analyzed:	04/02/22	2			
Copper, Dissolved	10.3	0.0038	0.010	ug/l	10.0		103	70-130		30	
Zinc, Dissolved	31.3	0.036	0.20	ug/l	30.0		104	68-132		30	
Matrix Spike (W2D0066-MS1)	ource: 2	C23057-01		Pre	pared: 04/01/2	2 Analyzed:	04/02/22	2			
Copper, Dissolved	21.5	0.0038	0.010	ug/l	10.0	10.9	107	70-130		30	
Zinc, Dissolved	61.8	0.036	0.20	ug/l	30.0	29.9	106	68-132		30	
Matrix Spike (W2D0066-MS2)	ource: 2	C23057-02		Pre	pared: 04/01/2	2 Analyzed:	04/02/22	2			
Copper, Dissolved	22.5	0.0038	0.010	ug/l	10.0	12.0	105	70-130		30	
Zinc, Dissolved	63.1	0.036	0.20	ug/l	30.0	31.2	106	68-132		30	
Matrix Spike Dup (W2D0066-MSD1)	ource: 2	C23057-01		Pre	pared: 04/01/2	2 Analyzed:	04/02/22	2			
Copper, Dissolved	21.5	0.0038	0.010	ug/l	10.0	10.9	107	70-130	0.03	30	
Zinc, Dissolved	61.9	0.036	0.20	ug/l	30.0	29.9	107	68-132	0.2	30	
Matrix Spike Dup (W2D0066-MSD2)	ource: 2	C23057-02		Pre	pared: 04/01/2	2 Analyzed:	04/02/22	2			
Copper, Dissolved	22.5	0.0038	0.010	ug/l	10.0	12.0	105	70-130	0.1	30	
Zinc, Dissolved	63.8	0.036	0.20	ug/l	30.0	31.2	109	68-132	1	30	



FINAL REPORT

Wood - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123 Project Number: Shelter Island Yacht Basin TMDL Winter

Monitoring (Port of San Diego)

Reported: 04/12/2022 18:00

Project Manager: Marisa Swiderski



Item

Notes and Definitions

J	Estimated conc. detected <mrl and="">MDL.</mrl>
MS-01	The spike recovery for this QC sample is outside of established control limits possibly due to sample matrix interference.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

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Weck Laboratories, Inc. Analytical Laboratory Services - Since 1964

CHAIN OF CUSTODY RECORD

14859 East Clark Avenue: Industry: CA 91745

STANDARD 1023057

Tel 626-336-2139	♦ Fax 626-	-336-2634	♦ www	w.wecklabs.com								0			<i>.</i>	[′] Page	<u> </u>	Of	_1
CLIENT NAME:				PROJECT:					AN	IALYS	SESI	REQL	JEST	ED		SPEC	IAL HA	NDLING	
Wood Environment & ADDRESS: 9177 Sky Park Ct. San Diego, CA 92123		e Solutions,	Inc.	2022 SIYB Winter Monitoring (Po PHONE: 858-300-430 FAX: 858-300-430 EMAIL: marisa.swiders barry.snyder@	ort of San Dìe 4 1 ski@woodplc.cc	-	1038 µg/L, RL= 0.01 µg/L.	1,2 1038 µg/L, RL= 0.01 µg/L	36 µg/l., RL= 0.20 µg/L	136 µg/L, RL= 0.20 µg/L	bon (TOC) 3.016 mg/L, RL = 0.10 mg/L	c Carbon (DOC) 3.016 mg/L, RL =	Solids = 1 mg/L, RL = 5 mg/L			game Tarre Tar Tarre Tarre Tarre Tarre Tarre Tarre Tarre Tarre Tarre Tarre Tar	24 Hou 48-72 h 4 - 5 Da Rush E 10 Bus	Day Rush 18 r Rush 100 dour Rush 70 ay Rush 30 xtractions 5 siness Days	% '5% % 0%
PROJECT MANAGER					Kata Buaklay	(IZD)	ا ^د ا 20 تار	opper CL 0.0	31. 0.0	nc ^{1,2}), 0, 1	c Car	Organic (MDL = 0.0	pended: D, MDL			Charges		Data Pack	•
Marisa Swiderski ID#	DATE	TIME	SMPL	Marisa Swiderski (MS) /	Kate buckiey	#OF	opper to MC	ed Co	nc¹ 40 ME	ed Zil 40 ME	gani OB ME	ed Or	Susper 540 D,			Method of			ds/holidays
(For lab Use Only)	SAMPLED	SAMPLED	TYPE	SAMPLE IDENTIFICATION/S	ITE LOCATION	CONT.	Total Co EPA 164	Dissolv EPA 164	Total Zii EPA 16	Dissalv EPA 164	Total Or SM 531(Dissolved SM 5310B	Total Su EPA 254			COMMEN	•		
	03/22/22	1550	seawater	SIYB-1		15	Χ	Х	Χ	Х	Χ	Х	Χ			extra vol.	analyze	sample N	IS/MSD
	03/22/22	1630	seawater	SIYB-1 (REP)		7	Х	Х	Х	X	Х	Х	Χ						
	03/22/22	1200		SIYB-2	•	7	X	Х	Х	Х	X	Х	Χ						
	03/22/22	1320		SIYB-3		7	Х	Х	Х	Х	X	Х	Χ						· · · · · · · · · · · · · · · · · · ·
	03/22/22	1300		SIYB-4		7	Х	Х	Х	X	X	X	Х						
	03/22/22	1150	•	SIYB-5		7	X	X	X	X	X	X	X			ļ			
	03/22/22	1030		SIYB-6	W-07	7	X	Х	X	X	X	Х	X			<u> </u>			
	03/22/22	0930		SIYB-REF-1		7	X	X	X	X	X	Х	X	-					
	03/22/22	0845		SIYB-REF-2		7.	X	X	X	X	X	X	X	_					
<u> </u>	03/22/22	2201	DI	SIYB-ER SIYB-FB		7.	X	X	X	X	X	X	X	-					
RELINQUISHED BY	03/22/22	(20		I SIAR-ER	REÇEIVED) DV	<u>`</u> ^	_ ^	۸	۸	Λ	_ ^	$\stackrel{\wedge}{-}$					SAMPLE	TYPE CODE:
Marin Sv	rderwi		03/	23/2022 0900	Late	ee	1		_ > <	en	_0	he	2	Actual T	emperatu	ONDITION: re:	∕Ÿ) N	AQ=Aque NA= Non SL ≃ Sluc	eous Aqueous
Head such 3			3-	-23-21 RECEIVED BY) 23 (2-2	. !	11:	25		·	Preservi Evidenc Contain	ed e Seals P er Intact	resent	Y/N Y/M2	WW = W RW = Ra GW = Gr	aste Water in Water ound Water
RELINQUISHED BY	RELINQUISHED BY DAT			E / TIME RECEIVED BY							·			· 7	ed at Lab		Y / [Q]	OL ≃ Oil OT ≈ Oth	lid Waste er Matrix
SPECIAL REQUIREMEN				Motals bottles have NO asid								invoic natior		APInvo	oice.US(@woodplc.d	om and i	nclude th)

1) <u>LAB ACTION</u>: PRESERVE Cu/Zn IMMEDIATELY. HDPE Metals bottles have NO acid (HNO3) in bottle.

- 2) Diss. metals were field filtered using 0.45 um bottletop filt. system.

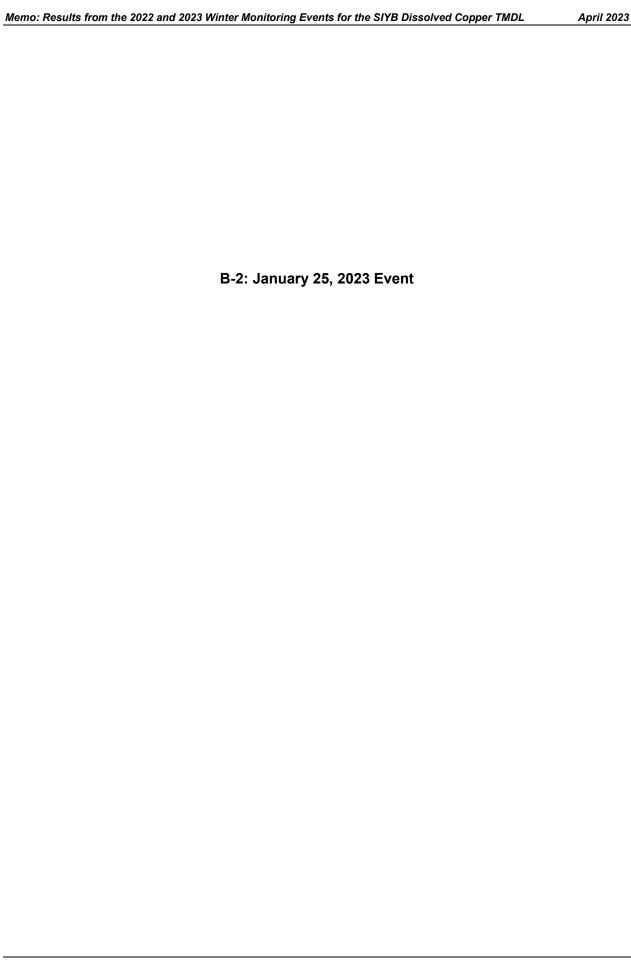
- 3) DOC samples were field filtered through 0.45 um Nylon filters.
 4) Preserve extra of each sample for total and dissolved metals to archive.
 5) SPIKE level at the following amounts: Copper = 10 ug/L, Zinc = 30 ug/L, TOC/DOC = 2.0 mg/L
 6) WECK will contact Wood PM within 24 hours if any sample anomalies are found.

- 1) Project #: 2015100111.0007.WECK
- (2) PO #: C015101804
- (3) Org: 3151
- (4) GL: 573000



Sample Receipt Checklist

\	Weck WKO: 2C23057 WKO Logged by: Lester Abad		Date	# of Samples:	11
	oles Checked by: LKA			Delivered by:	
	Task	Yes	No	N/A	Comments
	COC present at receipt?	 		HYA ELLE	commence
	COC properly completed?	\boxtimes		_	
ပ	COC matches sample labels?				
000				_	
				_	
	Project Manager notified?			\boxtimes	
	lo 1 = .				
	Sample Temperature		3°C		
⊊	Samples received on ice?			_	
Receipt Information	Ice Type (Blue/Wet)		ET	_	
Ĕ	All samples intact?	\boxtimes			
μ	Samples in proper containers?	\boxtimes		_	
)t	Sufficient sample volume?	\boxtimes			
ej.	Samples intact?	\boxtimes			
Re(Received within holding time?	\boxtimes			
				_	
	Project Manager notified?				
	Sample labels checked for correct preservation?				
C- -					
<u>.o</u>	VOC Headspace: none, <6mm/ <pea size?<="" td=""><td></td><td></td><td>\boxtimes</td><td></td></pea>			\boxtimes	
icat	524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT			-	
erif	pH verified upon receipt?			_	
۶	Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 608.3 5-9	\boxtimes			
tior	Wetting 4, 1120 1 p. 65 16515 42, 522 41, 100 42, 50015 5 5			_	
Preservation Verification?	Free Chlorine Tested <0.1				
res		ACCESSOR MANAGEMENT AND	SIRKSIC-YESISDI	100000000000000000000000000000000000000	
e P	O&G pH <2 verified?	на Шин	ыШ		pH paper Lot#
Sample	en en la propieta de la composition de La composition de la				pH Reading:
Sai	pH adjusted for O&G	П	Ш	(1)	Acid Lot#
					Amt added:
	Project Manager notified?			⊠ _	
РМ Со	mments				
-	e Receipt Checklist Prepared by:				
Signat	ture: LKA			Date:	03/23/22
	- · · · - · - · - · - · - · · · · · · ·				





FINAL REPORT

Work Orders: 3A26102 Report Date: 2/24/2023

Received Date: 1/26/2023

Turnaround Time: Normal

Phones: (858) 300-4324

Fax: (858) 278-5300

P.O. #: C015102550

Billing Code:

Attn: Marisa Swiderski

Client: WSP USA E&I Inc. - San Diego

9177 Sky Park Court, Ste A San Diego, CA 92123

Project: 2023 SIYB TMDL Winter Monitoring

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Marisa Swiderski,

Enclosed are the results of analyses for samples received 1/26/23 with the Chain-of-Custody document. The samples were received in good condition, at 4.3 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Chris Samatmanakit Project Manager

1: State











FINAL REPORT

WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123 **Project Number:** 2023 SIYB TMDL Winter Monitoring

Reported: 02/24/2023 11:02

Project Manager: Marisa Swiderski

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
SIYB-ER	Marisa Swiderski / Kate Buckley	3A26102-01	Water	01/25/23 06:25	
SIYB-REF-2	Marisa Swiderski / Kate Buckley	3A26102-02	Water	01/25/23 07:20	
SIYB-REF-1	Marisa Swiderski / Kate Buckley	3A26102-03	Water	01/25/23 08:00	
SIYB-6	Marisa Swiderski / Kate Buckley	3A26102-04	Water	01/25/23 09:00	
SIYB-5	Marisa Swiderski / Kate Buckley	3A26102-05	Water	01/25/23 10:00	
SIYB-4	Marisa Swiderski / Kate Buckley	3A26102-06	Water	01/25/23 11:00	
SIYB-3	Marisa Swiderski / Kate Buckley	3A26102-07	Water	01/25/23 12:00	
SIYB-2	Marisa Swiderski / Kate Buckley	3A26102-08	Water	01/25/23 13:00	
SIYB-1	Marisa Swiderski / Kate Buckley	3A26102-09	Water	01/25/23 14:00	
SIYB-1 (REP)	Marisa Swiderski / Kate Buckley	3A26102-10	Water	01/25/23 14:50	
SIYB-FB	Marisa Swiderski / Kate Buckley	3A26102-11	Water	01/25/23 15:20	



FINAL REPORT

WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123 Project Number: 2023 SIYB TMDL Winter Monitoring

Reported:

02/24/2023 11:02



	•								
Sample:	SIYB-ER				Sa	mpled: 01/25/	23 6:25 by	Marisa Swidersk	ci / Kate Buckley
	3A26102-01 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
onventional	Chemistry/Physical Paramete	rs by APHA/EPA/ASTM Methods							
Method: SM	1 2540D				Instr: OVEN15				
Batch ID:	W3A2312	Preparation: _NONE (WETCH	IEM)		Prepared: 01/2	27/23 09:40			Analyst: mes
Total Sus	pended Solids		0.4		5	mg/l	1	01/27/23	,
Method: SM	1 5310B				Instr: TOC02				
Batch ID:	W3B0162	Preparation: _NONE (TOC/TO	OX)		Prepared: 02/0	02/23 08:39			Analyst: ajc
Total Orga	anic Carbon (TOC)		0.21	0.19	0.30	mg/l	1	02/03/23	
Method: SM	1 5310B				Instr: TOC02				
Batch ID:	W3B0440	Preparation: _NONE (TOC/TO	OX)		Prepared: 02/0	06/23 13:21			Analyst: ajc
Dissolved	l Organic Carbon		0.25	0.15	0.30	mg/l	1	02/07/23	•
/letals - Low	Level by 1600 Series Methods								
Method: EPA	A 1640				Instr: ICPMS08	3			
Batch ID:	W3B1337	Preparation: EPA 1640#Preco	oncentration		Prepared: 02/	15/23 15:55			Analyst: ALN
Copper, D	Dissolved		0.037	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Diss	solved		1.9	0.036	0.20	ug/l	1	02/16/23	
Method: EPA	A 1640				Instr: ICPMS08	3			
Batch ID:	W3B1445	Preparation: EPA 1640#Preco	oncentration		Prepared: 02/	16/23 12:18			Analyst: ALN
Copper, T	otal		0.061	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Tota	ıl		3.8	0.036	0.20	ug/l	1	02/16/23	

Project Manager: Marisa Swiderski



FINAL REPORT

WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123

Project Number: 2023 SIYB TMDL Winter Monitoring

Reported: 02/24/2023 11:02

Project Manager: Marisa Swiderski

Sa	ımple Resu	ılts							(Continued)
Sample:	SIYB-REF-2				Sa	mpled: 01/25/	23 7:20 by	Marisa Swidersk	ki / Kate Buckley
	3A26102-02 (Wate	er)							
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional (Chemistry/Physical Pa	arameters by APHA/EPA/ASTM Metho	ods						
Method: SM	2540D				Instr: OVEN15				
Batch ID: V	V3A2312	Preparation: _NONE (V	VETCHEM)		Prepared: 01/2	27/23 09:40			Analyst: mes
Total Susp	ended Solids		4		5	mg/l	1	01/27/23	J
Method: SM	5310B				Instr: TOC02				
Batch ID: V	W3B0162	Preparation: _NONE (T	OC/TOX)		Prepared: 02/0	02/23 08:39			Analyst: ajc
Total Orga	inic Carbon (TOC)		1.4	0.19	0.30	mg/l	1	02/03/23	
Method: SM	5310B				Instr: TOC02				
Batch ID: V	V3B0440	Preparation: _NONE (T	OC/TOX)		Prepared: 02/0	06/23 13:21			Analyst: ajc
Dissolved	Organic Carbon		1.4	0.15	0.30	mg/l	1	02/07/23	
Metals - Low L	evel by 1600 Series N	Methods							
Method: EPA	1640				Instr: ICPMS08	3			
Batch ID: V	W3B1337	Preparation: EPA 1640	#Preconcentration		Prepared: 02/1	15/23 15:55			Analyst: ALN
Copper, D	issolved		2.2	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Diss	olved		14	0.036	0.20	ug/l	1	02/16/23	
Method: EPA	1640				Instr: ICPMS08	3			
Batch ID: V	W3B1445	Preparation: EPA 1640	#Preconcentration		Prepared: 02/1	16/23 12:18			Analyst: ALN
Copper, To	otal		2.5	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Total	l		14	0.036	0.20	ug/l	1	02/16/23	



FINAL REPORT

WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123 **Project Number:** 2023 SIYB TMDL Winter Monitoring

Reported: 02/24/2023 11:02

Project Manager: Marisa Swiderski

Sample Results

Sample:	SIYB-REF-1				Sa	mpled: 01/25/	23 8:00 by	Marisa Swiders	ki / Kate Buckle
	3A26102-03 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualific
onventional Ch	emistry/Physical Paramet	ers by APHA/EPA/ASTM Methods							
Method: SM 25	540D				Instr: OVEN15				
Batch ID: W3	A2312	Preparation: _NONE (WETCH	EM)		Prepared: 01/2	27/23 09:40			Analyst: me
Total Susper	nded Solids				5	mg/l	1	01/27/23	
Method: SM 53	310B				Instr: TOC02				
Batch ID: W3	B0162	Preparation: _NONE (TOC/TO	X)		Prepared: 02/0	02/23 08:39			Analyst: aj
Total Organi	c Carbon (TOC)		1.2	0.19	0.30	mg/l	1	02/03/23	
Method: SM 53	310B				Instr: TOC02				
Batch ID: W3	B0440	Preparation: _NONE (TOC/TO	X)		Prepared: 02/0	06/23 13:21			Analyst: a
Dissolved O	rganic Carbon		1.3	0.15	0.30	mg/l	1	02/07/23	
etals - Low Lev	el by 1600 Series Method	s							
Method: EPA 1	640				Instr: ICPMS08	;			
Batch ID: W3	B1337	Preparation: EPA 1640#Preco	ncentration		Prepared: 02/1	15/23 15:55			Analyst: ALI
Copper, Diss	solved		1.6	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Dissolv	ved		6.1	0.036	0.20	ug/l	1	02/16/23	
Method: EPA 1	640				Instr: ICPMS08	1			
Batch ID: W3	B1445	Preparation: EPA 1640#Preco	ncentration		Prepared: 02/1	16/23 12:18			Analyst: ALI
Copper, Tota	al		1.6	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Total			5.9	0.036	0.20	ug/l	1	02/16/23	



FINAL REPORT

WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123 **Project Number:** 2023 SIYB TMDL Winter Monitoring

Reported: 02/24/2023 11:02

Project Manager: Marisa Swiderski

Sample Results

Sample:	SIYB-6				Sar	mpled: 01/25/	23 9:00 by	Marisa Swiders	ki / Kate Buckley
	3A26102-04 (Water)								
Analyte		R	esult	MDL	MRL	Units	Dil	Analyzed	Qualifie
onventional (Chemistry/Physical Parameter	s by APHA/EPA/ASTM Methods							
Method: SM	2540D				Instr: OVEN15				
Batch ID: V	W3A2312	Preparation: _NONE (WETCHEM)			Prepared: 01/2	27/23 09:40			Analyst: mes
Total Susp	pended Solids		- 5		5	mg/l	1	01/27/23	
Method: SM	5310B				Instr: TOC02				
Batch ID: V	W3B0162	Preparation: _NONE (TOC/TOX)			Prepared: 02/0	02/23 08:39			Analyst: ajo
Total Orga	nic Carbon (TOC)		1.2	0.19	0.30	mg/l	1	02/03/23	
Method: SM	5310B				Instr: TOC02				
Batch ID: V	W3B0440	Preparation: _NONE (TOC/TOX)			Prepared: 02/0	06/23 13:21			Analyst: ajc
Dissolved	Organic Carbon		1.2	0.15	0.30	mg/l	1	02/07/23	
/letals - Low L	evel by 1600 Series Methods								
Method: EPA	x 1640				Instr: ICPMS08				
Batch ID: V	W3B1337	Preparation: EPA 1640#Preconcent	tration		Prepared: 02/1	5/23 15:55			Analyst: ALN
Copper, D	issolved		2.3	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Diss	olved		8.9	0.036	0.20	ug/l	1	02/16/23	
Method: EPA	x 1640				Instr: ICPMS08				
Batch ID: V	W3B1445	Preparation: EPA 1640#Preconcent	tration		Prepared: 02/1	6/23 12:18			Analyst: ALN
Copper, To	otal		2.3	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Total	l		8.1	0.036	0.20	ug/l	1	02/16/23	



FINAL REPORT

WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123 **Project Number:** 2023 SIYB TMDL Winter Monitoring

Reported:

02/24/2023 11:02

Sample Results

(Continued)

	•								
Sample:	SIYB-5				Sar	mpled: 01/25/2	23 10:00 by	Marisa Swiders	ki / Kate Buckley
	3A26102-05 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
onventional	Chemistry/Physical Paramete	rs by APHA/EPA/ASTM Methods							
Method: SM 2540D					Instr: OVEN15				
Batch ID: W3A2312		Preparation: _NONE (WETCHE	Preparation: _NONE (WETCHEM)			Prepared: 01/27/23 09:40			
Total Suspended Solids			5		5	mg/l	1	01/27/23	•
Method: SM	1 5310B				Instr: TOC02				
Batch ID: W3B0162		Preparation: _NONE (TOC/TOX)			Prepared: 02/02/23 08:39				Analyst: ajo
Total Organic Carbon (TOC)			1.2	0.19	0.30	mg/l	1	02/03/23	
Method: SM	1 5310B				Instr: TOC02				
Batch ID: W3B0440		Preparation: _NONE (TOC/TOX)			Prepared: 02/06/23 13:21				Analyst: ajo
Dissolved	l Organic Carbon		1.4	0.15	0.30	mg/l	1	02/07/23	
letals - Low	Level by 1600 Series Methods								
Method: EPA	A 1640				Instr: ICPMS08	}			
Batch ID: W3B1337		Preparation: EPA 1640#Precon	Preparation: EPA 1640#Preconcentration			Prepared: 02/15/23 15:55			
Copper, D	Dissolved		3.7	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Diss	solved		14	0.036	0.20	ug/l	1	02/16/23	
Method: EPA	A 1640				Instr: ICPMS08	1			
Batch ID: W3B1445		Preparation: EPA 1640#Precon	Preparation: EPA 1640#Preconcentration			Prepared: 02/16/23 12:18			
Copper, T	otal		3.7	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Tota	1		13	0.036	0.20	ug/l	1	02/16/23	

Project Manager: Marisa Swiderski



FINAL REPORT

WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123

Project Number: 2023 SIYB TMDL Winter Monitoring

Reported:

(Continued)

02/24/2023 11:02

Sample Results

Sample: SIYB-4	SIYB-4					Sampled: 01/25/23 11:00 by Marisa Swiderski / Kate Buckley				
3A26102-06 (Water)										
Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier			
Conventional Chemistry/Physical Parame	eters by APHA/EPA/ASTM Methods									
Method: SM 2540D			Instr: OVEN15							
Batch ID: W3A2312	Preparation: _NONE (WETCHEM)	Preparation: _NONE (WETCHEM)			Prepared: 01/27/23 09:40					
Total Suspended Solids	5		5	mg/l	1	01/27/23				
Method: SM 5310B			Instr: TOC02							
Batch ID: W3B0162	Preparation: _NONE (TOC/TOX)		Prepared: 02/02/23 08:39				Analyst: ajc			
Total Organic Carbon (TOC)	1.2	0.19	0.30	mg/l	1	02/03/23				
Method: SM 5310B			Instr: TOC02							
Batch ID: W3B0440	Preparation: _NONE (TOC/TOX)		Prepared: 02/06/23 13:21				Analyst: ajc			
Dissolved Organic Carbon	1.3	0.15	0.30	mg/l	1	02/07/23				
Metals - Low Level by 1600 Series Metho	ods									
Method: EPA 1640			Instr: ICPMS08							
Batch ID: W3B1337	Preparation: EPA 1640#Preconcentration	econcentration Prepared			d: 02/15/23 15:55					
Copper, Dissolved	5.2	0.0038	0.010	ug/l	1	02/16/23				
Zinc, Dissolved	19	0.036	0.20	ug/l	1	02/16/23				
Method: EPA 1640			Instr: ICPMS08							
Batch ID: W3B1445	Preparation: EPA 1640#Preconcentration		Prepared: 02/16/23 12:18				Analyst: ALN			
Copper, Total	5.4	0.0038	0.010	ug/l	1	02/16/23				
Zinc, Total		0.036	0.20	ug/l	1	02/16/23				

Project Manager: Marisa Swiderski



FINAL REPORT

WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123 Project Number: 2023 SIYB TMDL Winter Monitoring

Project Manager: Marisa Swiderski

Reported:

02/24/2023 11:02

Sample Results

(Continued)

Sample:	SIYB-3				Sar	mpled: 01/25/2	23 12:00 by	Marisa Swidersl	ki / Kate Buckley
	3A26102-07 (Wa	ater)							
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
nventional C	hemistry/Physical I	Parameters by APHA/EPA/ASTM N	lethods						
Method: SM	2540D				Instr: OVEN15				
Batch ID: W	/3A2312	Preparation: _NO	NE (WETCHEM)		Prepared: 01/2	27/23 09:40			Analyst: me
Total Susp	ended Solids		5		5	mg/l	1	01/27/23	
Method: SM !	5310B				Instr: TOC02				
Batch ID: W	/3B0162	Preparation: _NOI	NE (TOC/TOX)		Prepared: 02/0	02/23 08:39			Analyst: ajo
Total Organ	nic Carbon (TOC)		1.2	0.19	0.30	mg/l	1	02/03/23	
Method: SM	5310B				Instr: TOC02				
Batch ID: W	/3B0440	Preparation: _NO	NE (TOC/TOX)		Prepared: 02/0	06/23 13:21			Analyst: aj
Dissolved	Organic Carbon		1.4	0.15	0.30	mg/l	1	02/07/23	
etals - Low Lo	evel by 1600 Series	Methods							
Method: EPA	1640				Instr: ICPMS08	3			
Batch ID: W	/3B1337	Preparation: EPA	1640#Preconcentration		Prepared: 02/1	15/23 15:55			Analyst: ALN
Copper, Dis	ssolved		5.3	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Disso	olved		20	0.036	0.20	ug/l	1	02/16/23	
Method: EPA	1640				Instr: ICPMS08	3			
Batch ID: W	/3B1445	Preparation: EPA	1640#Preconcentration		Prepared: 02/1	16/23 12:18			Analyst: ALN
Copper, To	tal		5.3	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Total			19	0.036	0.20	ug/l	1	02/16/23	



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WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123

Project Number: 2023 SIYB TMDL Winter Monitoring

Reported:

(Continued)

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Sample Results

Sample: SIYB-2			Sam	pled: 01/25/2	23 13:00 by	Marisa Swidersl	ki / Kate Buckley
3A26102-08 (Water)							
Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
onventional Chemistry/Physical Paramet	ers by APHA/EPA/ASTM Methods						
Method: SM 2540D			Instr: OVEN15				
Batch ID: W3A2312	Preparation: _NONE (WETCHEM)		Prepared: 01/27	7/23 09:40			Analyst: mes
Total Suspended Solids	10		5	mg/l	1	01/27/23	
Method: SM 5310B			Instr: TOC02				
Batch ID: W3B0162	Preparation: _NONE (TOC/TOX)		Prepared: 02/02	2/23 08:39			Analyst: ajc
Total Organic Carbon (TOC)	1.3	0.19	0.30	mg/l	1	02/03/23	
Method: SM 5310B			Instr: TOC02				
Batch ID: W3B0440	Preparation: _NONE (TOC/TOX)		Prepared: 02/06	6/23 13:21			Analyst: ajc
Dissolved Organic Carbon	1.3	0.15	0.30	mg/l	1	02/07/23	
etals - Low Level by 1600 Series Method	ls						
Method: EPA 1640			Instr: ICPMS08				
Batch ID: W3B1337	Preparation: EPA 1640#Preconcentration		Prepared: 02/15	5/23 15:55			Analyst: ALN
Copper, Dissolved	6.9	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Dissolved	28	0.036	0.20	ug/l	1	02/16/23	
Method: EPA 1640			Instr: ICPMS08				
Batch ID: W3B1445	Preparation: EPA 1640#Preconcentration		Prepared: 02/16	6/23 12:18			Analyst: ALN
Copper, Total	7.3	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Total	26	0.036	0.20	ug/l	1	02/16/23	

Project Manager: Marisa Swiderski



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Sample Results

Project Manager: Marisa Swiderski

(Continued)

	-							
Sample:	SIYB-1			Sam	npled: 01/25/2	23 14:00 by	Marisa Swiders	ki / Kate Buckle
	3A26102-09 (Water)							
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
onventional	Chemistry/Physical Paramete	ers by APHA/EPA/ASTM Methods						
Method: SM	1 2540D			Instr: OVEN15				
Batch ID:	W3A2312	Preparation: _NONE (WETCHEM)		Prepared: 01/2	7/23 09:40			Analyst: me
Total Sus	pended Solids	9		5	mg/l	1	01/27/23	
Method: SM	1 5310B			Instr: TOC02				
Batch ID:	W3B0162	Preparation: _NONE (TOC/TOX)		Prepared: 02/0	2/23 08:39			Analyst: aj
Total Orga	anic Carbon (TOC)	1.2	0.19	0.30	mg/l	1	02/03/23	
Method: SM	1 5310B			Instr: TOC02				
Batch ID:	W3B0440	Preparation: _NONE (TOC/TOX)		Prepared: 02/0	6/23 13:21			Analyst: aj
Dissolved	l Organic Carbon	1.3	0.15	0.30	mg/l	1	02/07/23	
etals - Low	Level by 1600 Series Method	s						
Method: EPA	A 1640			Instr: ICPMS08				
Batch ID:	W3B1337	Preparation: EPA 1640#Preconcentration		Prepared: 02/1	5/23 15:55			Analyst: AL
Copper, D	Dissolved	7.7	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Diss	solved		0.036	0.20	ug/l	1	02/16/23	
Method: EPA	A 1640			Instr: ICPMS08				
Batch ID:	W3B1445	Preparation: EPA 1640#Preconcentration		Prepared: 02/1	6/23 12:18			Analyst: ALN
Copper, T	otal	7.3	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Tota	1	23	0.036	0.20	ug/l	1	02/16/23	



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Sample Results

Sample: SIYB-1 (REP)				San	npled: 01/25/2	23 14:50 by	Marisa Swidersl	ki / Kate Buckley
3A26102-10	(Water)							
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physi	cal Parameters by APHA/EPA/ASTM Meti	hods						
Method: SM 2540D				Instr: OVEN15				
Batch ID: W3A2544	Preparation: _NONE	(WETCHEM)		Prepared: 01/3	31/23 11:13			Analyst: mes
Total Suspended Solids		4		5	mg/l	1	01/31/23	J
Method: SM 5310B				Instr: TOC02				
Batch ID: W3B0162	Preparation: _NONE	(TOC/TOX)		Prepared: 02/0	02/23 08:39			Analyst: ajc
Total Organic Carbon (TO	C)	1.3	0.19	0.30	mg/l	1	02/03/23	
Method: SM 5310B				Instr: TOC02				
Batch ID: W3B0440	Preparation: _NONE	(TOC/TOX)		Prepared: 02/0	06/23 13:21			Analyst: ajc
Dissolved Organic Carbo	1	1.2	0.15	0.30	mg/l	1	02/07/23	
Metals - Low Level by 1600 Se	ries Methods							
Method: EPA 1640				Instr: ICPMS08				
Batch ID: W3B1337	Preparation: EPA 164	0#Preconcentration		Prepared: 02/1	5/23 15:55			Analyst: ALN
Copper, Dissolved		7.9	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Dissolved		28	0.036	0.20	ug/l	1	02/16/23	
Method: EPA 1640				Instr: ICPMS08				
Batch ID: W3B1445	Preparation: EPA 164	0#Preconcentration		Prepared: 02/1	6/23 12:18			Analyst: ALN
Copper, Total		8.0	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Total		26	0.036	0.20	ug/l	1	02/16/23	

Project Manager: Marisa Swiderski



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Project Manager: Marisa Swiderski

Sample Results

(Continued)

Sample: SIYB-FB			San	npled: 01/25/2	23 15:20 by	Marisa Swidersl	ki / Kate Buckley
3A26102-11 (Water)							
Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
onventional Chemistry/Physical Paran	neters by APHA/EPA/ASTM Methods						
Method: SM 2540D			Instr: OVEN15				
Batch ID: W3B0029	Preparation: _NONE (WETCHEM)		Prepared: 02/0	1/23 12:54			Analyst: mes
Total Suspended Solids	0.3		5	mg/l	1	02/01/23	J
Method: SM 5310B			Instr: TOC02				
Batch ID: W3B0162	Preparation: _NONE (TOC/TOX)		Prepared: 02/0	2/23 08:39			Analyst: ajc
Total Organic Carbon (TOC)	0.22	0.19	0.30	mg/l	1	02/03/23	J
Method: SM 5310B			Instr: TOC02				
Batch ID: W3B0440	Preparation: _NONE (TOC/TOX)		Prepared: 02/0	6/23 13:21			Analyst: ajc
Dissolved Organic Carbon	0.34	0.15	0.30	mg/l	1	02/07/23	
etals - Low Level by 1600 Series Meth	oods						
Method: EPA 1640			Instr: ICPMS08				
Batch ID: W3B1337	Preparation: EPA 1640#Preconcentration		Prepared: 02/1	5/23 15:55			Analyst: ALN
Copper, Dissolved	0.036	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Dissolved	ND	0.036	0.20	ug/l	1	02/16/23	
Method: EPA 1640			Instr: ICPMS08				
Batch ID: W3B1445	Preparation: EPA 1640#Preconcentration		Prepared: 02/1	6/23 12:18			Analyst: ALN
Copper, Total	0.12	0.0038	0.010	ug/l	1	02/16/23	
Zinc, Total	0.30	0.036	0.20	ug/l	1	02/16/23	



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Quality Control Results

Conventional Chemistry/Physical Parameter	ers by APHA/EPA/ASTM	Methods									
					Spike	Source	~~==	%REC		RPD	
Analyte atch: W3A2312 - SM 2540D	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifie
					Duamanad 9: A.		27/22				
Blank (W3A2312-BLK1) Total Suspended Solids	1.10		5	mg/l	Prepared & A	ialyzea: U1/	21/23				
				J			a= (aa				
LCS (W3A2312-BS1) Total Suspended Solids	54.7		5	mg/l	Prepared & A	nalyzed: 01/	101	90-110			
·				ŭ							
Duplicate (W3A2312-DUP1) Total Suspended Solids	Source: 3A2	26015-01	5	mg/l	Prepared & A	2780	21/23		9	10	
·				J							
Duplicate (W3A2312-DUP2) Total Suspended Solids	Source: 3A2	27056-01	5	mg/l	Prepared & A	128 128	27/23		2	10	
·				J							
atch: W3A2544 - SM 2540D											
Blank (W3A2544-BLK1) Total Suspended Solids	ND		5	ma/l	Prepared & A	nalyzed: 01/	31/23				
Total Suspended Solids	ND		3	mg/l							
LCS (W3A2544-BS1) Total Suspended Solids	52.5		5	ma/l	Prepared & A	nalyzed: 01/	31/23 95	90-110			
Total Suspended Solids			3	mg/l	30.4		90	90-110			
Duplicate (W3A2544-DUP1)	Source: 3A2	25110-03	E	m a /l	Prepared & A	-	31/23		9	10	
Total Suspended Solids	16.4		5	mg/l		18.0			9	10	
Duplicate (W3A2544-DUP2)	Source: 3A2	25110-08	_		Prepared & A	-	31/23		_	40	
Total Suspended Solids	8.60		5	mg/l		8.00			7	10	
atch: W3B0029 - SM 2540D											
Blank (W3B0029-BLK1)					Prepared & A	nalyzed: 02/	01/23				
Total Suspended Solids	0.200		5	mg/l							
LCS (W3B0029-BS1)					Prepared & A	nalyzed: 02/	01/23				
Total Suspended Solids			5	mg/l	63.7		102	90-110			
Duplicate (W3B0029-DUP1)	Source: 3A2	7039-01			Prepared & A	nalyzed: 02/	01/23				
Total Suspended Solids	58.4		5	mg/l		64.2			9	10	
Duplicate (W3B0029-DUP2)	Source: 3A2	7093-01			Prepared & A	nalyzed: 02/	01/23				
Total Suspended Solids	27.1		5	mg/l		28.3			4	10	
atch: W3B0162 - SM 5310B											
Blank (W3B0162-BLK1)				Pre	epared: 02/02/2	3 Analyzed:	02/03/23	3			
Total Organic Carbon (TOC)	· ND	0.19	0.30	mg/l	•	•					
LCS (W3B0162-BS1)				Pre	epared: 02/02/2	3 Analyzed:	02/03/23	3			
Total Organic Carbon (TOC)	1.99	0.19	0.30	mg/l	2.00		100	76-115		20	
Matrix Spike (W3B0162-MS1)	Source: 3A2	26102-09		Pre	epared: 02/02/2	3 Analyzed:	02/03/23	2			
		0.19	0.30	mg/l	2.00	1.24	101	76-115		20	
Total Organic Carbon (TOC)		06102.00		Dea	epared: 02/02/2	R Analyzad	02/03/23				
Total Organic Carbon (TOC)	Source: 342				-	-	99		4	20	
•	Source: 3A2	0.19	0.30	mg/l	2.00	1.24	99	76-115	1	20	
Total Organic Carbon (TOC) Matrix Spike Dup (W3B0162-MSD1) Total Organic Carbon (TOC)			0.30	mg/l	2.00	1.24	99	76-115	ı	20	
Total Organic Carbon (TOC) Matrix Spike Dup (W3B0162-MSD1)			0.30	-	2.00 epared: 02/06/2				'	20	



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Quality Control Results

(Continued)

AVIN											
Conventional Chemistry/Physical Parameters by A	PHA/EPA/AST	M Methods	(Continu	ed)							
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
Batch: W3B0440 - SM 5310B (Continued)											
Blank (W3B0440-BLK2)				Prep	ared: 02/06/2	3 Analyzed:	02/07/23	3			
Dissolved Organic Carbon	ND	0.15	0.30	mg/l							A-01
LCS (W3B0440-BS1)				Prep	ared: 02/06/2	3 Analyzed:	02/07/23	3			
Dissolved Organic Carbon	2.01	0.15	0.30	mg/l	2.00	•	100	74-120		20	
Matrix Spike (W3B0440-MS1)	Source: 3/	A26102-09		Prep	ared: 02/06/2	3 Analyzed:	02/07/23	3			
Dissolved Organic Carbon	3.39	0.15	0.30	mg/l	2.00	1.26	107	74-120		20	
Matrix Spike Dup (W3B0440-MSD1)	Source: 3/	A26102-09		Prep	ared: 02/06/2	3 Analyzed:	02/07/23	3			
Dissolved Organic Carbon	3.43	0.15	0.30	mg/l	2.00	1.26	109	74-120	1	20	

Project Manager: Marisa Swiderski



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Project Manager: Marisa Swiderski

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Quality Control Results

(Continued)

								` _	
			Spike	Source		%REC		RPD	
ılt MD	L MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifi
		Pre	epared: 02/15/2	23 Analyzed:	02/16/2	3			
D 0.003	38 0.010	ug/l							
D 0.03	36 0.20	ug/l							
		Pre	epared: 02/15/2	23 Analyzed:	: 02/16/2	3			
.7 0.003	38 0.010	ug/l	10.0	•	107	70-130		30	
.4 0.03	36 0.20	ug/l	30.0		111	68-132		30	
e: 3A2610	02-09	Pre	epared: 02/15/2	23 Analyzed:	02/16/2	3			
		ug/l	10.0	7.69	109	70-130		30	
.8 0.03	36 0.20	ug/l	30.0	25.9	113	68-132		30	
o· 3A261ſ	12-10	Dro	nared: 02/15/2	23 Analyzed	. 02/16/2	2			
		ug/l	10.0	7.87	92	70-130		30	
1 0.03	86 0.20	· ·	30.0	28.5	95	68-132		30	
		-						00	
				-				20	
		-							
.7 0.03	36 0.20	ug/i	30.0	25.9	120	68-132	3	30	
			-	-			4	20	
		· ·							
.4 0.03	36 0.20	ug/l	30.0	28.5	103	68-132	4	30	
			Prepared & A	nalyzed: 02/	16/23				
	38 0.010	ug/l							
D 0.03	36 0.20	ug/l							
			Prepared & A	nalyzed: 02/	16/23				
0.00	38 0.010	ug/l	10.0		99	83-109		25	
.9 0.03	36 0.20	ug/l	30.0		103	68-132		30	
e: 3A2610	02-09		Prepared & A	nalyzed: 02/	16/23				
.4 0.003	38 0.010	ug/l	10.0	7.30	101	83-109		25	
.9 0.03	36 0.20	ug/l	30.0	23.4	101	68-132		30	
e: 3A2610)2-10		Prepared & A	nalyzed: 02/	16/23				
.5 0.003	38 0.010	ug/l	10.0	7.98	95	83-109		25	
.7 0.03	36 0.20	ug/l	30.0	26.4	101	68-132		30	
e: 3A2610	02-09		Prepared & A	nalyzed: 02/	16/23				
		ug/l	10.0	7.30	97	83-109	2	25	
.5 0.03	36 0.20	ug/l	30.0	23.4	97	68-132	3	30	
e: 3A2610	2-10		Prepared & A	nalyzed: 02/	16/23				
e: 3A2610 .9 0.003		ug/l	Prepared & A	nalyzed: 02/ 7.98	16/23 99	83-109	2	25	
	D 0.00 D 0.03 -7 0.00 -4 0.03 -8 3A2610 -8 0.00 -1 0.03 -9 0.03	D 0.0038 0.010 D 0.036 0.20 7 0.0038 0.010 4 0.036 0.20 e: 3A26102-09 8 0.038 0.010 1 0.036 0.20 e: 3A26102-10 1 0.036 0.20 e: 3A26102-10 8 0.038 0.010 0.20 e: 3A26102-10 0.36 0.20 e: 3A26102-10 0.36 0.20 e: 3A26102-10 0.0038 0.010	Pre D 0.0038 0.010 ug/l D 0.036 0.20 ug/l Pre 7 0.0038 0.010 ug/l 4 0.036 0.20 ug/l e: 3A26102-09	Prepared: 02/15/2 D 0.0038 0.010 ug/l D 0.036 0.20 ug/l Prepared: 02/15/2 Prepared: 02/	Prepared: 02/15/23 Analyzed: 02/	Prepared: 02/15/23 Analyzed: 02/16/2:	Prepared: 02/15/23 Analyzed: 02/16/23 Prepared: 02/15/23 Analyzed: 02/	Prepared: 02/15/23 Analyzed: 02/16/23 Prepared: 02/15/23 Analyzed: 02/16/23 Prepared: 02/15/23 Analyzed: 02/16/23 Analyzed: 02/16/23 Prepared: 02/15/23 Analyzed: 02/16/23 Analyze	Prepared: 02/15/23 Analyzed: 02/16/23 Analyzed: 02/16/23 Prepared: 02/15/23 Analyzed: 02/16/23 Analyz



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Project Manager: Marisa Swiderski

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Notes and Definitions

A-01	filtered and acidified 01/25/2023
J	Estimated conc. detected <mrl and="">MDL.</mrl>
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

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Weck Laboratories, Inc.

Standard CHAIN OF CUSTODY RECORD

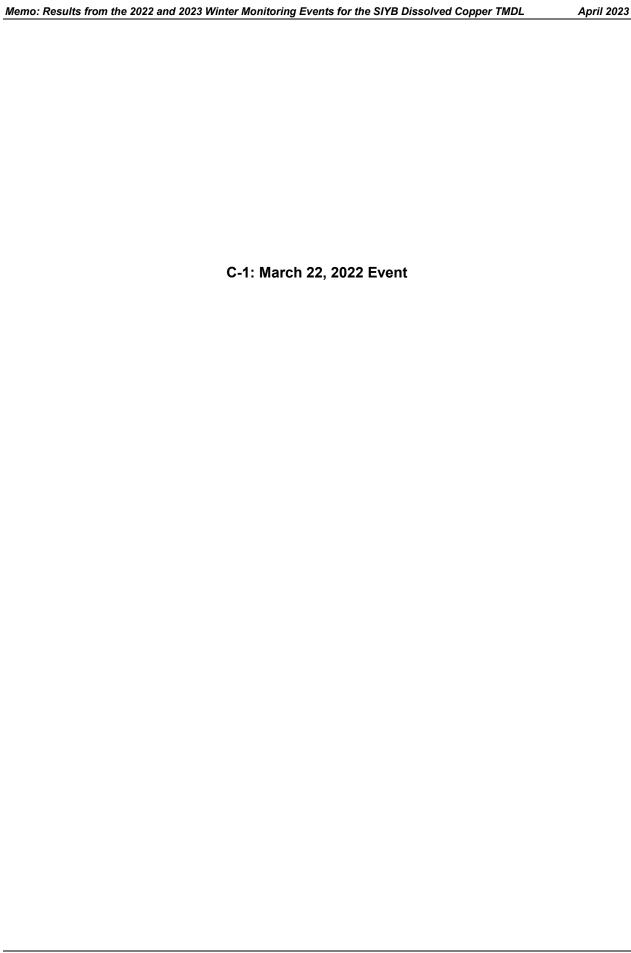
Analytical Laboratory Services - Since 1964 WECK WKO# 34 26 107 14859 Clark Avenue: Industry: CA 91745 Tel 626-336-2139 ♦ Fax 626-336-2634 ♦ www.wecklabs.com SPECIAL HANDLING ANALYSES REQUESTED CLIENT NAME: PROJECT: Same Day Rush 150% Dissolved Copper 1.2 (EPA 1640) 2023 SIYB TMDL Dissolved Zinc^{1,2} (EPA1640) Total Organic Carbon (TOC) (SM 5310B) 24 Hour Rush 100% Winter Monitoring (Port of San Diego) WSP USA Environment & Infrastructure Inc. Dissolved Organic Carbon (DOC)³ (SM 5310B) (EPA 1640) 808-772-8740 48-72 Hour Rush 75% ADDRESS: Total Suspended Solids SM 2540D) Total Zinc¹ (EPA 1640) FAX: 4 - 5 Day Rush 30% 9177 Sky Park Court marisa.swiderski@wsp.com Rush Extractions 50% EMAIL: San Diego, CA 92123 4 barry.snyder@wsp.com 10 - 15 Business Days PROJECT MANAGER SAMPLER QA/QC Data Package Charges will apply for weekends/holidays Marisa Swiderski (MS) / Kate Buckley (KB) Marisa Swiderski Total (Method of Shipment: TIME SMPL #OF DATE SAMPLE IDENTIFICATION/SITE LOCATION CONT COMMENTS SAMPLED TYPE (Lab Use Only) SAMPLED Y/N Х Х Х Х Х SIYB-ER 7 Х Х DΙ N 01/25/2023 0625 Х Х Х Χ Х Х 7 Х SW Ν SIYB-REF-2 0720 Х Х Х Х SIYB-REF-1 7 Х Х Х SW Ν 0800 Х Х Х Х Х Х Х 7 SW Ν SIYB-6 0900 7 Х Х Х Х Х Х Х SW Ν SIYB-5 1000 7 Х Х Х Х Х Х Х SIYB-4 SW Ν 1100 7 Х Х Х Х Х Х Х sw SIYB-3 Ν 1200 SIYB-2 7 Х Х Х Х Х Х Х SW Ν 1300 Х Х Х х extra volume - analyze sample MS/MSD 15 Х Х Х SIYB-1 1400 SW Ν Х Х Х Х SIYB-1 (REP) 7 Χ Х Х 1450 SW Ν Х SIYB-FB 7 Х Х Х Х Х Ν 1520 DI SAMPLE TYPE CODE: DATE / TIME RECEIVED BY RELINQUISHED BY SAMPLE CONDITION: 01/26/2022 0845 Mario Surdershi Sanch. Actual Temperature: DW = Drinking Water WW = Waste Water TANTA 4.30 GW = Ground Water RELINQUISHED BY RECEIVED BY Received On Ice SF = Surface Water SW = Sea Water 26-23 MY.CI SO = Soild/Soll Samples Preserved SL = Sludge DATE / TIME DATE / TIME RECEIVED BY RELINQUISHED BY Evidence Seals Present = Oil Container Attacked T = Other Matrix Please submit invoices to APInvoice.US@woodpic.com SPECIAL REQUIREMENTS / BILLING INFORMATION PRESCHEDULED RUSH ANALYSES WILL TAKE PRIORITY 1) LAB ACTION: PRESERVE Cu/Zn IMMEDIATELY. HDPE Metals bottles have NO acid (HNO3) in bottle. (cc: marisa.swiderski@wsp.com & marissa.cuevas@wsp.com) and OVER UNSCHEDULED RUSH REQUESTS 2) Diss. metals were field filtered using 0.45 um bottletop filt. system. include the following information: 3) DOC samples were field filtered through 0.45 um Nylon filters. 1) Project #: 2015100118.0007.WECK 4) Preserve extra of each sample for total and dissolved metals to archive. (2) PO #: C015102550 5) SPIKE level at the following amounts: Copper = 10 ug/L, Zinc = 30 ug/L, TOC/DOC = 2.0 mg/L (3) Org: 3151 6) Weck will contact WSP PM within 24 hours if any sample anomalies are found. Client agrees to Terms & Conditions at: (4) GL: 573000 www.wecklabs.com



Sample Receipt Checklist

٧	Weck WKO: _ VKO Logged by:	Jerico Bolotano		Date	# of Samples:	11
Sampl	les Checked by:	Jerico Bolotano			Delivered by:	Hector Sanchez
	Task		Yes	No	N/A	Comments
	COC present at re	eceipt?	\boxtimes			
	COC properly cor	•	\boxtimes		<u></u>	
o l	COC matches san		\boxtimes		_	
202	i i				_	
_			_		_	
	Project Manager	notified?				
	Sample Tempera	ture	4.3°C		_	
	Samples received		\boxtimes		-	
Receipt Information	Ice Type (Blue/W		Wet			
nati	All samples intac		\boxtimes			
n c	Samples in prope		\boxtimes			
Infe	Sufficient sample		\boxtimes		_	
ipt	Samples intact?		\boxtimes		_	
Sce	Received within	holding time?	\boxtimes		-	
æ	I Received Within	notating time.			_	
	Project Manager	notified?				
	Sample labels ch	ecked for correct preservation?	\boxtimes			
tion?		(No) none, If Yes (See comment) 4.1, 8260, 1666 P/T, LUFT				☐ <6mm/Pea size?
Sample Preservation Verification?	pH verified upor Metals <2; H2SO 6710B<2; 608.3	4 pres tests <2; 522<4; TOC <2; 525.2<2;	×		_ 	pH paper Lot# 2071882
servat	Free Chlorine Te	sted <0.1			⊠ -	Cl Test Strip Lot# 061221E
Sample Pre	O&G pH <2 verif pH adjusted for Project Manager	O&G				pH paper Lot# pH Réading: Acid Lot# Amt added:
РМ Со	mments					
Sample	e Receipt Check	dist Prepared by:				
	ture: JB	mot repared by:			Date:	01/26/23

o: Results from the 2022 and 2023	Winter Monitoring Events for the SIYB Dissolved Copper TM	IDL April
	Appendix C	
	Toxicity Laboratory Reports	



Results of Toxicity Testing for Shelter Island Yacht Basin Total Maximum Daily Load Monitoring

Sample Collection: March 22, 2022 Wood Project Number: 2015100111

Submitted to:

Wood Environment & Infrastructure Solutions, Inc. 9177 Sky Park Court San Diego, CA 92123

Testing Performed by:



Wood Environment & Infrastructure Solutions, Inc.
Aquatic Toxicology Laboratory
4905 Morena Blvd., Suite 1304
San Diego, California 92117

The Wood Aquatic Toxicology Laboratory is certified by the State of California Department of Health Services – Environmental Lab Accreditation Program (ELAP) under Certificate Number 3010. All test results were obtained following EPA Protocol guidelines and internal QA Program requirements. The data and test results have been reviewed and verified by the following laboratory representative:

Verified by: Steve Carley	Date:	5/24/	22	

INTRODUCTION

Located in the Port of San Diego, Shelter Island Yacht Basin (SIYB) was issued an Investigative Order (R9-2011-0036, amended from Resolution No. R9-2005-0019) from the San Diego Regional Water Quality Control Board that requires annual monitoring for the SIYB Dissolved Copper Total Maximum Daily Load (TMDL) program. The monitoring program requires the performance of water column toxicity testing at 7 locations within the basin area. The 7 sample sites are tested for chronic toxicity with the mussel species *Mytilus galloprovincialis*, and for acute toxicity with the Pacific topsmelt species *Atherinops affinis*. Testing was conducted during March 2022 as part of a winter monitoring event.

Staff for Wood Environment & Infrastructure Solutions, Inc. (Wood) collected and delivered all 7 samples to Wood's in-house Aquatic Toxicology Laboratory located in San Diego, California. The samples were collected on March 22, 2022, and testing was initiated on March 23, 2022.

MATERIALS & METHODS

Sample Information

1	
Client:	Port of San Diego
Project Name:	Shelter Island Yacht Basin Annual TMDL Monitoring
Monitoring Period:	March 2022 (winter event)
Sample IDs (7 sites):	SIYB-1, SIYB-2, SIYB-3, SIYB-4, SIYB-5, SIYB-6, and SIYB-REF-1
Sample Collection Date, Times:	3/22/2022, 09:30 – 15:50
Sample Receipt Date, Time:	3/22/2022, 17:40

Table 1. Water Quality Measured Upon Sample Receipt

Sample ID	Temp. (°C)	pH (units)	DO (mg/L)	Salinity (ppt)	Alkalinity (mg/L)	TRC (mg/L)
SIYB-1	13.7	7.74	7.9	32.9	124	<0.02
SIYB-2	13.0	7.74	8.0	32.8	123	0.03
SIYB-3	4.9	7.76	8.2	32.3	126	0.03
SIYB-4	1.9	7.77	8.6	32.5	122	<0.02
SIYB-5	3.9	7.77	8.2	32.5	121	<0.02
SIYB-6	2.2	7.76	8.2	32.5	123	<0.02
SIYB-REF-1	4.6	7.76	8.0	32.5	119	<0.02

DO = dissolved oxygen, TRC = total residual chlorine

Client: Port of San Diego Monitoring Period: March 2022
Project: Shelter Island Yacht Basin TMDL Monitoring Test IDs: 22-03-050 to -063

Chronic Mussel Development Test Specifications

Test Period: 3/23/2022, 16:15 – 3/25/2022, 16:15

Test Organism: *Mytilus galloprovincialis* (bivalve - mussel)

Test Organism Source: Field-collected – Mission Bay (San Diego, CA)

Test Organism Age at start: Fertilized embryos (<4 hours old)

Test Procedure: 48-hour embryo-larval development

Test Endpoint: Combined survival & proportion normal (ASTM)

Test Concentrations: Lab Control, 6.25, 12.5, 25, 50, and 100% sample

Treatment Concentrations: Filter Control and 100% Filtered (1.2µm filter)

Lab Control/Dilution Water: Natural seawater from the inlet at Scripps Institution

of Oceanography (20-µm filtered)

Protocols Used: EPA 1995 West Coast Manual (EPA/600/R-95/136);

and ASTM 1998 (E 724-98).

EPA Test Acceptability Criteria: Control: ≥50% survival; ≥90% proportion normal;

and minimum significant difference (MSD) <25%

ASTM Test Acceptability Criteria: Control: ≥70% combined survival/proportion normal

Reference Toxicant Test: Lab Control, 2.5, 5.0, 10, 20, and 40 μg/L copper

Statistical Analysis Software: CETIS™ v.1.9.3.0

Calculating the mussel test endpoint: Embryos within each test replicate are scored under a microscope by counting all larvae observed in the vial. Percent survival is evaluated by comparing the total number of larvae observed in each vial to an initial (time-zero) density count derived from 5 surrogate exposure chambers (vials) interspersed within the test and preserved immediately after adding embryos. Each larva is scored as normal or abnormal resulting in a second test endpoint; proportion normal. Normal development is exhibited by a clearly defined "D-shaped" shell with a clear straight line as a hinge, while abnormal development is exhibited by any clear abnormalities or differences to the normal "D-shaped" shell. This includes larva that have not fully developed a clear straight hinge (this is exhibited by a slightly curved hinge). Abnormal development was further enumerated to determine the magnitude of effect. The abnormal larvae were counted as having 1) a curved hinge, which indicates a moderate effect, or 2) more significant defects or abnormalities, which indicates a more severe effect. Examples of each of the larva (normal, abnormal with curved hinge, and abnormal with severe effects) are presented in Figure 1. A final combined surviving normal embryo endpoint is calculated by comparing the number of recovered normal embryos in each replicate test chamber to the average number of fertilized embryos counted in the time zero vials. Results for the combined

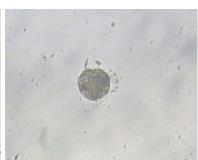
Monitoring Period: March 2022 Test IDs: 22-03-050 to -063

embryo development endpoint are presented herein in the main report, with supporting summaries and analyses of the individual percent survival and percent normal endpoints included in Appendix A

Figure 1. Images of Different Larva Development







1) Normal D-shape/straight hinge

2) Abnormal with curved hinge

3) Abnormal with severe effects

Pacific Topsmelt Acute Survival Test Specifications

Test Start Date, Time: 3/23/2022, 11:40 – 12:30

Test End Date, Time: 3/27/2022, 12:40 – 13:15

Test Organism: Atherinops affinis (Pacific topsmelt)

Organism Source; Age at start: Aquatic BioSystems (Fort Collins, CO); 14-days old

Test Procedure and Endpoint: 96-hour static-renewal acute survival test

Test Concentrations: Lab Control, 25, 50, and 100% each sample

Replicates/Number of Organisms: 6 replicates/5 fish per replicate (30 fish/conc.)

Lab Control/Dilution Water: Natural seawater collected from the inlet at Scripps

Institution of Oceanography (34 ppt salinity)

USEPA Protocol: EPA/821/R-02/012, 2002 Acute Manual

Test Acceptability Criteria: ≥90% mean survival in the control

Reference Toxicant Test: Lab Control, 25, 50, 100, 200, and 400 μg/L copper

Statistical Software: CETIS™ v1.9.3.0

RESULTS

Test results were evaluated using two USEPA methods of analysis. The results were first analyzed using the standard approach with multiple comparisons on a dilution series of concentrations to develop a No Observed Effect Concentration (NOEC). Then, the results were analyzed using the EPA Test of Significant Toxicity (TST) approach, as referenced in USEPA 2010. The TST approach applies a modified t-test that accounts for the statistical power of the test and the magnitude of the biological effect in determining the presence of toxicity. The instream waste concentration (IWC) is the 100% sample. The IWC is compared to the Control for statistical analysis. The TST results in a "Pass" if there are no biologically significant effects with the sample (non-toxic), or it will result in a "Fail" if there are significant effects (toxic).

Chronic Mussel Test:

For the chronic mussel development test, a standard dilution series of 6.25, 12.5, 25, 50, and 100% effluent was performed on the unfiltered sample from each of the 7 sites. For the chronic mussel test, the most significant effects were observed in site SIYB-1, where there was a 12% effect observed in the 100% undiluted sample compared to the Lab Control. This 12% effect was significant using the standard method of analysis, which resulted in a NOEC equal to the 50% concentration. However, using the TST method of analysis, this effect was not significant, resulting in a Pass with the TST. The other 6 sites all resulted in less than a 3.0% effect. Therefore, the other 6 sites resulted in a NOEC equal to 100% sample and a Pass with the TST. The chronic test results for the unfiltered samples are summarized and presented in Table 2.

The 100% concentration for each sample was also tested after filtering with a $1.2\mu m$ mesh screen to remove any potential algae or other native organisms. The 100% filtered sample was compared to a Filter Control (lab control water that received the same filtering treatment). The filtered samples produced similar results to the unfiltered samples. The most effect was observed in the SIYB-1 sample. However, the effect was only 6.9%, which is slightly less than the 12% effect observed in the unfiltered sample. The other 6 sites all resulted in less than a 3.0% effect. All 7 sites, though, resulted in a NOEC equal to 100% and a Pass with the TST. Summary results for the filtered samples are presented in Table 3.

As described in the Methods section, abnormal larvae were further enumerated as either having a curved hinge (moderate effect) or having clear abnormalities or defects (severe effect). During this round of testing, the frequency of curved hinges observed remained low as presented in Table 4. The greatest effect was observed in the 100% concentration of SIYB-1. There was 3.6% with curved hinges in the unfiltered 100% sample and 3.4% in the filtered 100% sample. All other sites and concentrations all had less than 1.0% with curved hinges.

All raw data and associated statistical analyses for the mussel tests are provided for reference in Appendix A.

Client: Port of San Diego Monitoring Period: March 2022
Project: Shelter Island Yacht Basin TMDL Monitoring Test IDs: 22-03-050 to -063

Table 2. Summary of Chronic Mussel Test Results: Unfiltered Samples

Sample	Sa	ample ID / C	Combined S	Survival & F	Proportion	Normal (%	6)
Concentration (%)	SIYB-1	SIYB-2	SIYB-3	SIYB-4	SIYB-5	SIYB-6	SIYB- REF-1
Lab Control	90.8	85.0	89.1	91.0	91.6	89.6	91.1
6.25	93.4	88.2	86.0	89.9	91.7	88.7	90.9
12.5	90.4	90.6	85.2	87.2	89.4	90.0	92.6
25	92.8	89.1	88.4	92.1	89.7	89.3	90.3
50	92.3	89.5	88.5	91.8	90.7	90.4	92.3
100	79.9	86.5	90.5	92.3	91.4	93.0	88.5
NOEC	50	100	100	100	100	100	100
EC ₅₀	>100	>100	>100	>100	>100	>100	>100
% Effect	12.0	-1.8	-1.6	-1.5	0.2	-3.8	2.9
TST Result	Pass	Pass	Pass	Pass	Pass	Pass	Pass

NOEC = the highest concentration tested that results in No Observed Effect

 EC_{50} = the concentration expected to cause a 50% adverse effect to the organisms

% Effect = the % effect of the IWC compared to control; a negative value indicates the IWC out-performed the control TST = Test of Significant Toxicity; a "Pass" indicates no toxicity was observed with the sample

Table 3. Summary of Chronic Mussel Test Results: 1.2 μm Filtered Samples

Sample	Sample ID / Combined Survival & Proportion Normal (%)										
Concentration (%)	SIYB-1	SIYB-2	SIYB-3	SIYB-4	SIYB-5	SIYB-6	SIYB- REF-1				
Filter Control	89.4	91.3	84.0	83.4	88.0	90.5	89.2				
100 filtered	83.2	89.2	88.5	89.1	90.3	89.3	91.6				
NOEC	100	100	100	100	100	100	100				
% Effect	6.9	2.3	-5.4	-6.9	-2.6	1.4	-2.8				
TST Result	Pass	Pass	Pass	Pass	Pass	Pass	Pass				

NOEC = the highest concentration tested that results in No Observed Effect

% Effect = the % effect of the IWC compared to control; a negative value indicates the IWC out-performed the control TST = Test of Significant Toxicity; a "Pass" indicates no toxicity was observed with the sample

Client: Port of San Diego
Project: Shelter Island Yacht Basin TMDL Monitoring

Monitoring Period: March 2022
Test IDs: 22-03-050 to -063

Table 4. Summary of Chronic Mussel Test: Percentage of Curved Hinges

Sample		Sample II	D / Mean N	umber of C	Curved Hing	ges (%)	
Concentration (%)	SIYB-1	SIYB-2	SIYB-3	SIYB-4	SIYB-5	SIYB-6	SIYB- REF-1
Lab Control	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.5	0.0	0.0	0.0	0.3	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100	3.6	0.0	0.0	0.0	0.0	0.0	0.4
Filter Control	0.0	0.0	0.0	0.4	0.0	0.0	0.0
100 Filtered	3.4	0.0	0.0	0.0	0.0	0.0	0.0

Acute Pacific Topsmelt Test:

For the acute topsmelt survival test, the 7 sample sites were tested along with 3 sets of Lab Controls. There was one Lab Control per two sample sites (except the SIYB-REF-1 site went with the final two sites). All 3 Lab Controls were valid with 90% or greater survival. Also, all 7 sample sites resulted in less than 4.0% effect when compared to the Lab Control. Therefore, all 7 sites resulted in a NOEC equal to the 100% concentration and a Pass with the TST analysis. A summary of the acute topsmelt test results is presented in Table 5. All raw data and associated statistical analyses for the topsmelt tests are provided for reference in Appendix B.

Table 5. Summary of Acute Topsmelt Test Results

Sample		Sample ID / Mean Survival (%)										
Concentration (%)	SIYB-1	SIYB-2	SIYB-3	SIYB-4	SIYB-5	SIYB-6	SIYB- REF-1					
Lab Control	96.7	96.7	100	100	100	100	100					
25	100	96.7	100	100	100	100	100					
50	100	93.3	100	100	100	100	100					
100	100	96.7	100	100	96.7	100	100					
NOEC	100	100	100	100	100	100	100					
LC ₅₀	>100	>100	>100	>100	>100	>100	>100					
% Effect	-3.5	0.0	0.0	0.0	3.3	0.0	0.0					
TST Result	Pass	Pass	Pass	Pass	Pass	Pass	Pass					

NOEC = the highest concentration tested that results in No Observed Effect

% Effect = the % effect of the IWC compared to control; a negative value indicates the IWC out-performed the control TST = Test of Significant Toxicity; a "Pass" indicates no toxicity was observed with the sample

QUALITY ASSURANCE

Samples were received by the lab in good condition the same day as collected. The samples were checked in, water quality measured, and then held in cold storage (4° C) until testing. Both chronic and acute tests were initiated the following day within the 36-hour holding time limit. For test organisms, the mussels were collected by Wood staff the morning of test initiation. The topsmelt were received by a commercial supplier 5-days prior to testing. The fish were held inhouse and allowed to acclimate to test conditions. There was <10% mortality with the fish during holding, which is considered typical, as there is naturally some die-off of weaker fish within a population. The topsmelt were determined to be of good quality for initiating tests.

 LC_{50} = the concentration expected to cause a lethal effect to 50% of the fish

Client: Port of San Diego Monitoring Period: March 2022
Project: Shelter Island Yacht Basin TMDL Monitoring Test IDs: 22-03-050 to -063

For the chronic mussel test, each sample was tested with its own Lab Control. All 7 Lab Controls met the EPA test acceptability criteria (TAC) of 50% or greater survival and 90% or greater proportion normal. All the Lab Controls also met the ASTM TAC of 70% or greater for the combined survival and proportion normal endpoint. All samples were analyzed for the combined endpoint to determine percent effects and TST results.

For the acute topsmelt test, there were 3 Lab Controls conducted with the 7 samples, and all 3 met the TAC of 90% or greater survival. Both acute and chronic tests were performed in accordance with EPA protocol guidelines and no major deviations were required during the testing period. Any minor deviations or errors made with recordings are noted on the raw bench sheets for both test species. A list of data qualifier codes is provided in Appendix C. Sample receipt information and chain of custody forms are provided in Appendix D.

Concurrent reference toxicant tests were conducted with both species. Both acute and chronic tests met the TAC and were deemed valid. The median effect concentration (EC_{50}) for both tests was within two standard deviations of the historical control chart mean for the laboratory. This indicates both the mussels and the topsmelt were healthy and resulted in typical sensitivity to the copper toxicant. A summary of the reference toxicant results for both species is presented in Table 6. Raw data, statistical analysis, and control charts for the reference toxicant tests are provided in Appendix E.

Table 6. Summary of Copper Reference Toxicant Test Results

Test Species & Endpoint	NOEC (μg/L)	EC ₅₀ (μg/L)	Historical EC ₅₀ ± 2SD range (μg/L)
Chronic Mussel Combined Surviving/Normal Embryo Development	5.0	12.6	4.54 – 17.8
Acute Pacific Topsmelt 96-hour Survival	50	159	71.3 – 278

NOEC = the highest concentration tested that results in No Observed Effect

 EC_{50} = the concentration expected to cause a 50% adverse effect to the test organisms

Historical EC_{50} = the mean EC_{50} for previous tests by the lab, presented as a range of \pm two standard deviations

Client: Port of San Diego Monitoring Period: March 2022
Project: Shelter Island Yacht Basin TMDL Monitoring Test IDs: 22-03-050 to -063

REFERENCES

ASTM. 1998. Standard Guide for Conducting Static Acute Toxicity Tests Starting with Embryos of Four Species of Saltwater Bivalve Molluscs. ASTM E 724-98.

- Tidepool Scientific Software, 2001-2015. CETIS: Comprehensive Environmental Toxicity Information System software, version 1.9.3.0.
- USEPA (U.S. Environmental Protection Agency) 1995. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms (EPA/600/R-95/136). The USEPA, Office of Research and Development, Washington, DC.
- USEPA 2002. U.S. Environmental Protection Agency. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms. 5th Edition. EPA/821/R-02/012. USEPA, Office of Water, Washington, DC.
- USEPA 2010. Test of Significant Toxicity Implementation Document (EPA/833/R-10/003). The USEPA, Office of Wastewater Management, Washington, DC.

APPENDIX A Chronic Mussel Development Test Raw Data & Statistical Analyses

Site: SIYB-1

CETIS Summary Report

Report Date:

29 Apr-22 12:20 (p 1 of 4)

22-03-057 | 06-5212-0616 Test Code:

Bivalve Larval Survival and Development Test Wood E&IS								
Batch ID: 18-9596-9430 Start Date: 22 Mar-22 16:15 Ending Date: 24 Mar-22 16:15 Duration: 48h	Protocol:	Development-Survival EPA/600/R-95/136 (1995) Mytilis galloprovincialis Field Collected	Analyst: Diluent: Brine: Age:	Natural Seawater Not Applicable				
Sample ID: 19-1947-9576 Sample Date: 22 Mar-22 15:50 Receipt Date: 22 Mar-22 17:40 Sample Age: 25m (13.7 °C) 2	Source:	22-W065 Seawater Shelter Island Yacht Basin SIYB 1	Client: Project:	Wood Environment and Infrastructure SIYB TMDL Monitoring				

Sample Age:	25m (13.7 °C) 24hr Stati	on: SIYB 1							
Comments: FC = Filtered (Control (1.2um), 101= 100% F	filtred (1.2um)							
Single Compa	arison Summary								
Analysis ID	Endpoint	Comparison Meth	P-Value	Comparis	son Resu	lt			
11-9037-3799	Combined Proportion Norma	0.0131	100% pas	sed comb	ined propor	tion normal			
15-8638-3255	Combined Proportion Norma		1.5E-04	101% pas	sed comb	ined propor	tion normal		
Multiple Com	parison Summary								
Analysis ID	Endpoint	Comparison Meth	od		NOEL	LOEL	TOEL	TU	PMSD √
18-2921-1865	Combined Proportion Norma	Dunnett Multiple Co	mparison Test	(50	100	70.71	2	6.67% ✓
04-7605-2775	Proportion Normal	Dunnett Multiple Co	mparison Test		50	100	70.71	2	3.57% ✓
16-3354-9738	Survival Rate	Dunnett Multiple Co	mparison Test		100	> 100	n/a	1	6.38% ✓
Test Acceptal	oility			TAC	Limits				
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decisio	n	
Guite Control Control Control Control	Proportion Normal	Control Resp	0.9403	0.9	>>	Yes	Passes	Criteria	
16-3354-9738	on the same of the	Control Resp	0.9649	0.5	>>	Yes	Passes	Criteria	
18-2921-1865	Combined Proportion Norma	PMSD	0.0667	<<	0.25	No	Passes	Criteria	

Report Date: Test Code:

29 Apr-22 12:20 (p 2 of 4) 22-03-057 | 06-5212-0616

								Code.		-03-037 00	
Bivalve Larval	Survival and	Developme	nt Test							٧	Vood E&IS
Combined Pro	portion Norm	al Summary	/								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9077	0.8488	0.9666	0.8511	0.9622	0.0212	0.0474	5.22%	0.00%
0	FC	5	0.8939	0.8548	0.9330	0.8397	0.9160	0.0141	0.0315	3.53%	1.52%
6.25		5	0.9337	0.9095	0.9579	0.9084	0.9547	0.0087	0.0195	2.09%	-2.86%
12.5		5	0.9051	0.8587	0.9515	0.8550	0.9453	0.0167	0.0374	4.13%	0.29%
25		5	0.9282	0.9123	0.9441	0.9068	0.9407	0.0057	0.0128	1.38%	-2.26%
50		5	0.9228	0.8833	0.9622	0.8779	0.9592	0.0142	0.0318	3.45%	-1.66%
100		5	0.7985	0.6954	0.9015	0.6718	0.8945	0.0371	0.0830	10.40%	12.04%
101		5	0.8323	0.7835	0.8810	0.7863	0.8936	0.0176	0.0393	4.72%	8.31%
Proportion No	rmal Summai	у									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9403	0.9039	0.9768	0.9028	0.9679	0.0131	0.0293	3.12%	0.00%
0	FC	5	0.9270	0.8999	0.9542	0.8943	0.9478	0.0098	0.0219	2.36%	1.42%
6.25		5	0.9484	0.9249	0.9718	0.9182	0.9686	0.0085	0.0189	1.99%	-0.85%
12.5		5	0.9365	0.9156	0.9575	0.9180	0.9545	0.0076	0.0169	1.80%	0.40%
25		5	0.9282	0.9123	0.9441	0.9068	0.9407	0.0057	0.0128	1.38%	1.29%
50		5	0.9326	0.9091	0.9561	0.9080	0.9592	0.0085	0.0189	2.03%	0.82%
100		5	0.8267	0.7688	0.8847	0.7788	0.8945	0.0209	0.0467	5.64%	12.08%
101		5	0.8391	0.8001	0.8782	0.8161	0.8936	0.0141	0.0314	3.74%	10.76%
Survival Rate	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9649	0.9328	0.9969	0.9427	1.0000	0.0115	0.0258	2.67%	0.00%
0	FC	5	0.9641	0.9405	0.9877	0.9389	0.9847	0.0085	0.0190	1.97%	0.08%
6.25		5	0.9847	0.9569	1.0000	0.9504	1.0000	0.0100	0.0224	2.28%	-2.06%
12.5		5	0.9664	0.9218	1.0000	0.9237	1.0000	0.0161	0.0360	3.72%	-0.16%
25		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	-3.64%
50		5	0.9893	0.9622	1.0000	0.9504	1.0000	0.0098	0.0218	2.21%	-2.53%
100		5	0.9641	0.8920	1.0000	0.8626	1.0000	0.0260	0.0581	6.03%	0.08%
101		5	0.9916	0.9683	1.0000	0.9580	1.0000	0.0084	0.0188	1.89%	-2.77%

Analyst: Ab QA: SC

002-883-387-8 CETIS™ v1.9.3.0

Report Date: Test Code: 29 Apr-22 12:20 (p 3 of 4) 22-03-057 | 06-5212-0616

Bivalve Larva	Survival and	Developme	nt Test				Wood E&I
Combined Pro	portion Norm	nal Detail					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	0.9198	0.8511	0.9389	0.8664	0.9622	
0	FC	0.9160	0.8969	0.9160	0.8397	0.9008	
6.25		0.9444	0.9427	0.9547	0.9084	0.9182	
12.5		0.9453	0.9084	0.8817	0.8550	0.9351	
25		0.9338	0.9315	0.9068	0.9407	0.9283	
50		0.9592	0.9391	0.9331	0.9046	0.8779	
100		0.6718	0.8000	0.8945	0.7824	0.8435	
101		0.8289	0.8161	0.8364	0.7863	0.8936	
Proportion No	rmal Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	0.9679	0.9028	0.9535	0.9153	0.9622	
0	FC	0.9302	0.9180	0.9449	0.8943	0.9478	
6.25		0.9444	0.9686	0.9547	0.9558	0.9182	
12.5		0.9453	0.9189	0.9545	0.9180	0.9459	
25		0.9338	0.9315	0.9068	0.9407	0.9283	
50		0.9592	0.9391	0.9331	0.9080	0.9237	
100		0.7788	0.8000	0.8945	0.8071	0.8533	
101		0.8289	0.8161	0.8364	0.8207	0.8936	
Survival Rate	Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	0.9504	0.9427	0.9847	0.9466	1.0000	
0	FC	0.9847	0.9771	0.9695	0.9389	0.9504	
6.25		1.0000	0.9733	1.0000	0.9504	1.0000	
12.5		1.0000	0.9885	0.9237	0.9313	0.9885	
25		1.0000	1.0000	1.0000	1.0000	1.0000	
50		1.0000	1.0000	1.0000	0.9962	0.9504	
100		0.8626	1.0000	1.0000	0.9695	0.9885	
101		1.0000	1.0000	1.0000	0.9580	1.0000	

Analyst: A QA: 5C

CETIS™ v1.9.3.0

002-883-387-8

Report Date: Test Code: 29 Apr-22 12:20 (p 4 of 4) 22-03-057 | 06-5212-0616

Bivalve Larva	Survival and	Developmen	nt Test				Wood E&I
Combined Pro	portion Norm	al Binomials	3				
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	241/262	223/262	246/262	227/262	280/291	
0	FC	240/262	235/262	240/262	220/262	236/262	
6.25		255/270	247/262	253/265	238/262	247/269	
12.5		259/274	238/262	231/262	224/262	245/262	
25		268/287	272/292	253/279	254/270	259/279	
50		282/294	262/279	265/284	237/262	230/262	
100		176/262	216/270	246/275	205/262	221/262	
101		218/263	253/310	230/275	206/262	252/282	
Proportion No	rmal Binomia	ls					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	241/249	223/247	246/258	227/248	280/291	
0	FC	240/258	235/256	240/254	220/246	236/249	
6.25		255/270	247/255	253/265	238/249	247/269	
12.5		259/274	238/259	231/242	224/244	245/259	
25		268/287	272/292	253/279	254/270	259/279	
50		282/294	262/279	265/284	237/261	230/249	
100		176/226	216/270	246/275	205/254	221/259	
101		218/263	253/310	230/275	206/251	252/282	
Survival Rate	Binomials						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	249/262	247/262	258/262	248/262	262/262	
0	FC	258/262	256/262	254/262	246/262	249/262	
6.25		262/262	255/262	262/262	249/262	262/262	
12.5		262/262	259/262	242/262	244/262	259/262	
25		262/262	262/262	262/262	262/262	262/262	
50		262/262	262/262	262/262	261/262	249/262	
100		226/262	262/262	262/262	254/262	259/262	
101		262/262	262/262	262/262	251/262	262/262	

Analyst: A QA: SC

CETIS™ v1.9.3.0

Report Date: Test Code:

29 Apr-22 12:20 (p 1 of 8) 22-03-057 | 06-5212-0616

Wood E&IS **Bivalve Larval Survival and Development Test**

Endpoint: Combined Proportion Normal Analysis ID: 18-2921-1865 Parametric-Control vs Treatments Analyzed: 29 Apr-22 12:15 Analysis:

CETIS Version:

Official Results: Yes

CETISv1.9.3

Comments:

FC = Filtered Control (1.2um), 101= 100% Filtred (1.2um)

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	50	100	70.71	2	6.67%

Dunnett Mu	ltiple (Comparison Test							
Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(a:5%)
Lab Control		6.25	-0.9864	2.362	0.101	8	CDF	0.9827	Non-Significant Effect
		12.5	0.1887	2.362	0.101	8	CDF	0.7716	Non-Significant Effect
		25	-0.703	2.362	0.101	8	CDF	0.9633	Non-Significant Effect
		50	-0.5472	2.362	0.101	8	CDF	0.9463	Non-Significant Effect
		100*	3.708	2.362	0.101	8	CDF	0.0024	Significant Effect

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.138312	0.0276625	5	6.036	9.4E-04	Significant Effect	
Error	0.109986	0.0045828	24				
Total	0.248299		29				

Distributional 7	Tests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Bartlett Equality of Variance Test	8.25	15.09	0.1430	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.987	0.9031	0.9661	Normal Distribution

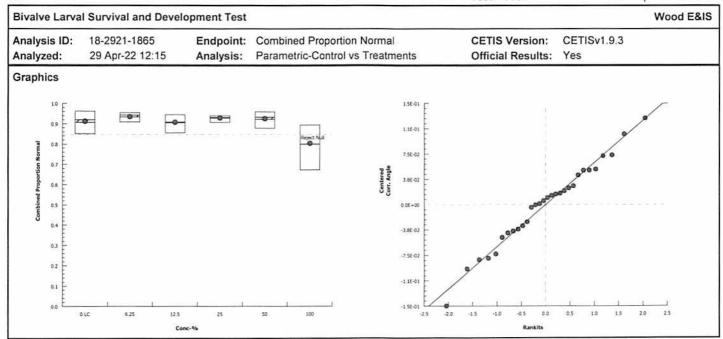
Combined Pr	Combined Proportion Normal Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect	
0	LC	5	0.9077	0.8488	0.9666	0.9198	0.8511	0.9622	0.0212	5.22%	0.00%	
6.25		5	0.9337	0.9095	0.9579	0.9427	0.9084	0.9547	0.0087	2.09%	-2.86%	
12.5		5	0.9051	0.8587	0.9515	0.9084	0.8550	0.9453	0.0167	4.13%	0.29%	
25		5	0.9282	0.9123	0.9441	0.9315	0.9068	0.9407	0.0057	1.38%	-2.26%	
50		5	0.9228	0.8833	0.9622	0.9331	0.8779	0.9592	0.0142	3.45%	-1.66%	
100		5	0.7985	0.6954	0.9015	0.8000	0.6718	0.8945	0.0371	10.40%	12.04%	

Angular (Corr	Ingular (Corrected) Transformed Summary												
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect		
0	LC	5	1.27	1.166	1.375	1.284	1.175	1.375	0.03763	6.62%	0.00%		
6.25		5	1.312	1.264	1.361	1.329	1.263	1.356	0.01738	2.96%	-3.32%		
12.5		5	1.262	1.183	1.342	1.263	1.18	1.335	0.02864	5.07%	0.64%		
25		5	1.3	1.27	1.33	1.306	1.261	1.325	0.01077	1.85%	-2.37%		
50		5	1.294	1.22	1.368	1.309	1.214	1.367	0.02663	4.60%	-1.84%		
100		5	1.112	0.9832	1.24	1.107	0.9607	1.24	0.04622	9.30%	12.50%		

Analyst: As QA: 5C

CETIS™ v1.9.3.0 002-883-387-8

Report Date: Test Code: 29 Apr-22 12:20 (p 2 of 8) 22-03-057 | 06-5212-0616



Report Date:

29 Apr-22 12:20 (p 3 of 8)

Test Code:

22-03-057 | 06-5212-0616

Bivalve Larval Survival and Development Test

LC VS 100% WITH TST

Wood E&IS

Analysis ID: Analyzed:

11-9037-3799 29 Apr-22 12:17

Analysis:

Endpoint: Combined Proportion Normal Parametric Bioequivalence-Two Sample

CETIS Version:

Official Results: Yes

CETISv1.9.3

Comments:

FC = Filtered Control (1.2um), 101= 100% Filtred (1.2um)

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	100% passed combined proportion normal

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF P-Type	P-Value	Decision(a:5%)	
Lab Control		100*	2.933	1.943	6 CDF	0.0131	Non-Significant Effect	

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.0630015	0.0630015	1	7.095	0.0286	Significant Effect	
Error	0.0710348	0.0088794	8				
Total	0.134036		9				

Distributional Tests

						- 1
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)	
Variances	Variance Ratio F Test	1.509	23.15	0.7000	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.9766	0.7411	0.9446	Normal Distribution	

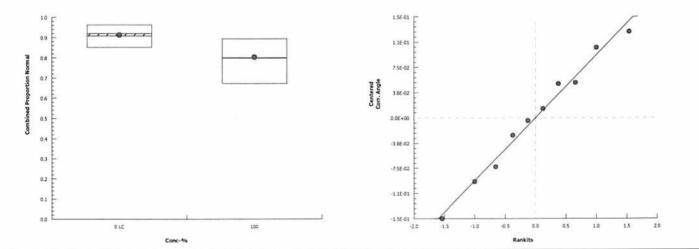
Combined Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.9077	0.8488	0.9666	0.9198	0.8511	0.9622	0.0212	5.22%	0.00%
100		5	0.7985	0.6954	0.9015	0.8000	0.6718	0.8945	0.0371	10.40%	12.04%

An	gular	(Corrected)	Transformed	Summary
----	-------	-------------	-------------	---------

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.27	1.166	1.375	1.284	1.175	1.375	0.03763	6.62%	0.00%
100		5	1.112	0.9832	1.24	1.107	0.9607	1.24	0.04622	9.30%	12.50%

Graphics



Report Date:

29 Apr-22 12:20 (p 4 of 8) 22-03-057 | 06-5212-0616

Test Code:

Wood E&IS

Analysis ID: Analyzed:

15-8638-3255 29 Apr-22 12:17

Bivalve Larval Survival and Development Test

Endpoint: Combined Proportion Normal Analysis:

0.0026714

Parametric Bioequivalence-Two Sample

FC us 100% Filtered

CETIS Version: Official Results:

Yes

CETISv1.9.3

Comments:

Error

Total

FC = Filtered Control (1.2um), 101= 100% Filtred (1.2um)

0.0213712

0.0417772

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	101% passed combined proportion normal

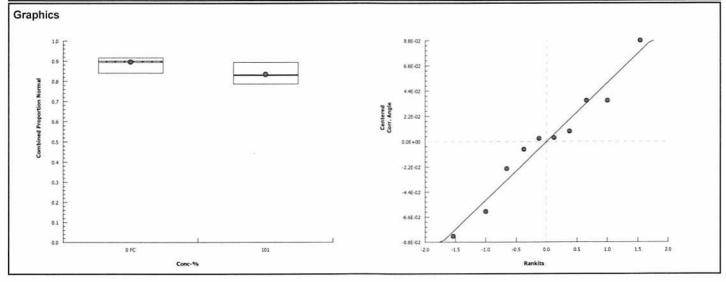
TST-Welch	's t Tes	t							
Control	vs	Control II	Test Stat	Critical		DF	P-Type	P-Value	Decision(a:5%)
Filter Contro	ol	101*	7.489	1.943		6	CDF	1.5E-04	Non-Significant Effect
ANOVA Ta	ble								
Source		Sum Squares	Mean Squ	iare	DF		F Stat	P-Value	Decision(α:5%)
Between		0.020406	0.020406		1		7.639	0.0245	Significant Effect

8

Distributional 1	Tests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Variance Ratio F Test	1.272	23.15	0.8212	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9673	0.7411	0.8650	Normal Distribution

Combined Pr	oportion Norm	al Summan	1								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	0.8939	0.8548	0.9330	0.9008	0.8397	0.9160	0.0141	3.53%	0.00%
101		5	0.8323	0.7835	0.8810	0.8289	0.7863	0.8936	0.0176	4.72%	6.90%

Angular (Corr	ected) Transfo	ormed Sumi	nary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	1.241	1.181	1.302	1.25	1.159	1.277	0.02169	3.91%	0.00%
101		5	1.151	1.083	1.219	1.144	1.09	1.239	0.02446	4.75%	7.28%



Report Date: Test Code: 29 Apr-22 12:20 (p 5 of 8) 22-03-057 | 06-5212-0616

Wood E&IS Bivalve Larval Survival and Development Test CETISv1.9.3 Analysis ID: 04-7605-2775 (Endpoint) Proportion Normal **CETIS Version:** Analyzed: 29 Apr-22 12:15 Analysis: Parametric-Control vs Treatments Official Results: Yes Comments: FC = Filtered Control (1.2um), 101= 100% Filtred (1.2um) TOEL **PMSD Data Transform** Alt Hyp NOEL LOEL TU 70.71 3.57% C > T 50 100 2 Angular (Corrected) **Dunnett Multiple Comparison Test** Control Conc-% Test Stat Critical MSD DF P-Type P-Value Decision(a:5%) -0.5006CDF 0.9402 Non-Significant Effect Lab Control 6.25 2.362 0.069 8 0.6877 Non-Significant Effect 12.5 0.4046 2.362 0.069 8 CDF 25 2.362 0.4192 Non-Significant Effect 1.002 0.069 8 CDF 50 0.6619 2.362 0.069 8 CDF 0.5744 Non-Significant Effect 100* 6.327 2.362 0.069 8 CDF 4.4E-06 Significant Effect **ANOVA Table** Source DF Sum Squares Mean Square F Stat P-Value Decision(a:5%) Between 0.135052 0.0270104 5 12.6 4.5E-06 Significant Effect Error 0.0021439 24 0.0514537 29 Total 0.186506 **Distributional Tests** Attribute Test Stat Critical P-Value Decision(a:1%) Variances Bartlett Equality of Variance Test 4.591 15.09 0.4678 Equal Variances 0.9779 0.7680 Normal Distribution Distribution Shapiro-Wilk W Normality Test 0.9031 **Proportion Normal Summary** CV% %Effect Conc-% Code Count 95% LCL 95% UCL Median Min Max Std Err Mean 0.0131 3.12% 0.00% LC 5 0.9028 0.9679 0.9403 0.9039 0.9768 0.9535 -0.85% 1.99% 6.25 5 0.9484 0.9249 0.9719 0.9547 0.9182 0.9686 0.0085 5 0.9180 0.9545 0.0076 1.80% 0.40% 12.5 0.9365 0.9156 0.9575 0.9453 25 5 0.9068 0.9407 0.0057 1.38% 1.29% 0.9282 0.9123 0.9441 0.9315 0.0085 2.03% 0.82% 50 5 0.9326 0.9091 0.9561 0.9331 0.9080 0.9592 12.08% 100 5 0.8267 0.7688 0.8847 0.8071 0.7788 0.8945 0.0209 5.64% Angular (Corrected) Transformed Summary %Effect Std Err CV% Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max 0 LC 5 1.33 1.254 1.406 1.353 1.254 1.391 0.02741 4.61% 0.00% 5 1.396 1.356 1.281 1.393 0.01854 3.08% -1.10% 6.25 1.344 1.293 0.89% 5 0.01541 2.61% 12.5 1.318 1.275 1.361 1.335 1.28 1.356 25 5 1.325 0.01077 1.85% 2.21% 1.3 1.27 1.33 1.306 1.261 50 5 1.262 1.358 1.263 1.367 0.01735 2.96% 1.46% 1.31 1.309

1.081

1.24

1.116

Analyst: Ab QA: SE

0.02869

5.61%

13.93%

002-883-387-8 CETIS™ v1.9.3.0

5

100

1.144

1.065

1.224

Report Date: Test Code:

29 Apr-22 12:20 (p 7 of 8) 22-03-057 | 06-5212-0616

Bivalve Larval Survival and Development Test

Wood E&IS

16-3354-9738 Analysis ID: Analysis: Analyzed: 29 Apr-22 12:15

Endpoint: Survival Rate Parametric-Control vs Treatments **CETIS Version:**

CETISv1.9.3 Official Results: Yes

Comments:

FC = Filtered Control (1.2um), 101= 100% Filtred (1.2um)

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	100	> 100	n/a	1	6.38%

Dunnett Mul	Dunnett Multiple Comparison Test										
Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(a:5%)		
Lab Control		6.25	-1.212	2.362	0.145	8	CDF	0.9909	Non-Significant Effect		
		12.5	-0.2075	2.362	0.145	8	CDF	0.8874	Non-Significant Effect		
		25	-2.275	2.362	0.145	8	CDF	0.9997	Non-Significant Effect		
		50	-1.545	2.362	0.145	8	CDF	0.9967	Non-Significant Effect		
		100	-0.4223	2.362	0.145	8	CDF	0.9285	Non-Significant Effect		

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0739934	0.0147987	5	1.564	0.2081	Non-Significant Effect
Error	0.227087	0.009462	24			
Total	0.301081		29			

Distributional *	Гests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Levene Equality of Variance Test	3.157	3.895	0.0249	Equal Variances
Variances	Mod Levene Equality of Variance Test	1.042	4.248	0.4235	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.951	0.9031	0.1801	Normal Distribution

Survival Rate	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.9649	0.9328	0.9969	0.9504	0.9427	1.0000	0.0115	2.67%	0.00%
6.25		5	0.9847	0.9569	1.0000	1.0000	0.9504	1.0000	0.0100	2.28%	-2.06%
12.5		5	0.9664	0.9218	1.0000	0.9885	0.9237	1.0000	0.0161	3.72%	-0.16%
25		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-3.64%
50		5	0.9893	0.9622	1.0000	1.0000	0.9504	1.0000	0.0098	2.21%	-2.53%
100		5	0.9641	0.8920	1.0000	0.9885	0.8626	1.0000	0.0260	6.03%	0.08%

Angular (Corr	ected) Transfo	rmed Sumr	mary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.4	1.286	1.514	1.346	1.329	1.54	0.04098	6.55%	0.00%
6.25		5	1.474	1.36	1.589	1.54	1.346	1.54	0.04118	6.24%	-5.33%
12.5		5	1.413	1.277	1.548	1.464	1.291	1.54	0.04882	7.73%	-0.91%
25		5	1.54	1.54	1.54	1.54	1.54	1.54	0	0.00%	-10.00%
50		5	1.495	1.39	1.6	1.54	1.346	1.54	0.03768	5.64%	-6.79%
100		5	1.426	1.247	1.605	1.464	1.191	1.54	0.06462	10.13%	-1.86%

Report Date: Test Code:

21 May-22 15:13 (p 1 of 2) 22-03-057 | 06-5212-0616

Bivalve Larval Survival and Development Test

Wood E&IS

Analysis ID: 15-8471-9837 Analyzed: 21 May-22 15:12

Analysis:

Endpoint: Proportion Normal Curved Hinge Nonparametric-Control vs Treatments

CETIS Version: Official Results: Yes

CETISv1.9.3

Comments:

FC = Filtered Control (1.2um), 101= 100% Filtred (1.2um)

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU
Angular (Corrected)	C > T	101	> 101	n/a	0.9901

Steel Many-	One R	ank Sum Test							
Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(a:5%)
Lab Control		6.25	27.5	16	1	8	Asymp	0.8571	Non-Significant Effect
		12.5	27.5	16	1	8	Asymp	0.8571	Non-Significant Effect
		25	27.5	16	1	8	Asymp	0.8571	Non-Significant Effect
		50	27.5	16	1	8	Asymp	0.8571	Non-Significant Effect
		100	40	16	0	8	Asymp	1.0000	Non-Significant Effect
		101	40	16	0	8	Asymp	1.0000	Non-Significant Effect

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.172408	0.0287346	6	101.8	<1.0E-37	Significant Effect	
Error	0.0079038	0.0002823	28				
Total	0.180311		34				

Distributiona	I Tes	ts				
Attribute		Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances		Bartlett Equality of Variance Test	105.4	16.81	<1.0E-37	Unequal Variances
Distribution	11	Shapiro-Wilk W Normality Test	0.6548	0.9146	7.9E-08	Non-Normal Distribution

Conc-%	Curved	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
6.25		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
12.5		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
25		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
50		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
100		5	0.0355	0.0230	0.0481	0.0354	0.0218	0.0487	0.0045	28.49%	
101		5	0.0344	0.0192	0.0496	0.0327	0.0177	0.0516	0.0055	35.51%	

Angular (Corr	ected) Transfo	rmed Sumr	mary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.0311	0.0298	0.0325	0.0317	0.0293	0.0318	0.0005	3.40%	0.00%
6.25		5	0.0309	0.0303	0.0316	0.0307	0.0304	0.0317	0.0002	1.78%	0.68%
12.5		5	0.0313	0.0303	0.0323	0.0311	0.0302	0.0322	0.0004	2.53%	-0.52%
25		5	0.0298	0.0293	0.0304	0.0299	0.0293	0.0304	0.0002	1.50%	4.25%
50		5	0.0303	0.0290	0.0316	0.0299	0.0292	0.0317	0.0005	3.37%	2.76%
100		5	0.1880	0.1533	0.2227	0.1894	0.1483	0.2224	0.0125	14.88%	-503.65%
101		5	0.1841	0.1412	0.2269	0.1819	0.1336	0.2292	0.0154	18.74%	-491.07%

Proportion No	Proportion Normal Detail									
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5				
0	LC	0.0000	0.0000	0.0000	0.0000	0.0000				
6.25		0.0000	0.0000	0.0000	0.0000	0.0000				
12.5		0.0000	0.0000	0.0000	0.0000	0.0000				
25		0.0000	0.0000	0.0000	0.0000	0.0000				
50		0.0000	0.0000	0.0000	0.0000	0.0000				
100		0.0487	0.0407	0.0218	0.0354	0.0309				
101		0.0380	0.0516	0.0327	0.0319	0.0177				

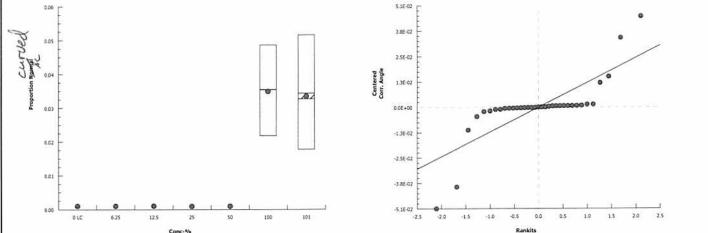
Analyst: SC QA: Je stopo-

CETIS™ v1.9.3.0

21 May-22 15:13 (p 2 of 2) 22-03-057 | 06-5212-0616

Bivalve Larva	al Survival and	Developn	nent Test						Wood E&IS
Analysis ID: Analyzed:	15-8471-9837 21 May-22 15			Proportion No Nonparametri	177.0	red Hingse Treatments	CETIS Version: Official Results:	CETISv1.9.3 Yes	
Angular (Cori	rected) Transfo	ormed Det	tail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5			
0	LC	0.0317	0.0318	0.0311	0.0318	0.0293			
6.25		0.0304	0.0313	0.0307	0.0317	0.0305			
12.5		0.0302	0.0311	0.0322	0.0320	0.0311			
25		0.0295	0.0293	0.0299	0.0304	0.0299			
50		0.0292	0.0299	0.0297	0.0310	0.0317			
100		0.2224	0.2032	0.1483	0.1894	0.1767			
101		0.1963	0.2292	0.1819	0.1795	0.1336			
Proportion N	ormal Binomia	ls							
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5			
0	LC	0/249	0/247	0/258	0/248	0/291			
6.25		0/270	0/255	0/265	0/249	0/269			
12.5		0/274	0/259	0/242	0/244	0/259			

50 100 101 Graphics	0/294 11/226 10/263	0/279 11/270 16/310	0/284 6/275 9/275	0/261 9/254 8/251	0/249 8/259 5/282	
Proportion Named Currel			- A		2.5E-02 2.5E-02 2.5E-02 2.5E-02 0.0E-00	•



Analyst:__SC__QA:__

002-883-387-8 CETIS™ v1.9.3.0

19 Mar-22 15:08 (p 1 of 2)

A-06-5212-0616/22-03-057

2.2 -63-05 Wood E&IS

Bivalve Larval Survival and Development Test

22 Mar-22 1615 Species: Mytilis galloprovincialis 24 Mar-22 1615 Protocol: EPA/600/R-95/136 (1995) Start Date: End Date:

Sample Date: TMar-22 1550 Material: Seawater

Sample Code: M-7268EF18 22-W065
Sample Source: Shelter Island Yacht Basin

Sample Station: SIYB 1

Conc-%	Code	Rep		Initial Density	Final Density	# Counted				Notes
			1			249	233241	BI	3/30/22	249 +241
			2		E	2800	194220) /	246-022	0
			3			ES 7261	4363	7 /	261 - 25	7
			4			7878X	282		294 - 28	2.
			5			244	774			
			6	11		226	+89176°	年		11 curved
			7			279	253			
			8			287				
			9			258				
			10			258		4		
			11				245		131/22	
			12	6			246		/	17H = 6 curved
			13				259			1 1111
			14			249	236			
			15			248	227			
			16				223			
			17	9		275	230			HA 1111 = 9 curve
			18				255			
			19	11		270	216			MANHI = 11 Curus
			20				235			
			21				262			
			22				240			
			23				265			
			24			259	238			
			25	5			252			THE = 5 curved
			26				231			
			27				254			
			28				247			
			29				230			
			30			274				
			31	9		254				MILLIII = 9 corvet
			32	10		William	2(8			10 curved
			33	15		292				
			34			265		V	7	

Report Date:

19 Mar-22 15:08 (p 2 of 2)

Test Code/ID:

A6 .06-5212-0616/22-03-057

Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	22-W068
			35	8		259	221	BI 3/31/22 THAIL = 8 curved
			36			269	247	4/1/22
			37	8		251	206	1411 = 8 curved
			38			291	280	(1)
			39			249	238	
			40	16		310	253	## THE THE I = 16 CUTVE

Report Date: Test Code/ID: 19 Mar-22 15:09 (p 1 of 2)

06-5212-0616/22-03-057

Bivalve Larval Survival and Development Test

Wood E&IS

Start Date: End Date:

22 Mar-22 1615 Species: Mytilis galloprovincialis 24 Mar-22 1615 Protocol: EPA/600/R-95/136 (1995)

Sample Code: 27268EF18 27 - W 66 5 Sample Source: Shelter Island Yacht Basin

Sample Date: 24 Mar-22 \S50 Material: Seawater

Sample Station: SIYB 1

Conc-%	Code		Pos	Materia Initial Density	Final Density	# Counted	# Normal	Notes
0	FC	1	10	•		258		
0	FC	2	20					
0	FC	3	22					
0	FC	4	2					
0	FC	5	14					
0	LC	1	1			249	241	
0	LC	2	16					
0	LC	3	9					
0	LC	4	15					
0	LC	5	38					
6.25		1	18			2 5 3	255	
6.25		2	28			LJ BI	255	
6.25		3	34					
6.25		4	39					
6.25		5	36					
12.5		1	30			274	259	
12.5		2	24					
12.5		3	26					
12.5		4	5					
12.5		5	11					
25		1	8			287	2/0	
25		2	33			201	200	
25		3	7					
25		4	27					
	1 1							
25		5	13					
50		1	4			294	282	
50		2	21					
50		3	23					
50		4	3	-				
50		5	29					
100		1	6			226	189	
100		2	19			46	101	
100		3	12					
100		4	31					

TIS Tes	st Dat	a W	orks	heet				Report Date: Test Code/ID:	19 Mar-22 15:09 (p 2 of 2) 06-5212-0616/22-03-057
Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes	
100		5	35						
101		1	32			2683	218	44	FHH = 10 curved
101		2	40						V
101		3	17						
101		4	37						
101		5	25						

QC: KB

Water Quality for Bivalve Development

Client: Wood - Port of San Diego

Sample ID: SIYB-1

Test No. 22-03-657

Test Species: M. galloprovincialis

Start Date/Time: 3/22/2022 1615 3/23 End Date/Time: 3/24/2022 \615 3/25

Test Conc.	Water Quality Measurements							
(%)	Parameter	0hr	24hr	48hr				
	Temp. (°C)	14.5	15.0	15.5				
	Salinity (ppt)	32.8	33.4	33.5				
Lab Control	pH (units)	8.00	7.70	7.79				
	DO (mg/L)	7.9	8.5	86				
	Temp. (°C)	14.2	15.8	15.6				
	Salinity (ppt)	32.8	33.4	33.6				
ilter Control	pH (units)	7.99	7.79	7.83				
	DO (mg/L)	7.9	4.0	8.6				
	Temp. (°C)	14.1	15.8	15.6				
6.35	Salinity (ppt)	33.0	33.6	33.7				
6.25	pH (units)	8.00	7.82	7.85				
	DO (mg/L)	8.2	8.7	8.6				
	Temp. (°C)	14.0	15.9	15.6				
12.5	Salinity (ppt)	33.0	33.7	33.7				
12.5	pH (units)	8.00	7.81	7.82				
	DO (mg/L)	8.2	9.0	8:7				
	Temp. (°C)	14.0	15.9	15.6				
25	Salinity (ppt)	33.0	33. 8	33.7				
25	pH (units)	7-99 8.Z	7.82	7.87				
	DO (mg/L)	8.Z	8.9	8.7				
	Temp. (°C)	14.0	15.9	15.6				
50	Salinity (ppt)	33.0	33.7	33.7				
50	pH (units)	7.98	7.82	7.8				
	DO (mg/L)	8.2	8.6	8.7				
	Temp. (°C)	14.1	15.9	15.6				
100	Salinity (ppt)	32.9	33.1	33.5				
100	pH (units)	7.96	7.81	7.86				
	DO (mg/L)	8.2	9.0	8.8				
	Temp. (°C)	14.4	15.9	15.7				
100 Filtered	Salinity (ppt)	32.3	33.7	33.7				
(1.2µm)	pH (units)	7.95	7.80	7.88				
	DO (mg/L)	8.1	9.0	8.8				

Source of Animals: AG Mission Bay 3 23 22 Date Received: 3(23 | 22

Final QC: Sc 5/9/22

Embryo-Larval Development Test Stock Preparation Worksheet

Test Species:

M. galloprovincialis

Test Date: 3/23/22

Batch ID:

Test Type:

Task	
Spawning Induction	1230
Spawning Begins	1315
# Males/# Females	5/3
Spawn Condition	good
Fertilization Initiated	1345
Fertilzation End/Eggs Rinsed	+3 (400/1415
Embryo Counts	1500
Test Initiation	11.15

Embryo Density Counts

per 100 µL

Stock #	Stock Volume (mL)	Rep 1	Rep 2	Rep 3	Rep 4	Mean #/100 μL	Mean #/mL (x10)
Stock 1	300	55	60	64	125	61	LID
Stock 2							0.0
Stock 3							

Cell Division:

	% Divided
Stock 1	N939-1
Stock 2	110
Stock 3	

i	Selected Stock:
	Selected Stock:

Stock Density

Dil Factor

Adjust selected embryo stock to 500 embryos/mL.

610

1.22

Dilution Factor = Stock Density/mL/500

In 10 mL sample volume add 500 μl of 500 embryo/ml stock to obtain 25 embryos/mL in test vials.

Notes:

, TO2=261 TO3=268 TO4=255, +BC =250

QA Review:

Site: SIYB-2

CETIS Summary Report

Single Comparison Summary

Endpoint

Analysis ID

Report Date:

29 Apr-22 15:23 (p 1 of 4) 22-03-058 | 01-1485-1509

Test Code:

Comparison Result

P-Value

Batch ID: 10-7376-6388	Test Type:	Development-Survival	Analyst:	
Start Date: 21 22 Mar-22 16:15	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Natural Seawater
Ending Date: 24 Mar-22 16:15	Species:	Mytilis galloprovincialis	Brine:	Not Applicable
Duration: 25 48h	Source:	Field Collected	Age:	
Sample ID: 19-6675-9349	Code:	22-W066	Client:	Wood Environment and Infrastructure
Sample Date: 22 Mar-22 15:00	Material:	Seawater	Project:	SIYB TMDL Monitoring
Receipt Date: 22 Mar-22 17:40	Source:	Shelter Island Yacht Basin		
Sample Age: 75m (13 °C) 25hr	Station:	SIYB 2		

FC = Filtered Control (1.2um), 101 = 100% filtered (1.2um)

	Combined Proportion Norma Combined Proportion Norma		2.8E-04 2.6E-05	22350 E C C C C BOD	101% passed combined proportion normal					
Multiple Com	parison Summary									
Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓			
11-9892-6215	Combined Proportion Norma	Dunnett Multiple Comparison Test	100	> 100	n/a	1	11.0%			
11-0146-4821	Proportion Normal	Steel Many-One Rank Sum Test	100	> 100	n/a	1	3.35%			
18-3587-6954	Survival Rate	Dunnett Multiple Comparison Test	100	> 100	n/a	1	12.2%			

Comparison Method

Test Acceptal	bility			TAC			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
11-0146-4821	Proportion Normal	Control Resp	0.9153	0.9	>>	Yes	Passes Criteria
18-3587-6954	Survival Rate	Control Resp	0.9282	0.5	>>	Yes	Passes Criteria

Analyst: DV 048c 5/10/22

29 Apr-22 15:23 (p 2 of 4) 22-03-058 | 01-1485-1509

Bivalve Larval	Survival and	Developme	nt Test								Wood E&IS
Combined Pro	portion Norm	al Summary	/								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.8497	0.7708	0.9286	0.7634	0.9126	0.0284	0.0635	7.48%	0.00%
0	FC	5	0.9132	0.8841	0.9423	0.8740	0.9314	0.0105	0.0235	2.57%	-7.47%
6.25		5	0.8824	0.8213	0.9435	0.8015	0.9233	0.0220	0.0492	5.58%	-3.85%
12.5		5	0.9056	0.8294	0.9817	0.8015	0.9604	0.0274	0.0613	6.77%	-6.58%
25		5	0.8914	0.8316	0.9512	0.8092	0.9312	0.0215	0.0482	5.40%	-4.90%
50		5	0.8950	0.8485	0.9415	0.8397	0.9262	0.0168	0.0375	4.19%	-5.33%
100		5	0.8646	0.7814	0.9478	0.7595	0.9440	0.0300	0.0670	7.75%	-1.75%
101		5	0.8921	0.8479	0.9362	0.8321	0.9197	0.0159	0.0356	3.99%	-4.99%
Proportion No	rmal Summar	у									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9153	0.9032	0.9273	0.9009	0.9270	0.0043	0.0097	1.06%	0.00%
0	FC	5	0.9230	0.9136	0.9325	0.9157	0.9314	0.0034	0.0076	0.83%	-0.85%
6.25		5	0.9248	0.9183	0.9314	0.9173	0.9305	0.0024	0.0053	0.57%	-1.04%
12.5		5	0.9279	0.9017	0.9541	0.9058	0.9604	0.0094	0.0211	2.27%	-1.38%
25		5	0.9231	0.9163	0.9299	0.9176	0.9312	0.0025	0.0055	0.60%	-0.86%
50		5	0.9158	0.9008	0.9307	0.8980	0.9262	0.0054	0.0120	1.31%	-0.06%
100		5	0.9134	0.8683	0.9586	0.8674	0.9536	0.0163	0.0364	3.98%	0.20%
101		5	0.9093	0.8998	0.9189	0.9031	0.9197	0.0034	0.0077	0.85%	0.65%
Survival Rate	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9282	0.8444	1.0000	0.8473	1.0000	0.0302	0.0675	7.27%	0.00%
0	FC	5	0.9893	0.9622	1.0000	0.9504	1.0000	0.0098	0.0218	2.21%	-6.58%
6.25		5	0.9542	0.8864	1.0000	0.8626	1.0000	0.0244	0.0546	5.72%	-2.80%
12.5		5	0.9756	0.9078	1.0000	0.8779	1.0000	0.0244	0.0546	5.60%	-5.10%
25		5	0.9656	0.9004	1.0000	0.8740	1.0000	0.0235	0.0525	5.44%	-4.03%
50		5	0.9771	0.9376	1.0000	0.9351	1.0000	0.0142	0.0318	3.26%	-5.26%
100		5	0.9466	0.8666	1.0000	0.8550	1.0000	0.0288	0.0644	6.80%	-1.97%
101		5	0.9809	0.9377	1.0000	0.9198	1.0000	0.0156	0.0348	3.54%	-5.67%

Analyst: RV QA: Se

CETIS™ v1.9.3.0

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Bivalve Larva	Survival and	Developme	nt Test				Wood E&IS
Combined Pro	portion Norm	nal Detail					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	0.7634	0.8359	0.8244	0.9126	0.9122	
0	FC	0.9173	0.9122	0.9310	0.9314	0.8740	
6.25		0.9198	0.8015	0.9233	0.8779	0.8893	
12.5		0.9288	0.9058	0.9313	0.8015	0.9604	
25		0.9046	0.9188	0.8931	0.8092	0.9312	
50		0.9262	0.8740	0.9257	0.8397	0.9094	
100		0.8626	0.8674	0.7595	0.9440	0.8893	
101		0.9154	0.9197	0.8321	0.9038	0.8893	
Proportion No	ormal Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	0.9009	0.9202	0.9270	0.9126	0.9157	
0	FC	0.9173	0.9157	0.9310	0.9314	0.9197	
6.25		0.9305	0.9292	0.9233	0.9237	0.9173	
12.5		0.9288	0.9058	0.9313	0.9130	0.9604	
25		0.9222	0.9188	0.9176	0.9258	0.9312	
50		0.9262	0.9197	0.9257	0.8980	0.9094	
100		0.9536	0.8674	0.8884	0.9440	0.9137	
101		0.9154	0.9197	0.9046	0.9038	0.9031	
Survival Rate	Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	0.8473	0.9084	0.8893	1.0000	0.9962	
0	FC	1.0000	0.9962	1.0000	1.0000	0.9504	
6.25		0.9885	0.8626	1.0000	0.9504	0.9695	
12.5		1.0000	1.0000	1.0000	0.8779	1.0000	
25		0.9809	1.0000	0.9733	0.8740	1.0000	
50		1.0000	0.9504	1.0000	0.9351	1.0000	
100		0.9046	1.0000	0.8550	1.0000	0.9733	
101		1.0000	1.0000	0.9198	1.0000	0.9847	

Analyst: PN QA: SL

29 Apr-22 15:23 (p 4 of 4) 22-03-058 | 01-1485-1509

							rest code.	22 00 000 01 1100 1000
Bivalve Larva	Survival and	Developme	nt Test					Wood E&IS
Combined Pro	portion Norm	al Binomials	5					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	200/262	219/262	216/262	261/286	239/262		
0	FC	244/266	239/262	270/290	258/277	229/262		
6.25		241/262	210/262	265/287	230/262	233/262		
12.5		248/267	250/276	244/262	210/262	267/278		
25		237/262	249/271	234/262	212/262	257/276		
50		251/271	229/262	249/269	220/262	241/265		
100		226/262	229/264	199/262	253/268	233/262		
101		249/272	252/274	218/262	263/291	233/262		
Proportion No	ormal Binomia	ls						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	200/222	219/238	216/233	261/286	239/261		
0	FC	244/266	239/261	270/290	258/277	229/249		
6.25		241/259	210/226	265/287	230/249	233/254		
12.5		248/267	250/276	244/262	210/230	267/278		
25		237/257	249/271	234/255	212/229	257/276		
50		251/271	229/249	249/269	220/245	241/265		
100		226/237	229/264	199/224	253/268	233/255		
101		249/272	252/274	218/241	263/291	233/258		
Survival Rate	Binomials							
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	222/262	238/262	233/262	262/262	261/262		
0	FC	262/262	261/262	262/262	262/262	249/262		
6.25		259/262	226/262	262/262	249/262	254/262		
12.5		262/262	262/262	262/262	230/262	262/262		
25		257/262	262/262	255/262	229/262	262/262		
50		262/262	249/262	262/262	245/262	262/262		
100		237/262	262/262	224/262	262/262	255/262		
101		262/262	262/262	241/262	262/262	258/262		

™ v1.9.3.0 Analyst: QA: _____ QA: _____

002-883-387-8 CETIS™ v1.9.3.0

Report Date: Test Code: 29 Apr-22 15:22 (p 1 of 8) 22-03-058 | 01-1485-1509

Bivalve Larval Survival and Development Test FC vs 100% File Fed

Wood E&IS

Analysis ID: 17-5538-4076 Endpoint: Combined Proportion Normal CETIS Version: CETISv1.9.3

Analyzed: 29 Apr-22 15:21 Analysis: Parametric Bioequivalence-Two Sample Official Results: Yes

Comments:

FC = Filtered Control (1.2um), 101 = 100% filtered (1.2um)

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	101% passed combined proportion normal

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF P-Type	P-Value	Decision(a:5%)	
Filter Control		101*	10.22	1.943	6 CDF	2.6E-05	Non-Significant Effect	

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0029965	0.0029965	1	1.317	0.2844	Non-Significant Effect
Error	0.0182089	0.0022761	8			
Total	0.0212054		9			

Distributional Tests

						,
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Variance Ratio F Test	1.856	23.15	0.5638	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.8488	0.7411	0.0562	Normal Distribution	

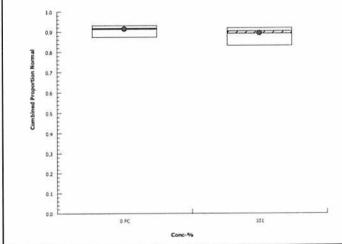
Combined Proportion Normal Summary

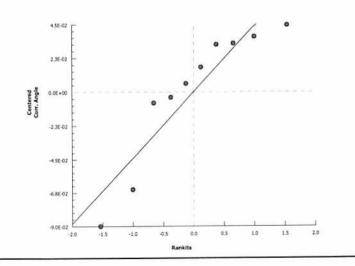
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	0.9132	0.8841	0.9423	0.9173	0.8740	0.9314	0.0105	2.57%	0.00%
101		5	0.8921	0.8479	0.9362	0.9038	0.8321	0.9197	0.0159	3.99%	2.31%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	1.274	1.224	1.323	1.279	1.208	1.306	0.01785	3.13%	0.00%
101		5	1.239	1.171	1.307	1.255	1.149	1.284	0.02432	4.39%	2.72%







Analyst: R QA: Ac

Report Date: Test Code:

29 Apr-22 15:22 (p 2 of 8) 22-03-058 | 01-1485-1509

Bivalve Larv	al Sur	vival and [Developme	nt Test								E.	Wood E&IS
Analysis ID: Analyzed:		9892-6215 Apr-22 15:2	-		combined Prop Parametric-Con					S Version		9.3	
Comments: FC = Filtered	Contr	ol (1.2um),	101 = 100%	% filtered (1	.2um)								
Data Transfe	orm		Alt Hyp						NOEL	LOEL	TOEL	TU	PMSD
Angular (Cor	ULA CALL)	C > T							> 100	n/a	1	10.95%
Dunnett Mu	tiple (Compariso	n Test										
Control	vs	Conc-%		Test St	at Critical	MSD	DF	P-Type	P-Value	Decision	(a:5%)		
Lab Control		6.25		-0.886	2.362	0.124	8	CDF	0.9772	Non-Sign	ificant Effect		
		12.5		-1.709	2.362	0.124	8	CDF	0.9981	Non-Sign	ificant Effect		
		25		-1.159	2.362	0.124	8	CDF	0.9894	Non-Sign	ificant Effect		
		50		-1.243	2.362	0.124	8	CDF	0.9917	Non-Sign	ificant Effect		
		100		-0.4393	2.362	0.124	8	CDF	0.9312	Non-Sign	ificant Effect	Ž.	
ANOVA Tab	le												
Source		Sum Squ	ares	Mean S	quare	DF		F Stat	P-Value	Decision	ı(a:5%)		
Between		0.025729	5	0.00514	159	5		0.7443	0.5981	Non-Sign	ificant Effect		
Error		0.165937		0.00691	40	24							
Total		0.191666				29							
Distribution	al Tes	ts											
Attribute		Test				Test S	tat	Critical	P-Value	Decision	ι(α:1%)		
Variances		Bartlett E	quality of V	ariance Te	st	1.385		15.09	0.9259	Equal Va	riances		
Distribution		Shapiro-V	Vilk W Nor	mality Test		0.9479	9	0.9031	0.1487	Normal E	Distribution		
Combined F	ropor	tion Norma	al Summar	у									
Conc-%		Code	Count	Mean	95% LCL	95% L	JCL	Median	Min	Max	Std Err	CV%	%Effec
0		LC	5	0.8497	0.7708	0.9286	3	0.8359	0.7634	0.9126	0.0284	7.48%	0.00%
6.25			5	0.8824	0.8213	0.9435	5	0.8893	0.8015	0.9233	0.0220	5.58%	-3.85%
12.5			5	0.9056	0.8294	0.9817	7	0.9288	0.8015	0.9604	0.0274	6.77%	-6.58%
25			5	0.8914	0.8316	0.9512	2	0.9046	0.8092	0.9312	0.0215	5.40%	-4.90%
50			5	0.8950	0.8485	0.9415	5	0.9094	0.8397	0.9262	0.0168	4.19%	-5.33%
100			5	0.8646	0.7814	0.9478	В	0.8674	0.7595	0.9440	0.0300	7.75%	-1.75%
Angular (Co	rrecte	d) Transfo	rmed Sum	mary									
Conc-%		Code	Count	Mean	95% LCL	95% L	JCL	Median	Min	Max	Std Err	CV%	%Effec
0		LC	5	1.179	1.067	1.291		1.154	1.063	1.271	0.0403	7.64%	0.00%
6.25			5	1.226	1.135	1.316		1.232	1.109	1.29	0.03265	5.96%	-3.95%
12.5			5	1.269	1.147	1.391		1.301	1.109	1.371	0.04379	7.72%	-7.62%
25			5	1.24	1.15	1.33		1.257	1.119	1.305	0.03242	5.85%	-5.17%
50			5	1.244	1.17	1.318		1.265	1.159	1.296	0.02667	4.79%	-5.54%
400			5	1 202	1.08	1 324		1 108	1.058	1 332	0.04391	8.17%	-1.96%

8.17%

-1.96%

1.324

5

1.202

1.08

1.198

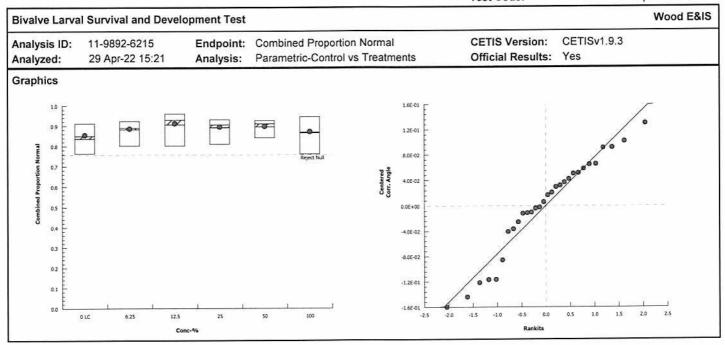
1.332

1.058

0.04391

100

Report Date: Test Code: 29 Apr-22 15:22 (p 3 of 8) 22-03-058 | 01-1485-1509



Report Date:

29 Apr-22 15:22 (p 4 of 8) 22-03-058 | 01-1485-1509

Test Code:

Wood E&IS

LC vs 100% **Bivalve Larval Survival and Development Test**

Analysis ID: Analyzed:

19-6125-9091 29 Apr-22 15:22 Endpoint: Combined Proportion Normal Parametric Bioequivalence-Two Sample Analysis:

CETIS Version: Official Results: Yes

CETISv1.9.3

Comments:

Total

FC = Filtered Control (1.2um), 101 = 100% filtered (1.2um)

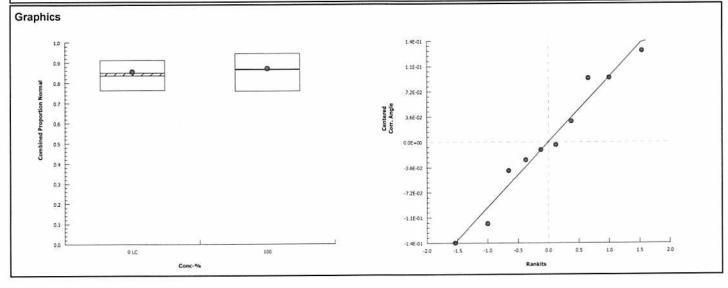
0.0723646

Data Transfe	orm	Alt Hyp			TST_	b		Comparis	son Result
Angular (Cor	rected)	C*b < T			0.75			100% pas	sed combined proportion normal
TST-Welch's	s t Test								
Control	VS	Control II	Test Stat	Critical		DF	P-Type	P-Value	Decision(a:5%)
Lab Control		100*	5.964	1.895		7	CDF	2.8E-04	Non-Significant Effect
ANOVA Tab	le								
Source		Sum Squares	Mean Squ	are	DF		F Stat	P-Value	Decision(a:5%)
Between		0.0013343	0.0013343		1		0.1503	0.7084	Non-Significant Effect
Error		0.0710303	0.0088788		8				

Distributional 1	Tests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Variance Ratio F Test	1.187	23.15	0.8720	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9562	0.7411	0.7416	Normal Distribution

Combined Pr	oportion Norm	ial Summar	/								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.8497	0.7708	0.9286	0.8359	0.7634	0.9126	0.0284	7.48%	0.00%
100		5	0.8646	0.7814	0.9478	0.8674	0.7595	0.9440	0.0300	7.75%	-1.75%

Angular (Corr	ected) Transfo	rmed Sumr	mary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.179	1.067	1.291	1.154	1.063	1.271	0.0403	7.64%	0.00%
100		5	1.202	1.08	1.324	1.198	1.058	1.332	0.04391	8.17%	-1.96%



Report Date: Test Code: 29 Apr-22 15:22 (p 5 of 8) 22-03-058 | 01-1485-1509

Wood E&IS Bivalve Larval Survival and Development Test

CETIS Version: CETISv1.9.3

Analysis ID: Analyzed:		0146-4821 Apr-22 15:21	-		portion Nor		vs T	reatments		S Version:		9.3	
Comments: FC = Filtered					•								
Data Transfe	orm		Alt Hyp						NOEL	LOEL	TOEL	TU	PMSD
Angular (Cor	rected)		C > T						100	> 100	n/a	1	3.35%
Steel Many-	One R	ank Sum Te	st										
Control	vs	Conc-%		Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision	(a:5%)		
Lab Control		6.25		36	16	0	8	Asymp	0.9991	Non-Sign	ificant Effect		
		12.5		33	16	0	8	Asymp	0.9907	Non-Sign	ificant Effect		
		25		34	16	0	8	Asymp	0.9954	Non-Sign	ificant Effect		
		50		27	16	0	8	Asymp	0.8003	Non-Sign	ificant Effect		
		100		27	16	0	8	Asymp	0.8003	Non-Sign	ificant Effect		
ANOVA Tab	le												
Source		Sum Squa	ares	Mean Sq	uare	DF		F Stat	P-Value	Decision	(a:5%)		
Between		0.0028352		0.000567	0	5		0.4744	0.7917	Non-Sign	ificant Effect		
Error		0.0286893		0.001195	4	24							
Total		0.0315245				29		-					
Distribution	al Test	ts											
Attribute		Test				Test S	Stat	Critical	P-Value	Decision	ı(α:1%)		
Variances		Bartlett Eq	uality of Va	riance Test		20.04		15.09	0.0012	Unequal	Variances		
Distribution		Shapiro-W	ilk W Norm	ality Test		0.935	2	0.9031	0.0678	Normal D	Distribution		
Proportion	Norma	I Summary											
Conc-%		Code	Count	Mean	95% LCL	95% (JCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	0.9153	0.9032	0.927	3	0.9157	0.9009	0.9270	0.0043	1.06%	0.00%
6.25			5	0.9248	0.9183	0.931	4	0.9237	0.9173	0.9305	0.0024	0.57%	-1.04%
12.5			5	0.9279	0.9017	0.954	1	0.9288	0.9058	0.9604	0.0094	2.27%	-1.38%
25			5	0.9231	0.9163	0.929	9	0.9222	0.9176	0.9312	0.0025	0.60%	-0.86%
50			5	0.9158	0.9008	0.930	7	0.9197	0.8980	0.9262	0.0054	1.31%	-0.06%

1722	475 4 7	iev.				1.000	4 054	4 007	0.007740	4 200/	0.000/
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
Angular (Corr	ected) Transfo	ormed Sumi	mary								
100		5	0.9134	0.8683	0.9586	0.9137	0.8674	0.9536	0.0163	3.98%	0.20%
50		5	0.9158	0.9008	0.9307	0.9197	0.8980	0.9262	0.0054	1.31%	-0.06%
25		5	0.9231	0.9163	0.9299	0.9222	0.9176	0.9312	0.0025	0.60%	-0.86%
12.5		5	0.9279	0.9017	0.9541	0.9288	0.9058	0.9604	0.0094	2.27%	-1.38%
6.25		5	0.9248	0.9183	0.9314	0.9237	0.9173	0.9305	0.0024	0.57%	-1.04%

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.276	1.254	1.297	1.276	1.251	1.297	0.007743	1.36%	0.00%
6.25		5	1.293	1.281	1.306	1.291	1.279	1.304	0.004455	0.77%	-1.36%
12.5		5	1.301	1.248	1.355	1.301	1.259	1.371	0.01937	3.33%	-2.01%
25		5	1.29	1.277	1.303	1.288	1.28	1.305	0.004654	0.81%	-1.11%
50		5	1.277	1.25	1.303	1.283	1.246	1.296	0.009551	1.67%	-0.09%
100		5	1.277	1.196	1.359	1.273	1.198	1.354	0.02944	5.15%	-0.12%

Analyst: QA: JC

CETIS™ v1.9.3.0 002-883-387-8

Report Date: Test Code: 29 Apr-22 15:23 (p 7 of 8) 22-03-058 | 01-1485-1509

Bivalve Larv	al Surv	ival and D	evelopm	ent Test								v	lood E&IS
Analysis ID: Analyzed:		587-6954 pr-22 15:2		The same of the sa	Survival Rate Parametric-Cor	itrol vs 7	Γreat	ments		S Version		9.3	
Comments: FC = Filtered	Control	(1.2um),	101 = 100	% filtered (1.2um)								
Data Transfo	orm		Alt Hyp)					NOEL	LOEL	TOEL	TU	PMSD
Angular (Corr	rected)		C > T						100	> 100	n/a	1	12.20%
Dunnett Mul	tiple Co	mparisor	n Test										
Control	vs	Conc-%		Test S	tat Critical	MSD	DF	P-Type	P-Value	Decision	n(a:5%)		
Lab Control		6.25		-0.4859	2.362	0.217	8	CDF	0.9381	Non-Sign	ificant Effect		
		12.5		-1.441	2.362	0.217	8	CDF	0.9955		ificant Effect		
		25		-0.9021	2.362	0.217	8	CDF	0.9782		ificant Effect		
		50		-1.235	2.362	0.217	8	CDF	0.9915		ificant Effect		
		100		-0.4584	2.362	0.217	8	CDF	0.9341	Non-Sign	nificant Effect	á	
ANOVA Tabl	le												
Source		Sum Squ	ares	Mean	Square	DF		F Stat	P-Value	Decision	n(a:5%)		
Between		0.0610039		0.0122		5		0.581	0.7142	Non-Sigr	nificant Effect	## 0	
Error		0.504017		0.0210		24							
Total		0.565021		V1364 - 041 - 150 - 1100	1707-171	29		-					
Distribution	al Tests												
Attribute		Test				Test S	Stat	Critical	P-Value	Decision	n(a:1%)		
Variances		0.0000000000000000000000000000000000000	quality of	Variance Te	est	0.728	7	15.09	0.9814	Equal Va	riances		
Distribution				rmality Tes		0.933	4	0.9031	0.0604	Normal E	Distribution		
Survival Rat	te Sumr	mary											
Conc-%		Code	Count	Mean	95% LCL	95% l	JCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	0.9282	0.8444	1.000	0	0.9084	0.8473	1.0000	0.0302	7.27%	0.00%
6.25			5	0.9542	0.8864	1.000	0	0.9695	0.8626	1.0000	0.0244	5.72%	-2.80%
12.5			5	0.9756	0.9078	1.000	0	1.0000	0.8779	1.0000	0.0244	5.60%	-5.10%
25			5	0.9656	0.9004	1.000	0	0.9809	0.8740	1.0000	0.0235	5.44%	-4.03%
50			5	0.9771		1.000	0	1.0000	0.9351	1.0000	0.0142	3.26%	-5.26%
100			5	0.9466		1.000	0	0.9733	0.8550	1.0000	0.0288	6.80%	-1.97%
Angular (Co	rracted) Transfor	rmed Sun	nmary									
Angulai (Co	HICCICA						ICI	Median	Min	Max	Std Err	CV%	%Effect
Conc-%	medied	Code	Count	Mean	95% LCL	95% l		modian	141111	0.015-0.00			A VAN AND MAINTANA
Conc-%	medied			Mean 1.343	95% LCL 1.132	1.553		1.263	1.169	1.54	0.0759	12.64%	0.00%
Conc-%	rected	Code LC	5	1.343				THE CONTRACTOR WILLIAM		0.010-20-3	0.0759 0.0589		-3.32%
Conc-% 0 6.25	mected		5 5	1.343 1.387	1.132 1.224	1.553 1.551		1.263	1.169	1.54		12.64%	
Conc-% 0 6.25 12.5			5 5 5	1.343 1.387 1.475	1.132 1.224 1.294	1.553		1.263 1.395	1.169 1.191	1.54 1.54	0.0589	12.64% 9.49%	-3.32%
Conc-% 0 6.25	Trected.		5 5	1.343 1.387	1.132 1.224	1.553 1.551 1.656		1.263 1.395 1.54	1.169 1.191 1.214	1.54 1.54 1.54	0.0589 0.06522	12.64% 9.49% 9.89%	-3.32% -9.83%

Analyst: QA: C

CETIS™ v1.9.3.0

Start Date:

End Date:

Bivalve Larval Survival and Development Test

22 Mar-22 1615 24 Mar-22 1615

Sample Date: Mar-22 \SOO Material: Seawater

Species: Mytilis galloprovincialis Protocol: EPA/600/R-95/136 (1995) Report Date:

19 Mar-22 15:12 (p 1 of 2)

Test Code/ID:

M 01-1485-1509/22-03-058

Sample Code: 2753A5DB5 2-2-W066 Sample Source: Shelter Island Yacht Basin

Sample Station: SIYB 2

Conc-%	Code	Rep		Initial Density	Final Density	# Counted	# Normal	Notes
			41			290	270	PI 4/1/22
			42			269	249	
			43			278	267	
			44			266	244	
			45			277		4
			46				233	4/3/22
			47			222	200	. /
			48			230		
			49			249		
			50			264	229	
			51				219	
			52			286	261	
			53				251	
			54			261	239	
			55		8	267	249	
			56			267	248	
			57				249	
			58				233	7
			59				244	4/6/22
			60				263	(
			61			224	199	
			62				241	
			63			249	230	
			64			276		
			65			233		
			66			237		
			67			268	253	
			68			229		
			69			276		
			70			287		
			71			245		
			72			249		
			73			226	210	
			74			259	241	4

Report Date: 19 Mar-22 15:12 (p 2 of 2) Test Code/ID: 01-1485-1509/22-03-058

Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	BI	4/6	1/22	Notes	22-03-058
			75			261	239		,	1		
			76			258	233		1	/		
			77			255	234					
			78			274	252					
			79			241	218	(218))			
			80			257	237		1	1		

Report Date:

19 Mar-22 15:12 (p 1 of 2)

Test Code/ID:

W-01-1485-1509/22-03-058

Bivalve Larval Survival and Development Test

Wood E&IS

Start Date: End Date:

22 Mar-22 6 5 Species: Mytilis galloprovincialis 24 Mar-22 16(\$ Protocol: EPA/600/R-95/136 (1995) Sample Code: 2753A5DB5 27 - WOCC Sample Source: Shelter Island Yacht Basin

Sample Date: 21 Mar-22 \SOO Material: Seawater

Sample Station: SIYB 2

Conc-%		Rep	Pos	Initial Density	Final Density	# Counted	# Normal				Notes	
0	FC	1	44			266	244	BI	4/1	122		
0	FC	2	75									
0	FC	3	41									
0	FC	4	45									
0	FC	5	49									
0	LC	1	47			222	200					
0	LC	2	51									
0	LC	3	65									
0	LC	4	52									
0	LC	5	54									
6.25		1	74			259	241					
6.25	Service Control of the Control of th	2	73				-,,,					
6.25		3	70									
6.25		4	63									
6.25		5	58									
12.5		1	56			2/2	248					
12.5		2	69			267	278					
12.5		3	59									
12.5		4	48									
12.5		5	43									
25		1	80			2 6 2	772					
25		2	55			257	237					
25		3	77									
25		4	68									
25	-	5	64									
50		1	53			7.	2-1					
50		2	72			271	251					
50		3	42				226					
50		4	71									
50		5	62									
100		1	66			237	226					
100		2	50									
100		3	61									
100		4	67									

Report Date: 19 Mar-22 15:12 (p 2 of 2) Test Code/ID: 01-1485-1509/22-03-058

Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
100		5	46					
101		1	57			272	249	
101		2	78					
101		3	79					
101		4	60					
101		5	76					

QC: KB

Water Quality for Bivalve Development

Client: Wood - Port of San Diego

Sample ID: SIYB-2

Test No. 22-03-058

Test Species: M. galloprovincialis

Start Date/Time: 3/22/2022 1615

End Date/Time: 3/24/2022 \b\

est Conc.		Water Quality	Measurements QC-1	
%)	Parameter	0hr	24hr	48hr
	Temp. (°C)	14.7	15.7	15.8
b Control	Salinity (ppt)	32.6	33.2	33.4
b control	pH (units)	7.94	7.79	7.84
	DO (mg/L)	7.7	8.7	8.6
	Temp. (°C)	14.3	15.4	15.6
as Control	Salinity (ppt)	32.8	33.4	33.6
er Control	pH (units)	7.96	7.80	7.86
	DO (mg/L)	8.0	8.6	8.6
	Temp. (°C)	14.2	15.7	15.6
6.35	Salinity (ppt)	33.0	33.5	33.6
6.25	pH (units)	7.98	7.93	7.86
	DO (mg/L)	8.1	8.5	8.5
	Temp. (°C)	14.4	15.6	15.6
12.5	Salinity (ppt)	33.0	33,6	33.7
12.5	pH (units)	7.99	7.84	7.86
	DO (mg/L)	8. 2	9.1	8.7
	Temp. (°C)	14.6	15.6	15.6
25	Salinity (ppt)	33.0	33.6	33.7
25	pH (units)	7.99	7.84	7.86
	DO (mg/L)	8.2	8.8	8.7
	Temp. (°C)	14.3	13.7	15.6
50	Salinity (ppt)	33-0	33.6	33.7
50	pH (units)	7.98	7, 83	7.85
	DO (mg/L)	8.2	9.1	8.8
	Temp. (°C)	14.1	15.9	15.7
100	Salinity (ppt)	32.9	33.6	33.7
100	pH (units)	7.95	7,82	7.84
	DO (mg/L)	8.3	8.5	8.6
	Temp. (°C)	14.2	15.7	12.8
0 Filtered	Salinity (ppt)	32.1	37.9	33.2
(1.2μm)	pH (units)	7.95	7.82	7.84
	DO (mg/L)	8.4	8.4	8.6
	Salinity (ppt) pH (units)	32.1	37.9	

Source of Animals: Ala Mission Psay

3/23/22

QA:4129/22 A6

Final: Jk 5/10/22

Date Received: 3 23 22

Site: SIYB-3

CETIS Summary Report

06-3609-2189 Survival Rate

Report Date: Test Code: 29 Apr-22 15:40 (p 1 of 4) 22-03-059 | 05-1144-8338

Passes Criteria

						103	L OOUC.	-	2 00 000	00 1111000
Bivalve Larva	l Survival and Devel	opment Test			****					Wood E&IS
	20-1568-3914 22 Mar-22 16:15 24 Mar-22 16:15 48h	Test Type: Protocol: Species: Source:	Developme EPA/600/R- Mytilis gallo Field Collec	-95/136 (1995) provincialis			ne: No	tural Seawa t Applicable	10.00 m	
Sample Date: Receipt Date:	21-1662-5842 22 Mar-22 13:50 21 Mar-22 17:40 24 (4.9°C) 26 V	Code: Material: Source: Station:	22-W067 Seawater Shelter Isla SIYB 3	nd Yacht Basin		Clie Pro	200	ood Environ /B TMDL M		nfrastructure
Comments: FC = Filtered (Control (1.2um), 101 =	100% filtered	(1.2um)							
Single Compa	arison Summary									
Analysis ID	Endpoint	Comp	oarison Metl	hod		P-Value	Compar	ison Resu	It	
06-4385-5796	Combined Proportion	Norma TST-	Welch's t Tes	st		3.1E-06	100% pa	ssed comb	ined propor	tion normal
09-5505-6264	Combined Proportion	Norma TST-	Welch's t Tes	st		1.1E-04	101% pa	ssed comb	ined propor	tion normal
Multiple Com	parison Summary									
Analysis ID	Endpoint	Comp	oarison Metl	hod		NOEL	LOEL	TOEL	TU	PMSD
16-2084-0631	Combined Proportion	Norma Dunn	ett Multiple C	Comparison Test		100	> 100	n/a	1	5.85%
08-0107-7872	Proportion Normal	Dunn	ett Multiple C	Comparison Test		100	> 100	n/a	1	2.33%
06-3609-2189	Survival Rate	Dunn	ett Multiple C	Comparison Test		100	> 100	n/a	1	6.69%
Test Acceptal	oility				TAC	Limits				
Analysis ID	Endpoint	Attrib	ute	Test Stat	Lower	Upper	Overlap	Decisio	n	
08-0107-7872	Proportion Normal	Contr	ol Resp	0.9222	0.9	>>	Yes	Passes	Criteria	
	50						(5),0)	220	2 10 10	

0.9656

0.5

Control Resp

>>

Yes

Analyst: Q QA: SC 5/20/22

002-883-387-8 CETIS™ v1.9.3.0

002-883-387-8

Report Date: Test Code: 29 Apr-22 15:40 (p 2 of 4) 22-03-059 | 05-1144-8338

							,	couc.		00 000 0	0-11-4-000
Bivalve Larval	Survival and	Developme	nt Test								Nood E&IS
Combined Prop	ortion Norm	al Summar	,								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.8905	0.8400	0.9410	0.8321	0.9348	0.0182	0.0407	4.57%	0.00%
0	FC	5	0.8395	0.7529	0.9261	0.7481	0.9286	0.0312	0.0698	8.31%	5.72%
6.25		5	0.8604	0.8118	0.9089	0.8282	0.9278	0.0175	0.0391	4.54%	3.39%
12.5		5	0.8518	0.7869	0.9167	0.7824	0.9231	0.0234	0.0523	6.14%	4.35%
25		5	0.8839	0.8516	0.9163	0.8588	0.9137	0.0117	0.0261	2.95%	0.74%
50		5	0.8849	0.8663	0.9036	0.8702	0.9046	0.0067	0.0150	1.70%	0.63%
100		5	0.9047	0.8764	0.9329	0.8664	0.9245	0.0102	0.0228	2.52%	-1.59%
101		5	0.8849	0.8553	0.9145	0.8435	0.9051	0.0107	0.0239	2.70%	0.63%
Proportion Nor	mal Summar	у									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9222	0.9114	0.9330	0.9109	0.9348	0.0039	0.0087	0.94%	0.00%
0	FC	5	0.9003	0.8729	0.9277	0.8829	0.9286	0.0099	0.0221	2.45%	2.37%
6.25		5	0.9147	0.9018	0.9276	0.9016	0.9278	0.0047	0.0104	1.14%	0.81%
12.5		5	0.9014	0.8686	0.9342	0.8723	0.9313	0.0118	0.0264	2.93%	2.26%
25		5	0.9097	0.8931	0.9264	0.8972	0.9298	0.0060	0.0134	1.47%	1.35%
50		5	0.9008	0.8909	0.9108	0.8923	0.9120	0.0036	0.0080	0.89%	2.31%
100		5	0.9187	0.9028	0.9346	0.9044	0.9368	0.0057	0.0128	1.40%	0.38%
101		5	0.8916	0.8792	0.9040	0.8770	0.9051	0.0045	0.0100	1.12%	3.32%
Survival Rate S	ummary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9656	0.9120	1.0000	0.9008	1.0000	0.0193	0.0432	4.47%	0.00%
0	FC	5	0.9321	0.8494	1.0000	0.8473	1.0000	0.0298	0.0666	7.14%	3.48%
6.25		5	0.9405	0.8949	0.9860	0.9008	1.0000	0.0164	0.0367	3.90%	2.61%
12.5		5	0.9450	0.8797	1.0000	0.8893	1.0000	0.0235	0.0526	5.56%	2.13%
25		5	0.9718	0.9327	1.0000	0.9237	1.0000	0.0141	0.0314	3.23%	-0.63%
50		5	0.9824	0.9561	1.0000	0.9542	1.0000	0.0095	0.0212	2.16%	-1.74%
100		5	0.9847	0.9586	1.0000	0.9580	1.0000	0.0094	0.0211	2.14%	-1.98%
101		5	0.9924	0.9712	1.0000	0.9618	1.0000	0.0076	0.0171	1.72%	-2.77%

Analyst: QA: 1

CETIS™ v1.9.3.0

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							rest odder	
Bivalve Larva	l Survival and	Developme	nt Test					Wood E&IS
Combined Pro	oportion Norm	nal Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.9348	0.8969	0.8702	0.8321	0.9185		
0	FC	0.9286	0.8321	0.8836	0.8053	0.7481		
6.25		0.8397	0.8550	0.8511	0.8282	0.9278		
12.5		0.8282	0.7824	0.8511	0.9231	0.8740		
25		0.8664	0.9104	0.9137	0.8588	0.8702		
50		0.8702	0.9046	0.8942	0.8702	0.8855		
100		0.9245	0.9046	0.9091	0.8664	0.9187		
101		0.8901	0.8927	0.8931	0.8435	0.9051		
Proportion No	ormal Detail							
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.9348	0.9109	0.9231	0.9237	0.9185		
0	FC	0.9286	0.9198	0.8836	0.8866	0.8829		
6.25		0.9016	0.9069	0.9177	0.9195	0.9278		
12.5		0.9313	0.8723	0.9028	0.9231	0.8774		
25		0.8972	0.9104	0.9137	0.9298	0.8976		
50		0.9120	0.9046	0.8942	0.9012	0.8923		
100		0.9245	0.9368	0.9091	0.9044	0.9187		
101		0.8901	0.8927	0.8931	0.8770	0.9051		
Survival Rate	Detail							
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	1.0000	0.9847	0.9427	0.9008	1.0000		
0	FC	1.0000	0.9046	1.0000	0.9084	0.8473		
6.25		0.9313	0.9427	0.9275	0.9008	1.0000		
12.5		0.8893	0.8969	0.9427	1.0000	0.9962		
25		0.9656	1.0000	1.0000	0.9237	0.9695		
50		0.9542	1.0000	1.0000	0.9656	0.9924		
100		1.0000	0.9656	1.0000	0.9580	1.0000		
101		1.0000	1.0000	1.0000	0.9618	1.0000		

Analyst: RV QA: JL

002-883-387-8 CETIS™ v1.9.3.0

29 Apr-22 15:40 (p 4 of 4) 22-03-059 | 05-1144-8338

Bivalve Larva	Survival and	Developme	nt Test				Wood E&IS
Combined Pro	portion Norm	al Binomials	3		-		
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	258/276	235/262	228/262	218/262	248/270	
0	FC	247/266	218/262	281/318	211/262	196/262	
6.25		220/262	224/262	223/262	217/262	244/263	
12.5		217/262	205/262	223/262	252/273	229/262	
25		227/262	244/268	254/278	225/262	228/262	
50		228/262	237/262	245/274	228/262	232/262	
100		245/265	237/262	260/286	227/262	260/283	
101		243/273	258/289	234/262	221/262	267/295	
Proportion No	rmal Binomia	ls					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	258/276	235/258	228/247	218/236	248/270	
0	FC	247/266	218/237	281/318	211/238	196/222	
6.25		220/244	224/247	223/243	217/236	244/263	
12.5		217/233	205/235	223/247	252/273	229/261	
25		227/253	244/268	254/278	225/242	228/254	
50		228/250	237/262	245/274	228/253	232/260	
100		245/265	237/253	260/286	227/251	260/283	
101		243/273	258/289	234/262	221/252	267/295	
Survival Rate	Binomials						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	262/262	258/262	247/262	236/262	262/262	
0	FC	262/262	237/262	262/262	238/262	222/262	
6.25		244/262	247/262	243/262	236/262	262/262	
12.5		233/262	235/262	247/262	262/262	261/262	
25		253/262	262/262	262/262	242/262	254/262	
50		250/262	262/262	262/262	253/262	260/262	
100		262/262	253/262	262/262	251/262	262/262	
101		262/262	262/262	262/262	252/262	262/262	

Analyst: RV QA: SC

002-883-387-8 CETIS™ v1.9.3.0

29 Apr-22 15:40 (p 1 of 8) 22-03-059 | 05-1144-8338

Bivalve Larval Survival and Development Test FC V5 100% Filtered TST Wood E&IS

Analysis ID: 09-5505-6264 Endpoint: Combined Proportion Normal CETIS Version: CETISv1.9.3

Analyzed: 29 Apr-22 15:40 Analysis: Parametric Bioequivalence-Two Sample Official Results: Yes

Comments:

FC = Filtered Control (1.2um), 101 = 100% filtered (1.2um)

TST_b	n Alt Hyp	Comparison Result
0.75	cted) C*b < T	101% passed combined proportion normal
0.75	cted) C*b < T	101% passed combined proportion normal

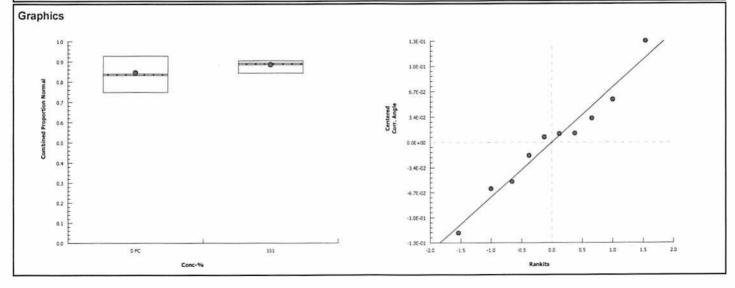
TST-Welch's t Test Control vs Control II Test Stat Critical DF P-Type P-Value Decision(α:5%) Filter Control 101* 9.558 2.015 5 CDF 1.1E-04 Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0089482	0.0089482	1	1.625	0.2381	Non-Significant Effect
Error	0.0440443	0.0055055	8			
Total	0.0529925		9			

Distributional 1	Distributional Tests									
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)					
Variances	Variance Ratio F Test	7.565	23.15	0.0754	Equal Variances					
Distribution	Shapiro-Wilk W Normality Test	0.9745	0.7411	0.9289	Normal Distribution					

Combined Pro	oportion Norm	al Summar	y								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	0.8395	0.7529	0.9261	0.8321	0.7481	0.9286	0.0312	8.31%	0.00%
101		5	0.8849	0.8553	0.9145	0.8927	0.8435	0.9051	0.0107	2.70%	-5.40%

Angular (Corre	ected) Transfo	rmed Sumr	nary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	1.166	1.044	1.289	1.149	1.045	1.3	0.0441	8.46%	0.00%
101		5	1.226	1.181	1.27	1.237	1.164	1.258	0.01603	2.92%	-5.13%



Analyst: DV QA: LE

CETIS™ v1.9.3.0

Report Date: Test Code: 29 Apr-22 15:40 (p 2 of 8) 22-03-059 | 05-1144-8338

Bivalve Larval Survival and Development Test LC vs 100% TST Wood E&IS

Analysis ID: 06-4385-5796 Endpoint: Combined Proportion Normal CETIS Version: CETISv1.9.3

Analyzed: 29 Apr-22 15:40 Analysis: Parametric Bioequivalence-Two Sample Official Results: Yes

0.0027886

Comments:

Error

Total

FC = Filtered Control (1.2um), 101 = 100% filtered (1.2um)

0.0223088

0.0233781

Data Transf	orm	Alt Hyp TST_b Comparison		son Result					
Angular (Co	rected)	C*b < T			0.75			100% pas	sed combined proportion normal
TST-Welch'	s t Test	8							
Control	vs	Control II	Test Stat	Critical		DF	P-Type	P-Value	Decision(a:5%)
Lab Control		100*	12.06	1.895		7	CDF	3.1E-06	Non-Significant Effect
ANOVA Tab	le								
Source		Sum Squares	Mean Squ	are	DF		F Stat	P-Value	Decision(a:5%)
Between		0.0010693	0.0010693		1		0.3835	0.5530	Non-Significant Effect

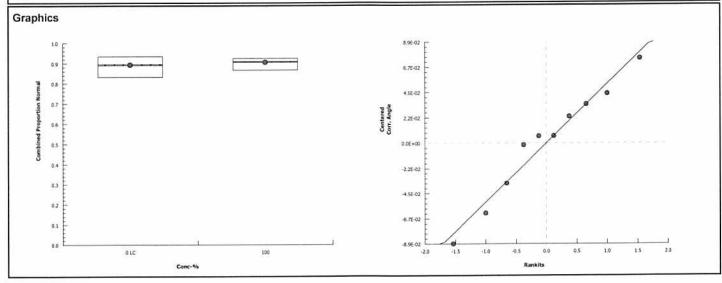
Distributional 1	Tests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	3.011	23.15	0.3109	Equal Variances
Distribution	Shaniro-Wilk W Normality Test	0.9651	0.7411	0.8417	Normal Distribution

8

9

Combined Pr	oportion Norm	al Summar	/								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.8905	0.8400	0.9410	0.8969	0.8321	0.9348	0.0182	4.57%	0.00%
100		5	0.9047	0.8764	0.9329	0.9091	0.8664	0.9245	0.0102	2.52%	-1.59%

Angular (Corr	ected) Transfo	rmed Sumr	mary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.238	1.157	1.318	1.244	1.149	1.313	0.02894	5.23%	0.00%
100		5	1.258	1.212	1.305	1.265	1.197	1.292	0.01668	2.96%	-1.67%



Analyst: D QA: SC

CETIS™ v1.9.3.0

Report Date: Test Code: 29 Apr-22 15:40 (p 3 of 8) 22-03-059 | 05-1144-8338

Bivalve Larval Survival and Development Test

Analysis ID: 16-2084-0631 Endpoint: Combined Proportion Normal CETIS Version: CETISv1.9.3 Analyzed: 29 Apr-22 15:40 Analysis: Parametric-Control vs Treatments Official Results: Yes

Comments:
FC = Filtered Control (1.2um), 101 = 100% filtered (1.2um)

 Data Transform
 Alt Hyp
 NOEL
 LOEL
 TOEL
 TU
 PMSD

 Angular (Corrected)
 C > T
 100
 > 100
 n/a
 1
 5.85%

Dunnett Multi	iple C	Comparison Test							
Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(a:5%)
Lab Control		6.25	1.365	2.362	0.081	8	CDF	0.2704	Non-Significant Effect
		12.5	1.684	2.362	0.081	8	CDF	0.1695	Non-Significant Effect
		25	0.3798	2.362	0.081	8	CDF	0.6979	Non-Significant Effect
		50	0.3656	2.362	0.081	8	CDF	0.7038	Non-Significant Effect
		100	-0.6062	2.362	0.081	8	CDF	0.9534	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0212443	0.0042489	5	1.46	0.2395	Non-Significant Effect
Error	0.0698373	0.0029099	24			
Total	0.0910816		29			

Distributional 1	Tests					
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)	
Variances	Bartlett Equality of Variance Test	5.776	15.09	0.3287	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.9726	0.9031	0.6122	Normal Distribution	

Combined Pr	oportion Norm	al Summar	/								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.8905	0.8400	0.9410	0.8969	0.8321	0.9348	0.0182	4.57%	0.00%
6.25		5	0.8604	0.8118	0.9089	0.8511	0.8282	0.9278	0.0175	4.54%	3.39%
12.5		5	0.8518	0.7869	0.9167	0.8511	0.7824	0.9231	0.0234	6.14%	4.35%
25		5	0.8839	0.8516	0.9163	0.8702	0.8588	0.9137	0.0117	2.95%	0.74%
50		5	0.8849	0.8663	0.9036	0.8855	0.8702	0.9046	0.0067	1.70%	0.63%
100		5	0.9047	0.8764	0.9329	0.9091	0.8664	0.9245	0.0102	2.52%	-1.59%

Angular (Corr	ected) Transfo	rmed Sumr	nary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.238	1.157	1.318	1.244	1.149	1.313	0.02894	5.23%	0.00%
6.25		5	1.191	1.114	1.268	1.175	1.143	1.299	0.02763	5.19%	3.76%
12.5		5	1.18	1.086	1.275	1.175	1.086	1.29	0.034	6.44%	4.64%
25		5	1.225	1.173	1.276	1.202	1.186	1.273	0.01857	3.39%	1.05%
50		5	1.225	1.196	1.255	1.226	1.202	1.257	0.01061	1.94%	1.01%
100		5	1.258	1.212	1.305	1.265	1.197	1.292	0.01668	2.96%	-1.67%

Analyst: D QA: JC

29 Apr-22 15:40 (p 4 of 8) 22-03-059 | 05-1144-8338

Bivalve Larva	I Survival and Develo	pment Test				Wood E&I
Analysis ID: Analyzed:	16-2084-0631 29 Apr-22 15:40	Endpoint: Analysis:	Combined Proportion No Parametric-Control vs Tr		CETIS Version: Official Results:	CETISv1.9.3 Yes
Graphics						
10 E				1.15-01	į	• •
E -L		-Az	Reject Null	8.2E-02 -		,
Combined Proportion Normal				Contered Corr. Angle		20000000
Combined P				0.06+00	60000	6
0.4 =				-2.76-02	0 0 9 9 8 8 8 9 9 9 9 9 9	
0.2				-5.5E-02	•	
0.1 E				-1.16-01	0 -15 -10 -05 0.0	0.5 1.0 1.5 2.0 2.5
	0 LC 6.25 12.5	25 c-%	50 100	43 4	Rankits	(text or text) (170) (170)

Analyst: EV QA: Sc

CETIS™ v1.9.3.0

Report Date: Test Code: 29 Apr-22 15:40 (p 5 of 8) 22-03-059 | 05-1144-8338

Bivalve Larval Survival and Development Test

Analysis ID: 08-0107-7872 Endpoint: Proportion Normal CETIS Version: CETISv1.9.3

Analyzed: 29 Apr-22 15:40 Analysis: Parametric-Control vs Treatments Official Results: Yes

Analyzed:	29 /	Apr-22 15:40 An	alysis: Par	ametric-Co	ntrol vs 7	reat	tments	Offic	ial Results	s: Yes		
Comments: FC = Filtered	l Contro	ol (1.2um), 101 = 1009	% filtered (1.2	um)								
Data Transfe	orm	Alt Hyp						NOEL	LOEL	TOEL	TU	PMSD
Angular (Cor	rected)	C > T						100	> 100	n/a	1	2.33%
Dunnett Mu	ltiple C	omparison Test										
Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision	n(a:5%)		
Lab Control		6.25	0.8421	2.362	0.038	8	CDF	0.4916	Non-Sigr	ificant Effec	ct	
		12.5	2.157	2.362	0.038	8	CDF	0.0745	Non-Sigr	ificant Effec	ct	
		25	1.367	2.362	0.038	8	CDF	0.2698	Non-Sigr	ificant Effect	ct	
		50	2.335	2.362	0.038	8	CDF	0.0527	Non-Sigr	nificant Effect	ct	
		100	0.3768	2.362	0.038	8	CDF	0.6992	Non-Sigr	nificant Effect	ct	
ANOVA Tab	le											
Source		Sum Squares	Mean Squ	uare	DF		F Stat	P-Value	Decision	n(a:5%)		
Between		0.0058601	0.0011720)	5		1.79	0.1531	Non-Sigr	nificant Effect	ct	
Error		0.0157177	0.0006549	9	24							
Total		0.0215779			29		-					
Distribution	al Test	s										
Attribute		Test			Test S	tat	Critical	P-Value	Decision	n(a:1%)		
Variances		Bartlett Equality of V	ariance Test		7.211		15.09	0.2054	Equal Va	riances		
Distribution		Shapiro-Wilk W Nor	mality Test		0.9801	į.	0.9031	0.8273	Normal D	Distribution		

Proportion No	ormal Summar	у									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.9222	0.9114	0.9330	0.9231	0.9109	0.9348	0.0039	0.94%	0.00%
6.25		5	0.9147	0.9018	0.9276	0.9177	0.9016	0.9278	0.0047	1.14%	0.81%
12.5		5	0.9014	0.8686	0.9342	0.9028	0.8723	0.9313	0.0118	2.93%	2.26%
25		5	0.9097	0.8931	0.9264	0.9104	0.8972	0.9298	0.0060	1.47%	1.35%
50		5	0.9008	0.8909	0.9108	0.9012	0.8923	0.9120	0.0036	0.89%	2.31%
100		5	0.9187	0.9028	0.9346	0.9187	0.9044	0.9368	0.0057	1.40%	0.38%

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.288	1.268	1.309	1.29	1.268	1.313	0.007331	1.27%	0.00%
6.25		5	1.275	1.252	1.298	1.28	1.252	1.299	0.008343	1.46%	1.06%
12.5		5	1.254	1.198	1.309	1.254	1.205	1.306	0.01998	3.56%	2.71%
25		5	1.266	1.237	1.296	1.267	1.244	1.303	0.01067	1.88%	1.72%
50		5	1.251	1.234	1.267	1.251	1.236	1.27	0.006021	1.08%	2.93%
100		5	1.282	1.253	1.312	1.282	1.256	1.317	0.01064	1.86%	0.47%

Analyst: QA: ____

Report Date: Test Code: 29 Apr-22 15:40 (p 7 of 8) 22-03-059 | 05-1144-8338

Analysis ID:	06-3609-2189	Endpoint:	Survival Rate	CETIS Version:	CETISv1.9.3	
Analyzed:	29 Apr-22 15:40	Analysis:	Parametric-Control vs Treatments	Official Results:	Yes	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	100	> 100	n/a	1	6.69%

Dunnett Multi	iple C	Comparison Test							
Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(a:5%)
Lab Control		6.25	1.062	2.362	0.170	8	CDF	0.3925	Non-Significant Effect
		12.5	0.7002	2.362	0.170	8	CDF	0.5569	Non-Significant Effect
		25	-0.1219	2.362	0.170	8	CDF	0.8668	Non-Significant Effect
		50	-0.5445	2.362	0.170	8	CDF	0.9460	Non-Significant Effect
		100	-0.7272	2.362	0.170	8	CDF	0.9655	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0633786	0.0126757	5	0.9743	0.4533	Non-Significant Effect
Error	0.312234	0.0130097	24			
Total	0.375612		29			

Distributional 1					
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Bartlett Equality of Variance Test	1.443	15.09	0.9195	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9498	0.9031	0.1670	Normal Distribution

Survival Rate	Survival Rate Summary													
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect			
0	LC	5	0.9656	0.9120	1.0000	0.9847	0.9008	1.0000	0.0193	4.47%	0.00%			
6.25		5	0.9405	0.8949	0.9860	0.9313	0.9008	1.0000	0.0164	3.90%	2.61%			
12.5		5	0.9450	0.8797	1.0000	0.9427	0.8893	1.0000	0.0235	5.56%	2.13%			
25		5	0.9718	0.9327	1.0000	0.9695	0.9237	1.0000	0.0141	3.23%	-0.63%			
50		5	0.9824	0.9561	1.0000	0.9924	0.9542	1.0000	0.0095	2.16%	-1.74%			
100		5	0.9847	0.9586	1.0000	1.0000	0.9580	1.0000	0.0094	2.14%	-1.98%			

Angular (Corr	ngular (Corrected) Transformed Summary														
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect				
0	LC	5	1.421	1.261	1.581	1.447	1.25	1.54	0.05767	9.07%	0.00%				
6.25		5	1.345	1.204	1.485	1.306	1.25	1.54	0.05047	8.39%	5.39%				
12.5		5	1.371	1.19	1.552	1.329	1.232	1.54	0.06514	10.63%	3.55%				
25		5	1.43	1.296	1.564	1.395	1.291	1.54	0.04838	7.56%	-0.62%				
50		5	1.461	1.353	1.568	1.483	1.355	1.54	0.03875	5.93%	-2.76%				
100		5	1.474	1.361	1.587	1.54	1.364	1.54	0.04066	6.17%	-3.69%				

Analyst: RV QA: JC

002-883-387-8 CETIS™ v1.9.3.0

Start Date:

Report Date:

19 Mar-22 15:14 (p 1 of 2) 05-1144-8338/22-03-059

Test Code/ID:

Wood E&IS

Bivalve Larval Survival and Development Test

22 Mar-22 1615 24 Mar-22 1615

Species: Mytilis galloprovincialis Protocol: EPA/600/R-95/136 (1995) Sample Code: 47E2925B2 22-W067 Sample Source: Shelter Island Yacht Basin

onc-%	Code	Rep	-		Final					
			Pos 81	Density	Density			TIT	11/1/27	Notes
			82			242	227	15-1	4/6/22	2
			83			_			4/7/2	
			84			278				
							228			
			85				223			
			86				229			
			87				232			
			88			274	24.5			
			89			2.35	205			
			90			273	243			
			91			262	237			
			92			276	258			
			93				234			
			94				258			
			95			273	252			
			96			222	196			
			97			252	221			
			98			254	228			
			99				228			
			100			236	217			
			101			250	228			
			102			247	224			
			103				223			
			104			270	248			
			105			265	245			
			106				244			
			107			253	227			
			108			238	211			
			109				260			
			110			283				
			111			237	218			
			112			233	217			
			113			244	220			
			114			286 268	260 244			

TIS Te	st Dat	ta W	orks	heet				Report Date: 19 Mar-22 15:14 (p Test Code/ID: 05-1144-8338/22	and a supplied
Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	al Notes	
			115			266	247	BT 4/8/22	
			116			295	267		
			117			236	218		
			118			253	237		
			119			3 18	281		
			120				z35	4	

Report Date:

19 Mar-22 15:14 (p 1 of 2)

Test Code/ID:

05-1144-8338/22-03-059

Bivalve Larval Survival and Development Test

Wood E&IS

Start Date: End Date:

22 Mar-22 65 Species: Mytilis galloprovincialis 24 Mar-22 67 Protocol: EPA/600/R-95/136 (1995)

Sample Code: A7E2025B2 2Z-W067
Sample Source: Shelter Island Yacht Basin

onc-%	Code		Pos	Material Initial Density	Final Density		# Normal			Notes
0	FC	1	115			266	247	BI	4/6/22	
0	FC	2	110			200			,, ,,	
0	FC	3	119							
0	FC	4	108							
0	FC	5	96							
0	LC	1	92			276	258			
0	LC	2	120			210	200			
0	LC	3	99							
0	LC	4	117							
0	LC	5	104							
6.25		1	112			2///	220			
6.25		2	102			244	220			
6.25		3	103							
6.25		4	100							
		7.40								
6.25		5	106							
12.5		1	111			233	217			
12.5		2	89							
12.5		3	85							
12.5		4	95							
12.5		5	86							
25		1	107			253	227			
25		2	114							
25		3	83							
25		4	81							
25		5	98							
50		1	101			250	228			
50		2	91							
50		3	88							
50		4	84							
50		5	87							
100		1	105			265	245			
100		2	118			200	-1-			
100		3	113							
100	-	4	82							

TIS Tes	st Dat	a W	orks	heet				Report Date: Test Code/ID:	19 Mar-22 15:14 (p 2 of 2) 05-1144-8338/22-03-059
Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes	
100		5	109						
101		1	90			273	243		
101		2	94						
101		3	93						
101		4	97						
101		5	116						

QC: KB

Water Quality for Bivalve Development

Client: Wood - Port of San Diego

Test Species: M. galloprovincialis

Sample ID: SIYB-3

Test No. 22-63-059

Start Date/Time: 3/22/2022 16/5 3/23/22 End Date/Time: 3/24/2022 16/5 3/25/22

Test Conc.		Water Quality Me	easurements &CU	
(%)	Parameter	0hr	24hr	48hr
	Temp. (°C)	14.5	15.7	15.6
1-1-6	Salinity (ppt)	32.9	33.4	23.6
Lab Control –	pH (units)	7.56	7.83	7.86
	DO (mg/L)	7.8	8.8	8.7
	Temp. (°C)	14.0	15.7	15-7
5111	Salinity (ppt)	33.0	33.4	33.6
Filter Control –	pH (units)	7.98	7.79	7.83
	DO (mg/L)	8.0	8.6	8.7
	Temp. (°C)	14.0	15.7	15.7
6.35	Salinity (ppt)	33.0	33.6	33.7
6.25	pH (units)	8.00	7.82	7.82
Γ	DO (mg/L)	8.1	\$ 8.9	8.7
	Temp. (°C)	-13.9en 15.0	15,8	15.7
	Salinity (ppt)	32-9	33.6	33.7
12.5	pH (units)	8.00	7.83	7.81
Γ	DO (mg/L)	8.1	9.0	8.7
	Temp. (°C)	13.9 W 15.D	15,6	15.7
35	Salinity (ppt) 33.0	-8.00 CB	33.6	33.7
25	pH (units) ع.يه(8333.0-CB	CB 33.6 7.83	7.81
	DO (mg/L) ඉ. ኃ .		CB 33.6-8.8	8.7
	Temp. (°C)	13.9 04 15.0	15.8	15.7
	Salinity (ppt)	32.8	33.7	33.7
50	pH (units)	7.99	7.83	7.81
Γ	DO (mg/L)	8.5	9.2	8.8
	Temp. (°C)	14.0	15.9	15.8
	Salinity (ppt)	33.1	33.6	33.6
100	pH (units)	7.96	7.81	7.80
	DO (mg/L)	8.6	8.8	8.7
	Temp. (°C)	14.2	15.9	12.8
100 Filtered	Salinity (ppt)	32.3	33.0	333
(1.2µm)	pH (units)	7,95	7.81	7.83
	DO (mg/L)	8.6	3.8	8.7
	Tech Initials:	PSA.	CB	R6

Source of Animals: ACM (2510 n Bay 3/23/22 Date Received: 3/23/22

Comments:

QA: A6 4124122

Final: Si Stoler

Site: SIYB-4

CETIS Summary Report

06-0879-0720 Survival Rate

Report Date: Test Code: 03 May-22 16:06 (p 1 of 4) 22-03-060 | 01-2958-4604

1

n/a

4.77%

Bivalve Larva	I Survival and Develop	ment Test						Wood E&IS
Ending Date:	22 Mar-22 16:15	Test Type: Protocol: Species: Source:	Development-Survival EPA/600/R-95/136 (1995) Mytilis galloprovincialis Field Collected	Ana Dilu Brin Age	ie:	Natural Seawa Not Applicable		
Receipt Date:	22 Mar-22 13:00 I 22 Mar-22 17:40	Code: Material: Source: Station:	22-W068 Seawater Shelter Island Yacht Basin SIYB 4	Clie Proj		Wood Environ SIYB TMDL M		nfrastructure
Comments: FC = Filtered	Control (1.2 um), 101 = 1	00% filtered	i (1.2um)					
Single Compa	arison Summary							
Analysis ID	Endpoint	Comp	parison Method	P-Value	Comp	arison Resul	t	
02-5444-8755	Combined Proportion No	orma TST-V	Welch's t Test	2.7E-04	100%	passed combi	ned propo	rtion normal
09-4471-8807	Combined Proportion No	orma TST-V	Welch's t Test	3.4E-05	101%	passed combi	ned propo	rtion normal
Multiple Com	parison Summary							
Analysis ID	Endpoint	Comp	parison Method	NOEL	LOEL	TOEL	TU	PMSD √
	Combined Proportion No	orma Dunne	ett Multiple Comparison Test	100	> 100	n/a	1	7.31%
15-8398-1867	Proportion Normal	Dunne	ett Multiple Comparison Test	100	> 100	n/a	1	3.37%

Test Acceptal	oility			TAC	Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision	
15-8398-1867	Proportion Normal	Control Resp	0.9222	0.9	>>	Yes	Passes Criteria	
06-0879-0720	Survival Rate	Control Resp	0.9863	0.5	>>	Yes	Passes Criteria	

100

> 100

Dunnett Multiple Comparison Test

Analyst: RV OA: 8c5/20/22

CETIS™ v1.9.3.0

03 May-22 16:06 (p 2 of 4) 22-03-060 | 01-2958-4604

Bivalve Larval	Survival and	Developme	nt Test							70	Wood E&IS
Combined Pro	portion Norm	al Summary	,								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9095	0.8727	0.9463	0.8664	0.9470	0.0133	0.0297	3.26%	0.00%
0	FC	5	0.8336	0.7769	0.8903	0.7824	0.8969	0.0204	0.0457	5.48%	8.34%
6.25		5	0.8994	0.8434	0.9554	0.8397	0.9384	0.0202	0.0451	5.01%	1.11%
12.5		5	0.8718	0.7784	0.9653	0.7443	0.9244	0.0337	0.0753	8.64%	4.14%
25		5	0.9214	0.8960	0.9467	0.8893	0.9461	0.0091	0.0204	2.21%	-1.31%
50		5	0.9179	0.8985	0.9372	0.8939	0.9363	0.0070	0.0156	1.70%	-0.92%
100		5	0.9227	0.8725	0.9728	0.8893	0.9855	0.0181	0.0404	4.38%	-1.45%
101		5	0.8911	0.8845	0.8977	0.8819	0.8956	0.0024	0.0053	0.60%	2.02%
Proportion Nor	mal Summar	у									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9222	0.8905	0.9538	0.9008	0.9528	0.0114	0.0255	2.77%	0.00%
0	FC	5	0.9120	0.8944	0.9295	0.8952	0.9325	0.0063	0.0142	1.55%	1.11%
6.25		5	0.9275	0.9173	0.9377	0.9167	0.9384	0.0037	0.0082	0.89%	-0.58%
12.5		5	0.9054	0.8815	0.9294	0.8744	0.9244	0.0086	0.0193	2.13%	1.81%
25		5	0.9277	0.9110	0.9444	0.9102	0.9461	0.0060	0.0135	1.45%	-0.60%
50		5	0.9179	0.8985	0.9372	0.8939	0.9363	0.0070	0.0156	1.70%	0.47%
100		5	0.9477	0.9213	0.9741	0.9357	0.9855	0.0095	0.0213	2.24%	-2.77%
101		5	0.8911	0.8845	0.8977	0.8819	0.8956	0.0024	0.0053	0.60%	3.37%
Survival Rate S	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9863	0.9627	1.0000	0.9618	1.0000	0.0085	0.0190	1.93%	0.00%
0	FC	5	0.9137	0.8646	0.9628	0.8740	0.9618	0.0177	0.0395	4.33%	7.35%
6.25		5	0.9695	0.9171	1.0000	0.9160	1.0000	0.0189	0.0422	4.35%	1.70%
12.5		5	0.9618	0.8818	1.0000	0.8511	1.0000	0.0288	0.0645	6.71%	2.48%
25		5	0.9931	0.9804	1.0000	0.9771	1.0000	0.0046	0.0102	1.03%	-0.70%
50		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	-1.39%
100		5	0.9733	0.9428	1.0000	0.9504	1.0000	0.0110	0.0246	2.53%	1.32%
101		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	-1.39%

Analyst: DN QA:

CETIS™ v1.9.3.0

03 May-22 16:06 (p 3 of 4) 22-03-060 | 01-2958-4604

							rest oode.	
Bivalve Larva	Survival and	Developme	nt Test					Wood E&IS
Combined Pro	portion Norm	al Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.9022	0.9237	0.9470	0.8664	0.9081		
0	FC	0.8626	0.8168	0.7824	0.8969	0.8092		
6.25		0.8626	0.8397	0.9384	0.9321	0.9241		
12.5		0.9148	0.7443	0.9244	0.9132	0.8626		
25		0.9220	0.9461	0.9258	0.9237	0.8893		
50		0.8939	0.9363	0.9158	0.9251	0.9182		
100		0.9407	0.8893	0.9855	0.8969	0.9008		
101		0.8926	0.8956	0.8819	0.8933	0.8921		
Proportion No	rmal Detail							
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.9022	0.9528	0.9470	0.9008	0.9081		
0	FC	0.9076	0.9185	0.8952	0.9325	0.9060		
6.25		0.9262	0.9167	0.9384	0.9321	0.9241		
12.5		0.9148	0.8744	0.9244	0.9132	0.9004		
25		0.9220	0.9461	0.9258	0.9344	0.9102		
50		0.8939	0.9363	0.9158	0.9251	0.9182		
100		0.9407	0.9357	0.9855	0.9363	0.9402		
101		0.8926	0.8956	0.8819	0.8933	0.8921		
Survival Rate	Detail							
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	1.0000	0.9695	1.0000	0.9618	1.0000		
0	FC	0.9504	0.8893	0.8740	0.9618	0.8931		
6.25		0.9313	0.9160	1.0000	1.0000	1.0000		
12.5		1.0000	0.8511	1.0000	1.0000	0.9580		
25		1.0000	1.0000	1.0000	0.9885	0.9771		
50		1.0000	1.0000	1.0000	1.0000	1.0000		
100		1.0000	0.9504	1.0000	0.9580	0.9580		
101		1.0000	1.0000	1.0000	1.0000	1.0000		

Analyst: DV QA: JC

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							rest oode.	22 00 000 01 2000 100
Bivalve Larva	l Survival and	Developme	nt Test					Wood E&IS
Combined Pro	oportion Norm	al Binomials	3					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	249/276	242/262	250/264	227/262	257/283		
0	FC	226/262	214/262	205/262	235/262	212/262		
6.25		226/262	220/262	259/276	261/280	268/290		
12.5		279/305	195/262	269/291	242/265	226/262		
25		272/295	281/297	262/283	242/262	233/262		
50		236/264	250/267	250/273	247/267	247/269		
100		254/270	233/262	272/276	235/262	236/262		
101		241/270	266/297	254/288	268/300	248/278		
Proportion No	ormal Binomia	ls						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	249/276	242/254	250/264	227/252	257/283		
0	FC	226/249	214/233	205/229	235/252	212/234		
6.25		226/244	220/240	259/276	261/280	268/290		
12.5		279/305	195/223	269/291	242/265	226/251		
25		272/295	281/297	262/283	242/259	233/256		
50		236/264	250/267	250/273	247/267	247/269		
100		254/270	233/249	272/276	235/251	236/251		
101		241/270	266/297	254/288	268/300	248/278		
Survival Rate	Binomials							
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	262/262	254/262	262/262	252/262	262/262		
0	FC	249/262	233/262	229/262	252/262	234/262		
6.25		244/262	240/262	262/262	262/262	262/262		
12.5		262/262	223/262	262/262	262/262	251/262		
25		262/262	262/262	262/262	259/262	256/262		
50		262/262	262/262	262/262	262/262	262/262		
100		262/262	249/262	262/262	251/262	251/262		
101		262/262	262/262	262/262	262/262	262/262		

Analyst: RV QA: KC

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Bivalve Larval Survival and Development Test FC vs 100% Filtered TJT

Wood E&IS

Analysis ID: 09-4471-8807 Endpoint: Combined Proportion Normal CETIS Version: CETISv1.9.3

Analyzed: 03 May-22 16:05 Analysis: Parametric Bioequivalence-Two Sample Official Results: Yes

Comments:

FC = Filtered Control (1.2 um), 101 = 100% filtered (1.2um)

Data Transform	Alt Hyp	TST_b	Comparison Result	
Angular (Corrected)	C*b < T	0.75	101% passed combined proportion normal	
TST-Welch's t Test				

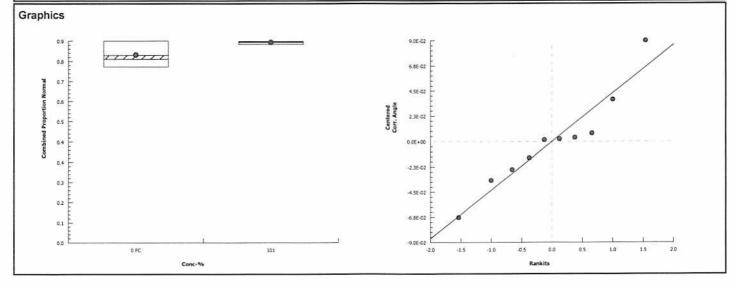
Control vs	Control II	Test Stat	Critical	DF	P-Type	P-Value	Decision(a:5%)	
Filter Control	101*	17.12	2.132	4	CDF	3.4E-05	Non-Significant Effect	
ANOVA Table								

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.016416	0.016416	1	8.039	0.0220	Significant Effect
Error	0.0163365	0.0020421	8			
Total	0.0327525		9			

Distributional 7	Distributional Tests										
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)						
Variances	Variance Ratio F Test	56.67	23.15	0.0018	Unequal Variances						
Distribution	Shapiro-Wilk W Normality Test	0.9393	0.7411	0.5453	Normal Distribution						

Combined Pro	portion Norm	al Summar	y								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	0.8336	0.7769	0.8903	0.8168	0.7824	0.8969	0.0204	5.48%	0.00%
101		5	0.8911	0.8845	0.8977	0.8926	0.8819	0.8956	0.0024	0.60%	-6.90%

Angular (Corre	ected) Transfo	rmed Sumr	nary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	1.154	1.075	1.232	1.128	1.086	1.244	0.02833	5.49%	0.00%
101		5	1.235	1.224	1.245	1.237	1.22	1.242	0.003764	0.68%	-7.02%



Analyst: DV QA: SC

CETIS™ v1.9.3.0

Report Date:

03 May-22 16:06 (p 2 of 8) 22-03-060 | 01-2958-4604

Wood E&IS

Test Code:

Bivalve Larval Survival and Development Test LC US 100% TST

Analysis ID: 02-5444-8755 Endpoint: Combined Proportion Normal 03 May-22 16:05 Analysis:

Parametric Bioequivalence-Two Sample

CETIS Version: CETISv1.9.3 Official Results: Yes

Analyzed: Comments:

FC = Filtered Control (1.2 um), 101 = 100% filtered (1.2um)

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	100% passed combined proportion normal

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF P-Type	P-Value	Decision(a:5%)	
Lab Control		100*	7.85	2.015	5 CDF	2.7E-04	Non-Significant Effect	

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.0025440	0.0025440	1	0.4597	0.5169	Non-Significant Effect	
Error	0.044271	0.0055339	8				
Total	0.046815		9				

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Variance Ratio F Test	3.085	23.15	0.3009	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.8981	0.7411	0.2088	Normal Distribution

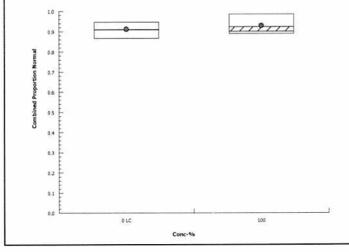
Combined Proportion Normal Summary

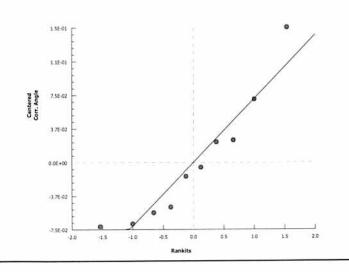
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.9095	0.8727	0.9463	0.9081	0.8664	0.9470	0.0133	3.26%	0.00%
100		5	0.9227	0.8725	0.9728	0.9008	0.8893	0.9855	0.0181	4.38%	-1.45%

Angular (Corrected) Transformed Summary

•	95										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.268	1.204	1.333	1.263	1.197	1.338	0.02328	4.10%	0.00%
100		5	1.3	1.187	1.414	1.25	1.232	1.45	0.04089	7.03%	-2.52%







Analyst: QA:

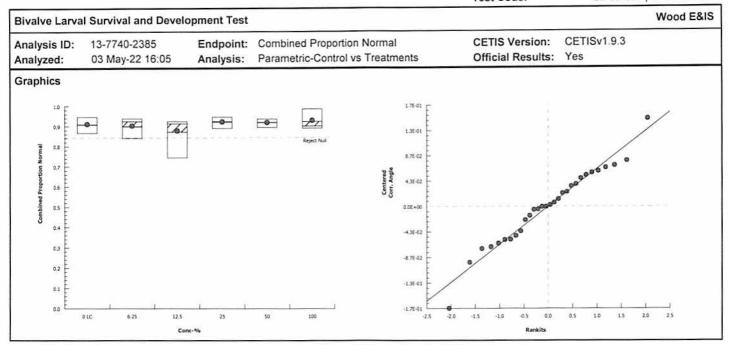
CETIS™ v1.9.3.0

Report Date: Test Code: 03 May-22 16:06 (p 3 of 8) 22-03-060 | 01-2958-4604

Divelve Len	al Cumi	ual and Day		1 Tool					1001				Wood E&IS
Bivalve Larv Analysis ID:		40-2385			mbined Prop	ortion N	lorm	al	CET	IS Version	: CETISv1.		WOOD EXIS
Analyzed:	03 M	ay-22 16:05		9	rametric-Cor				Offic	ial Results	s: Yes		
Comments:													
FC = Filtered	Control	(1.2 um), 10	1 = 100%	filtered (1	.2um)								
Data Transfo	rm	,	Alt Hyp						NOEL	LOEL	TOEL	TU	PMSD
Angular (Corr	rected)	(C > T						100	> 100	n/a	1	7.31%
Dunnett Mul	tiple Co	mparison T	est										
Control	vs	Conc-%		Test Sta	Critical	MSD	DF	P-Type	P-Value	Decision	ı(α:5%)		
Lab Control		6.25		0.3266	2.362	0.105	8	CDF	0.7194	Non-Sign	ificant Effect		
		12.5		1.222	2.362	0.105	8	CDF	0.3256	Non-Sign	ificant Effect		
		25		-0.4517	2.362	0.105	8	CDF	0.9331	Non-Sign	ificant Effect		
		50		-0.2881	2.362	0.105	8	CDF	0.9045	Non-Sign	ificant Effect		
		100		-0.7183	2.362	0.105	8	CDF	0.9647	Non-Sign	ificant Effect		
ANOVA Tabl	е												
Source		Sum Square	es	Mean So	uare	DF		F Stat	P-Value	Decision	(a:5%)		
Between		0.0236756		0.004735	1	5		0.9603	0.4614	Non-Sign	ificant Effect		
Error	(0.118345		0.004931	0	24							
Total	-	0.14202				29		-					
Distributiona	al Tests												
Attribute		Test				Test S	tat	Critical	P-Value	Decision	ı(a:1%)		
Variances		Bartlett Equa	ality of Var	iance Test		8.315		15.09	0.1397	Equal Va	riances		
Distribution	;	Shapiro-Wilk	W Norma	ality Test		0.9755	5	0.9031	0.6984	Normal D	Distribution		
Combined P	roportio	n Normal S	ummary										
Conc-%		Code (Count	Mean	95% LCL	95% U	ICL	Median	Min	Max	Std Err	CV%	%Effect
0		LC 5	5	0.9095	0.8727	0.9463	3	0.9081	0.8664	0.9470	0.0133	3.26%	0.00%
6.25		5	5	0.8994	0.8434	0.9554	1	0.9241	0.8397	0.9384	0.0202	5.01%	1.11%
12.5		5	5	0.8718	0.7784	0.9653	3	0.9132	0.7443	0.9244	0.0337	8.64%	4.14%
25			5	0.9214	0.8960	0.9467	7	0.9237	0.8893	0.9461	0.0091	2.21%	-1.31%
50			5	0.9179	0.8985	0.9372	2	0.9182	0.8939	0.9363	0.0070	1.70%	-0.92%
100			5	0.9227	0.8725	0.9728	3	0.9008	0.8893	0.9855	0.0181	4.38%	-1.45%
Angular (Co	rrected)	Transforme	ed Summa	ary									
Conc-%		Code (Count	Mean	95% LCL	95% U	ICL	Median	Min	Max	Std Err	CV%	%Effect
COMC-70				4 000	1.204	1.333		1.263	1.197	1.338	0.02328	4.10%	0.00%
0		LC 5	5	1.268	1.204								3 (10 (1) A (1) (2) (2) (3)
SENSE LANCE SWA				1.254	1.162	1.345		1.292	1.159	1.32	0.03289	5.87%	1.14%
0 6.25		5	5					1.292 1.272	1.159 1.041	1.32 1.292	0.03289 0.04675	5.87% 8.61%	1.14% 4.28%
0	ļ		5	1.254	1.162	1.345							
0 6.25 12.5	I	5	5	1.254 1.214	1.162 1.084	1.345 1.344		1.272	1.041	1.292	0.04675	8.61%	4.28%

Analyst: PV QA: (C

03 May-22 16:06 (p 4 of 8) 22-03-060 | 01-2958-4604



Report Date: Test Code: 03 May-22 16:06 (p 5 of 8) 22-03-060 | 01-2958-4604

Wood E&IS

Bivalve Larval Survival and Development Test

Analysis ID: 15-8398-1867 Endpoint: Proportion Normal CETIS Version:

Analysis ID: 15-8398-1867 Endpoint: Proportion Normal CETIS Version: CETISv1.9.3

Analyzed: 03 May-22 16:05 Analysis: Parametric-Control vs Treatments Official Results: Yes

Comments:

FC = Filtered Control (1.2 um), 101 = 100% filtered (1.2um)

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	100	> 100	n/a	1	3.37%

Dunnett Mul	Dunnett Multiple Comparison Test											
Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(a:5%)			
Lab Control		6.25	-0.3054	2.362	0.057	8	CDF	0.9079	Non-Significant Effect			
		12.5	1.326	2.362	0.057	8	CDF	0.2850	Non-Significant Effect			
		25	-0.3442	2.362	0.057	8	CDF	0.9152	Non-Significant Effect			
		50	0.4214	2.362	0.057	8	CDF	0.6806	Non-Significant Effect			
		100	-2.272	2.362	0.057	8	CDF	0.9997	Non-Significant Effect			

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.0204227	0.0040845	5	2.832	0.0379	Significant Effect	
Error	0.0346093	0.0014421	24				
Total	0.055032		29				

Distributional T	ests		Distributional Tests										
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)								
Variances	Bartlett Equality of Variance Test	7.328	15.09	0.1974	Equal Variances								
Distribution	Shapiro-Wilk W Normality Test	0.9388	0.9031	0.0844	Normal Distribution								

Proportion No	Proportion Normal Summary													
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect			
0	LC	5	0.9222	0.8905	0.9538	0.9081	0.9008	0.9528	0.0114	2.77%	0.00%			
6.25		5	0.9275	0.9173	0.9377	0.9262	0.9167	0.9384	0.0037	0.89%	-0.58%			
12.5		5	0.9054	0.8815	0.9294	0.9132	0.8744	0.9244	0.0086	2.13%	1.81%			
25		5	0.9277	0.9109	0.9444	0.9258	0.9102	0.9461	0.0060	1.45%	-0.60%			
50		5	0.9179	0.8985	0.9372	0.9182	0.8939	0.9363	0.0070	1.70%	0.47%			
100		5	0.9477	0.9213	0.9741	0.9402	0.9357	0.9855	0.0095	2.24%	-2.77%			

Angular (Corr	Angular (Corrected) Transformed Summary												
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect		
0	LC	5	1.291	1.23	1.353	1.263	1.25	1.352	0.02219	3.84%	0.00%		
6.25		5	1.299	1.279	1.318	1.296	1.278	1.32	0.00712	1.23%	-0.57%		
12.5		5	1.259	1.219	1.299	1.272	1.209	1.292	0.01438	2.55%	2.47%		
25		5	1.299	1.267	1.332	1.295	1.266	1.337	0.01178	2.03%	-0.64%		
50		5	1.281	1.246	1.316	1.281	1.239	1.316	0.01253	2.19%	0.78%		
100		5	1.346	1.273	1.418	1.324	1.315	1.45	0.02617	4.35%	-4.23%		

Report Date: Test Code: 03 May-22 16:06 (p 7 of 8) 22-03-060 | 01-2958-4604

Bivalve Larval	Survival and	Developme	ent Test							(Wood E&IS
Analysis ID: Analyzed:	06-0879-0720 03 May-22 16			Survival Rate Parametric-Cor	ntrol vs Trea	tments		S Version		.9.3	
Comments: FC = Filtered C	ontrol (1.2 um), 101 = 100	% filtered	(1.2um)							
Data Transform	n	Alt Hyp	Y				NOEL	LOEL	TOEL	TU	PMSD
Angular (Correc	cted)	C > T					100	> 100	n/a	1	4.77%
Dunnett Multip	ole Compariso	on Test									
Control v	s Conc-%	6	Test S	tat Critical	MSD DF	P-Type	P-Value	Decision			
Lab Control	6.25		0.5658	2.362	0.156 8	CDF	0.6179		nificant Effect		
	12.5		0.6968		0.156 8	CDF	0.5585		nificant Effect		
	25		-0.342		0.156 8	CDF	0.9149		nificant Effect		
	50		-0.9398		0.156 8	CDF	0.9803		nificant Effect		
	100		0.7089	2.362	0.156 8	CDF	0.5529	Non-Sigr	nificant Effect	Š	
ANOVA Table											
Source	Sum Sq	uares	Mean	Square	DF	F Stat	P-Value	Decision			
Between	0.04866	73	0.0097	335	5	0.8918	0.5021	Non-Sign	nificant Effect	ës Pë	
Error	0.26193	5	0.0109	14	24	_					
Total	0.31060	3			29						
Distributional	Tests										
Attribute	Test				Test Stat	Critical	P-Value	Decision	η(α:1%)		
Variances		Equality of \			9.339	3.895	4.8E-05		Variances		
Variances		ene Equalit			0.8329	4.248	0.5431	Equal Va			
Distribution	Shapiro-	Wilk W Nor	mality Tes	t	0.9164	0.9031	0.0216	Normal E	Distribution		
Survival Rate	Summary										
Conc-%	Code	Count	Mean	95% LCL		() (() () () () () () () () (Min	Max	Std Err	CV%	%Effect
0	LC	5	0.9863		1.0000	1.0000	0.9618	1.0000	0.0085	1.93%	0.00%
6.25		5	0.9695		1.0000	1.0000	0.9160	1.0000	0.0189	4.35%	1.70%
12.5		5	0.9618		1.0000	1.0000	0.8511	1.0000	0.0288	6.71%	2.48%
25		5	0.9931		1.0000	1.0000	0.9771	1.0000	0.0046	1.03%	-0.70%
50 100		5 5	1.0000 0.9733		1.0000 1.0000	1.0000 0.9580	1.0000 0.9504	1.0000	0.0000 0.0110	0.00% 2.53%	-1.39% 1.32%
	on an experience of the second	2.55	(15,051),1555	0.9428	1.0000	0.9560	0.9504	1.0000	0.0110	2.55%	1.3270
Angular (Corre				7 <u>8 9 3 2</u> 12 13 17 6 17 4 3 4 1	geringer conserva-	(Edinal)	14/22/2	22000		****	AVI
Conc-%	Code	Count	Mean		95% UCL		Min	Max	Std Err	CV%	%Effect
0	LC	5	1.478	1.372	1.584	1.54	1.374	1.54	0.03817	5.78%	0.00%
6.25		5	1.44	1.271	1.61	1.54	1.277	1.54	0.06109	9.48%	2.53%
12.5		5	1.432	1.23	1.634	1.54	1.175	1.54	0.0727	11.35%	3.12%
25		5	1.5	1.431	1.57	1.54	1.419	1.54	0.02518	3.75%	-1.53%
50		5	1.54	1.54	1.54	1.54	1.54	1.54	0	0.00%	-4.20%
100		5	1.431	1.307	1.555	1.364	1.346	1.54	0.0446	6.97%	3.17%

Analyst: QA: LC

Report Date:

19 Mar-22 15:17 (p 1 of 2)

Test Code/ID:

01-2958-4604/22-03-060

Bivalve Larval Survival and Development Test

Wood E&IS

Start Date: End Date:

22 Mar-22 1618 24 Mar-22 1618

Species: Mytilis galloprovincialis
Protocol: EPA/600/R-95/136 (1995)

Sample Code: 7425A67F 22-WCS Sample Source: Shelter Island Yacht Basin

Sample Date: Mar-22 1300

Material: Seawater

Sample Station: SIYB 4

Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal			Notes		
			121			288	254	BI	4/8/2	2		
			122		1	76267			1			
			123				266					
			124			270	241					
			125				247					
			126				242					
			127				220					
			128			249	233					
			129			264	236					
			130			297						
			131			300	281 268	4				
			132			283	257	41	13/22			
			133			305	279	1/	10/-			W 1-7-F
			134			25 l	226					
			135			273	250		1			
			136			251	236					
			137			233	214			0.4%	Icun	ad Lin
			138			259	242			0.7	1 COTY	ecr rilve
			139			•			\			
			140			244 278	226 248		1			
			141	,		291				127	1.curved	1 10.
			142				269		1	0,5 %	(.Corvea	nung
			143			249	226					
			144			269	247		1			
			145			276	259					
			146			283	262					
			147			276	249					
			148			264	250					
			149			270	254					
			150			251	235					
			151			265	242					
			152			229	205					
			153			252	235		-			
			154			256	233		1,			
			104			280	261		/		hati Da	^

Report Date: Test Code/ID: 19 Mar-22 15:17 (p 2 of 2) 01-2958-4604/22-03-060

Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
			155			234	212	BI 4/13/22
			156			290	212	
			157			223	195	
			158			252	227	
			159			252 276	272	\
			160			795		7

295 272

Report Date:

19 Mar-22 15:16 (p 1 of 2) 01-2958-4604/22-03-060

Test Code/ID:

Wood E&IS

Bivalve Larval Survival and Development Test

Sample Code: A7425A07F 2Z-WCS Sample Source: Shelter Island Yacht Basin Species: Mytilis galloprovincialis 22 Mar-22 1615 Start Date: End Date: 24 Mar-22 16 5 Protocol: EPA/600/R-95/136 (1995)
Sample Date: 21 Mar-22 1300 Material: Seawater Sample Station: SIYB 4 Initial Final Notes Code Rep Pos Conc-% # Counted # Normal Density Density 0 FC 1 142 PT 11/2/22

	BI 4/9/22	2	249		142	1	FC	0
27	BI 4/8/22	B 2	3276	e .	137	2	FC	0
					151	3	FC	0
					152	4	FC	0
					155	5	FC	0
		2	276		146	1	LC	0
					126	2	LC	0
					147	3	LC	0
					158	4	LC	0
					132	5	LC	0
		2	244		139	1		6.25
					127	2		6.25
					144	3		6.25
					154	4		6.25
					156	5		6.25
26		2	305		133	1		12.5
			303		157	2		12.5
				,	141	3		12.5
					150	4		12.5
					134	5		12.5
23		2	295		160	1		25
-			2,5		130	2		25
					145	3		25
					138	4		25
					153	5		25
28		2	264		129	1		50
		۷.	207		122	2		50
					135	3		50
					125	4		50
					143	5		50
		2	270		148	1		100
			210		128	2		100
					159	3		100
					149	4		100

Report Date: Test Code/ID: 19 Mar-22 15:16 (p 2 of 2)

01-2	958-	4604	122	-03	-060

Notes		# Normal	# Counted	Final Density	Initial Density	Pos	Rep	Code	Conc-%
	1					136	5		100
	BI 4/8/22	241	270			124	1		101
						123	2		101
						121	3		101
						131	4		101
						140	5		101

QC: KB

Water Quality for Bivalve Development

Client: Wood - Port of San Diego

Sample ID: SIYB-4
Test No. 22-03-060

Test Species: M. galloprovincialis

Start Date/Time: 3/22/2022 /(

End Date/Time: 3/24/2022 145

Test Conc.		Water Quality I	Measurements	
(%)	Parameter	0hr	24hr	48hr
	Temp. (°C)	14.1	15.7	15.7
Jah Garden	Salinity (ppt)	32.4	33.2	33.4
Lab Control	pH (units)	7.97	7.79	7.84
	DO (mg/L)	7.8	8.5	8.4
	Temp. (°C)	14.7	15.9	15.7
Filter Control	Salinity (ppt)	32.7	33.4	33.6
-liter Control	pH (units)	7.97	7.77	7.83
	DO (mg/L)	8.0	8.6	8.5
	Temp. (°C)	14.5	15.6	15.7
6.25	Salinity (ppt)	33.0	33.5	33.6
0.23	pH (units)	7.99	7.82	7.83
	DO (mg/L)	8.0	8.5	8.6
	Temp. (°C)	14.6	15.4	15.6
12.5	Salinity (ppt)	33.0	33.7	33.7
12.5	pH (units)	7-99	7.83	7.84
	DO (mg/L)	8.1	8.8	8:7
	Temp. (°C)	14.8	13.5	15.6
25	Salinity (ppt)	32.7	33.7	33.7
	pH (units)	7.98	7.83	7.84
	DO (mg/L)	8.1	8.7	8.7
	Temp. (°C)	14.7	15.4	15.5
50	Salinity (ppt)	32.8	33.6	33.7
	pH (units)	7.97	7.83	7.83
	DO (mg/L)	8.2	8.8	8.7
	Temp. (°C)	14.9	15.5	18.4
100	Salinity (ppt)	32.7	33.7	33.8
	pH (units)	7.95	7.82	7.82
	DO (mg/L)	8.3	8.8	8.7
	Temp. (°C)	14.7	15.6	15.5
100 Filtered	Salinity (ppt)	32.5	33.3	33.5
(1.2µm)	pH (units)	93. چې	7.82	7.85

Source of Animals: AG Mission Bay Date Received: 3(23/22)

Comments:

DO (mg/L)

Tech Initials:

QA: No 4124122

Final: Ic strops

Site: SIYB-5

CETIS Summary Report

Report Date:

03 May-22 16:30 (p 1 of 4)

Test Code:	22-03-061	16-1391-828
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Bivalve Larval Survival and Develo	opment Test			Wood E&IS
Batch ID: 09-2480-7121 Start Date: 27 Mar-22 16:15 Ending Date: 24 Mar-22 16:15 Duration: 25 48h	Test Type: Protocol: Species: Source:	Development-Survival EPA/600/R-95/136 (1995) Mytilis galloprovincialis Field Collected	Analyst: Diluent: Brine: Age:	Natural Seawater Not Applicable
Sample ID: 10-0155-2905 Sample Date: 22 Mar-22 11:50 Receipt Date: 22 Mar-22 17:40 Sample Age: 4K (3.9 °C) 28 M	Code: Material: Source: Station:	22-W069 Seawater Shelter Island Yacht Basin SIYB 5	Client: Project:	Wood Environment and Infrastructure SIYB TMDL Monitoring

Comments:

FC = Filtered Control (1.2um), 101 = 100% Filtered (1.2 um)

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
07-7388-9532	Combined Proportion Norma	TST-Welch's t Test	2.0E-05	100% passed combined proportion normal
05-4352-7153	Combined Proportion Norma	TST-Welch's t Test	2.0E-06	101% passed combined proportion normal

Multiple Com	parison Summary						
Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD √
06-5299-0345	Combined Proportion Norma	Dunnett Multiple Comparison Test	100	> 100	n/a	1	4.68%
02-9605-8370	Proportion Normal	Dunnett Multiple Comparison Test	100	> 100	n/a	1	3.33%
07-1175-1156	Survival Rate	Steel Many-One Rank Sum Test	100	> 100	n/a	1	3.03%

Test Acceptal	bility						
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
02-9605-8370	Proportion Normal	Control Resp	0.9231	0.9	>>	Yes	Passes Criteria
07-1175-1156	Survival Rate	Control Resp	0.9924	0.5	>>	Yes	Passes Criteria

Analyst: R QA: Sc 5/20/22

CETIS™ v1.9.3.0

03 May-22 16:30 (p 2 of 4) 22-03-061 | 16-1391-8287

	Test Code: 22-03-06						-03-001	16-1391-828			
Bivalve Larva	Survival and	Developme	nt Test								Wood E&I
Combined Pro	portion Norm	nal Summar	у								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effec
0	LC	5	0.9161	0.8849	0.9474	0.8855	0.9544	0.0113	0.0252	2.75%	0.00%
0	FC	5	0.8802	0.8346	0.9257	0.8206	0.9122	0.0164	0.0367	4.17%	3.93%
6.25		5	0.9165	0.8881	0.9449	0.8783	0.9359	0.0102	0.0229	2.50%	-0.04%
12.5		5	0.8940	0.8357	0.9522	0.8130	0.9340	0.0210	0.0469	5.25%	2.42%
25		5	0.8972	0.8750	0.9194	0.8740	0.9118	0.0080	0.0179	1.99%	2.07%
50		5	0.9065	0.8807	0.9324	0.8924	0.9402	0.0093	0.0208	2.30%	1.05%
100		5	0.9142	0.8752	0.9533	0.8702	0.9504	0.0141	0.0315	3.44%	0.21%
101		5	0.9028	0.8841	0.9214	0.8811	0.9189	0.0067	0.0151	1.67%	1.46%
Proportion No	rmal Summar	у									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effec
0	LC	5	0.9231	0.9000	0.9463	0.9052	0.9544	0.0083	0.0186	2.02%	0.00%
0	FC	5	0.9387	0.9182	0.9592	0.9110	0.9516	0.0074	0.0165	1.76%	-1.69%
6.25		5	0.9165	0.8881	0.9449	0.8783	0.9359	0.0102	0.0229	2.50%	0.72%
12.5		5	0.9185	0.9028	0.9342	0.9007	0.9340	0.0056	0.0126	1.37%	0.50%
25		5	0.9105	0.8927	0.9284	0.8911	0.9315	0.0064	0.0144	1.58%	1.37%
50		5	0.9151	0.8870	0.9432	0.8924	0.9402	0.0101	0.0227	2.48%	0.87%
100		5	0.9248	0.8925	0.9571	0.8837	0.9540	0.0116	0.0260	2.81%	-0.18%
101		5	0.9070	0.8872	0.9267	0.8811	0.9189	0.0071	0.0159	1.76%	1.75%
Survival Rate	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effec
0	LC	5	0.9924	0.9737	1.0000	0.9656	1.0000	0.0067	0.0150	1.51%	0.00%
0	FC	5	0.9374	0.9015	0.9733	0.9008	0.9733	0.0129	0.0289	3.08%	5.54%
6.25		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	-0.77%
12.5		5	0.9733	0.9115	1.0000	0.8855	1.0000	0.0223	0.0498	5.11%	1.92%
25		5	0.9855	0.9566	1.0000	0.9466	1.0000	0.0104	0.0233	2.36%	0.69%
50		5	0.9908	0.9654	1.0000	0.9542	1.0000	0.0092	0.0205	2.07%	0.15%
100		5	0.9885	0.9684	1.0000	0.9618	1.0000	0.0072	0.0162	1.64%	0.38%
101		5	0.9954	0.9827	1.0000	0.9771	1.0000	0.0046	0.0102	1.03%	-0.31%

Analyst: QA: L

03 May-22 16:30 (p 3 of 4) 22-03-061 | 16-1391-8287

Bivalve Larva	Survival and	Developme	nt Test				Wood E&IS
Combined Pro	portion Norm	nal Detail					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	0.9198	0.9052	0.8855	0.9158	0.9544	
0	FC	0.8702	0.8206	0.8969	0.9122	0.9008	
6.25		0.9324	0.9178	0.9359	0.8783	0.9179	
12.5		0.9084	0.9007	0.9137	0.8130	0.9340	
25		0.9106	0.8817	0.9118	0.8740	0.9078	
50		0.8935	0.9135	0.8931	0.9402	0.8924	
100		0.8969	0.8702	0.9198	0.9504	0.9338	
101		0.8811	0.9022	0.9189	0.8969	0.9147	
Proportion No	rmal Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	0.9234	0.9052	0.9170	0.9158	0.9544	
0	FC	0.9500	0.9110	0.9438	0.9373	0.9516	
6.25		0.9324	0.9178	0.9359	0.8783	0.9179	
12.5		0.9261	0.9007	0.9137	0.9181	0.9340	
25		0.9106	0.9315	0.9118	0.8911	0.9078	
50		0.8935	0.9135	0.9360	0.9402	0.8924	
100		0.9325	0.8837	0.9198	0.9540	0.9338	
101		0.8811	0.9022	0.9189	0.9180	0.9147	
Survival Rate	Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	0.9962	1.0000	0.9656	1.0000	1.0000	
0	FC	0.9160	0.9008	0.9504	0.9733	0.9466	
6.25		1.0000	1.0000	1.0000	1.0000	1.0000	
12.5		0.9809	1.0000	1.0000	0.8855	1.0000	
25		1.0000	0.9466	1.0000	0.9809	1.0000	
50		1.0000	1.0000	0.9542	1.0000	1.0000	
100		0.9618	0.9847	1.0000	0.9962	1.0000	
101		1.0000	1.0000	1.0000	0.9771	1.0000	

Analyst: W QA: SC

03 May-22 16:30 (p 4 of 4) 22-03-061 | 16-1391-8287

Bivalve Larval	Survival and	Developme	nt Test				Wood E&I
Combined Pro	portion Norm	al Binomials	5				
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	241/262	277/306	232/262	250/273	251/263	
0	FC	228/262	215/262	235/262	239/262	236/262	
6.25		276/296	268/292	263/281	231/263	257/280	
12.5		238/262	245/272	254/278	213/262	269/288	
25		275/302	231/262	279/306	229/262	256/282	
50		260/291	264/289	234/262	283/301	257/288	
100		235/262	228/262	241/262	249/262	254/272	
101		252/286	249/276	272/296	235/262	268/293	
Proportion Nor	rmal Binomia	ls					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	241/261	277/306	232/253	250/273	251/263	
0	FC	228/240	215/236	235/249	239/255	236/248	
6.25		276/296	268/292	263/281	231/263	257/280	
12.5		238/257	245/272	254/278	213/232	269/288	
25		275/302	231/248	279/306	229/257	256/282	
50		260/291	264/289	234/250	283/301	257/288	
100		235/252	228/258	241/262	249/261	254/272	
101		252/286	249/276	272/296	235/256	268/293	
Survival Rate E	Binomials						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	261/262	262/262	253/262	262/262	262/262	
0	FC	240/262	236/262	249/262	255/262	248/262	
6.25		262/262	262/262	262/262	262/262	262/262	
12.5		257/262	262/262	262/262	232/262	262/262	
25		262/262	248/262	262/262	257/262	262/262	
50		262/262	262/262	250/262	262/262	262/262	
100		252/262	258/262	262/262	261/262	262/262	
101		262/262	262/262	262/262	256/262	262/262	

Analyst: NO OA: SC

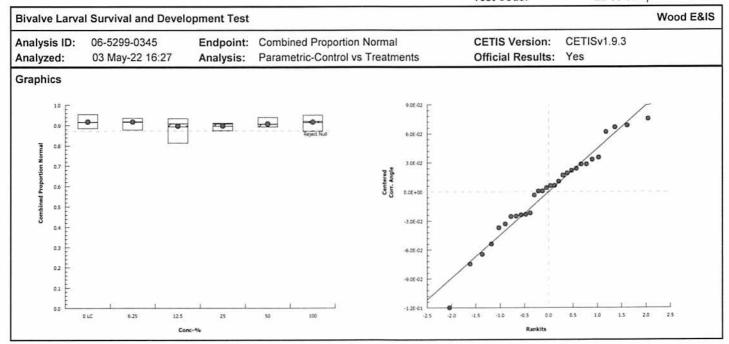
Report Date: Test Code: 03 May-22 16:29 (p 1 of 8) 22-03-061 | 16-1391-8287

Bivalve Larv	al Survi	ival and De	evelopmen	t Test								Wood E&IS
Analysis ID: Analyzed:		299-0345 lay-22 16:2			mbined Prop trametric-Con				IS Version: cial Results:	CETISv1 Yes	.9.3	
Comments: FC = Filtered	Control	(1.2um), 1	01 = 100%	Filtered (1.	.2 um)							
Data Transfo	orm		Alt Hyp					NOEL	LOEL	TOEL	TU	PMSD
Angular (Corr	rected)		C > T					100	> 100	n/a	1	4.68%
Dunnett Mul	tiple Co	mparison	Test									
Control	vs	Conc-%		Test Stat	Critical	MSD DF	P-Type	P-Value	Decision(a:5%)		
Lab Control		6.25		0.01078	2.362	0.073 8	CDF	0.8301	Non-Signif	icant Effect	(
		12.5		1.153	2.362	0.073 8	CDF	0.3539		icant Effect		
		25		1.117	2.362	0.073 8	CDF	0.3689		icant Effect		
		50		0.5847	2.362	0.073 8	CDF	0.6094		icant Effect		
		100		0.07917	2.362	0.073 8	CDF	0.8089	Non-Signif	icant Effect		
ANOVA Tabl	e											
Source		Sum Squa	ires	Mean Sq	uare	DF	F Stat	P-Value	Decision(
Between		0.0070807		0.001416	1	5	0.5918	0.7063	Non-Signif	icant Effect		
Error		0.0574263		0.002392	8	24						
Total		0.064507				29						
Distribution	al Tests											
Attribute		Test				Test Stat	Critical	P-Value	Decision(a:1%)		
Variances		Bartlett Eq	uality of Var	iance Test		3.612	15.09	0.6065	Equal Vari	ances		
Distribution		Shapiro-W	ilk W Norma	ality Test		0.9671	0.9031	0.4634	Normal Dis	stribution		
Combined P	roportio	on Normal	Summary									
Conc-%	7,7	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	0.9161	0.8849	0.9474	0.9158	0.8855	0.9544	0.0113	2.75%	0.00%
6.25			5	0.9165	0.8881	0.9449	0.9179	0.8783	0.9359	0.0102	2.50%	-0.04%
12.5			5	0.8940	0.8357	0.9522	0.9084	0.8130	0.9340	0.0210	5.25%	2.42%
25			5	0.8972	0.8750	0.9194	0.9078	0.8740	0.9118	0.0080	1.99%	2.07%
50			5	0.9065	0.8807	0.9324	0.8935	0.8924	0.9402	0.0093	2.30%	1.05%
100			5	0.9142	0.8752	0.9533	0.9198	0.8702	0.9504	0.0141	3.44%	0.21%
Angular (Co	rrected)	Transform	ned Summ	ary								
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	1.28	1.22	1.339	1.276	1.226	1.356	0.02143	3.74%	0.00%
6.25			5	1.279	1.23	1.329	1.28	1.214	1.315	0.01773	3.10%	0.03%
12.5			5	1.244	1.156	1.332	1.263	1.124	1.311	0.0318	5.72%	2.79%
25			5	1.245	1.209	1.281	1.262	1.208	1.269	0.01301	2.34%	2.70%
50			5	1.262	1.215	1.309	1.238	1.237	1.324	0.0169	3.00%	1.41%
100			5	1.277	1.208	1.347	1.284	1.202	1.346	0.02513	4.40%	0.19%
Combined P	roportio	on Normal	Binomials									
Conc-%		Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0		LC	241/262	277/306	232/262	250/273	251/263					
6.25			276/296	268/292	263/281	231/263	257/280					
			238/262	245/272	254/278	213/262	269/288					
12.5												
12.5 25			275/302	231/262	279/306	229/262	256/282					
19.10				231/262 264/289	279/306 234/262	229/262 283/301	256/282 257/288					

Analyst: QV QA: LL

CETIS™ v1.9.3.0

Report Date: Test Code: 03 May-22 16:29 (p 2 of 8) 22-03-061 | 16-1391-8287



Report Date:

TST

03 May-22 16:29 (p 3 of 8) 22-03-061 | 16-1391-8287

Test Code:

Wood E&IS

CETISv1.9.3

Analysis ID: 05-4352-7153 Endpoint: Combined Proportion Normal **CETIS Version:**

Analyzed: 03 May-22 16:28 Analysis: Parametric Bioequivalence-Two Sample Official Results: Yes

FC us 100% Filtered

Comments:

FC = Filtered Control (1.2um), 101 = 100% Filtered (1.2 um)

Bivalve Larval Survival and Development Test

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	101% passed combined proportion normal

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF P-Type	P-Value	Decision(a:5%)
Filter Control		101*	15.84	1.943	6 CDF	2.0E-06	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0029536	0.0029536	1	1.647	0.2353	Non-Significant Effect
Error	0.0143442	0.0017930	8			
Total	0.0172978		9	ii		

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)	
Variances	Variance Ratio F Test	4.639	23.15	0.1664	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.9195	0.7411	0.3530	Normal Distribution	

Combined Proportion Normal Summary

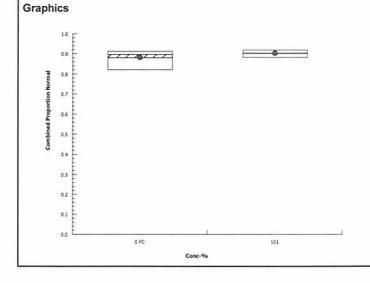
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	0.8802	0.8346	0.9257	0.8969	0.8206	0.9122	0.0164	4.17%	0.00%
101		5	0.9028	0.8841	0.9214	0.9022	0.8811	0.9189	0.0067	1.67%	-2.57%

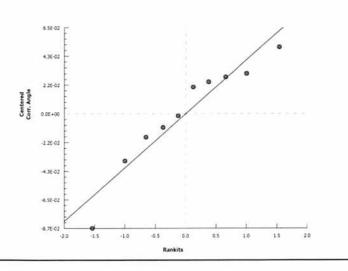
Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	1.22	1.153	1.287	1.244	1.133	1.27	0.02429	4.45%	0.00%
101		5	1.254	1.223	1.286	1.253	1.219	1.282	0.01128	2.01%	-2.82%

Combined Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	FC	228/262	215/262	235/262	239/262	236/262
101		252/286	249/276	272/296	235/262	268/293





Report Date: Test Code: 03 May-22 16:29 (p 4 of 8) 22-03-061 | 16-1391-8287

Bivalve Larval Survival and Development Test LC v5 100% T5T Wood E&IS

Analysis ID: 07-7388-9532 Endpoint: Combined Proportion Normal CETIS Version: CETISv1.9.3

Analyzed: 03 May-22 16:28 Analysis: Parametric Bioequivalence-Two Sample Official Results: Yes

Comments:

FC = Filtered Control (1.2um), 101 = 100% Filtered (1.2 um)

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	100% passed combined proportion normal

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF P-Type	P-Value	Decision(a:5%)	
Lab Control		100*	10.64	1.943	6 CDF	2.0E-05	Non-Significant Effect	

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	1.5E-05	1.5E-05	1	0.0055	0.9427	Non-Significant Effect
Error	0.0218146	0.0027268	8			
Total	0.0218296		9			

Distributional Tests

Security Security Market Security Secur						
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)	
Variances	Variance Ratio F Test	1.376	23.15	0.7648	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.9645	0.7411	0.8354	Normal Distribution	

Combined Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.9161	0.8849	0.9474	0.9158	0.8855	0.9544	0.0113	2.75%	0.00%
100		5	0.9142	0.8752	0.9533	0.9198	0.8702	0.9504	0.0141	3.44%	0.21%

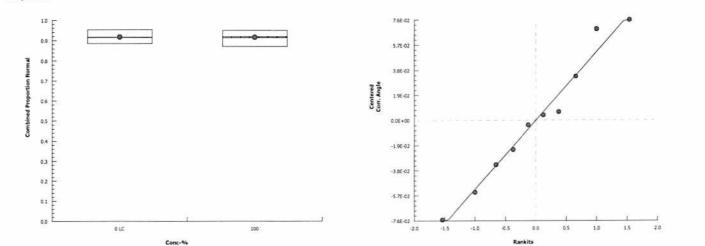
Angula	(Corrected) Transformed	Summary
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	35										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.28	1.22	1.339	1.276	1.226	1.356	0.02143	3.74%	0.00%
100		5	1.277	1.208	1.347	1.284	1.202	1.346	0.02513	4.40%	0.19%

Combined Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	241/262	277/306	232/262	250/273	251/263	
100		235/262	228/262	241/262	249/262	254/272	

Graphics



3.0 Analyst: QA: LC

Report Date: Test Code: 03 May-22 16:29 (p 5 of 8) 22-03-061 | 16-1391-8287

Bivalve Larval Survival and Development Test

Wood E&IS

Analysis ID: 02-9605-8370 Endpoint: Proportion Normal CETIS Version: CETISv1.9.3

Analyzed: 03 May-22 16:27 Analysis: Parametric-Control vs Treatments Official Results: Yes

Comments:

FC = Filtered Control (1.2um), 101 = 100% Filtered (1.2 um)

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	100	> 100	n/a	1	3.33%

Dunnett Multiple	Dunnett Multiple Comparison Test										
Control vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(a:5%)			
Lab Control	6.25	0.5238	2.362	0.055	8	CDF	0.6365	Non-Significant Effect			
	12.5	0.4169	2.362	0.055	8	CDF	0.6825	Non-Significant Effect			
	25	1.024	2.362	0.055	8	CDF	0.4091	Non-Significant Effect			
	50	0.6223	2.362	0.055	8	CDF	0.5925	Non-Significant Effect			
	100	-0.1831	2.362	0.055	8	CDF	0.8818	Non-Significant Effect			

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0026047	0.0005209	5	0.3819	0.8562	Non-Significant Effect
Error	0.0327342	0.0013639	24			
Total	0.0353389		29			

Distributional 1	Tests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Bartlett Equality of Variance Test	2.772	15.09	0.7351	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.978	0.9031	0.7714	Normal Distribution

Proportion No	ormal Summar	У									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.9231	0.9000	0.9463	0.9170	0.9052	0.9544	0.0083	2.02%	0.00%
6.25		5	0.9165	0.8881	0.9449	0.9179	0.8783	0.9359	0.0102	2.50%	0.72%
12.5		5	0.9185	0.9028	0.9342	0.9181	0.9007	0.9340	0.0056	1.37%	0.50%
25		5	0.9105	0.8927	0.9284	0.9106	0.8911	0.9315	0.0064	1.58%	1.37%
50		5	0.9151	0.8870	0.9432	0.9135	0.8924	0.9402	0.0101	2.48%	0.87%
100		5	0.9248	0.8925	0.9571	0.9325	0.8837	0.9540	0.0116	2.81%	-0.18%

Angular (Corr	rected) Transfo	ormed Sumr	mary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.292	1.245	1.338	1.279	1.258	1.356	0.01678	2.90%	0.00%
6.25		5	1.279	1.23	1.329	1.28	1.214	1.315	0.01773	3.10%	0.95%
12.5		5	1.282	1.253	1.311	1.281	1.25	1.311	0.0103	1.80%	0.75%
25		5	1.268	1.236	1.299	1.267	1.234	1.306	0.0114	2.01%	1.85%
50		5	1.277	1.226	1.328	1.272	1.237	1.324	0.01842	3.23%	1.13%
100		5	1.296	1.236	1.356	1.308	1.223	1.355	0.02158	3.72%	-0.33%

Proportion No	ormal Binomia	ls					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	241/261	277/306	232/253	250/273	251/263	
6.25		276/296	268/292	263/281	231/263	257/280	
12.5		238/257	245/272	254/278	213/232	269/288	
25		275/302	231/248	279/306	229/257	256/282	
50		260/291	264/289	234/250	283/301	257/288	
100		235/252	228/258	241/262	249/261	254/272	

CETIS™ v1.9.3.0 Analyst: QA:

002-883-387-8

Report Date: Test Code: 03 May-22 16:29 (p 7 of 8) 22-03-061 | 16-1391-8287

Bivalve Larval Survival and Development Test

Wood E&IS

Analysis ID: 07-1175-1156 Endpoint: Survival Rate CETIS Version: CETISv1.9.3

Analyzed: 03 May-22 16:27 Analysis: Nonparametric-Control vs Treatments Official Results: Yes

Comments:

FC = Filtered Control (1.2um), 101 = 100% Filtered (1.2 um)

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	100	> 100	n/a	1	3.03%

Steel Many-C	One R	ank Sum Test							
Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(a:5%)
Lab Control		6.25	32.5	16	1	8	Asymp	0.9870	Non-Significant Effect
		12.5	26.5	16	1	8	Asymp	0.7637	Non-Significant Effect
		25	26.5	16	1	8	Asymp	0.7637	Non-Significant Effect
		50	29	16	1	8	Asymp	0.9104	Non-Significant Effect
		100	24.5	16	2	8	Asymp	0.5880	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0207288	0.0041458	5	0.5722	0.7206	Non-Significant Effect
Error	0.173893	0.0072456	24			
Total	0.194622		29			

Distributional 1	Tests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Levene Equality of Variance Test	2.697	3.895	0.0452	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.6321	4.248	0.6778	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.8436	0.9031	4.6E-04	Non-Normal Distribution

Survival Rate	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.9924	0.9737	1.0000	1.0000	0.9656	1.0000	0.0067	1.51%	0.00%
6.25		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-0.77%
12.5		5	0.9733	0.9115	1.0000	1.0000	0.8855	1.0000	0.0223	5.11%	1.92%
25		5	0.9855	0.9566	1.0000	1.0000	0.9466	1.0000	0.0104	2.36%	0.69%
50		5	0.9908	0.9654	1.0000	1.0000	0.9542	1.0000	0.0092	2.07%	0.15%
100		5	0.9885	0.9684	1.0000	0.9962	0.9618	1.0000	0.0072	1.64%	0.38%

Angular (Corr	ected) Transfo	ormed Sumr	mary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.503	1.419	1.586	1.54	1.384	1.54	0.03016	4.49%	0.00%
6.25		5	1.54	1.54	1.54	1.54	1.54	1.54	0	0.00%	-2.48%
12.5		5	1.456	1.286	1.625	1.54	1.226	1.54	0.06114	9.39%	3.14%
25		5	1.478	1.365	1.591	1.54	1.338	1.54	0.04082	6.18%	1.65%
50		5	1.503	1.4	1.606	1.54	1.355	1.54	0.03696	5.50%	-0.02%
100		5	1.482	1.394	1.57	1.509	1.374	1.54	0.03185	4.81%	1.37%

Survival Rate	Binomials					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	LC	261/262	262/262	253/262	262/262	262/262
6.25		262/262	262/262	262/262	262/262	262/262
12.5		257/262	262/262	262/262	232/262	262/262
25		262/262	248/262	262/262	257/262	262/262
50		262/262	262/262	250/262	262/262	262/262
100		252/262	258/262	262/262	261/262	262/262

Analyst: N QA: RC

Report Date:

19 Mar-22 15:19 (p 1 of 2) 16-1391-8287/22-03-061

Test Code/ID:

Bivalve Larval Survival and Development Test

Wood E&IS

Start Date: End Date:

22 Mar-22 1615

Species: Mytilis galloprovincialis

Sample Date Mar-22 1150 Material: Seawater

24 Mar-22 1615

Protocol: EPA/600/R-95/136 (1995)

Sample Code: 23BB27C09 22-W069
Sample Source: Shelter Island Yacht Basin

Sample Station: SIYB 5

Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
			161	34,000		296	276	BF 4/14/22
			162				234	
			163			288	257	
			164			282		
			165			280	757	
			166			286	752	
			167			278		
			168			296		
			169			302	275	
			170				269	
			171				231	
			172			100	229	
			173					
			174				277	
			175				235	
			176			257	264	
			177			289		
			178			236	215	
			179			281	263	
							249	
			180				235	
			181			232	213	
			182			30 6	279	
			183				249	
			184			248		
			185			272		
			186			292	268	
			187			262	241	
			188			258		
			189			263		
			190			272		
			191			255	239	17 7s
			192				235	b
			193				236	4/15/22
			194			293	268	H

Report Date: 19 Mar-22 15:19 (p 2 of 2) Test Code/ID: 16-1391-8287/22-03-061

Conc-%	Code	Rep	Pos	Initial Density	Final Density		# Normal	
			195			253	232	BX4/15/22
			196			301	283	
			197			291	260	
			198			240	228	
			199			261	241	
			200			273	250	*

Report Date: Test Code/ID: 19 Mar-22 15:19 (p 1 of 2) 16-1391-8287/22-03-061

Bivalve Larval Survival and Development Test

Wood E&IS

Start Date: End Date:

22 Mar-22 1615 Species: Mytilis galloprovincialis 24 Mar-22 1615 Protocol: EPA/600/R-95/136 (1995)

Sample Code: 3BB27C09 72-WC69 Sample Source: Shelter Island Yacht Basin

nle Station: SIVR 5

Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal			Notes
0	FC	1	198			240	228	BI	4/13/22	
0	FC	2	177		9	561 8	241		4/13/22	
0	FC	3	174			~01				
0	FC	4	191							
0	FC	5	193							
0	LC	1	199			261	241			
0	LC	2	173			201	241			
0	LC	3	195							
0	LC	4	200							
0	LC	5	189							
	LO					ueso				
6.25		1	161			296	276			
6.25		2	186							
6.25		3	178							
6.25		4	171							
6.25		5	165							
12.5		1	175			257	238			
12.5		2	190							
12.5		3	167							
12.5		4	181							
12.5		5	170							
25		1	169			302	275			
25		2	184			302	213			
25		3	182							
25		4	172							
25		5	164							
50		1	197				26-			
		2	176			291	260			
50										
50		3	162							
50		4	196							
50		5	163							
100		1	192			252	235	1		
100		2	188							
100		3	187							
100		4	179							

Report Date: 19 Mar-22 15:19 (p 2 of 2)
Test Code/ID: 16-1391-8397702

Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
100		5	185					
101		1	166			286	252	13= 4/14/22
101		2	183					
101		3	168					
101		4	180					
101		5	194					

QC.KB

Water Quality for Bivalve Development

Client: Wood - Port of San Diego

Sample ID: SIYB-5

Test No. 22-03-061

Test Species: M. galloprovincialis

Start Date/Time: 3/22/2022 1615

End Date/Time: 3/24/2022 1615

Test Conc.	Water Quality Measurements								
(%)	Parameter	0hr	24hr	48hr					
	Temp. (°C)	14.6	15.8	15.7					
	Salinity (ppt)	32.9	33.4	33-6					
Lab Control	pH (units)	7.94	7.78	7.85					
	DO (mg/L)	7.9	8.4	8.3					
	Temp. (°C)	14.6	15,8	15.6					
"Itaa Caataa I	Salinity (ppt)	32.8	33.3	33.6					
ilter Control	pH (units)	7.96	7.77	7.85					
	DO (mg/L)	7.7	8.6	8.4					
	Temp. (°C)	14.6	15.4	15.4					
	Salinity (ppt)	32.8	33.5	33.7					
6.25	pH (units)	7.97	7.80	7.83					
	DO (mg/L)	8.0	8.7	8.5					
	Temp. (°C)	14·Z	15.3	15.4					
135	Salinity (ppt)	33.0	33.7	33,7					
12.5	pH (units)	7.99	7.81	7.83					
	DO (mg/L)	8.0	8.8	8.6					
	Temp. (°C)	14.3	15.3	15.4					
25	Salinity (ppt)	32.8	33.7	33.8					
25	pH (units)	7.98	7.82	7.83					
	DO (mg/L)	8.1	8.6	8.5					
	Temp. (°C)	14.3	15.4	15.5					
50	Salinity (ppt)	33.0	33.7	33.8					
30	pH (units)	7.98	7.83	7.83					
	DO (mg/L)	8.1	3.8	8.7					
	Temp. (°C)	14.5	15.5	15.5					
100	Salinity (ppt)	33.0	33.7	33-8					
100	pH (units)	7.96	7. 82	7.82					
	DO (mg/L)	8.2	8.8	8.7					
	Temp. (°C)	14.5	18.5	15.6					
100 Filtered	Salinity (ppt)	32.5	33.2	33.4					
(1.2µm)	pH (units)	7.94	7.82	7,83					
	DO (mg/L)	8.5	₹.૪	8.7					

ource of Animals: AG M.35:00 Bay

Date Received: 3/23/27

Comments

QA: MG 412472

Final: & stroker

Site: SIYB-6

CETIS Summary Report

Single Comparison Summary

Report Date: Test Code:

03 May-22 16:47 (p 1 of 4) 22-03-062 | 21-3626-1790

Bivalve Larval Survival and Deve	elopment Test			Wood E&IS
Batch ID: 12-7539-7101	Test Type:	Development-Survival	Analyst:	
Start Date: 23 22 Mar-22 16:15	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Natural Seawater
Ending Date: 24 Mar-22 16:15	Species:	Mytilis galloprovincialis	Brine:	Not Applicable
Duration: ²⁵ 48h	Source:	Field Collected	Age:	
Sample ID: 01 0932 6696	Codo	22 14/070	Client	Wood Environment and Infrastructure

Sample ID: 01-9832-6686 Code: 22-W070 Client: Wood Environment and Infrastructure SIYB TMDL Monitoring Sample Date: 22 Mar-22 10:30 Material: Seawater Project: Shelter Island Yacht Basin

Receipt Date: 22 Mar-22 17:40 Source:

Sample Age: 6h (2.2 °C) 30hr Station: SIYB 6

Comments:

002-883-387-8

FC = Filtered Control (1.2um), 101 = 100% Filtered (1.2 um)

ndpoint	Comparison Method	P-Value	Comparison Result
ombined Proportion Norma	TST-Welch's t Test	1.4E-05	100% passed combined proportion normal
ombined Proportion Norma	TST-Welch's t Test	8.1E-05	101% passed combined proportion normal
	ombined Proportion Norma	ombined Proportion Norma TST-Welch's t Test ombined Proportion Norma TST-Welch's t Test	ombined Proportion Norma TST-Welch's t Test 1.4E-05

Multiple Com	parison Summary						
Analysis ID	Endpoint	Comparison Method	LOEL	TOEL	TU	PMSD √	
03-7275-9714	Combined Proportion Norma	Dunnett Multiple Comparison Test	100	> 100	n/a	1	5.67%
13-2255-2678	Proportion Normal	Dunnett Multiple Comparison Test	100	> 100	n/a	1	4.54%
06-3057-5365	Survival Rate	Steel Many-One Rank Sum Test	100	> 100	n/a	1	2.98%

Test Acceptal	oility			TAC			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
13-2255-2678	Proportion Normal	Control Resp	0.9146	0.9	>>	Yes	Passes Criteria
06-3057-5365	Survival Rate	Control Resp	0.9802	0.5	>>	Yes	Passes Criteria

Analyst: W QA: Se 5/20/22

CETIS™ v1.9.3.0

03 May-22 16:47 (p 2 of 4) 22-03-062 | 21-3626-1790

								Coue.	22-03-002 21-3020-1130			
Bivalve Larval	Survival and	Developme	nt Test							1	Vood E&IS	
Combined Pro	portion Norm	al Summar	у									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect	
0	LC	5	0.8961	0.8733	0.9188	0.8750	0.9176	0.0082	0.0184	2.05%	0.00%	
0	FC	5	0.9049	0.8444	0.9655	0.8206	0.9393	0.0218	0.0488	5.39%	-0.99%	
6.25		5	0.8874	0.8473	0.9275	0.8511	0.9180	0.0144	0.0323	3.64%	0.97%	
12.5		5	0.8997	0.8643	0.9351	0.8759	0.9414	0.0128	0.0285	3.17%	-0.41%	
25		5	0.8931	0.8661	0.9201	0.8626	0.9112	0.0097	0.0217	2.43%	0.33%	
50		5	0.9041	0.8528	0.9554	0.8582	0.9659	0.0185	0.0413	4.57%	-0.90%	
100		5	0.9300	0.8972	0.9628	0.8960	0.9627	0.0118	0.0265	2.84%	-3.79%	
101		5	0.8927	0.8370	0.9484	0.8206	0.9299	0.0201	0.0448	5.02%	0.38%	
Proportion No	rmal Summar	у										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effec	
0	LC	5	0.9146	0.8836	0.9456	0.8750	0.9431	0.0112	0.0250	2.73%	0.00%	
0	FC	5	0.9291	0.9140	0.9442	0.9084	0.9393	0.0054	0.0122	1.31%	-1.58%	
6.25		5	0.9045	0.8909	0.9181	0.8956	0.9180	0.0049	0.0109	1.21%	1.11%	
12.5		5	0.9024	0.8695	0.9353	0.8759	0.9414	0.0119	0.0265	2.94%	1.33%	
25		5	0.9050	0.8873	0.9227	0.8812	0.9187	0.0064	0.0142	1.57%	1.05%	
50		5	0.9082	0.8598	0.9567	0.8582	0.9659	0.0175	0.0390	4.30%	0.70%	
100		5	0.9300	0.8972	0.9628	0.8960	0.9627	0.0118	0.0265	2.84%	-1.68%	
101		5	0.9183	0.8962	0.9404	0.8958	0.9414	0.0080	0.0178	1.94%	-0.40%	
Survival Rate	Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effec	
0	LC	5	0.9802	0.9449	1.0000	0.9389	1.0000	0.0127	0.0284	2.89%	0.00%	
0	FC	5	0.9740	0.9096	1.0000	0.8817	1.0000	0.0232	0.0519	5.33%	0.62%	
6.25		5	0.9809	0.9484	1.0000	0.9504	1.0000	0.0117	0.0262	2.67%	-0.08%	
12.5		5	0.9969	0.9885	1.0000	0.9847	1.0000	0.0031	0.0068	0.68%	-1.71%	
25		5	0.9870	0.9536	1.0000	0.9389	1.0000	0.0121	0.0269	2.73%	-0.70%	
50		5	0.9954	0.9827	1.0000	0.9771	1.0000	0.0046	0.0102	1.03%	-1.56%	
100		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	-2.02%	
101		5	0.9718	0.9289	1.0000	0.9160	1.0000	0.0154	0.0345	3.55%	0.86%	

Analyst: QA: SC

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Bivalve Larva	I Survival and	Developme	nt Test				Wood E&IS
Combined Pro	oportion Norm	al Detail					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	0.8893	0.9176	0.8750	0.9129	0.8855	
0	FC	0.9198	0.9084	0.9366	0.8206	0.9393	
6.25		0.8982	0.8511	0.8550	0.9147	0.9180	
12.5		0.9170	0.8779	0.8864	0.9414	0.8759	
25		0.9044	0.8779	0.8626	0.9094	0.9112	
50		0.9182	0.8779	0.9004	0.9659	0.8582	
100		0.9396	0.9627	0.9408	0.8960	0.9110	
101		0.9152	0.9198	0.9299	0.8779	0.8206	
Proportion No	ormal Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	0.9246	0.9176	0.8750	0.9129	0.9431	
0	FC	0.9305	0.9084	0.9366	0.9307	0.9393	
6.25		0.8982	0.8956	0.8960	0.9147	0.9180	
12.5		0.9170	0.8915	0.8864	0.9414	0.8759	
25		0.9044	0.8812	0.9187	0.9094	0.9112	
50		0.9182	0.8984	0.9004	0.9659	0.8582	
100		0.9396	0.9627	0.9408	0.8960	0.9110	
101		0.9152	0.9414	0.9299	0.9091	0.8958	
Survival Rate	Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	0.9618	1.0000	1.0000	1.0000	0.9389	
0	FC	0.9885	1.0000	1.0000	0.8817	1.0000	
6.25		1.0000	0.9504	0.9542	1.0000	1.0000	
12.5		1.0000	0.9847	1.0000	1.0000	1.0000	
25		1.0000	0.9962	0.9389	1.0000	1.0000	
50		1.0000	0.9771	1.0000	1.0000	1.0000	
100		1.0000	1.0000	1.0000	1.0000	1.0000	
101		1.0000	0.9771	1.0000	0.9656	0.9160	

Analyst: QV QA: SC

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Bivalve Larva	Survival and	Developme	nt Test				Wood E&IS
Combined Pro	portion Norm	al Binomials	3				
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	233/262	245/267	231/264	241/264	232/262	
0	FC	241/262	248/273	251/268	215/262	263/280	
6.25		247/275	223/262	224/262	268/293	280/305	
12.5		254/277	230/262	242/273	257/273	247/282	
25		246/272	230/262	226/262	261/287	308/338	
50		247/269	230/262	244/271	255/264	242/282	
100		249/265	258/268	286/304	267/298	266/292	
101		259/283	241/262	252/271	230/262	215/262	
Proportion No	ormal Binomia	ls					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	233/252	245/267	231/264	241/264	232/246	
0	FC	241/259	248/273	251/268	215/231	263/280	
6.25		247/275	223/249	224/250	268/293	280/305	
12.5		254/277	230/258	242/273	257/273	247/282	
25		246/272	230/261	226/246	261/287	308/338	
50		247/269	230/256	244/271	255/264	242/282	
100		249/265	258/268	286/304	267/298	266/292	
101		259/283	241/256	252/271	230/253	215/240	
Survival Rate	Binomials						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	252/262	262/262	262/262	262/262	246/262	
0	FC	259/262	262/262	262/262	231/262	262/262	
6.25		262/262	249/262	250/262	262/262	262/262	
12.5		262/262	258/262	262/262	262/262	262/262	
25		262/262	261/262	246/262	262/262	262/262	
50		262/262	256/262	262/262	262/262	262/262	
100		262/262	262/262	262/262	262/262	262/262	
101		262/262	256/262	262/262	253/262	240/262	

Analyst: QA: SL

002-883-387-8 CETIS™ v1.9.3.0

03 May-22 16:47 (p 1 of 8) 22-03-062 | 21-3626-1790

FC us 100% Filtered Bivalve Larval Survival and Development Test

Wood E&IS

Analysis ID: Analyzed:

10-2819-8685 03 May-22 16:46 Endpoint: Combined Proportion Normal Analysis:

Parametric Bioequivalence-Two Sample

CETIS Version: Official Results:

CETISv1.9.3

Yes

Comments:

FC = Filtered Control (1.2um), 101 = 100% Filtered (1.2 um)

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	101% passed combined proportion normal

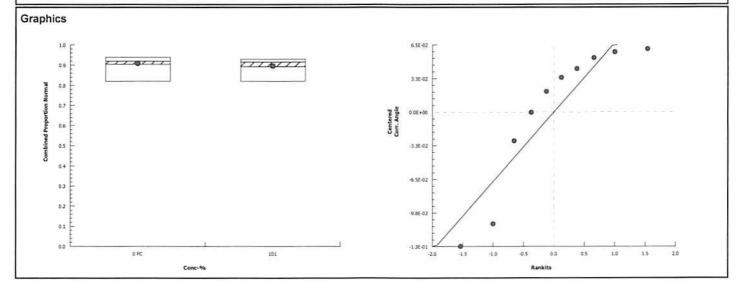
TST-Welch's t Test Control II Test Stat Critical DF P-Type P-Value Decision(a:5%) Control 7 CDF 8.1E-05 Non-Significant Effect 101* 7.311 1.895 Filter Control ANOVA Table

Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
0.0011989	0.0011989	1	0.2249	0.6480	Non-Significant Effect	
0.0426366	0.0053296	8				
0.0438355		9				
	0.0011989 0.0426366	0.0011989 0.0011989 0.0426366 0.0053296	0.0011989 0.0011989 1 0.0426366 0.0053296 8	0.0011989 0.0011989 1 0.2249 0.0426366 0.0053296 8	0.0011989 0.0011989 1 0.2249 0.6480 0.0426366 0.0053296 8	0.0011989 0.0011989 1 0.2249 0.6480 Non-Significant Effect 0.0426366 0.0053296 8

Distributional Tests										
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)					
Variances	Variance Ratio F Test	1.229	23.15	0.8467	Equal Variances					
Distribution	Shapiro-Wilk W Normality Test	0.8245	0.7411	0.0287	Normal Distribution					

Combined Pro	oportion Norm	al Summar	/								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	0.9049	0.8444	0.9655	0.9198	0.8206	0.9393	0.0218	5.39%	0.00%
101		5	0.8927	0.8370	0.9484	0.9152	0.8206	0.9299	0.0201	5.02%	1.36%

Angular (Corr	rected) Transfo	ormed Sumr	mary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	1.264	1.169	1.359	1.284	1.133	1.322	0.03428	6.07%	0.00%
101		5	1.242	1.156	1.328	1.275	1.133	1.303	0.03093	5.57%	1.73%



Report Date: Test Code:

03 May-22 16:47 (p 2 of 8) 22-03-062 | 21-3626-1790

Wood E&IS

LC US 100% Bivalve Larval Survival and Development Test 75T

CETIS Version: CETISv1.9.3 Analysis ID: 11-8497-8412 Endpoint: Combined Proportion Normal

Parametric Bioequivalence-Two Sample Official Results: Yes Analyzed: 03 May-22 16:46 Analysis:

Comments:

FC = Filtered Control (1.2um), 101 = 100% Filtered (1.2 um)

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	100% passed combined proportion normal

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF P-Type	P-Value	Decision(a:5%)	
Lab Control		100*	14.58	2.015	5 CDF	1.4E-05	Non-Significant Effect	

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)	
Between	0.0100257	0.0100257	1	5.423	0.0483	Significant Effect	
Error	0.0147892	0.0018487	8				
Total	0.0248149		9				

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)	
Variances	Variance Ratio F Test	3.003	23.15	0.3121	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.9801	0.7411	0.9655	Normal Distribution	

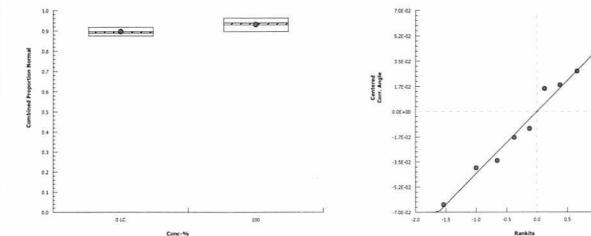
Combined Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.8961	0.8733	0.9188	0.8893	0.8750	0.9176	0.0082	2.05%	0.00%
100		5	0.9300	0.8972	0.9628	0.9396	0.8960	0.9627	0.0118	2.84%	-3.79%

Angular (Corrected) Transformed Summary

•	411		3.50								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.243	1.206	1.281	1.232	1.209	1.28	0.01359	2.44%	0.00%
100		5	1.307	1.241	1.372	1.323	1.242	1.376	0.02355	4.03%	-5.09%

Graphics



Analyst: RV QA: LC

002-883-387-8 CETIS™ v1.9.3.0

Report Date: Test Code: 03 May-22 16:47 (p 3 of 8) 22-03-062 | 21-3626-1790

Wood E&IS **Bivalve Larval Survival and Development Test** Endpoint: Combined Proportion Normal Analysis ID: 03-7275-9714 **CETIS Version:** CETISv1.9.3 Parametric-Control vs Treatments Official Results: Yes Analyzed: 03 May-22 16:46 Analysis: Comments: FC = Filtered Control (1.2um), 101 = 100% Filtered (1.2 um) **Data Transform** NOEL LOEL TOEL TU **PMSD** Alt Hyp 100 > 100 1 5.67% C > T n/a Angular (Corrected) **Dunnett Multiple Comparison Test** Decision(a:5%) Control Conc-% Test Stat Critical MSD DF P-Type P-Value VS Lab Control 6.25 0.3793 2.362 0.077 8 CDF 0.6982 Non-Significant Effect 12.5 -0.23872.362 0.077 8 CDF 0.8942 Non-Significant Effect 25 0.14 2.362 0.077 8 CDF 0.7887 Non-Significant Effect 0.077 8 CDF 50 -0.5915 2.362 0.9517 Non-Significant Effect 100 0.9991 Non-Significant Effect -1.941 2.362 0.077 8 CDF

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0185868	0.0037174	5	1.398	0.2606	Non-Significant Effect
Error	0.0638373	0.0026599	24			
Total	0.082424		29			

Distributional Tests									
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)				
Variances	Bartlett Equality of Variance Test	4.004	15.09	0.5489	Equal Variances				
Distribution	Shapiro-Wilk W Normality Test	0.9607	0.9031	0.3224	Normal Distribution				

Combined Proportion Normal Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.8961	0.8733	0.9188	0.8893	0.8750	0.9176	0.0082	2.05%	0.00%
6.25		5	0.8874	0.8473	0.9275	0.8982	0.8511	0.9180	0.0144	3.64%	0.97%
12.5		5	0.8997	0.8643	0.9351	0.8864	0.8759	0.9414	0.0128	3.17%	-0.41%
25		5	0.8931	0.8661	0.9201	0.9044	0.8626	0.9112	0.0097	2.43%	0.33%
50		5	0.9041	0.8528	0.9554	0.9004	0.8582	0.9659	0.0185	4.57%	-0.90%
100		5	0.9300	0.8972	0.9628	0.9396	0.8960	0.9627	0.0118	2.84%	-3.79%

ected) Transfo	rmed Sumi	Angular (Corrected) Transformed Summary											
Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect			
LC	5	1.243	1.206	1.281	1.232	1.209	1.28	0.01359	2.44%	0.00%			
	5	1.231	1.168	1.294	1.246	1.175	1.28	0.02271	4.12%	0.99%			
	5	1.251	1.189	1.313	1.227	1.211	1.326	0.02236	4.00%	-0.63%			
	5	1.239	1.196	1.282	1.256	1.191	1.268	0.01546	2.79%	0.37%			
	5	1.263	1.167	1.359	1.25	1.185	1.385	0.03461	6.13%	-1.55%			
	5	1.307	1.241	1.372	1.323	1.242	1.376	0.02355	4.03%	-5.09%			
	Code	Code Count LC 5 5 5 5 5 5	Code Count Mean LC 5 1.243 5 1.231 5 1.251 5 1.239 5 1.263	Code Count Mean 95% LCL LC 5 1.243 1.206 5 1.231 1.168 5 1.251 1.189 5 1.239 1.196 5 1.263 1.167	Code Count Mean 95% LCL 95% UCL LC 5 1.243 1.206 1.281 5 1.231 1.168 1.294 5 1.251 1.189 1.313 5 1.239 1.196 1.282 5 1.263 1.167 1.359	Code Count Mean 95% LCL 95% UCL Median LC 5 1.243 1.206 1.281 1.232 5 1.231 1.168 1.294 1.246 5 1.251 1.189 1.313 1.227 5 1.239 1.196 1.282 1.256 5 1.263 1.167 1.359 1.25	Code Count Mean 95% LCL 95% UCL Median Min LC 5 1.243 1.206 1.281 1.232 1.209 5 1.231 1.168 1.294 1.246 1.175 5 1.251 1.189 1.313 1.227 1.211 5 1.239 1.196 1.282 1.256 1.191 5 1.263 1.167 1.359 1.25 1.185	Code Count Mean 95% LCL 95% UCL Median Min Max LC 5 1.243 1.206 1.281 1.232 1.209 1.28 5 1.231 1.168 1.294 1.246 1.175 1.28 5 1.251 1.189 1.313 1.227 1.211 1.326 5 1.239 1.196 1.282 1.256 1.191 1.268 5 1.263 1.167 1.359 1.25 1.185 1.385	Code Count Mean 95% LCL 95% UCL Median Min Max Std Err LC 5 1.243 1.206 1.281 1.232 1.209 1.28 0.01359 5 1.231 1.168 1.294 1.246 1.175 1.28 0.02271 5 1.251 1.189 1.313 1.227 1.211 1.326 0.02236 5 1.239 1.196 1.282 1.256 1.191 1.268 0.01546 5 1.263 1.167 1.359 1.25 1.185 1.385 0.03461	Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% LC 5 1.243 1.206 1.281 1.232 1.209 1.28 0.01359 2.44% 5 1.231 1.168 1.294 1.246 1.175 1.28 0.02271 4.12% 5 1.251 1.189 1.313 1.227 1.211 1.326 0.02236 4.00% 5 1.239 1.196 1.282 1.256 1.191 1.268 0.01546 2.79% 5 1.263 1.167 1.359 1.25 1.185 1.385 0.03461 6.13%			

Analyst: RN QA: A

002-883-387-8 CETIS™ v1.9.3.0

03 May-22 16:47 (p 4 of 8) 22-03-062 | 21-3626-1790

Wood E&IS **Bivalve Larval Survival and Development Test** CETISv1.9.3 03-7275-9714 Endpoint: Combined Proportion Normal **CETIS Version:** Analysis ID: Parametric-Control vs Treatments Official Results: Yes 03 May-22 16:46 Analysis: Analyzed: Graphics 1.25-01 0-4 9.2E-02 6.15-02 Corr. Angle 3.1E-02 0.0E+00 J 1E-02 -6.1E-02 -9.2E-02 ☐ -2.5 Conc-% Rankits

Analyst: RV QA: K

Report Date: Test Code: 03 May-22 16:47 (p 5 of 8) 22-03-062 | 21-3626-1790

Bivalve Larval Survival and Development Test

Wood E&IS

Analysis ID: 13-2255-2678 Endpoint: Proportion Normal CETIS Version: CETISv1.9.3

Analyzed: 03 May-22 16:46 Analysis: Parametric-Control vs Treatments Official Results: Yes

Comments:

FC = Filtered Control (1.2um), 101 = 100% Filtered (1.2 um)

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	100	> 100	n/a	1	4.54%

Dunnett Multiple Comparison Test											
Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(a:5%)		
Lab Control		6.25	0.6594	2.362	0.070	8	CDF	0.5756	Non-Significant Effect		
		12.5	0.7085	2.362	0.070	8	CDF	0.5531	Non-Significant Effect		
		25	0.623	2.362	0.070	8	CDF	0.5922	Non-Significant Effect		
		50	0.244	2.362	0.070	8	CDF	0.7514	Non-Significant Effect		
		100	-1.02	2.362	0.070	8	CDF	0.9842	Non-Significant Effect		

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0095869	0.0019174	5	0.8719	0.5144	Non-Significant Effect
Error	0.0527787	0.0021991	24			
Total	0.0623656		29			

Distributional 7	Tests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Bartlett Equality of Variance Test	8.041	15.09	0.1540	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9678	0.9031	0.4818	Normal Distribution

Proportion Normal Summary													
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect		
0	LC	5	0.9146	0.8836	0.9456	0.9176	0.8750	0.9431	0.0112	2.73%	0.00%		
6.25		5	0.9045	0.8909	0.9181	0.8982	0.8956	0.9180	0.0049	1.21%	1.11%		
12.5		5	0.9024	0.8695	0.9353	0.8915	0.8759	0.9414	0.0119	2.94%	1.33%		
25		5	0.9050	0.8873	0.9227	0.9094	0.8812	0.9187	0.0064	1.57%	1.05%		
50		5	0.9082	0.8598	0.9567	0.9004	0.8582	0.9659	0.0175	4.30%	0.70%		
100		5	0.9300	0.8972	0.9628	0.9396	0.8960	0.9627	0.0118	2.84%	-1.68%		

Angular (Corrected) Transformed Summary												
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect	
0	LC	5	1.277	1.222	1.331	1.28	1.209	1.33	0.01956	3.43%	0.00%	
6.25		5	1.257	1.234	1.28	1.246	1.242	1.28	0.008413	1.50%	1.53%	
12.5		5	1.256	1.197	1.314	1.235	1.211	1.326	0.02093	3.73%	1.65%	
25		5	1.258	1.229	1.287	1.265	1.219	1.282	0.01059	1.88%	1.45%	
50		5	1.269	1.178	1.361	1.25	1.185	1.385	0.03287	5.79%	0.57%	
100		5	1.307	1.241	1.372	1.323	1.242	1.376	0.02355	4.03%	-2.37%	

Analyst: RV QA:

CETIS™ v1.9.3.0

Report Date: Test Code: 03 May-22 16:47 (p 7 of 8) 22-03-062 | 21-3626-1790

Bivalve Larval Survival and Development Test Wood E&IS

Analysis ID: 06-3057-5365 Endpoint: Survival Rate CETIS Version: CETISv1.9.3

Analyzed: 03 May-22 16:46 Analysis: Nonparametric-Control vs Treatments Official Results: Yes

Comments:

FC = Filtered Control (1.2um), 101 = 100% Filtered (1.2 um)

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	100	> 100	n/a	1	2.98%

Steel Many-One Rank Sum Test										
Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(a:5%)	
Lab Control		6.25	27.5	16	1	8	Asymp	0.8333	Non-Significant Effect	
		12.5	31	16	1	8	Asymp	0.9676	Non-Significant Effect	
		25	28	16	2	8	Asymp	0.8627	Non-Significant Effect	
		50	31	16	1	8	Asymp	0.9676	Non-Significant Effect	
		100	32.5	16	1	8	Asymp	0.9870	Non-Significant Effect	

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.025195	0.005039	5	0.8411	0.5339	Non-Significant Effect
Error	0.143791	0.0059913	24			
Total	0.168986		29			

Distributional 1	Tests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Levene Equality of Variance Test	6.42	3.895	6.4E-04	Unequal Variances
Variances	Mod Levene Equality of Variance Test	0.9074	4.248	0.4979	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.8569	0.9031	8.7E-04	Non-Normal Distribution

Survival Rate Summary													
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect		
0	LC	5	0.9802	0.9449	1.0000	1.0000	0.9389	1.0000	0.0127	2.89%	0.00%		
6.25		5	0.9809	0.9484	1.0000	1.0000	0.9504	1.0000	0.0117	2.67%	-0.08%		
12.5		5	0.9969	0.9885	1.0000	1.0000	0.9847	1.0000	0.0031	0.68%	-1.71%		
25		5	0.9870	0.9536	1.0000	1.0000	0.9389	1.0000	0.0121	2.73%	-0.70%		
50		5	0.9954	0.9827	1.0000	1.0000	0.9771	1.0000	0.0046	1.03%	-1.56%		
100		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.02%		

Angular (Corrected) Transformed Summary												
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect	
0	LC	5	1.463	1.33	1.596	1.54	1.321	1.54	0.04784	7.31%	0.00%	
6.25		5	1.464	1.335	1.593	1.54	1.346	1.54	0.04638	7.08%	-0.08%	
12.5		5	1.521	1.47	1.573	1.54	1.447	1.54	0.0186	2.73%	-3.99%	
25		5	1.49	1.372	1.608	1.54	1.321	1.54	0.04264	6.40%	-1.84%	
50		5	1.516	1.448	1.583	1.54	1.419	1.54	0.0242	3.57%	-3.60%	
100		5	1.54	1.54	1.54	1.54	1.54	1.54	0	0.00%	-5.26%	

Analyst: RV QA: 1

19 Mar-22 15:22 (p 1 of 2) 21-3626-1790/22-03-062

Bivalve Larval Survival and Development Test

Wood E&IS

22 Mar-22 1615 24 Mar-22 1615 Species: Mytilis galloprovincialis Start Date: Protocol: EPA/600/R-95/136 (1995) End Date:

Sample Code: BD2399E 22 W 570
Sample Source: Shelter Island Yacht Basin

Sample Date: 4-Mar-22 030 Material: Seawater

Sample Station: SIYB 6

ep Pos	Initial Density	Final Density	# Counted	# Normal	Notes
201			264	255	BI 4/15/22
202				241	
203			246	226	
204			280	263	
205			272		
206			264		
207			256		
208				259	
209			-	268	
210			249	223	
211				254	
212			261	230	
213			268		
214				215	
215			275		
216			253	230	
217			305	280	
218				252	
219			271 304	286	
220			240	215	
221			25 5000	230	
222			256 273	257	
223			265	249	
224					
225			252		
226			268		
227			298	1	
228				224	47
229			267	745	4/19/22
230			271	244	1/11/22
231					
232					
233					
			-		4
		233	232	232 292 233 273	233 273 242

Report Date: Test Code/ID: 19 Mar-22 15:22 (p 2 of 2) 21-3626-1790/22-03-062

Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
			235			258	230	BI 4/19/22
			236				232	(
			237			273	248	
			238			269	247	
			239			282	242	
			240			282	247	4



Report Date: Test Code/ID: 19 Mar-22 15:21 (p 1 of 2) 21-3626-1790/22-03-062

Wood E&IS

Bivalve Larval Survival and Development Test

Sample Code: & BD2399E 22-W070 Start Date: 22 Mar-22 Lb 18
End Date: 24 Mar-22 Lb 18
Sample Date: 21 Mar-22 War-Species: Mytilis galloprovincialis Sample Source: Shelter Island Yacht Basin Protocol: EPA/600/R-95/136 (1995)

Sample Station: SIYB 6

mple Date	22	lar-22	1000) Materia	al: Seawa	ater			Sample Station	1. 31160
Conc-%	Code	Rep		Initial Density	Final Density	# Counted	# Normal			Notes
0	FC	1	224			259	241	BI	4/15/22	
0	FC	2	237							
0	FC	3	213							
0	FC	4	214							
0	FC	5	204							
0	LC	1	225			252	233			
0	LC	2	229							
0	LC	3	206							
0	LC	4	202							
0	LC	5	236							
6.25		1	215			275	247			
6.25		2	210			-13	-11			
6.25		3	228							
6.25		4	209							
6.25		5	217							
12.5		1	211			277	254	1		
12.5		2	235			277	237			
12.5	-	3	233							
12.5		4	222							
12.5		5	240							
25		1	205			_				
25		2	212			272	246			
25		3	203							
25		4	231							
25		5	234							
50		1	238			269	247			
50		2	221							
50		3	230							
50		4	201							
50		5	239							
100		1	223			265	249			
100		2	226							
100		3	219							
100		4	227							

Report Date: 19 Mar-22 15:21 (p 2 of 2) Test Code/ID: 21-3626-1790/22-03-062

Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
100		5	232					
101		1	208			283	259	BI 4/15/22
101		2	207					
101		3	218					
101		4	216					
101		5	220					

QC: KB

Water Quality for Bivalve Development

Client: Wood - Port of San Diego

Sample ID: SIYB-6

Test No. 22-03-062

Test Species: M. galloprovincialis

Start Date/Time: 3/22/2022 1615

End Date/Time: 3/24/2022 1615

Test Conc.		Water Quality	Measurements	
(%)	Parameter	0hr	24hr	48hr
	Temp. (°C)	15.8	15.8	15.6
Lab Control	Salinity (ppt)	32.9	33.2	33.4
Lab Control	pH (units)	8.00	7.79	7.85
Γ	DO (mg/L)	7.9	8.9	8:7
	Temp. (°C)	15.9	15.7	15-6
Filter Control	Salinity (ppt)	33.0	33.3	33.4
Filter Control	pH (units)	7.98	7.76	7.85
	DO (mg/L)	8.0	8.8	8.7
	Temp. (°C)	15.9	15.5	15-6
6.25	Salinity (ppt)	33.0	33.5	33.6
0.25	pH (units)	7.98	7.79	7.89
	DO (mg/L)	8.1	8.9	8.8
	Temp. (°C)	16.0	15.4	15.6
12.5	Salinity (ppt)	32.8	33.7	33.6
12.5	pH (units)	7.98	7.81	7.85
	DO (mg/L)	8.1	8.8	8.8
	Temp. (°C)	16.0	15.4	15.6
25	Salinity (ppt)	32.7	33.7	33.6
25	pH (units)	7.98	7.87	7.85
	DO (mg/L)	8.3	8.8	8.7
	Temp. (°C)	16.0	15.4	15.5
50	Salinity (ppt)	32.8	33.6	33.7
50	pH (units)	7.97	7.82	7.85
	DO (mg/L)	8.3	8.9	8.8
	Temp. (°C)		15.4	15.5
100	Salinity (ppt)	16.0 32.8	33.7	33.7
100	pH (units)	7.94	7.81	7.85
	DO (mg/L)	8.5	8.9	8.8
	Temp. (°C)	16.0	13.4	15.6
100 Filtered	Salinity (ppt)	32·1	33.1	33.3
(1.2μm)	pH (units)	7.53	7. 71	7.85
Γ	DO (mg/L)	8.5	8.8	8.7

Source of Animals: At Mizsion Bay

Date Received: 3/23/22

Comments:

QA: A6 4129/22

Fonal: le 5/20/22

Site: SIYB-REF-1

CETIS Summary Report

Analysis ID Endpoint

06-0682-9626 Proportion Normal

01-6506-6316 Survival Rate

002-883-387-8

Report Date: Test Code:

LOEL

> 100

> 100

> 100

NOEL

100

100

100

TOEL

n/a

n/a

n/a

TU

1

1

1

PMSD √

5.53%

3.43%

2.9%

03 May-22 16:56 (p 1 of 4) 22-03-063 | 15-6712-3463

Divalve Laivai Suivivai alid Dev	elopment Test			Wood E&
Batch ID: 17-7141-2118 Start Date: 7327 Mar-22 16:15 Ending Date: 24 Mar-22 16:15 Duration: 48h	Test Type: Protocol: Species: Source:	Development-Survival EPA/600/R-95/136 (1995) Mytilis galloprovincialis Field Collected	Analyst: Diluent: Brine: Age:	1044 ARC SCIENCE (\$200 - \$3000 (BC) (\$0.00)
Sample ID: 15-8067-4716	Code:	22-W071	Client:	Wood Environment and Infrastructur
Sample Date: 22 Mar-22 09:30	Material:	Seawater	Project:	SIYB TMDL Monitoring
Receipt Date: 22 Mar-22 17:40	Source:	Shelter Island Yacht Basin		
Sample Age: SH (4.6 °C) 3 lkr	Station:	SIYB REF1		
Comments:				
	I = 100% Filtered	i (1.2 um)		
FC = Filtered Control (1.2um), 10 Single Comparison Summary	I = 100% Filtered	i (1.2 um)		
FC = Filtered Control (1.2um), 10 Single Comparison Summary	0	d (1.2 um)	P-Value C	Comparison Result
FC = Filtered Control (1.2um), 10 SIngle Comparison Summary	Comp	parison Method		Comparison Result 00% passed combined proportion norma

Test Acceptat	bility			TAC	Limits		
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
06-0682-9626	Proportion Normal	Control Resp	0.9105	0.9	>>	Yes	Passes Criteria
01-6506-6316	Survival Rate	Control Resp	1	0.5	>>	Yes	Passes Criteria

Comparison Method

Dunnett Multiple Comparison Test

Steel Many-One Rank Sum Test

20-8154-8703 Combined Proportion Norma Dunnett Multiple Comparison Test

Analyst: R QA: Se spoper

CETIS™ v1.9.3.0

03 May-22 16:56 (p 2 of 4) 22-03-063 | 15-6712-3463

								coue.	10-70	300 TO 30 TO 1	0 01 12 0 10
Bivalve Larval	Survival and	Developme	nt Test							- 1	Nood E&IS
Combined Pro	portion Norm	al Summar	,								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9105	0.8978	0.9232	0.8947	0.9190	0.0046	0.0102	1.12%	0.00%
0	FC	5	0.8917	0.8542	0.9293	0.8435	0.9187	0.0135	0.0302	3.39%	2.06%
6.25		5	0.9088	0.8718	0.9459	0.8779	0.9467	0.0133	0.0298	3.28%	0.18%
12.5		5	0.9255	0.8906	0.9605	0.8817	0.9579	0.0126	0.0282	3.04%	-1.65%
25		5	0.9025	0.8454	0.9597	0.8244	0.9368	0.0206	0.0460	5.10%	0.87%
50		5	0.9230	0.9065	0.9396	0.9008	0.9363	0.0060	0.0133	1.45%	-1.38%
100		5	0.8845	0.8231	0.9458	0.8015	0.9278	0.0221	0.0494	5.59%	2.85%
101		5	0.9164	0.9009	0.9318	0.8973	0.9304	0.0056	0.0125	1.36%	-0.65%
Proportion No	rmal Summar	y									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9105	0.8978	0.9232	0.8947	0.9190	0.0046	0.0102	1.12%	0.00%
0	FC	5	0.9062	0.8938	0.9185	0.8919	0.9187	0.0045	0.0100	1.10%	0.47%
6.25		5	0.9207	0.8926	0.9489	0.8846	0.9467	0.0102	0.0227	2.46%	-1.13%
12.5		5	0.9296	0.9040	0.9552	0.9023	0.9579	0.0092	0.0206	2.22%	-2.10%
25		5	0.9169	0.8939	0.9399	0.8963	0.9368	0.0083	0.0186	2.02%	-0.71%
50		5	0.9323	0.9191	0.9456	0.9231	0.9492	0.0048	0.0107	1.15%	-2.40%
100		5	0.9125	0.8832	0.9418	0.8830	0.9417	0.0106	0.0236	2.59%	-0.22%
101		5	0.9171	0.9009	0.9333	0.8973	0.9304	0.0058	0.0131	1.42%	-0.73%
Survival Rate	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0	FC	5	0.9840	0.9496	1.0000	0.9351	1.0000	0.0124	0.0277	2.82%	1.60%
6.25		5	0.9870	0.9654	1.0000	0.9580	1.0000	0.0078	0.0174	1.76%	1.30%
12.5		5	0.9954	0.9827	1.0000	0.9771	1.0000	0.0046	0.0102	1.03%	0.46%
25		5	0.9840	0.9395	1.0000	0.9198	1.0000	0.0160	0.0359	3.64%	1.60%
50		5	0.9901	0.9731	1.0000	0.9733	1.0000	0.0061	0.0137	1.38%	0.99%
100		5	0.9702	0.8876	1.0000	0.8511	1.0000	0.0298	0.0666	6.86%	2.98%
101		5	0.9992	0.9971	1.0000	0.9962	1.0000	0.0008	0.0017	0.17%	0.08%

Analyst: RV QA: LC

002-883-387-8 CETIS™ v1.9.3.0

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Bivalve Larval	Survival and	Developme	nt Test				Wood E&
Combined Pro	portion Norm	al Detail					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	0.9163	0.8947	0.9056	0.9190	0.9167	
0	FC	0.9187	0.9101	0.8817	0.8435	0.9046	
6.25		0.9296	0.9084	0.8817	0.8779	0.9467	
12.5		0.9395	0.9239	0.9245	0.9579	0.8817	
25		0.8986	0.9220	0.9308	0.8244	0.9368	
50		0.9363	0.9231	0.9008	0.9275	0.9275	
100		0.8015	0.9278	0.8961	0.8830	0.9140	
101		0.8973	0.9142	0.9237	0.9163	0.9304	
Proportion No	ormal Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	0.9163	0.8947	0.9056	0.9190	0.9167	
0	FC	0.9187	0.9101	0.8919	0.9020	0.9080	
6.25		0.9296	0.9225	0.9203	0.8846	0.9467	
12.5		0.9395	0.9239	0.9245	0.9579	0.9023	
25		0.8986	0.9220	0.9308	0.8963	0.9368	
50		0.9363	0.9231	0.9255	0.9492	0.9275	
100		0.9417	0.9278	0.8961	0.8830	0.9140	
101		0.8973	0.9142	0.9272	0.9163	0.9304	
Survival Rate	Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	1.0000	1.0000	1.0000	1.0000	1.0000	
0	FC	1.0000	1.0000	0.9885	0.9351	0.9962	
6.25		1.0000	0.9847	0.9580	0.9924	1.0000	
12.5		1.0000	1.0000	1.0000	1.0000	0.9771	
25		1.0000	1.0000	1.0000	0.9198	1.0000	
50		1.0000	1.0000	0.9733	0.9771	1.0000	
100		0.8511	1.0000	1.0000	1.0000	1.0000	
101		1.0000	1.0000	0.9962	1.0000	1.0000	

Analyst: QJ QA: X

03 May-22 16:56 (p 4 of 4) 22-03-063 | 15-6712-3463

Bivalve Larval	Survival and	Developmen	nt Test				Wood E&IS
Combined Pro	portion Norm	al Binomials	3				
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	241/263	238/266	259/286	261/284	253/276	
0	FC	260/283	253/278	231/262	221/262	237/262	
6.25		264/284	238/262	231/262	230/262	284/300	
12.5		264/281	255/276	245/265	273/285	231/262	
25		257/286	272/295	269/289	216/262	252/269	
50		294/314	252/273	236/262	243/262	256/276	
100		210/262	270/291	250/279	234/265	255/279	
101		262/292	245/268	242/262	241/263	254/273	
Proportion No	rmal Binomia	ls					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	241/263	238/266	259/286	261/284	253/276	
0	FC	260/283	253/278	231/259	221/245	237/261	
6.25		264/284	238/258	231/251	230/260	284/300	
12.5		264/281	255/276	245/265	273/285	231/256	
25		257/286	272/295	269/289	216/241	252/269	
50		294/314	252/273	236/255	243/256	256/276	
100		210/223	270/291	250/279	234/265	255/279	
101		262/292	245/268	242/261	241/263	254/273	
Survival Rate	Binomials						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	262/262	262/262	262/262	262/262	262/262	
0	FC	262/262	262/262	259/262	245/262	261/262	
6.25		262/262	258/262	251/262	260/262	262/262	
12.5		262/262	262/262	262/262	262/262	256/262	
25		262/262	262/262	262/262	241/262	262/262	
50		262/262	262/262	255/262	256/262	262/262	
100		223/262	262/262	262/262	262/262	262/262	
101		262/262	262/262	261/262	262/262	262/262	

Analyst: D QA: JC

002-883-387-8 CETIS™ v1.9.3.0

5

5

0.9230

0.8845

0.9065

0.8231

Report Date:

0.9363

0.9278

0.9008

0.8015

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Test Code: 22-03-063 | 15-6712-34

Bivalve Larva	al Surv	vival and	Develop	ment Test								·		Wood E&IS
Analysis ID: Analyzed:		154-8703 Лау-22 16		Endpoint: Analysis:		Combined Proportion Normal Parametric-Control vs Treatments			CETIS Version: CETISv1.9.3 Official Results: Yes					
Comments: FC = Filtered	Contro	ıl (1.2um),	101 = 10	00% Filtered	(1.2	um)								
Data Transfo	rm		Alt Hy	/p						NOEL	LOEL	TOEL	TU	PMSD
Angular (Corre	ected)		C > T	•						100	> 100	n/a	1	5.53%
Dunnett Mult	iple C	ompariso	n Test											
Control	vs	Conc-%		Test S	Stat	Critical	MSD	DF	P-Type	P-Value	Decision	n(a:5%)		
Lab Control		6.25		-0.001	614	2.362	0.08	8	CDF	0.8338	Non-Sign	nificant Effec	t	
		12.5		-0.908	5	2.362	0.08	8	CDF	0.9786	Non-Sign	nificant Effec	t	
		25		0.249	7	2.362	0.08	8	CDF	0.7492	Non-Sign	nificant Effec	t	
		50		-0.684	9	2.362	0.08	8	CDF	0.9616	Non-Sign	nificant Effec	t	
		100		1.132	53	2.362	0.08	8	CDF	0.3627	_	nificant Effec		
ANOVA Table	9			72										
Source		Sum Sq	uares	Mean	Squ	are	DF		F Stat	P-Value	Decision	n(α:5%)		
Between		0.015008	37	0.003	0017	Ţ	5		1.052	0.4108	Non-Sign	nificant Effec	t	
Error		0.068482	29	0.002	3535		24							
Total		0.083491	15				29							
Distributiona	I Test	S												
Attribute		Test					Test S	Stat	Critical	P-Value	Decision	n(α:1%)		
Variances		Bartlett E	quality of	f Variance T	est		9.421		15.09	0.0934	Equal Va	ariances		
Distribution				ormality Te			0.926		0.9031	0.0384	Normal I	Distribution		
Combined Pr	roport	ion Norm	al Summ	ary										
Conc-%		Code	Count	Mean		95% LCL	95% l	JCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	0.910	5	0.8978	0.923	2	0.9163	0.8947	0.9190	0.0046	1.12%	0.00%
6.25			5	0.908	3	0.8718	0.945	9	0.9084	0.8779	0.9467	0.0133	3.28%	0.18%
12.5			5	0.925	5	0.8906	0.960	5	0.9245	0.8817	0.9579	0.0126	3.04%	-1.65%
25			5	0.902		0.8454	0.959	7	0.9220	0.8244	0.9368	0.0206	5.10%	0.87%
			2		500							0.0000	4 450/	4 200/

Angular (Corrected) Transformed Summary CV% %Effect Std Err Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max LC 1.277 1.282 0.007876 1.39% 0.00% 0 5 1.267 1.245 1.289 1.24 0.00% 0.0238 4.20% 5 1.333 1.338 6.25 1.267 1.201 1.263 1.214 -2.42% 4.07% 5 1.364 0.02364 12.5 1.298 1.232 1.364 1.292 1.22 25 5 1.169 1.349 1.288 1.138 1.317 0.03234 5.75% 0.67% 1.259 0.01088 1.88% -1.83% 50 5 1.321 1.298 1.25 1.316 1.29 1.26 0.03274 5.96% 3.02% 1.32 1.243 1.299 100 5 1.229 1.138 1.109

0.9396

0.9458

0.9275

0.8961

Analyst: QA: SC

1.45%

5.59%

0.0060

0.0221

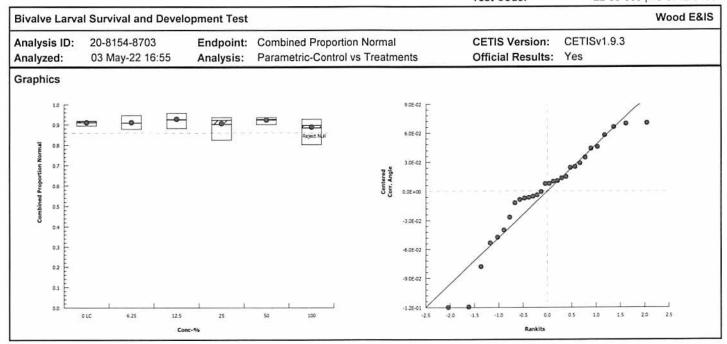
-1.38%

2.85%

50

100

03 May-22 16:55 (p 2 of 8) 22-03-063 | 15-6712-3463



Analyst: QA: JC

10-5076-3931

Report Date:

03 May-22 16:55 (p 3 of 8)

Wood E&IS

Test Code: 22-03-063 | 15-6712-3463

Bivalve Larval Survival and Development Test LC US 100% TST

Endpoint: Combined Proportion Normal

CETIS Version: CETISv1.9.3

Analyzed: 03 May-22 16:55 Analysis: Parametric Bioequivalence-Two Sample Official Results: Yes

Comments:

Analysis ID:

FC = Filtered Control (1.2um), 101 = 100% Filtered (1.2 um)

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	100% passed combined proportion normal

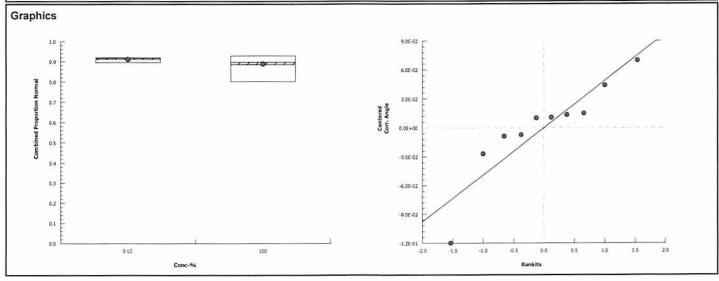
TST-Welch'	s t Tes	t						
Control	vs	Control II	Test Stat	Critical	DF	P-Type	P-Value	Decision(a:5%)
Lab Control		100*	8.373	2.132	4	CDF	5.6E-04	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0036543	0.0036543	1	1.289	0.2891	Non-Significant Effect
Error	0.0226842	0.0028355	8			
Total	0.0263385		9			

Distributional Tests									
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)				
Variances	Variance Ratio F Test	17.28	23.15	0.0173	Equal Variances				
Distribution	Shapiro-Wilk W Normality Test	0.8626	0.7411	0.0820	Normal Distribution				

Combined Prop	portion Norm	al Summar	/								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.9105	0.8978	0.9232	0.9163	0.8947	0.9190	0.0046	1.12%	0.00%
100		5	0.8845	0.8231	0.9458	0.8961	0.8015	0.9278	0.0221	5.59%	2.85%

Angular (Corre	cted) Transfo	rmed Sumr	nary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.267	1.245	1.289	1.277	1.24	1.282	0.007876	1.39%	0.00%
100	đi.	5	1.229	1.138	1.32	1.243	1.109	1.299	0.03274	5.96%	3.02%



Analyst: R QA: R

CETIS™ v1.9.3.0

03 May-22 16:56 (p 4 of 8) 22-03-063 | 15-6712-3463

Bivalve Larval Survival and Development Test FC US 100% Alfested TST

Wood E&IS

Analysis ID: 06-6774-9758 Endpoint: Combined Proportion Normal CETIS Version: CETISv1.9.3

Analyzed: 03 May-22 16:55 Analysis: Parametric Bioequivalence-Two Sample Official Results: Yes

Comments:

FC = Filtered Control (1.2um), 101 = 100% Filtered (1.2 um)

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	101% passed combined proportion normal

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF P-Typ	e P-Value	Decision(a:5%)	
Filter Control		101*	18.75	1.943	6 CDF	7.4E-07	Non-Significant Effect	

ANOVA Table

CANADA IN SURVEY AND INCOME.							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.0040655	0.0040655	1	3.002	0.1214	Non-Significant Effect	
Error	0.0108328	0.0013541	8				
Total	0.0148983		9				

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)	
Variances	Variance Ratio F Test	4.485	23.15	0.1752	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.9366	0.7411	0.5158	Normal Distribution	

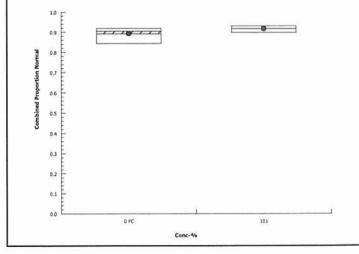
Combined Proportion Normal Summary

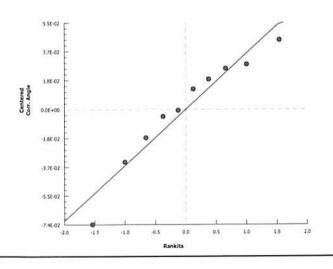
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	0.8917	0.8542	0.9293	0.9046	0.8435	0.9187	0.0135	3.39%	0.00%
101		5	0.9164	0.9009	0.9318	0.9163	0.8973	0.9304	0.0056	1.36%	-2.77%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	1.238	1.179	1.296	1.257	1.164	1.282	0.02105	3.80%	0.00%
101		5	1.278	1.25	1.306	1.277	1.245	1.304	0.009938	1.74%	-3.26%







Analyst: QV QA: SC

002-883-387-8 CETIS™ v1.9.3.0

Report Date: Test Code: 03 May-22 16:56 (p 5 of 8) 22-03-063 | 15-6712-3463

Bivalve Larva	al Survival and	Developm	ent Test							*0	Wood E&IS
Analysis ID: Analyzed:	06-0682-962 03 May-22 1			portion Norr rametric-Cor		tments		S Version		9.3	
Comments: FC = Filtered (Control (1.2um), 101 = 100	% Filtered (1.	2 um)							
Data Transfor	rm	Alt Hyp					NOEL	LOEL	TOEL	TU	PMSD
Angular (Corre	ected)	C > T					100	> 100	n/a	1	3.43%
Dunnett Multi	iple Comparis	on Test									
Control	vs Conc-	%	Test Stat	Critical	MSD DF	P-Type	P-Value	Decision	ı(a:5%)		
Lab Control	6.25		-0.9286	2.362	0.051 8	CDF	0.9797	Non-Sign	ificant Effect		
	12.5		-1.717	2.362	0.051 8	CDF	0.9981	Non-Sign	ificant Effect		
	25		-0.5723	2.362	0.051 8	CDF	0.9494	Non-Sign	ificant Effect		
	50		-1.885	2.362	0.051 8	CDF	0.9989	Non-Sign	ificant Effect		
	100		-0.2456	2.362	0.051 8	CDF	0.8957	Non-Sign	ificant Effect		
ANOVA Table)										
Source	Sum So	quares	Mean Sq	uare	DF	F Stat	P-Value	Decision	ı(a:5%)		
	748,723,234,123	23	0.001412	5	5	1.193	0.3419	Non-Sign	ificant Effect		
Between	0.00706	23									
Between Error	0.00706		0.001183	5	24						
		45	0.001183	5	29	-					
Error	0.02840 0.03546	45	0.001183	5		_					
Error Total Distributional	0.02840 0.03546	45	0.001183	5		Critical	P-Value	Decision	n(α:1%)		
Error Total Distributional Attribute	0.02840 0.03546 I Tests Test	668			29 Test Stat	Library Samuel Control	CALL COVERNIE OF STREET	Decision Equal Va			
Error Total Distributional	0.02840 0.03546 I Tests Test Bartlett	668	/ariance Test		29	Critical 15.09 0.9031	P-Value 0.5211 0.9457	Equal Va			
Error Total Distributional Attribute Variances Distribution	0.02840 0.03546 I Tests Test Bartlett Shapiro	Equality of \	/ariance Test		7 Test Stat 4.199	15.09	0.5211	Equal Va	riances		
Error Total Distributional Attribute Variances Distribution	0.02840 0.03546 I Tests Test Bartlett	Equality of \	/ariance Test		Test Stat 4.199 0.9855	15.09 0.9031	0.5211	Equal Va	riances	CV%	%Effect
Error Total Distributional Attribute Variances Distribution Proportion No	0.02840 0.03546 I Tests Test Bartlett Shapiro ormal Summa Code	Equality of V-Wilk W Nor	/ariance Test mality Test		Test Stat 4.199 0.9855	15.09 0.9031	0.5211 0.9457	Equal Va Normal D	riances Distribution	CV% 1.12%	%Effect 0.00%
Distributional Attribute Variances Distribution Proportion No Conc-% 0	0.02840 0.03546 I Tests Test Bartlett Shapiro	Equality of \ -Wilk W Nor	/ariance Test mality Test Mean	95% LCL 0.8978	Test Stat 4.199 0.9855 95% UCL	15.09 0.9031 Median	0.5211 0.9457 Min	Equal Va Normal D	riances Distribution		
Error Total Distributional Attribute Variances Distribution Proportion No. Conc-% 0 6.25	0.02840 0.03546 I Tests Test Bartlett Shapiro ormal Summa Code	Equality of Norwy Count 5 5	/ariance Test mality Test Mean 0.9105	95% LCL	79 Test Stat 4.199 0.9855 95% UCL 0.9232	15.09 0.9031 Median 0.9163	0.5211 0.9457 Min 0.8947	Equal Va Normal D Max 0.9190	Std Err 0.0046	1.12%	0.00%
Distributional Attribute Variances Distribution Proportion No Conc-% 0 6.25 12.5	0.02840 0.03546 I Tests Test Bartlett Shapiro ormal Summa Code	Equality of Norwick W Norw	/ariance Test mality Test Mean 0.9105 0.9207 0.9296	95% LCL 0.8978 0.8926 0.9040	29 Test Stat 4.199 0.9855 95% UCL 0.9232 0.9489 0.9552	15.09 0.9031 Median 0.9163 0.9225 0.9245	0.5211 0.9457 Min 0.8947 0.8846 0.9023	Max 0.9190 0.9467	Std Err 0.0046 0.0102	1.12% 2.46%	0.00% -1.13%
Distributional Attribute Variances Distribution Proportion No Conc-% 0 6.25 12.5 25	0.02840 0.03546 I Tests Test Bartlett Shapiro ormal Summa Code	Equality of Norwy Count 5 5 5 5	/ariance Test mality Test Mean 0.9105 0.9207 0.9296 0.9169	95% LCL 0.8978 0.8926 0.9040 0.8939	29 Test Stat 4.199 0.9855 95% UCL 0.9232 0.9489 0.9552 0.9399	15.09 0.9031 Median 0.9163 0.9225 0.9245 0.9220	0.5211 0.9457 Min 0.8947 0.8846 0.9023 0.8963	Max 0.9190 0.9467 0.9579	Std Err 0.0046 0.0102 0.0092	1.12% 2.46% 2.22% 2.02%	0.00% -1.13% -2.10%
Distributional Attribute Variances Distribution Proportion No Conc-% 0 6.25 12.5	0.02840 0.03546 I Tests Test Bartlett Shapiro ormal Summa Code	Equality of Norwick W Norw	/ariance Test mality Test Mean 0.9105 0.9207 0.9296	95% LCL 0.8978 0.8926 0.9040	29 Test Stat 4.199 0.9855 95% UCL 0.9232 0.9489 0.9552	15.09 0.9031 Median 0.9163 0.9225 0.9245	0.5211 0.9457 Min 0.8947 0.8846 0.9023	Max 0.9190 0.9467 0.9579 0.9368	Std Err 0.0046 0.0102 0.0092 0.0083	1.12% 2.46% 2.22%	0.00% -1.13% -2.10% -0.71%
Distributional Attribute Variances Distribution Proportion No Conc-% 0 6.25 12.5 25 50 100	0.02840 0.03546 I Tests Test Bartlett Shapiro ormal Summa Code	Equality of Norwick W Norw	Mean 0.9105 0.9207 0.9296 0.9169 0.9323 0.9125	95% LCL 0.8978 0.8926 0.9040 0.8939 0.9191	29 Test Stat 4.199 0.9855 95% UCL 0.9232 0.9489 0.9552 0.9399 0.9456	15.09 0.9031 Median 0.9163 0.9225 0.9245 0.9220 0.9275	0.5211 0.9457 Min 0.8947 0.8846 0.9023 0.8963 0.9231	Max 0.9190 0.9467 0.9579 0.9368 0.9492	Std Err 0.0046 0.0102 0.0092 0.0083 0.0048	1.12% 2.46% 2.22% 2.02% 1.15%	0.00% -1.13% -2.10% -0.71% -2.40%
Distributional Attribute Variances Distribution Proportion No Conc-% 0 6.25 12.5 25 50 100	0.02840 0.03546 I Tests Test Bartlett Shapiro ormal Summa Code LC	Equality of Norwick W Norw	/ariance Test mality Test Mean 0.9105 0.9207 0.9296 0.9169 0.9323 0.9125 mary	95% LCL 0.8978 0.8926 0.9040 0.8939 0.9191	29 Test Stat 4.199 0.9855 95% UCL 0.9232 0.9489 0.9552 0.9399 0.9456	15.09 0.9031 Median 0.9163 0.9225 0.9245 0.9220 0.9275	0.5211 0.9457 Min 0.8947 0.8846 0.9023 0.8963 0.9231	Max 0.9190 0.9467 0.9579 0.9368 0.9492	Std Err 0.0046 0.0102 0.0092 0.0083 0.0048	1.12% 2.46% 2.22% 2.02% 1.15%	0.00% -1.13% -2.10% -0.71% -2.40%
Error Total Distributional Attribute Variances Distribution Proportion No. Conc-% 0 6.25 12.5 25 50 100 Angular (Corr	0.02840 0.03546 I Tests Test Bartlett Shapiro ormal Summa Code LC	Equality of V-Wilk W Nor Count 5 5 5 5 cormed Sum	/ariance Test mality Test Mean 0.9105 0.9207 0.9296 0.9169 0.9323 0.9125 mary	95% LCL 0.8978 0.8926 0.9040 0.8939 0.9191 0.8832	29 Test Stat 4.199 0.9855 95% UCL 0.9232 0.9489 0.9552 0.9399 0.9456 0.9418	15.09 0.9031 Median 0.9163 0.9225 0.9245 0.9220 0.9275 0.9140	0.5211 0.9457 Min 0.8947 0.8846 0.9023 0.8963 0.9231 0.8830	Max 0.9190 0.9467 0.9579 0.9368 0.9492 0.9417	Std Err 0.0046 0.0102 0.0092 0.0083 0.0048 0.0106	1.12% 2.46% 2.22% 2.02% 1.15% 2.59%	0.00% -1.13% -2.10% -0.71% -2.40% -0.22%
Error Total Distributional Attribute Variances Distribution Proportion No Conc-% 0 6.25 12.5 25 50 100 Angular (Corr	0.02840 0.03546 I Tests Test Bartlett Shapiro ormal Summa Code LC rected) Transf	Equality of Norwick W Norw	/ariance Test mality Test Mean 0.9105 0.9207 0.9296 0.9169 0.9323 0.9125 mary Mean	95% LCL 0.8978 0.8926 0.9040 0.8939 0.9191 0.8832	7est Stat 4.199 0.9855 95% UCL 0.9232 0.9489 0.9552 0.9399 0.9456 0.9418	15.09 0.9031 Median 0.9163 0.9225 0.9245 0.9220 0.9275 0.9140 Median	0.5211 0.9457 Min 0.8947 0.8846 0.9023 0.8963 0.9231 0.8830	Max 0.9190 0.9467 0.9579 0.9368 0.9492 0.9417	Std Err 0.0046 0.0102 0.0092 0.0083 0.0048 0.0106	1.12% 2.46% 2.22% 2.02% 1.15% 2.59%	0.00% -1.13% -2.10% -0.71% -2.40% -0.22%
Error Total Distributional Attribute Variances Distribution Proportion No Conc-% 0 6.25 12.5 25 50 100 Angular (Corr Conc-% 0 6.25	0.02840 0.03546 I Tests Test Bartlett Shapiro ormal Summa Code LC rected) Transf	Equality of Norwing Count 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	/ariance Test mality Test Mean 0.9105 0.9207 0.9296 0.9169 0.9323 0.9125 mary Mean 1.267	95% LCL 0.8978 0.8926 0.9040 0.8939 0.9191 0.8832 95% LCL 1.245	7est Stat 4.199 0.9855 95% UCL 0.9232 0.9489 0.9552 0.9399 0.9456 0.9418	15.09 0.9031 Median 0.9163 0.9225 0.9245 0.9220 0.9275 0.9140 Median 1.277	0.5211 0.9457 Min 0.8947 0.8846 0.9023 0.8963 0.9231 0.8830 Min 1.24	Max 0.9190 0.9467 0.9579 0.9368 0.9492 0.9417 Max 1.282	Std Err 0.0046 0.0102 0.0092 0.0083 0.0048 0.0106 Std Err 0.007876	1.12% 2.46% 2.22% 2.02% 1.15% 2.59% CV% 1.39%	0.00% -1.13% -2.10% -0.71% -2.40% -0.22% %Effect 0.00%
Error Total Distributional Attribute Variances Distribution Proportion No Conc-% 0 6.25 12.5 25 50 100 Angular (Corr Conc-% 0 6.25 12.5 12.5	0.02840 0.03546 I Tests Test Bartlett Shapiro ormal Summa Code LC rected) Transf	Equality of Norwick W Norw	Mean 0.9105 0.9207 0.9296 0.9169 0.9323 0.9125 mary Mean 1.267 1.287	95% LCL 0.8978 0.8926 0.9040 0.8939 0.9191 0.8832 95% LCL 1.245 1.236	7est Stat 4.199 0.9855 95% UCL 0.9232 0.9489 0.9552 0.9399 0.9456 0.9418 95% UCL 1.289 1.339	15.09 0.9031 Median 0.9163 0.9225 0.9245 0.9220 0.9275 0.9140 Median 1.277 1.289	0.5211 0.9457 Min 0.8947 0.8846 0.9023 0.8963 0.9231 0.8830 Min 1.24 1.224	Max 0.9190 0.9467 0.9579 0.9368 0.9492 0.9417 Max 1.282 1.338	Std Err 0.0046 0.0102 0.0092 0.0083 0.0048 0.0106 Std Err 0.007876 0.01838	1.12% 2.46% 2.22% 2.02% 1.15% 2.59% CV% 1.39% 3.19%	0.00% -1.13% -2.10% -0.71% -2.40% -0.22% *Effect 0.00% -1.59%
Error Total Distributional Attribute Variances Distribution Proportion No Conc-% 0 6.25 12.5 25 50 100 Angular (Corr Conc-% 0	0.02840 0.03546 I Tests Test Bartlett Shapiro ormal Summa Code LC rected) Transf	Equality of Norwill W Norwill W Norwill W Norwill S 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Mean 0.9105 0.9207 0.9296 0.9169 0.9323 0.9125 mary Mean 1.267 1.287 1.305	95% LCL 0.8978 0.8926 0.9040 0.8939 0.9191 0.8832 95% LCL 1.245 1.236 1.253	29 Test Stat 4.199 0.9855 95% UCL 0.9232 0.9489 0.9552 0.9399 0.9456 0.9418 95% UCL 1.289 1.339 1.356	15.09 0.9031 Median 0.9163 0.9225 0.9245 0.9220 0.9275 0.9140 Median 1.277 1.289 1.292	0.5211 0.9457 Min 0.8947 0.8846 0.9023 0.8963 0.9231 0.8830 Min 1.24 1.224 1.253	Max 0.9190 0.9467 0.9579 0.9368 0.9492 0.9417 Max 1.282 1.338 1.364	Std Err 0.0046 0.0102 0.0092 0.0083 0.0048 0.0106 Std Err 0.007876 0.01838 0.0185	1.12% 2.46% 2.22% 2.02% 1.15% 2.59% CV% 1.39% 3.19% 3.17%	0.00% -1.13% -2.10% -0.71% -2.40% -0.22% %Effect 0.00% -1.59% -2.95%

Analyst: QA:

002-883-387-8 CETIS™ v1.9.3.0

Report Date: Test Code:

03 May-22 16:56 (p 7 of 8) 22-03-063 | 15-6712-3463

Bivalve Larval Survival and Development Test

Wood E&IS

Analysis ID: Analyzed:

01-6506-6316 03 May-22 16:55

Analysis:

Endpoint: Survival Rate Nonparametric-Control vs Treatments **CETIS Version:**

CETISv1.9.3 Official Results: Yes

Comments:

FC = Filtered Control (1.2um), 101 = 100% Filtered (1.2 um)

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	100	> 100	n/a	1	2.90%

Steel Many-One Rank Sum Test										
Control v	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)	
Lab Control		6.25	20	16	1	8	Asymp	0.1899	Non-Significant Effect	
		12.5	25	16	1	8	Asymp	0.6353	Non-Significant Effect	
		25	25	16	1	8	Asymp	0.6353	Non-Significant Effect	
		50	22.5	16	1	8	Asymp	0.3937	Non-Significant Effect	
		100	25	16	1	8	Asymp	0.6353	Non-Significant Effect	

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0185592	0.0037118	5	0.4204	0.8298	Non-Significant Effect
Error	0.211885	0.0088285	24			
Total	0.230444		29			

Distributional 1	Tests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variances	Levene Equality of Variance Test	2.726	3.895	0.0436	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.4173	4.248	0.8305	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.7695	0.9031	1.9E-05	Non-Normal Distribution

Survival Rate	urvival Rate Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect	
0	LC	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%	
6.25		5	0.9870	0.9654	1.0000	0.9924	0.9580	1.0000	0.0078	1.76%	1.30%	
12.5		5	0.9954	0.9827	1.0000	1.0000	0.9771	1.0000	0.0046	1.03%	0.46%	
25		5	0.9840	0.9395	1.0000	1.0000	0.9198	1.0000	0.0160	3.64%	1.60%	
50		5	0.9901	0.9731	1.0000	1.0000	0.9733	1.0000	0.0061	1.38%	0.99%	
100		5	0.9702	0.8876	1.0000	1.0000	0.8511	1.0000	0.0298	6.86%	2.98%	

Angular (Corr	ected) Transfo	rmed Sumr	nary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.54	1.54	1.54	1.54	1.54	1.54	0	0.00%	0.00%
6.25		5	1.475	1.384	1.566	1.483	1.364	1.54	0.03279	4.97%	4.22%
12.5		5	1.516	1.448	1.583	1.54	1.419	1.54	0.0242	3.57%	1.57%
25		5	1.489	1.346	1.631	1.54	1.284	1.54	0.05123	7.69%	3.33%
50		5	1.489	1.402	1.576	1.54	1.407	1.54	0.03121	4.69%	3.30%
100		5	1.467	1.264	1.67	1.54	1.175	1.54	0.07304	11.13%	4.74%

Analyst: QA:

19 Mar-22 15:25 (p 1 of 2)

15-6712-3463/22-03-06356

Bivalve Larval Survival and Development Test

Wood E&IS

Species: Mytilis galloprovincialis Protocol: EPA/600/R-95/136 (1995) Sample Code: A:5E372E9C 22-W67/ Sample Source: Shelter Island Yacht Basin

Start Date: 22 Mar-22 1615 Species: Mytilis gall End Date: 24 Mar-22 1615 Protocol: EPA/600/F Sample Date: 24 Mar-22 0930 Material: Seawater

Sample Station: SIYB REF1

Conc-%	Code	Rep	1	Initial Density	Final Density	# Counted	# Normal	Notes
			241			258	238	BI 4/19/22
			242			283	260	BI 4/19/22 4/20/22 (0.4%) 1 curved hinge
			243			279	255	4/20/22 (0.4%) 1 curved hinge
			244			284	261	
			245			276	253	
			246			279		
			247			265	234	
			248			260		
			249			273		
			250			273		
			251			295		
			252			291		
			253			266		
			254			276		
			255					
			256		9	314	2113	256 + 243
			257			265		
			258			292		
	1		259			286		
			260			276		
			261			241	2/1	+-1
			262		1	250+	BF 2-1	counted Abril 223+210
			263		,	210	210	223.210
			264			278	273	4
			265			245	-	4/21/22
			266			286		7/2//22
	-		267					
			268			255		
			269			281 268	264 245	
			270			269		
			271			-		
			272				241	
			273					
			274			256	2.27	
			2/4			289	269	Y

Report Date: Test Code/ID: 19 Mar-22 15:25 (p 2 of 2)

19 Mai-22	13.23 (p 2 01 2)
15-6712	-3463/22-03-0 63 55

Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
			275			259	231	BI 4/19/22
			276			284	264	BI
			277			261	237	
			278				284	
			279			251	231	
			280			261	242	V

Report Date: Test Code/ID: 19 Mar-22 15:25 (p 1 of 2)

15-6712-3463/22-03-069 56

Bivalve Larval Survival and Development Test

Wood E&IS

Start Date: End Date:

22 Mar-22 65 Species: Mytilis galloprovincialis 24 Mar-22 65 Protocol: EPA/600/R-95/136 (1995)

Sample Code: 5E372E06 272057|
Sample Source: Shelter Island Yacht Basin

Conc-%		Rep		Materia Initial Density	Final	10.00	# Normal			Notes
0	FC	1	242	- Johnson,		283	760	BI	4/19/22	
0	FC	2	263		3	F2/4 B	541		4/19/22	
0	FC	3	275			261	-11			
0	FC	4	265							
0	FC	5	277							
0	LC	1	272			2/7	- (()			
	LC		253			263	241			
0		2								
0	LC	3	266							
0	LC	4	244							
0	LC	5	245							
6.25		1	276			284	264			
6.25		2	241							
6.25		3	279							
6.25		4	248							
6.25		5	278							
12.5		1	268			281	264			
12.5		2	260			201	20 1			
12.5		3	257							
12.5	-	4	264							
12.5		5	273							
25	-	1	259			0.026	257			
25		2	251			286	257			
25		3	274							
25		4	261							
25		5	270							
50		1	255			314	294			
50		2	249							
50		3	267							
50		4	256							
50		5	254			DI	PT			
100		1	262			291	270			
100		2	252			291 291	270			
100		3	246							
100	1	4	247							

Report Date: Test Code/ID: 19 Mar-22 15:25 (p 2 of 2)

19 Mar-22 13.20 (p = 15-6712-3463/22-03-0096

> 2-03-0	# Normal	# Counted	Final Density	Initial Density	Pos	Rep	Code	Conc-%
					243	5		100
	262	292			258	1		101
					269	2		101
					280	3		101
					271	4		101
					250	5		101

QC. KB

Analyst: Bl QA: Ab

Water Quality for Bivalve Development

Client: Wood - Port of San Diego

Test Species: M. galloprovincialis

Sample ID: SIYB-REF-1

Start Date/Time: 3/22/2022 /6/

Test No. 22-03-662-16

End Date/Time: 3/24/2022 1615

	- 056		ac Polisti Sattle Coltina IV	ν,		
Test Conc.		Water Quality Me	asurements			
(%)	Parameter	0hr	24hr	48hr		
	Temp. (°C)	15.7	15.9	15.7		
Lab Control	Salinity (ppt)	32.9	33.2	33.5		
Lab Control	pH (units)	7.91	7.83	7.86		
	DO (mg/L)	7.7	8.7	8.5		
	Temp. (°C)	15.3	15.9	15.7		
Filter Control	Salinity (ppt)	32.9	33.3	23.5		
Filter Control	pH (units)	7.93	7.81	7.85		
	DO (mg/L)	7.8	8.7	8.5		
	Temp. (°C)	15.3	15.8	15.7		
6.25	Salinity (ppt)	32.9	33.5	33.7		
6.25	pH (units)	7.94	7.82	7.85		
	DO (mg/L)	8.0	8.8	8.6		
	Temp. (°C)	15.4	15.8	15.7		
12.5	Salinity (ppt)	32-9	33.4	33.6		
12.5	pH (units)	7.15	7.83	7.86		
	DO (mg/L)	8.0	প . প	8.5		
	Temp. (°C)	15.2	15.9	33.6		
25	Salinity (ppt)	32.9	33.5	33.6		
23	pH (units)	7.96	7.84	7.86		
	DO (mg/L)	8.6	8.9	8.6		
	Temp. (°C)	15.3	15.9	15.8		
50	Salinity (ppt)	3 3.0	33.5	33.6		
50	pH (units)	7.98 8-0	7.84	7.87		
	DO (mg/L)	8-0	8.8	8.6		
	Temp. (°C)	15.0	15.9			
100	Salinity (ppt)	357.94 32.9	33.41	33.6		
100	pH (units)	7.94	7.82	7.85		
	DO (mg/L)	8.3	8.7	8.5		
	Temp. (°C)	15.0	15.9	15.7		
100 Filtered	Salinity (ppt)	32.3	33.0	33.3		
(1.2µm)	pH (units)	7.92	7.83	7-86		
	DO (mg/L)	8.2	8.6	8.5		
	Tech Initials:	131	CB	Alo		

Source of Animals: Ath Mission Bay

Date Received: 3/23/27

Comments:

QA: A6 412422

Final: Sc spoper

APPENDIX B Acute Topsmelt Test Raw Data & Statistical Analyses

Site: SIYB-1

CETIS Summary Report

Report Date: Test Code: 13 Apr-22 17:38 (p 1 of 1)

e: 22-03-050 | 16-4985-6208

Pacific Topsn	nelt 96-h Acute	Surviva	l Test							9	Wood E&IS
Batch ID: Start Date: Ending Date: Duration:	04-1874-6629 23 Mar-22 11:4 27 Mar-22 12:4 4d 1h	40 40	Test Type: Protocol: Species: Source:	Survival (96h) EPA/821/R-02- Atherinops affir Aquatic Biosyst	Dil	ne:	Natural Seawate Not Applicable 14 d	er			
(15)	19-7413-1782 22 Mar-22 15:5 22 Mar-22 17:4 20h (13.7 °C)	50 40	Code: Material: Source: Station:	22-W065 Ambient Samp Shelter Island ' SIYB 1	Client: Wood Environment and Infrast Project: SIYB TMDL Monitoring						
Multiple Com	parison Summ	ary									
Analysis ID	Endpoint		Comp	parison Method			NOEL	LOEL		TU	PMSD √
12-3679-8711	96h Survival R	ate	Steel	Many-One Rank	Sum Test		100	> 100	n/a	1	7.21%
20-4884-4623	96h Survival R	ate	TST-\	Welch's t Test			100	> 100	n/a	1	n/a
96h Survival I	Rate Summary										
Conc-%	Code	Coun	t Mean	95% LCL	95% UCL	Min	Max	Std E	rr Std Dev	CV%	%Effect
0	LC	6	0.966	7 0.8810	1.0000	0.8000	1.0000	0.0333	3 0.0817	8.45%	0.00%
25		6	1.000	0 1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	-3.45%
50		6	1.000	0 1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	-3.45%
100		6	1.000	0 1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	-3.45%
96h Survival I	Rate Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6				
0	LC	1.000	1.000	0 1.0000	0.8000	1.0000	1.0000				
25		1.000	1.000	0 1.0000	1.0000	1.0000	1.0000				
50		1.000	1.000	0 1.0000	1.0000	1.0000	1.0000				
100		1.000	1.000	0 1.0000	1.0000	1.0000	1.0000				

13 Apr-22 17:38 (p 1 of 2) 22-03-050 | 16-4985-6208

Pacific Topsn	melt 96-h Acute Sur	rvival Test						Wood E&IS
Analysis ID: Analyzed:	12-3679-8711 13 Apr-22 17:37		96h Survival Rate Nonparametric-Control vs Treatments	-	TIS Version: ficial Results:	CETISv Yes	1.9.3	
Data Transfor	rm A	Alt Hyp		NOEL	LOEL	TOEL	TU	PMSD
Angular (Corre	ected) C	> T		100	> 100	n/a	1	7.21%

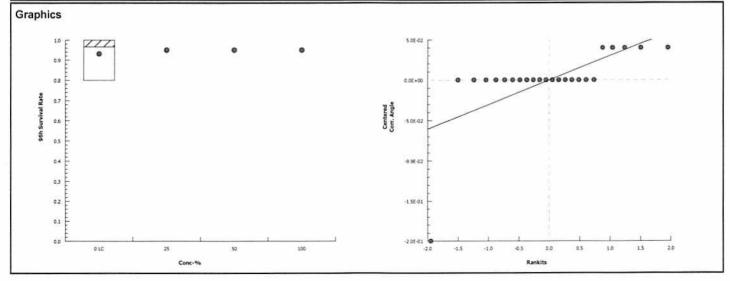
Steel Many-One Rank Sum Test											
Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(a:5%)		
Lab Control		25	42	26	1	10	Asymp	0.8900	Non-Significant Effect		
		50	42	26	1	10	Asymp	0.8900	Non-Significant Effect		
		100	42	26	1	10	Asymp	0.8900	Non-Significant Effect		

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0070885	0.0023628	3	1	0.4133	Non-Significant Effect
Error	0.0472566	0.0023628	20			
Total	0.0543451		23			

Distributional 1	Distributional Tests											
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)							
Variances	Levene Equality of Variance Test	6.25	4.938	0.0036	Unequal Variances							
Variances	Mod Levene Equality of Variance Test	1	4.938	0.4133	Equal Variances							
Distribution	Shapiro-Wilk W Normality Test	0.4436	0.884	1.7E-08	Non-Normal Distribution							

96h Survival I	Rate Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	0.00%
25		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-3.45%
50		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-3.45%
100		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-3.45%

Angular (Corr	Angular (Corrected) Transformed Summary													
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect			
0	LC	6	1.306	1.204	1.408	1.345	1.107	1.345	0.03969	7.45%	0.00%			
25		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	-3.04%			
50		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	-3.04%			
100		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	-3.04%			



Analyst: RV QA: SU

CETIS™ v1.9.3.0

Report Date:

13 Apr-22 17:38 (p 2 of 2) 22-03-050 | 16-4985-6208

Test Code: Wood E&IS Pacific Topsmelt 96-h Acute Survival Test CETISv1.9.3 **CETIS Version:** Analysis ID: 20-4884-4623 Endpoint: 96h Survival Rate Parametric Bioequivalence-Two Sample Official Results: Yes Analyzed: 13 Apr-22 17:37 Analysis: TST_b NOEL LOEL TOEL TU **Data Transform** Alt Hyp 8.0 100 > 100 n/a Angular (Corrected) C*b < T

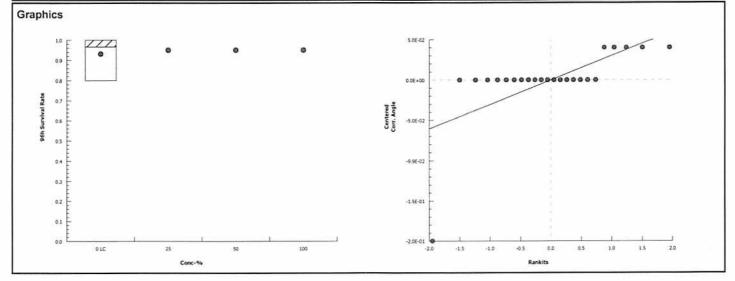
TST-Welch's	s t Tes	t						
Control	vs	Control II	Test Stat	Critical	DF	P-Type	P-Value	Decision(a:10%)
Lab Control		25*	9.474	1.476	5	CDF	1.1E-04	Non-Significant Effect
		50*	9.474	1.476	5	CDF	1.1E-04	Non-Significant Effect
		100*	9.474	1.476	5	CDF	1.1E-04	Non-Significant Effect

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.0070885	0.0023628	3	1	0.4133	Non-Significant Effect	
Error	0.0472566	0.0023628	20				
Total	0.0543451		23				

Distributional Tests											
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)						
Variances	Levene Equality of Variance Test	6.25	4.938	0.0036	Unequal Variances						
Variances	Mod Levene Equality of Variance Test	1	4.938	0.4133	Equal Variances						
Distribution	Shapiro-Wilk W Normality Test	0.4436	0.884	1.7E-08	Non-Normal Distribution						

96h Survival F	6h Survival Rate Summary													
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect			
0	LC	6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	0.00%			
25		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-3.45%			
50		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-3.45%			
100		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-3.45%			

Angular (Corr	Angular (Corrected) Transformed Summary												
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect		
0	LC	6	1.306	1.204	1.408	1.345	1.107	1.345	0.03969	7.45%	0.00%		
25		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	-3.04%		
50		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	-3.04%		
100		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	-3.04%		



Analyst: RV QA: SC

96hr Marine Acute Test with 48hr Renewal

Client: Sample ID:			- She	lter Isla	and Ya	icht Bas	Test Species Start Date/Time	_	nops aff						
Test No.			2-1	50			End Date/Time		27/2						
		V 0	2-1	150				-21	-11-	C .C	- 10				
Sample ID	Rep			Counts				Water Quality							
(%)		0	24	48	72	96	Parameter	0	24	48f	,48i3	72	96		
	Α	5	5	5	5	5	Temp. (°C)	21.5		21.2	444.0	20.9	20.7		
	В	5	5	5	2	5	Salinity (ppt)	33.1		33.8		34.0	34.2		
LC #1	С	5	5	5	5	5	pH (units)	790	7.72	7.62	7.88		7.80		
LC #1	D	5	5	5	4	4	DO (mg/L)	7.2	6.2	6.1	7.5	6.3	6.1		
	Ε	5	5	5	5	5									
	F	5	5	5	5	5									
	Α	5	5	5	5	5	Temp. (°C)	21.7	21.8	21.2	20.5	Z0.8	20.7		
	В	5	5	5	5	5	Salinity (ppt)	33.1	39/	135.9	33.7	340	34.2		
25	С	5	5	5	5	5	pH (units)	7.90	7.70	7.66	7.89	7.82	7.76		
25	D	5	5	5	5	5	DO (mg/L)	73	64	6.3	7.6	6.3	6.1		
	E	5	1	5	5	5		i grow		NEW R					
	F	5	5	5	5	5									
100	А	5	5	5	5	5	Temp. (C)	21.6	21.9	21.2	20.6	8.05	20.7		
	В	5	5	5	5	5	Salinity (ppt)	33.0	34.0	33.9	33.5	34.0	34.2		
F0	С	5	5	5	5	5	pH (units)	790	769	7.66	7.90	7.82	7.75		
50	D	5	5	5	5	5	DO (mg/L)	7.3	6.3	6.1	7.7	65	62		
	E	5	5	5	5										
	F	5	5	5	2	5									
	Α	5	-	5	5	5	Temp. (°C)	21.1	21.7	21.1	20.4	20.8	20.7		
	В	5	5	5	5	5	Salinity (ppt)	33.0	34.1	The second second	332		34.2		
	С	5	5	5	5	5	pH (units)	7.89	769		7.90	281			
100	D	5	5	5	5	5	DO (mg/L)	7.4	6.4	6.2	8.0	6.7	6.3		
	Е	5	5	5	5	5,					15-11	EAL ON			
	F	5	5	3	5	5									
	А						Temp. (C)	T							
	В						Salinity (ppt)								
	С						pH (units)								
	D						DO (mg/L)								
	E							No. The							
	F														
Tec	n Initials:	SC	SL	Ab	50	A6	Tech Initials	5	SC	26	AC	SC	Ab		
N	Qc: D	V									,				
	nimals Re		3/1	8/27	LA	35	<u>Feedings</u>	0,	24	48	72	96			
Age of Anin	nals at Te	st Start:		4 da	X5		Initials (AM):	EN	SC	96	25	HO			
				,			Initials (PM):								
Comments:															
	0									1	-6 15	h-			
QC Check:	K	14	13	22				Fina	al Review	PL	5/20	u			

Wood Environmental Toxicology Lab, 4905 Morena Blvd, Ste. 1304, San Diego, CA 92117

Site: SIYB-2

CETIS Summary Report

Pacific Topsmelt 96-h Acute Survival Test

Report Date:

13 Apr-22 17:41 (p 1 of 1) 22-03-051 | 09-2084-1762

Test Code:	22-03-051 09-2084-1762
	Wood E&IS

Batch ID: 18-2203-6722 Test Type: Survival (96h) Analyst:

Start Date: 23 Mar-22 11:40 Protocol: EPA/821/R-02-012 (2002) Diluent: Natural Seawater Ending Date: 27 Mar-22 12:40 Species: Atherinops affinis Brine: Not Applicable

Duration: 4d 1h Source: Aquatic Biosystems, CO Age: 14 d

Sample ID: 15-5493-8898 Code: 22-W066 Client: Wood Environment and Infrastructure

Sample Date: 22 Mar-22 15:00 Material: Ambient Sample Project: SIYB TMDL Monitoring
Receipt Date: 22 Mar-22 17:40 Source: Shelter Island Yacht Basin

Sample Age: 21h (13 °C) Station: SIYB 2

Multiple Com	parison Summary						
Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD √
09-6857-0666	96h Survival Rate	Steel Many-One Rank Sum Test	100	> 100	n/a	1	12.0%
11-1162-1219	96h Survival Rate	TST-Welch's t Test	100	> 100	n/a	1	n/a

96h Survival I	6h Survival Rate Summary													
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect			
0	LC	6	0.9667	0.8810	1.0000	0.8000	1.0000	0.0333	0.0817	8.45%	0.00%			
25		6	0.9667	0.8810	1.0000	0.8000	1.0000	0.0333	0.0817	8.45%	0.00%			
50		6	0.9333	0.8249	1.0000	0.8000	1.0000	0.0422	0.1033	11.07%	3.45%			
100		6	0.9667	0.8810	1.0000	0.8000	1.0000	0.0333	0.0817	8.45%	0.00%			

96h Survival	Rate Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6
0	LC	1.0000	1.0000	1.0000	0.8000	1.0000	1.0000
25		0.8000	1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	0.8000	0.8000	1.0000	1.0000	1.0000
100		1.0000	1.0000	0.8000	1.0000	1.0000	1.0000

50

100

Report Date: Test Code:

0.5503

0.7500

Non-Significant Effect

Non-Significant Effect

13 Apr-22 17:40 (p 1 of 2) 22-03-051 | 09-2084-1762

Pacific Tops	melt 9	96-h Acute Sur	vival Test									Wood E&IS
Analysis ID: Analyzed:	97.50	6857-0666 Apr-22 17:40	Endpoint: Analysis:		Survival R		vs Treatments		TIS Version: icial Results		9.3	
Data Transfo	rm	А	It Hyp					NOEL	LOEL	TOEL	TU	PMSD
Angular (Corre	ected) C	> T					100	> 100	n/a	1	12.03%
Steel Many-C	ne R	ank Sum Test										
Control	vs	Conc-%	Test :	Stat	Critical	Ties	DF P-Type	P-Value	Decision	(α:5%)		
Lab Control		25	39		26	2	10 Asymp	0.7500	Non-Sign	ificant Effect		

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.0070885	0.0023628	3	0.2174	0.8832	Non-Significant Effect	
Error	0.21738	0.010869	20				
Total	0.224469		23				

10 Asymp

10 Asymp

2

2

26

26

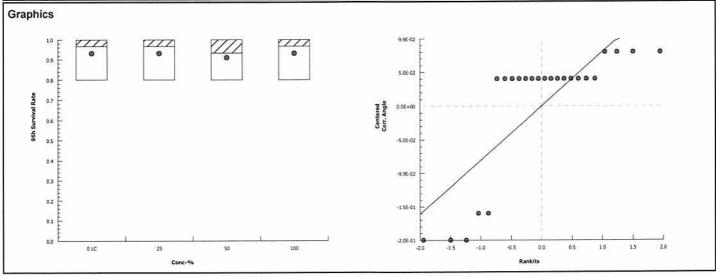
36

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Distributional 1	l'ests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	0.411	11.34	0.9380	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.6264	0.884	1.2E-06	Non-Normal Distribution

96h Survival I	6h Survival Rate Summary													
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect			
0	LC	6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	0.00%			
25		6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	0.00%			
50		6	0.9333	0.8249	1.0000	1.0000	0.8000	1.0000	0.0422	11.07%	3.45%			
100		6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	0.00%			

Angular (Corr	Angular (Corrected) Transformed Summary												
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect		
0	LC	6	1.306	1.204	1.408	1.345	1.107	1.345	0.03969	7.45%	0.00%		
25		6	1.306	1.204	1.408	1.345	1.107	1.345	0.03969	7.45%	0.00%		
50		6	1.266	1.137	1.395	1.345	1.107	1.345	0.0502	9.71%	3.04%		
100		6	1.306	1.204	1.408	1.345	1.107	1.345	0.03969	7.45%	0.00%		



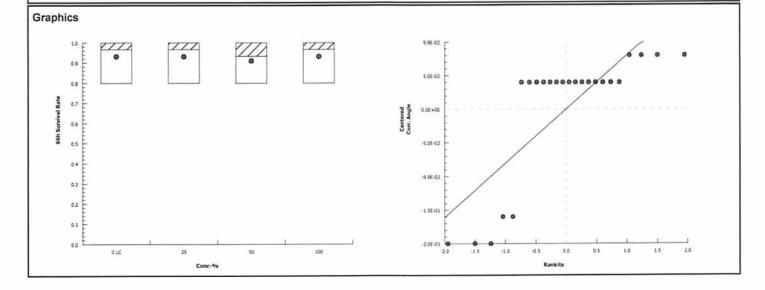
Analyst: W QA: LC

002-883-387-8 CETIS™ v1.9.3.0

Report Date:

13 Apr-22 17:41 (p 2 of 2) 22-03-051 | 09-2084-1762

								Test	Code:	22-	03-051 09	9-2084-1762
Pacific Tops	melt 9	6-h Acute S	urvival Tes	st							1	Nood E&IS
Analysis ID: Analyzed:		162-1219 Apr-22 17:40			Survival Ra ametric Bioe		Two Sampl		S Version: ial Results:	CETISv1 Yes	9.3	
Data Transfo	rm		Alt Hyp			TST_b		NOEL	LOEL	TOEL	TU	
Angular (Corr	C 17.0003		C*b < T			0.8		100	> 100	n/a	1	
TST-Welch's	t Test											
Control	vs	Control II		Test Stat	Critical	DF	P-Type	P-Value	Decision(α:10%)		
Lab Control		25*		5.137	1.383	9	CDF	3.1E-04	Non-Signif	icant Effect		
		50*		3.728	1.397	8	CDF	0.0029	Non-Signif	icant Effect		
		100*		5.137	1.383	9	CDF	3.1E-04	Non-Signif	icant Effect		
ANOVA Table	е										_	
Source		Sum Squa	res	Mean Squ	iare	DF	F Stat	P-Value	Decision(a:5%)		
Between		0.0070885		0.0023628	1	3	0.2174	0.8832	Non-Signif	icant Effect		
Error		0.21738		0.010869		20						
Total		0.224469				23	7.					
Distributiona	al Test	s										
Attribute		Test				Test Stat	Critical	P-Value	Decision(a:1%)		
Variances		Bartlett Equ	uality of Var	riance Test		0.411	11.34	0.9380	Equal Vari	ances		
Distribution		Shapiro-Wi	lk W Norm	ality Test		0.6264	0.884	1.2E-06	Non-Norm	al Distribution	on	
96h Survival	Rate	Summary										
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	0.00%
25			6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	0.00%
50			6	0.9333	0.8249	1.0000	1.0000	0.8000	1.0000	0.0422	11.07%	3.45%
100			6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	0.00%
Angular (Cor	rrected	i) Transforn	ned Summ	ary								
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	6	1.306	1.204	1.408	1.345	1.107	1.345	0.03969	7.45%	0.00%
25			6	1.306	1.204	1.408	1.345	1.107	1.345	0.03969	7.45%	0.00%
50			6	1.266	1.137	1.395	1.345	1.107	1.345	0.0502	9.71%	3.04%
100			6	1.306	1.204	1.408	1.345	1.107	1.345	0.03969	7.45%	0.00%



Analyst:_RV QA;

96hr Marine Acute Test with 48hr Renewal

Sample ID: Test No.			3 D	51			Start Date/Time: End Date/Time:			12			
Sample ID	Rep			Counts				Water	Quality				
(%)		0	24	48	72	96	Parameter	0	24	48f	48i	72	96
	Α	5	5	5	5	5	Temp. (°C)	21.5		21.2	20.3	209	20.7
	В	5	5	5	5	5	Salinity (ppt)	33.1	34.0	37.8	38.6	340	
LC #1	С	5	2	5	5	5	pH (units)	790	7.72	7,62	7.88	783	7.80
LC 11 1	D	5	2		54	4	DO (mg/L)	7.2	62	6.1	7.5	63	6.1
	E	5	5	5	5	5							
	F	5	1	5	5	5							
	Α	5	5	4	4	4	Temp. (°C)	21.7	220		21.0	20.8	20.6
	В	5	5	5	5	5	Salinity (ppt)	33.1	33,7	33.8			333
25	С	5	5	5	2	5	pH (units)	791	7.70		7.80	7.87	7.80
23	D	5	5	5	5	5	DO (mg/L)	7.3	6.0	6.2	7.7	6.6	6.5
	E	5	5	5	5	5							
	F	5	5	5	5	5							
	Α	5	5	5	5	5	Temp. (°C)	21.5	21.8	21.1	2(.0	20.8	20.6
	В	5	4	4	4	4	Salinity (ppt)	33.0	34.0	33.9	33.5		34.1
50	С	5	2	5	4	4	pH (units)	7.91	7.69	7.68	7.89	7.81	777
30	D	5	2	5	5	5	DO (mg/L)	7.3	6.1	6.3	7.7	6,5	6.3
	E	5	5	5	5	5							
	F	5	5	8	5	5							
	Α	5	5	5	5	5	Temp. (°C)	21.0	21.9	21.1	20.5	20.7	20.6
	В	5	5	5	2	5	Salinity (ppt)	33.0	34.0	33.9	33.4	33.9	34.1
100	С	5	5	5	2	ч	pH (units)	7.90	7.68	7.69	7.90	7.81	7.74
100	D	5	5	5	2	5	DO (mg/L)	7.5	5.9	6.5	7.9	6.5	63
	E	5	5	5	5	8							
	F	5	5	5	5	5			1524				
	Α						Temp. (°C)						
	В						Salinity (ppt)						
	С						pH (units)						
	D					E/F	DO (mg/L)						
	E												
	F												
Tec	h Initials:		SL	As	SC	Mb	Tech Initials:	SC	CB	A6	160	50	AL
Data A	QC. S Animals R		3/1	x/22	A	BS	Feedings	0	24	48	72	96	1
Age of Anir				4 da	45		Initials (AM): Initials (PM):	PN	se	A6	50	Ab	2
Comments:							07910 1275 500 \$7 400 \$7						1

Site: SIYB-3

CETIS Summary Report

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Report Date: Test Code:

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1.0000

13 Apr-22 17:43 (p 1 of 1) 22-03-052 | 08-1488-0517

Pacific Topsn	nelt 96-h Acute S	Survival T	est							١	Wood E&IS
Batch ID: Start Date: Ending Date: Duration:	03-4363-5945 23 Mar-22 12:00 27 Mar-22 13:00 4d 1h	Pr Sp	st Type: otocol: pecies: purce:	Survival (96h) EPA/821/R-02- Atherinops affir Aquatic Biosyst	nis		Dil	ne: N	latural Seawate lot Applicable 4 d	er	
	08-6425-8260 22 Mar-22 13:50 22 Mar-22 17:40 22h (4.9 °C)	Ma So	ode: aterial: ource: ation:	22-W067 Ambient Samp Shelter Island ` SIYB 3			N. 200		Vood Environm SIYB TMDL Mo		frastructure
Multiple Com	parison Summa	ry									
Analysis ID	Endpoint		Comp	oarison Method			NOEL	LOEL	TOEL	TU	PMSD 、
07-3868-8737	96h Survival Rat	e	Steel	Many-One Rank	Sum Test		100	> 100	n/a	1	n/a
11-1219-5946	96h Survival Rat	e	TST-V	Welch's t Test			100	> 100	n/a	1	n/a
96h Survival	Rate Summary		V								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Er	r Std Dev	CV%	%Effect
0	LC	6	1.000	0 1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
25		6	1.000	0 1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
50		6	1.000	0 1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
100		6	1.000	0 1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
96h Survival	Rate Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6				
0	LC	1.0000	1.000	0 1.0000	1.0000	1.0000	1.0000				
25		1.0000	1.000	0 1.0000	1.0000	1.0000	1.0000				

Analyst: W QA: Se stoom

002-883-387-8 CETIS™ v1.9.3.0

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Total

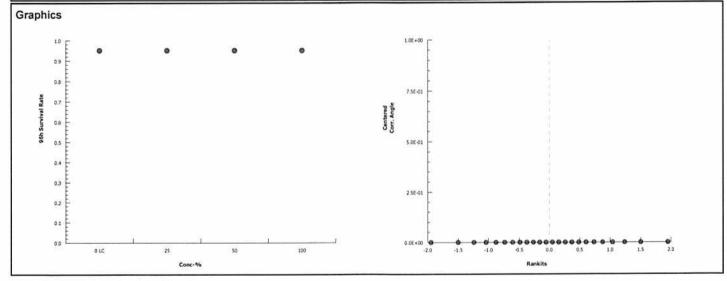
Report Date: Test Code: 13 Apr-22 17:43 (p 1 of 2) 22-03-052 | 08-1488-0517

Pacific Tops	melt 9	6-h Acute Surv	val Test									Wood E&IS
Analysis ID: Analyzed:	15	8868-8737 Apr-22 17:43	Endpoint: Analysis:	96h Survival R Nonparametric		l vs T	reatments		S Version		1.9.3	
Data Transfo	rm	Alt	Нур					NOEL	LOEL	TOEL	TU	
Angular (Corr	ected)	C >	Т					100	> 100	n/a	1	
Steel Many-0	One Ra	nk Sum Test										
Control	vs	Conc-%	Test S	Stat Critical	Ties	DF	P-Type	P-Value	Decision	n(a:5%)		
Lab Control		25	39	26	1	10	Asymp	0.7500	Non-Sig	nificant Effec	t	
		50	39	26	1	10	Asymp	0.7500	Non-Sign	nificant Effec	t	
		100	39	26	1	10	Asymp	0.7500	Non-Sig	nificant Effec	t	
ANOVA Tabl	е											
Source		Sum Squares	Mean	Square	DF		F Stat	P-Value	Decision	n(a:5%)		
Between		0	0		3		65540	<1.0E-37	Significa	nt Effect		
Error		0	0		20							

96h Survival	Rate Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

23

Angular (Corr	ected) Transfo	rmed Sumr	mary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%
25		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%
50		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%
100		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%



Analyst: DV QA:

0

0

Error

Total

0

Report Date:

13 Apr-22 17:43 (p 2 of 2) 22-03-052 | 08-1488-0517

Test Code:

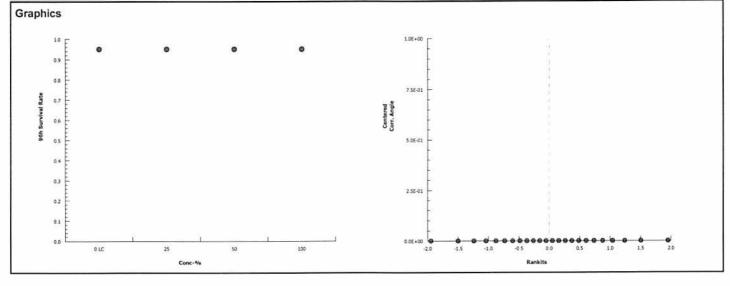
Pacific Topsn	nelt 96	6-h Acute Surv	val Test			·						Wood E&IS
Analysis ID: Analyzed:		219-5946 pr-22 17:43	Endpo		Survival Rametric Bio		e-Two Sample		S Version:		9.3	
Data Transfor	rm	Alt	Нур			TST_b		NOEL	LOEL	TOEL	TU	
Angular (Corre	ected)	C*I) < T			8.0		100	> 100	n/a	1	
TST-Welch's	t Test											
Control	vs	Control II	1	Test Stat	Critical		P-Type	P-Value	Decision	n(a:10%)		
Lab Control		25*	(0.2691	n/a			<0.1	Non-Sign	ificant Effect		
		50*	(0.2691	n/a			<0.1	Non-Sign	ificant Effect		
		100*	(0.2691	n/a			<0.1	Non-Sign	nificant Effect		
ANOVA Table	,											·
Source		Sum Squares		Mean Squ	uare	DF	F Stat	P-Value	Decision	η(α:5%)		
Between		0	()		3	65540	<1.0E-37	Significar	nt Effect		

96h Survival I	Rate Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

20

23

Angular (Corr	ected) Transfo	rmed Sumr	mary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%
25		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%
50		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%
100		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%



96hr Marine Acute Test with 48hr Renewal

Client: Sample ID:			- She	lter Isl	and Ya	cht Bas	Test Species: A Start Date/Time:				psmelt)	
Test No.			·- b	52			End Date/Time:		1		300		
Sample ID				Counts			v	Water C	Quality				
(%)	Rep	0	24	48	72	96	Parameter	0	24	48f	48i	72	96
	Α	5	5	5	5	5	Temp. (°C)	21.2	21.9	21.1	20.3	20-7	20.5
	В	5	5	5	5	5		33.1		33.8		34.0	
1000	С	5	5	5	5	5	pH (units)	7.94	7.71		7.92	779	7-77
LC #2	D	5	5	5	2	5		7.3	5.7	6.0	7.4	65	6.3
	Ε	5	5	5	2	5			A residence				
	F	5	5	5	5	5							
	Α	5	5	5	5	5	Temp. (C)	21.7	21.8	21.2	20.6	20.7	20.6
	В	5	5	5	5	5	Salinity (ppt)	33.0	33.7	33.8	335	339	34.2
25	С	5	5	5	5	5	pH (units)	792	7.70	7.69	7.93	7.79	7.75
25	D	5	5	5	5	5	DO (mg/L)	7.3	6,0	6.1	7.5	6.4	6.2
	E	5	5	5	5	5							
	F	5	5	3	5	5		W					
	Α	5	5	5	5	5	Temp. (C)	21.4	21.8	21.2	20.6	20.7	20.6
	В	5	5	5	5	5		33.0	33.9	33.8	33.4	33,9	34.)
50	С	5	5	5	5	5	pH (units)	792	7,69	7.68	7.92	7.79	7.75
50	D	5	5	5	5	5	DO (mg/L)	7.4	6.0	6.1	7.1	65	62
	E	5	5	5	5	5							
	F	5	5	5	5	5							
	Α	5	5	5	5	5		20.7	21.8		20.3		20.6
	В	5	5	5	5	5	Salinity (ppt)	32.9	33.7	33.8	33.4	33.9	34.1
100	С	5	5	5	5	5	pH (units)	791	7.71	7.69	7.90	7.79	774
100	D	5	5	5	5	5	DO (mg/L)	76	6.1	6.3	8,0	6.6	63
	E	5	2	5	5	5							
	F	5	5	5	5	5							
	Α						Temp. (°C)						
	В						Salinity (ppt)						
	С						pH (units)						
	D						DO (mg/L)						
	E												
	F			l									Α
Tec	h Initials: QU,	ger se	25	Ab	SC	Ab	Tech Initials:	50	CB	100	PS6	SC	PO
Date A	nimals Re	ceived	:_3/	18/2	LA	BS_	Feedings	0	24	48	72	96	
Age of Anin	nals at Te	st Start		14 d	945		Initials (AM):	PN	8	A6	50	De	
Comments:					/		Initials (PM):]
	-0.1	ш	13/2:					Flor	al Review	. 0	5/2	0/77	
QC Check:	100	. 1	13/1	V				rina	i neview		-10	100	

Wood Environmental Toxicology Lab, 4905 Morena Blvd, Ste. 1304, San Diego, CA 92117

Site: SIYB-4

CETIS Summary Report

Report Date: Test Code:

13 Apr-22 17:45 (p 1 of 1) 22-03-053 | 06-8176-9033

								Tes	st Code:		22.	-03-053 0	6-8176-9033
Pacific Topsr	nelt 96-h Acute	Survival	Test									1	Wood E&IS
Batch ID: Start Date: Ending Date: Duration:	12-6594-8652 23 Mar-22 12:00 27 Mar-22 13:00 4d 1h	0 F	est Type: Protocol: Species: Source:	EPA/821/ Atherinop	R-02- s affii	-012 (2002) nis tems, CO		Dil	alyst: uent: ine: e:		ural Seawate Applicable	er	
	16-2612-5069 : 22 Mar-22 13:00 : 22 Mar-22 17:40 23h (1.9 °C)	0 N	Code: Material: Source: Station:	ial: Ambient Sample e: Shelter Island Yacht Basin					ent: oject:		od Environm B TMDL Mo		frastructure
Multiple Com	parison Summa	ary											
Analysis ID	Endpoint		Comp	oarison Me	ethod			NOEL	LOE	L	TOEL	TU	PMSD √
06-0369-0353	96h Survival Ra	ite	Steel	Many-One	Rank	Sum Test		100	> 100		n/a	1	n/a
05-3321-0171	96h Survival Ra	ite	TST-\	Welch's t T	est			100	> 100		n/a	1	n/a
96h Survival	Rate Summary												
Conc-%	Code	Count	Mean	95%	LCL	95% UCL	Min	Max	Std I	Err	Std Dev	CV%	%Effect
0	LC	6	1.000	0 1.00	00	1.0000	1.0000	1.0000	0.00	00	0.0000	0.00%	0.00%
25		6	1.000	0 1.00	00	1.0000	1.0000	1.0000	0.00	00	0.0000	0.00%	0.00%
50		6	1.000	0 1.00	00	1.0000	1.0000	1.0000	0.00	00	0.0000	0.00%	0.00%
100		6	1.000	0 1.00	00	1.0000	1.0000	1.0000	0.00	00	0.0000	0.00%	0.00%
96h Survival	Rate Detail												
Conc-%	Code	Rep 1	Rep 2	2 Rep	3	Rep 4	Rep 5	Rep 6					
0	LC	1.0000	1.000	0 1.00	00	1.0000	1.0000	1.0000					
25		1.0000	1.000	0 1.00	00	1.0000	1.0000	1.0000					
50		1.0000	1.000	0 1.00	00	1.0000	1.0000	1.0000					
				1.0000 1.0000 1.0000 1.0000									

Analyst: N OA: Se stadia

Report Date: Test Code: 13 Apr-22 17:45 (p 1 of 2) 22-03-053 | 06-8176-9033

	1001 - 0 - 0 - 0	
Pacific Topsmelt 96-h Acute Survival Test		Wood E&IS

Analysis ID: 06-0369-0353 Endpoint: 96h Survival Rate CETIS Version: CETISv1.9.3

Analyzed: 13 Apr-22 17:44 Analysis: Nonparametric-Control vs Treatments Official Results: Yes

 Data Transform
 Alt Hyp
 NOEL
 LOEL
 TOEL
 TU

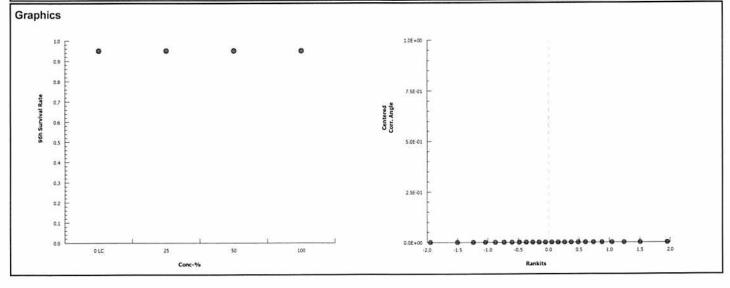
 Angular (Corrected)
 C > T
 100
 > 100
 n/a
 1

Steel Many-One R	ank Sum Test						
Control vs	Conc-%	Test Stat	Critical	Ties	DF P-Type	P-Value	Decision(a:5%)
Lab Control	25	39	26	1	10 Asymp	0.7500	Non-Significant Effect
	50	39	26	1	10 Asymp	0.7500	Non-Significant Effect
	100	39	26	1	10 Asymp	0.7500	Non-Significant Effect

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0	0	3	65540	<1.0E-37	Significant Effect	
Error	0	0	20				
Total	0		23				

96h Survival	96h Survival Rate Summary													
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect			
0	LC	6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%			
25		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%			
50		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%			
100		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%			

Angular (Corr	ected) Transfo	rmed Sumr	mary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%
25		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%
50		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%
100		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%



Analyst: RV QA: SC

Report Date:

13 Apr-22 17:45 (p 2 of 2)

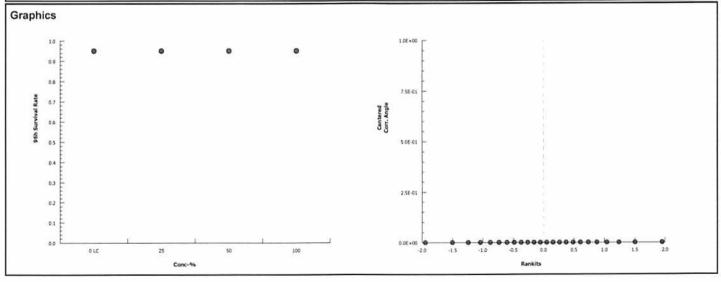
Test Code: 22-03-053 | 06-8176-9033

Analyzed: 13 /		321-0171 pr-22 17:45	Endpoi Analysi		Survival R ametric Bio		-Two Sample		IS Version: cial Results:	CETISv1. Yes	.9.3	
Data Transfo	orm	Alt	Нур			TST_b		NOEL	LOEL	TOEL	TU	
Angular (Corr	rected)	C*I	o < T			0.8		100	> 100	n/a	1	
TST-Welch's	t Test											
Control	vs	Control II	Te	est Stat	Critical		P-Type	P-Value	Decision(α:10%)		
		25*	0.	2691	n/a			<0.1	Non-Signi	ficant Effect		
Lab Control		50*	0.	2691	n/a			<0.1	Non-Signi	ficant Effect		
Lab Control								< 0.1	Non-Signi			

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0	0	3	65540	<1.0E-37	Significant Effect	
Error	0	0	20				
Total	0		23				

96h Survival I	Rate Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50		6	1.0000	1.0000	1.0000 .	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

Angular (Corr	ected) Transfo	rmed Sumr	mary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%
25		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%
50		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%
100		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%



Analyst: N QA: SC

96hr Marine Acute Test with 48hr Renewal

Sample ID: Test No.			3-	053	1		Start Date/Time: 3/23/22 1200 End Date/Time: 3/27/22 1300
Sample ID	Rep			Counts			Water Quality
(%)		0	24	48	72	96	Parameter 0 24 48f 48i 72 96
	Α	5	5	5	5	5	Temp. (C) 21.2 21.9 21.1 20.3 20.7 20.5
	В	5	5	5	5	5	Salinity (ppt) 33.1 34.0 33.8 33.5 34.0 34.2
LC #2	С	5	5	5	2	5	pH (units) 794 771 769 792 771 7.71
LC II Z	D	5	5	5	2	5	DO (mg/L) 7-3 5-7 6-0 7-4 65 63
	E	5	5	5	5	5	
	F	5	5	5	5	5	
	Α	5	5	5	5	5	Temp. (C) 21.7 21.8 21.1 20.8 20.7 20.6
	В	5	5	5	5	5	Salinity (ppt) 33.0 33.7 33.8 53.5 39.0 34.2
25	С	5	5	5	5	5	pH (units) 7.93 7.70 7.90 7.79 7.76
23	D	5	2	5	5	5	DO (mg/L) 7.3 6.4 6.2 7.6 6.9 6.7
	E	5	5	5	5	5	
	F	5	2	5	5	5	
	Α	5	5	5	5	5	Temp. (c) 21.4 21.8 21.0 20.8 70.7 20.7
	В	5	5	5	5	5	Salinity (ppt) 33.0 34.0 35.9 33.5 34.0 34.2
F0	С	5	0	5	2	5	pH (units) 7.72 7.70 7.70 7.91 7.80 7.77
50	D	5	5	5	5	5	DO (mg/L) 7.4 6.1 6.2 7.7 6.8 6.6
	E	5	5	5.	5	5	
	F	5	5	3	5	5	
	Α	5	5	5	5	5	Temp. (C) 20,8 21,6 21,0 20.6 20.7 20.7
	В	5	5	5	5	5	Salinity (ppt) 32.9 34.0 33.9 33.4 34.0 34.3
	С	5	5	5	5	5	pH (units) 791 7.69 7.70 7.90 7.80 7.77
100	D	5	5	5	5	5	DO (mg/L) 76 6.0 64 8.2 4.8 6b
	Е	5	5	5	5	5	
	F	5	5	13	2	5	
	Α						Temp. ('C)
	В						Salinity (ppt)
	С						pH (units)
	D						DO (mg/L)
	E						
	F						
Tec	h Initials:	00	8	AL	SL	Ro	Tech Initials: SC CB A6 Ab 5C A6
	QC:	eceived	3/1	8/22 4 da	AL YS	35	Feedings 0 24 48 72 96 Initials (AM):
Comments: QC Check:	PN	ч	1131	n			Final Review: Sc 5/2022

Wood Environmental Toxicology Lab, 4905 Morena Blvd, Ste. 1304, San Diego, CA 92117

Site: SIYB-5

CETIS Summary Report

Report Date: Test Code: 13 Apr-22 17:47 (p 1 of 1) 22-03-054 | 19-0707-3132

Pacific Topsn	nelt 96-h Acute S	Survival	Test								Wood E&IS
Batch ID: Start Date: Ending Date: Duration:	02-0208-6696 23 Mar-22 12:30 27 Mar-22 13:15 4d 1h) I	Test Type: Protocol: Species: Source:	Survival (96h) EPA/821/R-02-0 Atherinops affin Aquatic Biosyst	is			ne:	Natural Seawate Not Applicable 14 d	er	
	21-0774-0699 22 Mar-22 11:50 22 Mar-22 17:40 25h (3.9 °C)) !	Code: Material: Source: Station:	22-W069 Ambient Sampl Shelter Island Y SIYB 5			Clie Pro		Wood Environm SIYB TMDL Mo		frastructure
Analysis ID	parison Summa Endpoint 96h Survival Ra			parison Method Many-One Rank	Sum Test		NOEL 100	LOEL > 100	TOEL	TU 1	PMSD √ 8.02%
	96h Survival Ra			Welch's t Test			100	> 100	n/a	1	n/a
96h Survival	Rate Summary Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std E	irr Std Dev	CV%	%Effect
0 25 50 100	LC	6 6 6	1.000 1.000 1.000 0.966	0 1.0000 0 1.0000	1.0000 1.0000 1.0000 1.0000	1.0000 1.0000 1.0000 0.8000	1.0000 1.0000 1.0000 1.0000	0.000 0.000 0.000 0.033	0.0000 0.0000	0.00% 0.00% 0.00% 8.45%	0.00% 0.00% 0.00% 3.33%
96h Survival	Rate Detail										
0 25 50 100	Code LC	1.0000 1.0000 1.0000 1.0000	1.000 1.000 1.000	0 1.0000 0 1.0000 0 1.0000	Rep 4 1.0000 1.0000 1.0000 1.0000	Rep 5 1.0000 1.0000 1.0000 1.0000	Rep 6 1.0000 1.0000 1.0000 1.0000				

Analyst: DO OA: lestrope

Report Date: Test Code: 13 Apr-22 17:47 (p 1 of 2) 22-03-054 | 19-0707-3132

								Test				9-0/0/-313
Pacific Tops	melt 9	6-h Acute S	Survival Te	st							3	Wood E&I
Analysis ID:	08-2	2002-2128	End	lpoint: 96h	Survival Ra	ite		CET	IS Version:	CETISv1	.9.3	
Analyzed:		Apr-22 17:4		č.	parametric-		Treatments	Offi	cial Results:	Yes		
Data Transfo	_		Swinner					NOEL	LOEL	TOEL	TU	PMSD
Angular (Cor	C. 10 11 11 11 11 11 11 11 11 11 11 11 11		C > T					100	> 100	n/a	1	8.02%
Arigular (Cor	recteu)	<u></u>	071					100	- 100	1174	<u> </u>	
Steel Many-	One Ra	ank Sum Te	est									
Control	vs	Conc-%		Test Stat	Critical		P-Type	P-Value	Decision(
Lab Control		25		39	26	1 10	Asymp	0.7500		ficant Effect		
		50		39	26	1 10	Asymp	0.7500		ficant Effect		
		100		36	26	1 10	Asymp	0.5503	Non-Signi	ficant Effect		
ANOVA Tab	le											
Source		Sum Squ	ares	Mean Squ	are	DF	F Stat	P-Value	Decision(a:5%)		
Between		0.0070885	5	0.0023628	K.	3	1	0.4133	Non-Signi	ficant Effect		
Error		0.0472566	5	0.0023628	F	20						
Total		0.054345	ı			23						
Distribution	al Test	s										
Attribute		Test				Test Stat	Critical	P-Value	Decision(a:1%)		
Variances		Levene Ed	uality of V	ariance Test		6.25	4.938	0.0036	Unequal V	/ariances		
Variances				of Variance	Test	1	4.938	0.4133	Equal Var			
Distribution			Vilk W Norn			0.4436	0.884	1.7E-08	Non-Normal Distribution			
96h Surviva	I Date	Summanı	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,									
Conc-%	i Kale	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	_	LC	6	1.0000	1.0000	PROPERTY AND ALL COMME	G CAUMANA BANANA	ENGENIES.	ATTEMPORT	Stu Lii	20,5305	0.00%
		LU							1 0000	0.0000	0.000/	
25						1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	
25			6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50			6 6	1.0000 1.0000	1.0000 1.0000	1.0000 1.0000	1.0000 1.0000	1.0000 1.0000	1.0000 1.0000	0.0000 0.0000	0.00% 0.00%	0.00% 0.00%
50 100			6 6	1.0000 1.0000 0.9667	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50 100 Angular (Co	rrected	d) Transfor	6 6 6 med Sumn	1.0000 1.0000 0.9667	1.0000 1.0000 0.8810	1.0000 1.0000 1.0000	1.0000 1.0000 1.0000	1.0000 1.0000 0.8000	1.0000 1.0000 1.0000	0.0000 0.0000 0.0333	0.00% 0.00% 8.45%	0.00% 0.00% 3.33%
50 100 Angular (Co Conc-%	rrected	d) Transfor Code	6 6 6 med Sumn	1.0000 1.0000 0.9667 mary	1.0000 1.0000 0.8810 95% LCL	1.0000 1.0000 1.0000	1.0000 1.0000 1.0000 Median	1.0000 1.0000 0.8000	1.0000 1.0000 1.0000	0.0000 0.0000 0.0333 Std Err	0.00% 0.00% 8.45% CV%	0.00% 0.00% 3.33%
50 100 Angular (Co Conc-%	rrected	d) Transfor	6 6 6 med Sumn Count 6	1.0000 1.0000 0.9667	1.0000 1.0000 0.8810	1.0000 1.0000 1.0000 95% UCL 1.345	1.0000 1.0000 1.0000	1.0000 1.0000 0.8000 Min 1.345	1.0000 1.0000 1.0000 Max 1.345	0.0000 0.0000 0.0333 Std Err	0.00% 0.00% 8.45% CV% 0.00%	0.00% 0.00% 3.33% %Effect 0.00%
50 100 Angular (Co	rrected	d) Transfor Code	6 6 6 med Sumn	1.0000 1.0000 0.9667 mary	1.0000 1.0000 0.8810 95% LCL	1.0000 1.0000 1.0000	1.0000 1.0000 1.0000 Median	1.0000 1.0000 0.8000	1.0000 1.0000 1.0000	0.0000 0.0000 0.0333 Std Err 0	0.00% 0.00% 8.45% CV% 0.00%	0.00% 0.00% 3.33% %Effect 0.00% 0.00%
50 100 Angular (Co Conc-% 0 25	rrected	d) Transfor Code	6 6 6 med Sumn Count 6	1.0000 1.0000 0.9667 mary Mean 1.345	1.0000 1.0000 0.8810 95% LCL 1.345	1.0000 1.0000 1.0000 95% UCL 1.345	1.0000 1.0000 1.0000 Median 1.345	1.0000 1.0000 0.8000 Min 1.345	1.0000 1.0000 1.0000 Max 1.345	0.0000 0.0000 0.0333 Std Err	0.00% 0.00% 8.45% CV% 0.00%	0.00% 0.00% 3.33% %Effect 0.00% 0.00%
50 100 Angular (Co Conc-%	rrected	d) Transfor Code	6 6 med Sumn Count 6 6	1.0000 1.0000 0.9667 Mean 1.345 1.345	1.0000 1.0000 0.8810 95% LCL 1.345 1.345	1.0000 1.0000 1.0000 95% UCL 1.345 1.345	1.0000 1.0000 1.0000 Median 1.345 1.345	1.0000 1.0000 0.8000 Min 1.345 1.345	1.0000 1.0000 1.0000 Max 1.345 1.345	0.0000 0.0000 0.0333 Std Err 0	0.00% 0.00% 8.45% CV% 0.00%	0.00% 0.00% 3.33% %Effect 0.00% 0.00%
50 100 Angular (Co Conc-% 0 25 50	rrected	d) Transfor Code	6 6 med Sumn Count 6 6 6	1.0000 1.0000 0.9667 Mean 1.345 1.345	1.0000 1.0000 0.8810 95% LCL 1.345 1.345 1.345	1.0000 1.0000 1.0000 95% UCL 1.345 1.345 1.345	1.0000 1.0000 1.0000 Median 1.345 1.345 1.345	1.0000 1.0000 0.8000 Min 1.345 1.345 1.345	1.0000 1.0000 1.0000 Max 1.345 1.345 1.345	0.0000 0.0000 0.0333 Std Err 0 0	0.00% 0.00% 8.45% CV% 0.00% 0.00%	0.00% 0.00% 3.33% %Effect 0.00% 0.00%
50 100 Angular (Co Conc-% 0 25 50 100 Graphics	rrected	d) Transfor Code	6 6 med Sumn Count 6 6 6	1.0000 1.0000 0.9667 Mean 1.345 1.345	1.0000 1.0000 0.8810 95% LCL 1.345 1.345 1.345	1.0000 1.0000 1.0000 95% UCL 1.345 1.345 1.345	1.0000 1.0000 1.0000 Median 1.345 1.345 1.345 1.345	1.0000 1.0000 0.8000 Min 1.345 1.345 1.345	1.0000 1.0000 1.0000 Max 1.345 1.345 1.345	0.0000 0.0000 0.0333 Std Err 0 0 0 0.03969	0.00% 0.00% 8.45% CV% 0.00% 0.00% 7.45%	0.00% 0.00% 3.33% %Effect 0.00% 0.00% 2.95%
50 100 Angular (Co Conc-% 0 25 50 100	rrected	d) Transfor Code	6 6 med Sumn Count 6 6 6	1.0000 1.0000 0.9667 Mean 1.345 1.345	1.0000 1.0000 0.8810 95% LCL 1.345 1.345 1.345	1.0000 1.0000 1.0000 95% UCL 1.345 1.345 1.345	1.0000 1.0000 1.0000 Median 1.345 1.345 1.345	1.0000 1.0000 0.8000 Min 1.345 1.345 1.345	1.0000 1.0000 1.0000 Max 1.345 1.345 1.345	0.0000 0.0000 0.0333 Std Err 0 0 0 0.03969	0.00% 0.00% 8.45% CV% 0.00% 0.00%	0.00% 0.00% 3.33% %Effect 0.00% 0.00% 2.95%

Rankits

-9.9E-02

-1.58-01

-2.0E-01 -2.0

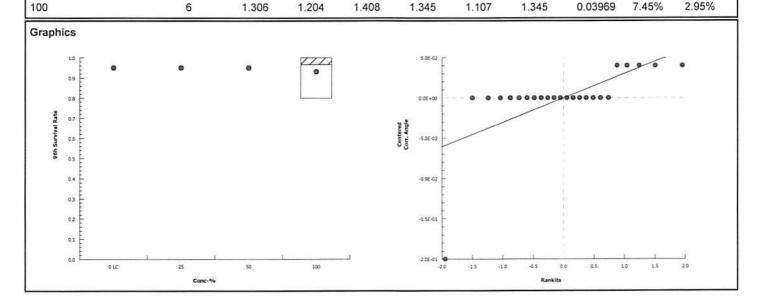
0.1

0.0 t

Conc-%

Report Date: Test Code: 13 Apr-22 17:47 (p 2 of 2) 22-03-054 | 19-0707-3132

											M 010
Pacific Topsm	elt 96-h Acute	Survival T	est							3	Wood E&IS
Analysis ID: Analyzed:	19-7874-3648 13 Apr-22 17:4			h Survival Ra rametric Bioe		Two Sampl	W	S Version		.9.3	
Data Transform	m	Alt Hyp			TST_b		NOEL	LOEL	TOEL	TU	
Angular (Correc		C*b < T			0.8		100	> 100	n/a	1	
TST-Welch's t	Test										
Control v	s Control	II	Test Stat	Critical	DF	P-Type	P-Value	Decision	n(α:10%)		
Lab Control	25*		0.2691	n/a			<0.1	Non-Sign	nificant Effect		
	50*		0.2691	n/a			< 0.1	Non-Sign	nificant Effect	ý	
	100*		5.779	1.476	5	CDF	0.0011	Non-Sign	nificant Effect	:	
ANOVA Table											
Source	Sum Squ	ares	Mean Sq	uare	DF	F Stat	P-Value	Decision	n(a:5%)		
	T-207, 1990, 1990, 1990, 1990, 1990	-	0.002362	8	3	1	0.4133	Non-Sign	nificant Effect		
Between	0.007088	5	0.002302	.0					miodin mioo		
Between Error	0.007088 0.047256	70	0.002362		20				miodin Elico		
		6	A STATE OF THE PARTY OF THE PARTY.		20 23	- 65			modili Eliosi		
Error	0.047256 0.054345	6	A STATE OF THE PARTY OF THE PARTY.			= 9					
Error Total	0.047256 0.054345	6	A STATE OF THE PARTY OF THE PARTY.			Critical	P-Value	Decision			
Error Total Distributional	0.047256 0.054345 Tests Test	6 1	0.002362	8	23	Critical 4.938	P-Value 0.0036	100000000000000000000000000000000000000			
Error Total Distributional Attribute	0.047256 0.054345 Tests Test Levene E	6 1 quality of \	0.002362 /ariance Test	t	23 Test Stat	Color and the Color and Co		100000000000000000000000000000000000000	n(α:1%) Variances		
Error Total Distributional Attribute Variances	0.047256 0.054345 Tests Test Levene E Mod Leve	quality of \	0.002362	t	Test Stat 6.25	4.938	0.0036	Unequal Equal Va	n(α:1%) Variances		
Error Total Distributional Attribute Variances Variances Distribution	0.047256 0.054345 Tests Test Levene E Mod Leve Shapiro-V	quality of \	0.002362 Variance Test y of Variance	t	23 Test Stat 6.25	4.938 4.938	0.0036 0.4133	Unequal Equal Va	n(α:1%) Variances ariances		
Error Total Distributional Attribute Variances Variances Distribution	0.047256 0.054345 Tests Test Levene E Mod Leve Shapiro-V	quality of \	0.002362 Variance Test y of Variance	t	23 Test Stat 6.25	4.938 4.938 0.884	0.0036 0.4133	Unequal Equal Va	n(α:1%) Variances ariances		%Effect
Error Total Distributional Attribute Variances Variances Distribution 96h Survival R Conc-%	0.047256 0.054345 Tests Test Levene E Mod Leve Shapiro-V	quality of \ ne Equalit	0.002362 Variance Test y of Variance mality Test	t Test	23 Test Stat 6.25 1 0.4436	4.938 4.938 0.884	0.0036 0.4133 1.7E-08	Unequal Equal Va Non-Norr	n(α:1%) Variances ariances mal Distributi	on	%Effect
Error Total Distributional Attribute Variances Variances Distribution 96h Survival R	0.047256 0.054345 Tests Test Levene E Mod Leve Shapiro-V Rate Summary Code	quality of \ ne Equalit Vilk W Nor	0.002362 /ariance Test y of Variance mality Test Mean	t Test	23 Test Stat 6.25 1 0.4436 95% UCL	4.938 4.938 0.884 Median	0.0036 0.4133 1.7E-08	Unequal Equal Va Non-Norr	n(α:1%) Variances ariances mal Distributi Std Err	on CV%	100000000000000000000000000000000000000
Error Total Distributional Attribute Variances Variances Distribution 96h Survival R Conc-% 0 25	0.047256 0.054345 Tests Test Levene E Mod Leve Shapiro-V Rate Summary Code	quality of \ ene Equalit Vilk W Nor	0.002362 /ariance Test y of Variance mality Test Mean 1.0000	95% LCL	23 Test Stat 6.25 1 0.4436 95% UCL 1.0000	4.938 4.938 0.884 Median 1.0000	0.0036 0.4133 1.7E-08 Min 1.0000	Unequal Equal Va Non-Norr Max 1.0000	n(α:1%) Variances ariances mal Distributi Std Err 0.0000	on CV% 0.00%	0.00%
Error Total Distributional Attribute Variances Variances Distribution 96h Survival R Conc-% 0 25 50	0.047256 0.054345 Tests Test Levene E Mod Leve Shapiro-V Rate Summary Code	quality of \ ene Equalit Vilk W Nor Count 6 6	/ariance Test y of Variance mality Test Mean 1.0000 1.0000	95% LCL 1.0000 1.0000	23 Test Stat 6.25 1 0.4436 95% UCL 1.0000 1.0000	4.938 4.938 0.884 Median 1.0000 1.0000	0.0036 0.4133 1.7E-08 Min 1.0000 1.0000	Unequal Equal Va Non-Nom Max 1.0000 1.0000	n(α:1%) Variances ariances mal Distributi Std Err 0.0000 0.0000	on CV% 0.00% 0.00%	0.00%
Error Total Distributional Attribute Variances Variances Distribution 96h Survival R Conc-% 0 25 50 100	0.047256 0.054345 Tests Test Levene E Mod Leve Shapiro-V Rate Summary Code	quality of \ ene Equalit Vilk W Nor Count 6 6 6 6	/ariance Test y of Variance mality Test Mean 1.0000 1.0000 0.9667	95% LCL 1.0000 1.0000	23 Test Stat 6.25 1 0.4436 95% UCL 1.0000 1.0000 1.0000	4.938 4.938 0.884 Median 1.0000 1.0000	0.0036 0.4133 1.7E-08 Min 1.0000 1.0000 1.0000	Unequal Equal Va Non-Non Max 1.0000 1.0000	Std Err 0.0000 0.0000	ON CV% 0.00% 0.00% 0.00%	0.00% 0.00% 0.00%
Error Total Distributional Attribute Variances Variances Distribution 96h Survival R Conc-% 0 25 50 100	0.047256 0.054345 Tests Test Levene E Mod Leve Shapiro-V Rate Summary Code LC	quality of \ ene Equalit Vilk W Nor Count 6 6 6 6	/ariance Test y of Variance mality Test Mean 1.0000 1.0000 0.9667	95% LCL 1.0000 1.0000	23 Test Stat 6.25 1 0.4436 95% UCL 1.0000 1.0000 1.0000	4.938 4.938 0.884 Median 1.0000 1.0000	0.0036 0.4133 1.7E-08 Min 1.0000 1.0000 1.0000	Unequal Equal Va Non-Non Max 1.0000 1.0000	Std Err 0.0000 0.0000	ON CV% 0.00% 0.00% 0.00%	0.00% 0.00% 0.00% 3.33%
Error Total Distributional Attribute Variances Variances Distribution 96h Survival R Conc-% 0 25 50 100 Angular (Corre	0.047256 0.054345 Tests Test Levene E Mod Leve Shapiro-V Rate Summary Code LC	quality of \ ne Equalit Vilk W Nor Count 6 6 6 6	/ariance Test y of Variance mality Test Mean 1.0000 1.0000 0.9667	95% LCL 1.0000 1.0000 0.8810	23 Test Stat 6.25 1 0.4436 95% UCL 1.0000 1.0000 1.0000 1.0000	4.938 4.938 0.884 Median 1.0000 1.0000 1.0000	0.0036 0.4133 1.7E-08 Min 1.0000 1.0000 1.0000 0.8000	Unequal Equal Va Non-Norm Max 1.0000 1.0000 1.0000	std Err 0.0000 0.0000 0.0333	on CV% 0.00% 0.00% 0.00% 8.45%	0.00% 0.00% 0.00% 3.33%
Error Total Distributional Attribute Variances Variances Distribution 96h Survival R Conc-% 0 25 50 100 Angular (Corre	0.047256 0.054345 Tests Test Levene E Mod Leve Shapiro-V Rate Summary Code LC	quality of \ ne Equalit Vilk W Nor Count 6 6 6 6 6 Count Count	/ariance Test y of Variance mality Test Mean 1.0000 1.0000 0.9667 mary Mean	95% LCL 1.0000 1.0000 0.8810	23 Test Stat 6.25 1 0.4436 95% UCL 1.0000 1.0000 1.0000 95% UCL	4.938 4.938 0.884 Median 1.0000 1.0000 1.0000 Median	0.0036 0.4133 1.7E-08 Min 1.0000 1.0000 1.0000 0.8000	Unequal Equal Va Non-Norm Max 1.0000 1.0000 1.0000 Max	n(a:1%) Variances ariances mal Distributi Std Err 0.0000 0.0000 0.0333 Std Err	ON CV% 0.00% 0.00% 0.00% 8.45% CV%	0.00% 0.00% 0.00% 3.33%
Error Total Distributional Attribute Variances Variances Distribution 96h Survival R Conc-% 0 25 50 100 Angular (Corre	0.047256 0.054345 Tests Test Levene E Mod Leve Shapiro-V Rate Summary Code LC	quality of \ ene Equalit Vilk W Nor Count 6 6 6 6 6 Count Count 6	/ariance Test y of Variance mality Test Mean 1.0000 1.0000 0.9667 mary Mean 1.345	95% LCL 1.0000 1.0000 0.8810 95% LCL 1.345	23 Test Stat 6.25 1 0.4436 95% UCL 1.0000 1.0000 1.0000 1.0000 95% UCL 1.345	4.938 4.938 0.884 Median 1.0000 1.0000 1.0000 Median 1.345	0.0036 0.4133 1.7E-08 Min 1.0000 1.0000 0.8000 Min 1.345	Unequal Equal Va Non-Norm Max 1.0000 1.0000 1.0000 1.0000 1.0000	Std Err 0.0000 0.0000 0.0333 Std Err	ON CV% 0.00% 0.00% 0.00% 8.45% CV% 0.00%	0.00% 0.00% 0.00% 3.33% %Effect 0.00%



Analyst: DV QA: LV

96hr Marine Acute Test with 48hr Renewal

Sample ID: Test No.	SIYB-5	j		- 05 ⁴		icht Bas	n Test Species Start Date/Time End Date/Time	: 3/23	122	1230	0		
				Counts				Water (in the		
Sample ID (%)	Rep	0	24	48	72	96	Parameter	0	24	48f	48i	72	96
	А	5	5	5	5	5	Temp. (C)	21.2	21,8	21.0		20.7	20.60
	В	5	2	5	5	5	Salinity (ppt)	33.1		339		34.1	343
0.23.2	С	5	5	5	5	5	pH (units)	790			7.95		7.76
LC #3	D	5	5	5	5		DO (mg/L)	7.3	6.2	6.3		6.5	62
	Е	5	5	5	5	5		H			Time		
	F	5	2	5	5	5							
	А	5	5	5	-	5	Temp. ('C)	21.8	21,7	21.0	20.8	20.7	207
	В	5	2	5	5	5	Salinity (ppt)	33.0	33.9	-		33.9	34:2
-7000	С	5	2	5	5	5	pH (units)	791			7.94		
25	D	5	Ś	5	5	5	DO (mg/L)	73	6.0	6.1	7.6	66	6.2
	E	5	5	5	1-	5		111	0, 0	0	1.0		
	F	5	-	5	5	5							
	А	5	ć	5	-	5	Temp. (C)	21.5	21.7	210	20.8	20.7	20.6
	В	5	5	5	-2-	5	Salinity (ppt)	33.0			334	200	34.2
	С	5	5	5	-	5	pH (units)	791	7.20		7.93		7.74
50	D	5	5	5	5	5	DO (mg/L)	7.4	6.3	6.5	77	6.5	6.2
	E	5	-	5	5	5			6,0	0,0	THE STATE OF	SHALL	0, 0
	F	5	=	3	5	5							
	А	5	-	5	-	5	Temp. (C)	20,9	21.>	21,0	20.7	20.7	20.6
	В	5	5	5	5	4	Salinity (ppt)	33,0	34.0		33.3	339	34.2
147.0000	С	5	5	6	2	5	pH (units)	790	7.69		7.91	7.79	7.75
100	D	5	5	5	2		DO (mg/L)	7.6		6.2	8.1	64	6.1
	E	5	5	5	2	5		120		01-			
	F	5	5	3	5	555							
	А						Temp. (C)	1					
	В						Salinity (ppt)						
	С						pH (units)						
	D						DO (mg/L)						
	E											44	Julia:
	F												
Tec	h Initials:	لىم	8	Po	SC	Ab	Tech Initial	:: 5	CB	Ab	No	SC	Ab
Date A Age of Anir	QU: Animals Re	eceived:	- 1	8/22 4 da	Al Ys	55	<u>Feedings</u> Initials (AM): Initials (PM):	0 EV	24 5C	48 A6	72 5 C	96 A6	
QC Check:	en .	1/13	22				7 - 2	Fina	al Review:	ߣ	5/2	ofer	

Site: SIYB-6

CETIS Summary Report

002-883-387-8

Report Date: Test Code: 13 Apr-22 17:49 (p 1 of 1) 22-03-055 | 19-2893-5134

								10.	st coue.			00-000 1	3-2033-310-
Pacific Topsn	nelt 96-h Acute	Survival	Test									9	Wood E&IS
Batch ID: Start Date: Ending Date: Duration:	14-5937-9710 23 Mar-22 12:3 27 Mar-22 13:1 4d 1h	0 I 5 \$	Test Type: Protocol: Species: Source:	EPA/821	/R-02- ps affir	012 (2002) nis tems, CO		Dil	alyst: uent: ine: e:	The said	al Seawate	er	
	18-8350-1225 22 Mar-22 10:3 22 Mar-22 17:4 26h (2.2 °C)	0 I	Code: Material: Source: Station:	22-W076 Ambient Shelter I SIYB 6	Sampl	e ⁄acht Basin			ent: oject:	100000	d Environm TMDL Mo		frastructure
Multiple Com Analysis ID	parison Summa Endpoint	ary	Comr	narison N	lethod			NOEL	LOE	L	TOEL	TU	PMSD √
	96h Survival Ra	ite							> 100	_	n/a	1	n/a
	96h Survival Ra	25.00		" menz energene sent sent sent sent sent sent sent s					> 100		n/a	1	n/a
96h Survival I	Rate Summary												
Conc-%	Code	Count	Mean	959	6 LCL	95% UCL	Min	Max	Std I	Err	Std Dev	CV%	%Effect
0	LC	6	1.000	0 1.0	000	1.0000	1.0000	1.0000	0.00	00	0.0000	0.00%	0.00%
25		6	1.000	0 1.0	000	1.0000	1.0000	1.0000	0.00	00	0.0000	0.00%	0.00%
50		6	1.000	0 1.0	000	1.0000	1.0000	1.0000	0.00	00	0.0000	0.00%	0.00%
100		6	1.000	0 1.0	000	1.0000	1.0000	1.0000	0.00	00	0.0000	0.00%	0.00%
96h Survival	Rate Detail												
Conc-%	Code	Rep 1	Rep 2	2 Re	о 3	Rep 4	Rep 5	Rep 6					
0	LC	1.0000	1.000	0 1.0	000	1.0000	1.0000	1.0000					
25		1.0000	1.000	0 1.0	000	1.0000	1.0000	1.0000					
50		1.0000	1.000	0 1.0	000	1.0000	1.0000	1.0000					
100		1,0000	1.000	0 1.0	000	1.0000	1.0000	1.0000					

Analyst: W OA: LV 5/20/22

Report Date: Test Code: 13 Apr-22 17:48 (p 1 of 2) 22-03-055 | 19-2893-5134

Pacific Topsmelt 96-h Acute Survival Test

Wood E&IS

Analysis ID: 02-5554-6486 Endpoint: 96h Survival Rate CETIS Version: CETISv1.9.3

Analyzed: 13 Apr-22 17:48 Analyzes: Nonparametric-Control vs Treatments Official Results: Yes

 Data Transform
 Alt Hyp
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 Angular (Corrected)
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Steel Many-One Rank Sum Test P-Value Decision(a:5%) DF P-Type Control Conc-% Test Stat Critical Ties 0.7500 Non-Significant Effect 25 39 26 1 10 Asymp Lab Control 0.7500 Non-Significant Effect 39 26 50 1 10 Asymp 0.7500 Non-Significant Effect 26 100 39 1 10 Asymp

ANOVA Table P-Value Decision(a:5%) DF F Stat Source **Sum Squares** Mean Square <1.0E-37 Significant Effect Between 0 3 65540 0 20 Error 0 23 Total 0

96h Survival Rate Summary Std Err CV% %Effect Conc-% Code Mean 95% LCL 95% UCL Median Min Max Count 0.00% 1.0000 0.0000 0.00% 0 LC 6 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.0000 0.00% 0.00% 25 6 1.0000 1.0000 1.0000 1.0000 1.0000 0.0000 0.00% 0.00% 50 6 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.0000 0.00% 0.00% 100 6 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000

Angular (Corrected) Transformed Summary Std Err CV% %Effect Code 95% UCL Median Min Max Conc-% Count Mean 95% LCL 1.345 0.00% 0.00% LC 1.345 1.345 1.345 1.345 1.345 0 0 6 0.00% 0 0.00% 1.345 25 6 1.345 1.345 1.345 1.345 1.345 0.00% 0 0.00% 50 6 1.345 1.345 1.345 1.345 1.345 1.345 0.00% 1.345 1.345 1.345 1.345 0 0.00% 100 6 1.345 1.345

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Report Date:

13 Apr-22 17:48 (p 2 of 2)

Test Code: 22-03-055 | 19-2893-5134

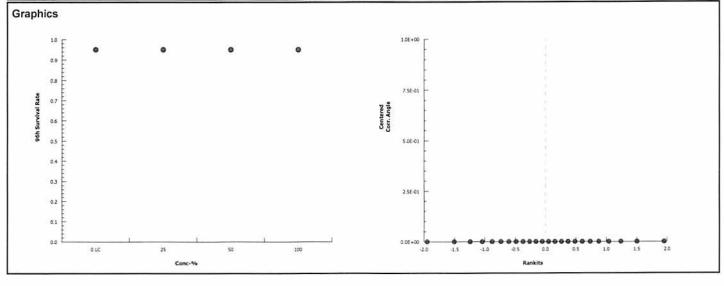
Analysis ID: Analyzed:	11-8235-1974 13 Apr-22 17:48	Endpoint: Analysis:	96h Survival Rate Parametric Bioequivalence-Two Sample	11.0	ETIS Version: fficial Results:	CETISV Yes	1.9.3	
Data Transfor	m ,	Alt Hyp	TST_b	NOEL	LOEL	TOEL	TU	
Angular (Corre	ected)	C*b < T	0.8	100	> 100	n/a	1	

Control	VS	Control II	Test Stat	Critical	P-Type	P-Value	Decision(a:10%)
Lab Control		25*	0.2691	n/a		<0.1	Non-Significant Effect
		50*	0.2691	n/a		<0.1	Non-Significant Effect
		100*	0.2691	n/a		<0.1	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0	0	3	65540	<1.0E-37	Significant Effect
Error	0	0	20			
Total	0		23			

96h Survival	Rate Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

Angular (Corr	rected) Transfo	rmed Sumr	nary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%
25		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%
50		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%
100		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%



Analyst: QA: J

96hr Marine Acute Test with 48hr Renewal

Sample ID:	SIYB-6	5					Start Date/Time:	3/2	3/23/22 1230							
Test No.			-03	-05	5		End Date/Time:	_		-						
								Water (•						
Sample ID	Rep			Counts				_								
(%)		0	24	48	72	96	Parameter	0	24	48f	48i	72	96			
	Α	5	5	5	5	5	Temp. (C)	21.2	21.8	21.0	20.5		20.6			
	В	5	5	5	2	5	Salinity (ppt)	33.1	34.0	33.9	33.5	34.1	34.3			
LC #3	С	5	5	5_	5	5	pH (units)	790	7.73	771	7.95	7,79	7.76			
11 000 200 000 00	D	5	2	5	2	5	DO (mg/L)	73	6.2	6.3	7.5	65	6.2			
	E	5		5	5	5										
	F	5	5	5	5	5		1 1 5	15/							
	A	5	5	5	5	5	Temp. ('C)	21.8	21.7	20.8	1000	206				
	В	5	2	5	5	5	Salinity (ppt)	33.0			235	34.1	343			
25	С	5	5	5	5	5	pH (units)	7.90		7.73		7.79	7.75			
	D	5	5	5	5	5	DO (mg/L)	7.3	6.3	6.6	7.5	65	6.3			
	E	5	5	5	5	5										
	F	5	2	5	5	5										
	Α	5	5	5	5	5	Temp. (°C)	21.4	21.7		20.6					
	В	5	5	5	5	5	Salinity (ppt)	33,0	34,0	339	33.5	34.0	342			
50	С	5	5	5	2	5	pH (units)	790	7.70	7.72	7.89	7.79	7.75			
30	D	5	5	5	5	5	DO (mg/L)	7-4	6.2	6.5	7.7	6.5	6.3			
	E	5	5	5	5	5										
	F	5	5	5	5	5										
	Α	5	5	5	5	5	Temp. (C)	20.8	21.7	20.9	20.4	20,6	20.4			
	В	5	5	5	2	5	Salinity (ppt)	33.0	34.1	33.9	334	33.9	34.2			
100	С	5	5	5	2	5	pH (units)	788	7,69	7.72	1	7.79	7.74			
100	D	5	5	5	2	5	DO (mg/L)	76	6.1	6.4	8.1	6.5	63			
	E	5	5	5	5	5										
	F	5	5	5	5	5										
	А						Temp. (C)									
	В						Salinity (ppt)									
	С					100	pH (units)									
	D						DO (mg/L)									
	E															
	F															
Tech	n Initials:	60	SC	46	SL	A6	Tech Initials	50	CB	26	De	Ś	A6			
200 0	QC:	67	2/1	8/22	A	35	Feedings	0	24	48	72	96	1			
	nimals R			1110	1/5	D ,	Initials (AM):	-	50	As	Sc	NO				
Age of Anim	nals at Te	st Start:		9 29	4,		Initials (PM):	ev	00	000		NO				
Comments:																

Site: SIYB-REF-1

CETIS Summary Report

Report Date: Test Code: 13 Apr-22 17:50 (p 1 of 1) 22-03-056 | 08-7398-8960

Pacific Topsmelt 96-h Acute Survival Test

Wood E&IS

Batch ID: 12-4021-7845 Test Type: Survival (96h)

Analyst:

Protocol: EPA/821/R-02-012 (2002) Diluent: Natural Seawater Start Date: 23 Mar-22 12:30 Not Applicable Brine: Species: Atherinops affinis Ending Date: 27 Mar-22 13:15 14 d Age: Aquatic Biosystems, CO **Duration:** 4d 1h Source:

Sample ID: 09-0807-7198 Code: 22-W071 Client: Wood Environment and Infrastructure
Sample Date: 22 Mar-22 09:30 Material: Ambient Sample Project: SIYB TMDL Monitoring

Sample Date: 22 Mar-22 09:30 Material: Ambient Sample Project: SIYB TMDL Monitoring Receipt Date: 22 Mar-22 17:40 Source: Shelter Island Yacht Basin

Sample Age: 27h (4.6 °C) Station: SIYB REF1

Multiple Com	parison Summary						
Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD √
13-9967-3862	96h Survival Rate	Steel Many-One Rank Sum Test	100	> 100	n/a	1	n/a
14-0379-4151	96h Survival Rate	TST-Welch's t Test	100	> 100	n/a	1	n/a

96h Survival I	96h Survival Rate Summary													
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect			
0	LC	6	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%			
25		6	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%			
50		6	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%			
100		6	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%			

96h Survival I	Rate Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6
0	LC	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

50*

0.2691

n/a

Report Date: Test Code:

< 0.1

Non-Significant Effect

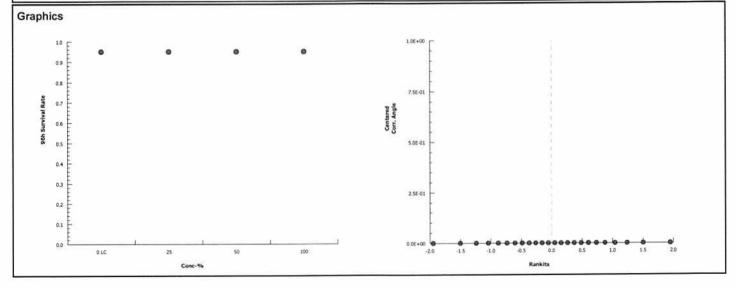
13 Apr-22 17:50 (p 1 of 2) 22-03-056 | 08-7398-8960

Pacific Topsn	nelt 96	i-h Acute Surv	ival Test									Wood E&IS
Analysis ID: Analyzed:		379-4151 pr-22 17:50	Endpoint: Analysis:		Survival Ra		e-Two Sample		IS Version: cial Results		1.9.3	
Data Transfor	m	Alt	Нур			TST_b		NOEL	LOEL	TOEL	TU	
Angular (Corre	ected)	C*I	D < T			0.8		100	> 100	n/a	1	
TST-Welch's	t Test											
Control	vs	Control II	Test :	Stat	Critical		P-Type	P-Value	Decision	(a:10%)		
Lab Control		25*	0.269	1	n/a			<0.1	Non-Sign	ificant Effect	ct	

	100*	0.2691 n/a			<0.1	Non-Significant Effect	
ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0	0	3	65540	<1.0E-37	Significant Effect	
Error	0	0	20				
Total	0		23				

96h Survival	96h Survival Rate Summary													
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect			
0	LC	6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%			
25		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%			
50		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%			
100		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%			

Angular (Corr	ngular (Corrected) Transformed Summary												
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect		
0	LC	6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%		
25		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%		
50		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%		
100		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%		



Analyst: QA: AC

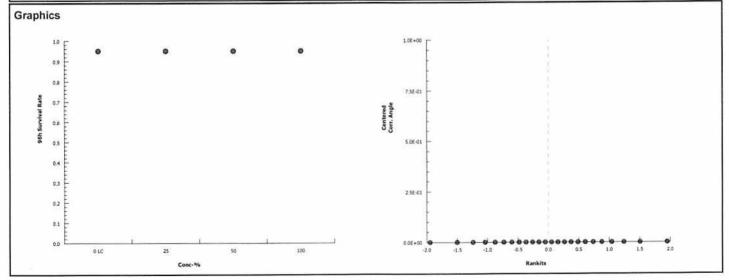
Report Date: Test Code: 13 Apr-22 17:50 (p 2 of 2) 22-03-056 | 08-7398-8960

Pacific Topsr	nelt 96-h	Acute Surv	val Test									Wood E&IS
Analysis ID: Analyzed:		13-9967-3862 Endpoint: 96h Survival Rate 13 Apr-22 17:50 Analysis: Nonparametric-Control vs Treatments						CET				
Data Transfor	rm	Alt	Нур					NOEL	LOEL	TOEL	TU	
Angular (Corre	ected)	C >	Т					100	> 100	n/a	1	
Steel Many-O	ne Rank	Sum Test										
Control	vs C	onc-%	Test S	Stat Critical	Ties	DF	P-Type	P-Value	Decision	ı(α:5%)		
Lab Control	2	5	39	26	1	10	Asymp	0.7500	Non-Sigr	ificant Effect	et	
	50)	39	26	1	10	Asymp	0.7500	Non-Sigr	ificant Effect	ct	
	10	00	39	26	1	10	Asymp	0.7500	Non-Sigr	ificant Effec	ot	
ANOVA Table	•											
Source Sum Squares		Mean	Square	DF		F Stat	P-Value	Decision	ı(α:5%)			
Between	0		0		3		65540	<1.0E-37	Significa	nt Effect		

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0	0	3	65540	<1.0E-37	Significant Effect
Error	0	0	20			
Total	0		23			

96h Survival	Rate Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

Angular (Corr	ected) Transfo	rmed Sumr	mary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%
25		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%
50		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%
100		6	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	0.00%



Analyst QA: SC

002-883-387-8 CETIS™ v1.9.3.0

96hr Marine Acute Test with 48hr Renewal

Sample ID: Test No.			13-	054	2		Start Date/Time:	3/2	3/22	AUT.	50	1230)		
reservor											517				
Sample ID	Rep			Counts			Water Quality								
(%)		0	24	48	72	96	Parameter	0	24	48f	48i	72	96		
	Α	5	5	5	5	5	Temp. (°C)	21.2	21.8	21.0		20.7	206		
	В	5	7	5	5	5	Salinity (ppt)	33.1	34.0	33.9	33.5	34.1	343		
LC#4	С	5	5	5	2	5	pH (units)	790	7.73	7.71	795	7,79	7.76		
#2	D	5	5	5	5	5	DO (mg/L)	73	62	63	15	6.5	62		
"	E	5	5	5	5	5									
	F	5	5	5	5	5					11776				
	Α	5	5	5	5	5	Temp. (°C)	21.7	21,2	20.8		20.2			
	В	5	5	5	5	5	Salinity (ppt)	33.1	34.2		33.6	34.3	34.4		
25	С	5	7	5	5	5	pH (units)	791	7,67	7.70	7.90	7.79	דר.ר		
23	D	5	5	5	5	5	DO (mg/L)	7.3	5.7	59	7.6	6.7	6.5		
	Ε	5	7	5	2	5									
	F	5	5	5	5	5									
	Α	5	~	5	5	5	Temp. (°C)	21.6	21.0	20.8	20.6	20.1	20.2		
	В	5	5	5	5	5	Salinity (ppt)	33.0	34.3	34.2	33.5	34.2	34.4		
	С	5	5	5	2	5	pH (units)	791	7.65	7.69	7.90	7.79	7.75		
50	D	5	0	5	5	5	DO (mg/L)	74		6.1	7.7	6.7	6.5		
	E	5	5		5	5			E-E	1500	4				
	F	5	-	5	5	5									
	Α	5	5	5	5	5	Temp. (°C)	21.1	8.8	20.7	20.5	20,0	20.1		
	В	5	7	5	-	5	Salinity (ppt)	33.0	34.3	34.2	334	34.2	34.4		
022	С	5	5	5	5	5	pH (units)	7.89		7.68	7.90	7.78			
100	D	5	5	5	5	5	DO (mg/L)	7.6	5.5		8.1	leb	6.4		
	Ε	5	5	4	5	5					7	W. I	1		
	F	5	-	2	5	5									
	А	.00		-3-		100	Temp. (°C)	T							
	В					50%	Salinity (ppt)								
	С					- B	pH (units)								
	D	_					DO (mg/L)								
	E											The state of			
	F														
Tech	n Initials:	RW	50	Ro	SC	As	Tech Initials	50	CB	Db	AL	5	AL		
	OC=	SC		1						, , -			-		
Date A	nimals Re	ceived:	3/	18/2	2,	465	<u>Feedings</u>	0	24	48	72	96			
Age of Anin	als at Tes	st Start:	i	4 da	λı		Initials (AM): Initials (PM):	ev	50	16	SC	16			
Comments:		8 C - 41.5					o annecessor con en established.	-	-				*		

APPENDIX C List of Data Qualifier Codes



Data Qualifier Codes

QC1: Temperatures out of recommended range; corrective action taken

QC2: Temperatures out of recommended range; no action taken, test terminated

QC3: Test initiated on aeration due to anticipated drop in dissolved oxygen

QC4: Dissolved oxygen percent saturation <110

QC5: Survival counts not recorded due to poor visibility

QC6: Inadequate sample volume remaining; 50% renewal performed

QC7: Inadequate sample volume remaining; no renewal performed

APPENDIX D Sample Receipt Information & Chain of Custody Form

Sample Check-In: Effluent/Water

Wood Aquatic Toxicology Laboratory 4905 Morena Blvd, Ste. 1304 San Diego, CA 92117 Client: Wood - POSD

Project Name: SIYB TMDL Wither Testing

Test ID Numbers: 22-03-050 to 063

Sample ID:	SIYB-1	SIYB-2	SIYB-3	5IYB-4	SIYB-5	SIYB-6	SIYB-Reft	
Sample Number:	22-W065	22-WO66	22-W067	22-W068	22-4069	21-W070	22-6071	
Collection Date/Time:	3/22/22 1550	3/22/22 1500	3/21/22 350	3/22/22 1300	3/22/22 1150	3/22/22 1030	3/22/22 0930	
Receipt Date/Time:	1 1		1740		1 1140	1 1740	V 1740	
Total Sample Volume (L):	146	146	146	14	146	14L	14L	
Receipt Temp (°C):	13.7	13.0	4.9	1.9	3.9	2.2	4.6	
Appropriate Temp (Y/N) ¹ :	7	У	\ \	Y	Y	Y	У	
pH (units):	7.74	7.74	7.78	7.77	רהר	7.76	7.76	
DO (mg/L):	7.9	8.0	8.2	8.4	8.2	8.2	8-0	
Conductivity (μS/cm) ² :	-	-		1	-	_	-	
Salinity (ppt):	32.9	32.8	32.3	32.5	32.5	32.5	32.5	
Alkalinity (mg/L):	124-	123 -	126	- j22	121-	- 123	-119	
Hardness (mg/L) ² :		_	, 1	-	-	-	_	
Total Chlorine (mg/L) ³ :	20.02	0.03	0.03	20.02	<0.02	40.02	20,02	
Free Chlorine (mg/L) ³ :	_	-		_	_	-	_	
Technician Initials:	RV 186	RV/R6	EN/As	RV	RN	RV	21	

Notes:	Sample Descriptions ⁴ :
¹ Temperature should be 0 - 6°C if received > 24 hours past collection	-all Samples year & wloviess
² Only measured on samples with less than 3 ppt salinity	
³ If total chlorine is above 0.10 mg/L, the free chlorine will be measured	
⁴ Debris, odor, and color is described only if observed in the sample	

Test Organism: Topswell	Dilution Water: (Nat-SW, Art-SW, RW, DMW, Other	Salinity_84
*	Additional Control: Filter Control for Muscles	Salinity 34

Initial QC: AL 4/29/22
Final Review: Sc 5/9/22



Wood Aquatic Toxicology Lab 4905 Morena Blvd, Ste. 1304 San Diego, CA 92117 Phone: (858) 299-5368

Chain of Custody Form

Analysis Requested

Page ___1__ of ___1___

Client/Send F	Report To:				and the second second	formation (if ne				ut or use	384. CSNP6275-0		
Company Address	Wood E & I Solutions, I 9177 Sky Park Court San Diego, CA 92123	nc.			The second of th	2022 SIYB TMDL W 2015100111.0007. N/A							(°C)
Contact/PM Phone Number Email Address	Marisa Swiderski (858) 300-4324 marisa.swiderski@wood	dplc.com			Personal Cooler Shipped: Return Requested: YES NO_X				Mg-dv				Receipt Temp (°C)
S	Collection Date		Collection Time	Sample Volume	Sample Type: Grab/Comp.	Sample Number (for lab use)							
- 4	SIYB-1	3/22/22		1550	14L	Grab		Х	х				13.7
SIYB-2 SIYB-3 SIYB-4 SIYB-5 SIYB-6				1500	14L	Grab		Х	х				13.0
				1350	14L	Grab		Х	х				49
				1300 1150 1030	14L	Grab		Х	х				1.9
					14L	Grab		Х	Х				3.9
					14L	Grab		Х	х				2.2
Si	YB-REF-1	1		0930	14L	Grab		Х	Х				4.6
Samples Collected By: MS/KB		100, 200, Topsmelt Bivalve to	, 400 ug/l t tests at ests at 5 c	L for topsmelt a 3 concentration concentrations (t ref. tox. test for nd 0, 2.5, 5.0, 10 s (25, 50, 100%) 6.25, 12.5, 25, 5 uca sp.); 5 reps/s	Samples Shipped via: Chr-5 S. Condition Upon Receipt:							
Relinquished/Shipped By: Signature: Marrison Aurolewin S			Received By: Signature: Print Name: Chars Signature			Relinquished By: Signature: Print Name:			Received By: Signature: Print Name:				
Date/Time: 3/	22/22 1740	Date/Ti	me: 3	22/22	1740	Date/Time:		Date	/Time:				

Test Codes (marine):

Mp-c: Chronic Kelp Hr-dv: Chronic Abalone Aa-a: Acute Topsmelt

Aa-c: Chronic Topsmelt

Mb-a: Acute Menidia/Silverside Sp-c: Chronic Urchin Fertilization

Ab-a: Acute Mysid Shrimp

Ab-c: Chronic Mysid Shrimp

Mb-c: Chronic Menidia/Silverside Sp-dv: Chronic Urchin Development Mg-dv: Chronic Mussel Development

Other: Write out the test organism

Test Codes (freshwater): Cd-a: Acute Ceriodaphnia Sc-c: Chronic Green Algae Cd-c: Chronic Ceriodaphnia Ha-a: Acute Hyalella amphipod Pp-a: Acute Fathead Minnow Ha-c: Chronic Hyalella amphipod Pp-c: Chronic Fathead Minno T-22: CA Title 22 Hazardous Waste

APPENDIX E

Reference Toxicant Test
Statistical Analysis, Control Chart, and Raw Data

Chronic Mussel
Reference Toxicant Test

10

20

40

Survival Rate Summary

Papart Data:

03 May-22 17:03 (p 1 of 2)

CETIS Summary Report							3			:03 (p 1 of
						Tes	st Code:	2203	36	
Bivalve Larval	Survival and D	evelopment Tes	t							Wood E&
	20-5972-8344		e: Development-	Survival			alyst:		64000 AND THE STREET TO SERVE	
200 mile 400 miletina miletina 17	22 Mar-22 16:15		EPA/600/R-95	/136 (1995)				Diluted Natural	Seawater	
7(24 Mar-22 16:15	Species:	Mytilis gallopro	ovincialis		Bri	ne:	Not Applicable		
Duration:	48h	Source:	Field Collected	ACT TORKY BOOK STONE SERVER SERVER						
Sample ID:	16-7570-0116	Code:	22032 2 mgrd			Cli	ent: I	nternal		
Sample Date:	22 Mar-22	Material:	Total Copper			Pro	oject:			
Receipt Date:	22 Mar-22	Source:	Reference Tox	kicant						
Sample Age:	16h	Station:								
Multiple Comp	arison Summa	ry								
Analysis ID	Endpoint	Cor	nparison Method	d		NOEL	LOEL	TOEL	TU	PMSD
15-1421-6731	Combined Propo	ortion Norma Ste	el Many-One Ran	k Sum Test		5	10	7.071		7.73%
12-7911-5919	2-7911-5919 Proportion Normal Steel Many-One Rank Sum Test						10	7.071		3.01%
02-5653-4987 Survival Rate Dunnett Multiple Comparison Test						40	> 40	n/a		9.56%
Point Estimate	Summary									
Analysis ID	Endpoint	Poi	nt Estimate Meth	nod		Level	μg/L	95% LCL	95% UC	L TU
17-5105-1124	Combined Propo	ortion Norma Trin	nmed Spearman-l	Kärber		EC50	12.55	12.33	12.77	
Test Acceptab	ility				TAC	Limits				
Analysis ID	Endpoint	Attr	ibute	Test Stat	Lower	Upper	Overla	p Decision		
12-7911-5919	Proportion Norm	nal Cor	itrol Resp	0.9039	0.9	>>	Yes	Passes C	riteria	
02-5653-4987			itrol Resp	0.9855	0.5	>>	Yes	Passes C	riteria	
15-1421-6731	Combined Propo	ortion Norma PM	SD	0.0773	<<	0.25	No	Passes C	riteria	
Combined Pro	portion Normal	I Summary								
Conc-µg/L	Code	Count Mea	an 95% LCL	95% UCL	Min	Max	Std Er	r Std Dev	CV%	%Effec
0	LC	5 0.89	0.8659	0.9155	0.8626	0.9104	0.0089		2.24%	0.00%
2.5		5 0.86	0.7938	0.9317	0.7863	0.9201	0.0248	0.0555	6.43%	3.14%
5		5 0.82		0.9542	0.6412	0.8955	0.0476		12.95%	7.71%
10		5 0.77		0.8218	0.7354	0.8371	0.0176		5.08%	13.21%
20		5 0.00		0.0000	0.0000	0.0000	0.0000			100.00
40		5 0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00
	rmal Summary			5 9742700780219			2200000	9 <u>2</u> , 9,162,623	02-970-2101	27
Conc-µg/L	Code	Count Mea			All Control of the Control	Max	Std Er		CV%	%Effec
0	LC	5 0.90		0.9157	0.8915	0.9150	0.0043		1.05%	0.00%
2.5		5 0.89		0.9183	0.8729	0.9201	0.0089		2.24%	1.15%
5		5 0.87	773 0.8418	0.9128	0.8317	0.8987	0.0128	0.0286	3.26%	2.94%

CV% %Effect Conc-µg/L Code 95% UCL Min Std Err Std Dev Count Mean 95% LCL Max LC 5 1.0000 1.0000 0.0111 0.0248 2.52% 0.00% 0 0.9855 0.9547 0.9427 2.5 5 1.0000 0.9008 1.0000 0.0191 0.0428 4.43% 2.09% 0.9649 0.9118 5 5 1.0000 1.0000 0.1006 10.76% 5.11% 0.9351 0.8102 0.7710 0.0450 10 5 0.9878 0.9647 1.0000 0.9580 1.0000 0.0083 0.0186 1.88% -0.23% 20 5 0.9084 0.7888 1.0000 0.7748 1.0000 0.0431 0.0963 10.60% 7.82% 40 5 1.0000 0.7634 1.0000 0.0455 0.1016 11.63% 11.31% 0.8740 0.7479

0.8283

0.0000

0.0000

0.7354

0.0000

0.0000

0.8371

0.0000

0.0000

0.0165

0.0000

0.0000

0.0368

0.0000

0.0000

4.70%

13.42%

100.00% 100.00%

Analyst: PJ QA: IC 5/20/22

002-883-387-8 CETIS™ v1.9.3.0

5

5

5

0.7826

0.0000

0.0000

0.7369

0.0000

0.0000

03 May-22 17:03 (p 2 of 2) 220322mgrd | 07-3402-8050

							rest douc.	ELOOLEINGIA O. O.OL. O.O.
Bivalve Larval Su	rvival and [Developmer	nt Test					Wood E&IS
Combined Propor	tion Norma	ıl Detail						
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.8779	0.8626	0.9104	0.8974	0.9051		
2.5		0.8855	0.8244	0.8973	0.9201	0.7863		
5		0.8942	0.8664	0.8130	0.6412	0.8955		
10		0.7354	0.7697	0.7481	0.8371	0.7748		
20		0.0000	0.0000	0.0000	0.0000	0.0000		
40		0.0000	0.0000	0.0000	0.0000	0.0000		
Proportion Norma	ıl Detail							
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.8915	0.9150	0.9104	0.8974	0.9051		
2.5		0.9027	0.8745	0.8973	0.9201	0.8729		
5		0.8942	0.8664	0.8987	0.8317	0.8955		
10		0.7354	0.7697	0.7809	0.8371	0.7899		
20		0.0000	0.0000	0.0000	0.0000	0.0000		
40		0.0000	0.0000	0.0000	0.0000	0.0000		
Survival Rate Deta	ail							
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.9847	0.9427	1.0000	1.0000	1.0000		
2.5		0.9809	0.9427	1.0000	1.0000	0.9008		
5		1.0000	1.0000	0.9046	0.7710	1.0000		
10		1.0000	1.0000	0.9580	1.0000	0.9809		
20		0.9084	1.0000	0.7748	0.8588	1.0000		
40		0.7634	0.8931	0.9351	1.0000	0.7786		
Combined Propor	tion Norma	I Binomials	3					
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	230/262	226/262	244/268	245/273	248/274		
2.5		232/262	216/262	236/263	265/288	206/262		
5		245/274	227/262	213/262	168/262	257/287		
10		214/291	234/304	196/262	221/264	203/262		
20		0/262	0/285	0/262	0/262	0/281		
40		0/262	0/262	0/262	0/264	0/262		
Proportion Norma	l Binomials	S						
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	230/258	226/247	244/268	245/273	248/274		
2.5		232/257	216/247	236/263	265/288	206/236		
5		245/274	227/262	213/237	168/202	257/287		
10		214/291	234/304	196/251	221/264	203/257		
20		0/238	0/285	0/203	0/225	0/281		
40		0/200	0/234	0/245	0/264	0/204		
Survival Rate Bind	omials							
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	258/262	247/262	262/262	262/262	262/262		
2.5		257/262	247/262	262/262	262/262	236/262		
5		262/262	262/262	237/262	202/262	262/262		
10		262/262	262/262	251/262	262/262	257/262		
20		238/262	262/262	203/262	225/262	262/262		
40		200/262	234/262	245/262	262/262	204/262		

Analyst: DV QA: SC

002-883-387-8 CETIS™ v1.9.3.0

CETIS Analytical Report

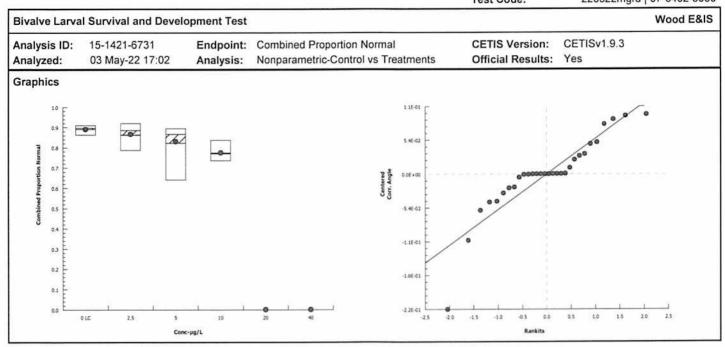
Report Date: Test Code: 03 May-22 17:03 (p 1 of 6) 220322mgrd | 07-3402-8050

Bivalve Larval Survival and Development Test												٧	Vood E&IS
Analysis ID: Analyzed:		1421-6731 May-22 17:02	Endp Analy		nbined Prop					S Version: ial Results:	CETISv1.9 Yes	9.3	
				313. 1101	parametrio	001111011			NOEL	LOEL	TOEL	TU	PMSD
Data Transfo			t Hyp >T				-		5	10	7.071	10	7.73%
Angular (Corr	ectea)	C	<i>-</i> 1				_		3	10	7.071		1.7070
Steel Many-C	one Ra	ank Sum Test											
Control	vs	Conc-µg/L		Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(a:5%)		
Lab Control		2.5		24	16	0	8	Asymp	0.5394	Non-Signif	icant Effect		
		5		20	16	0	8	Asymp	0.1899	Non-Signif	icant Effect		
		10*		15	16	0	8	Asymp	0.0191	Significant	Effect		
		20* 15 16 0 8 Asymp			Asymp	0.0191	Significant	Effect					
	40* 15 16			0	8	Asymp	0.0191	Significant	Effect				
ANOVA Table	e												
Source		Sum Squares	s	Mean Squ	iare	DF		F Stat	P-Value	Decision(a:5%)		
Between		8.62279 1.72456				5		386.4	<1.0E-37	Significant	Effect		
Error		0.107125		0.0044635	i	24							
Total		0.107125 0.0044635 8.72992		29									
Distributiona	al Test	s					_						
Distributiona Attribute	al Test	s Test					at	Critical	P-Value	Decision(a:1%)		
20 (500)	al Test	Test	ity of Vari	ance Test			at	Critical	P-Value <1.0E-37	Decision(o			
Attribute	al Test	IN Low Section 1	. 1940			Test St	at			Unequal V		n	
Attribute Variances Distribution		Test Bartlett Equal Shapiro-Wilk	W Norma			Test St 87.58	at	15.09	<1.0E-37	Unequal V	ariances	n	
Attribute Variances Distribution Combined P		Test Bartlett Equal Shapiro-Wilk	W Norma		95% LCL	Test St 87.58		15.09	<1.0E-37	Unequal V	ariances	n CV%	%Effect
Attribute Variances Distribution		Test Bartlett Equal Shapiro-Wilk	W Norma	lity Test	95% LCL 0.8659	Test St 87.58 0.8554		15.09 0.9031	<1.0E-37 8.1E-04	Unequal V Non-Norma	ariances al Distributio		%Effect 0.00%
Attribute Variances Distribution Combined P Conc-µg/L		Test Bartlett Equal Shapiro-Wilk tion Normal Su	W Norma	lity Test Mean	THAT TO SAN STEEL CO.	Test St 87.58 0.8554		15.09 0.9031 Median	<1.0E-37 8.1E-04 Min	Unequal V Non-Norma	ariances al Distributio	CV%	
Attribute Variances Distribution Combined P Conc-μg/L 0		Test Bartlett Equal Shapiro-Wilk tion Normal St Code Co	W Norma	Mean 0.8907	0.8659	Test St 87.58 0.8554 95% UG 0.9155	CL	15.09 0.9031 Median 0.8974	<1.0E-37 8.1E-04 Min 0.8626	Unequal V Non-Norma Max 0.9104	ariances al Distributio Std Err 0.0089	CV% 2.24%	0.00%
Attribute Variances Distribution Combined P Conc-µg/L 0 2.5		Test Bartlett Equal Shapiro-Wilk cion Normal Su Code Co LC 5 5	W Norma	Mean 0.8907 0.8627	0.8659 0.7938	7est St 87.58 0.8554 95% U0 0.9155 0.9317	CL	15.09 0.9031 Median 0.8974 0.8855	<1.0E-37 8.1E-04 Min 0.8626 0.7863	Max 0.9104 0.9201	Std Err 0.0089 0.0248	CV% 2.24% 6.43%	0.00% 3.14%
Attribute Variances Distribution Combined P Conc-µg/L 0 2.5 5		Test Bartlett Equal Shapiro-Wilk cion Normal Succeeded Control S	W Norma	Mean 0.8907 0.8627 0.8220	0.8659 0.7938 0.6899	Test St 87.58 0.8554 95% UC 0.9155 0.9317 0.9542	CL	15.09 0.9031 Median 0.8974 0.8855 0.8664	<1.0E-37 8.1E-04 Min 0.8626 0.7863 0.6412	Max 0.9104 0.9201 0.8955	Std Err 0.0089 0.0248 0.0476	CV% 2.24% 6.43% 12.95%	0.00% 3.14% 7.71%
Attribute Variances Distribution Combined P Conc-µg/L 0 2.5 5 10		Test Bartlett Equal Shapiro-Wilk Code Code Code Code Code Code Code Code	W Norma	Mean 0.8907 0.8627 0.8220 0.7730	0.8659 0.7938 0.6899 0.7243	Test St 87.58 0.8554 95% UC 0.9155 0.9317 0.9542 0.8218	CL	15.09 0.9031 Median 0.8974 0.8855 0.8664 0.7697	<1.0E-37 8.1E-04 Min 0.8626 0.7863 0.6412 0.7354	Max 0.9104 0.9201 0.8955 0.8371	Std Err 0.0089 0.0248 0.0476 0.0176	CV% 2.24% 6.43% 12.95%	0.00% 3.14% 7.71% 13.21%
Attribute Variances Distribution Combined P Conc-µg/L 0 2.5 5 10 20 40	roport	Test Bartlett Equal Shapiro-Wilk Code C LC 5 5 5 5 5 5 5	W Norma ummary ount	Mean 0.8907 0.8627 0.8220 0.7730 0.0000 0.0000	0.8659 0.7938 0.6899 0.7243 0.0000	7est St 87.58 0.8554 95% UC 0.9155 0.9317 0.9542 0.8218 0.0000	CL	15.09 0.9031 Median 0.8974 0.8855 0.8664 0.7697 0.0000	<1.0E-37 8.1E-04 Min 0.8626 0.7863 0.6412 0.7354 0.0000	Max 0.9104 0.9201 0.8955 0.8371 0.0000	Std Err 0.0089 0.0248 0.0476 0.0176 0.0000	CV% 2.24% 6.43% 12.95%	0.00% 3.14% 7.71% 13.21% 100.00%
Attribute Variances Distribution Combined P Conc-µg/L 0 2.5 5 10 20 40	roport	Test Bartlett Equal Shapiro-Wilk Code Code LC 5 5 5 5 5 7 7 Transformed	W Norma ummary ount	Mean 0.8907 0.8627 0.8220 0.7730 0.0000 0.0000	0.8659 0.7938 0.6899 0.7243 0.0000	7est St 87.58 0.8554 95% UC 0.9155 0.9317 0.9542 0.8218 0.0000	CL	15.09 0.9031 Median 0.8974 0.8855 0.8664 0.7697 0.0000	<1.0E-37 8.1E-04 Min 0.8626 0.7863 0.6412 0.7354 0.0000	Max 0.9104 0.9201 0.8955 0.8371 0.0000	Std Err 0.0089 0.0248 0.0476 0.0176 0.0000	CV% 2.24% 6.43% 12.95%	0.00% 3.14% 7.71% 13.21% 100.00%
Attribute Variances Distribution Combined P Conc-μg/L 0 2.5 5 10 20 40 Angular (Con	roport	Test Bartlett Equal Shapiro-Wilk Code Code LC 5 5 5 5 5 7 7 Transformed	W Norma ummary ount	Mean 0.8907 0.8627 0.8220 0.7730 0.0000 0.0000	0.8659 0.7938 0.6899 0.7243 0.0000 0.0000	Test St 87.58 0.8554 95% UC 0.9155 0.9317 0.9542 0.8218 0.0000 0.0000	CL	15.09 0.9031 Median 0.8974 0.8855 0.8664 0.7697 0.0000 0.0000	<1.0E-37 8.1E-04 Min 0.8626 0.7863 0.6412 0.7354 0.0000 0.0000	Max 0.9104 0.9201 0.8955 0.8371 0.0000 0.0000	Std Err 0.0089 0.0248 0.0476 0.0176 0.0000 0.0000	CV% 2.24% 6.43% 12.95% 5.08%	0.00% 3.14% 7.71% 13.21% 100.00%
Attribute Variances Distribution Combined P Conc-μg/L 0 2.5 5 10 20 40 Angular (Corc-μg/L	roport	Test Bartlett Equal Shapiro-Wilk Con Normal State Code Code Code Code Code Code Code Cod	W Norma ummary ount	Mean 0.8907 0.8627 0.8220 0.7730 0.0000 0.0000 hry Mean	0.8659 0.7938 0.6899 0.7243 0.0000 0.0000	Test St 87.58 0.8554 95% UC 0.9155 0.9317 0.9542 0.8218 0.0000 0.0000	CL	15.09 0.9031 Median 0.8974 0.8855 0.8664 0.7697 0.0000 0.0000	<1.0E-37 8.1E-04 Min 0.8626 0.7863 0.6412 0.7354 0.0000 0.0000	Max 0.9104 0.9201 0.8955 0.8371 0.0000 0.0000	Std Err 0.0089 0.0248 0.0476 0.0176 0.0000 0.0000 Std Err	CV% 2.24% 6.43% 12.95% 5.08%	0.00% 3.14% 7.71% 13.21% 100.00% 100.00%
Attribute Variances Distribution Combined P Conc-μg/L 0 2.5 5 10 20 40 Angular (Corconc-μg/L 0	roport	Test Bartlett Equal Shapiro-Wilk cion Normal State Code Code LC 5 5 5 5 5 Code Code Code LC 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	W Norma ummary ount	Mean 0.8907 0.8627 0.8220 0.7730 0.0000 0.0000 ary Mean 1.235	0.8659 0.7938 0.6899 0.7243 0.0000 0.0000 95% LCL	Test St 87.58 0.8554 95% UC 0.9155 0.9317 0.9542 0.8218 0.0000 0.0000 95% UC	CL	15.09 0.9031 Median 0.8974 0.8855 0.8664 0.7697 0.0000 0.0000 Median 1.245	<1.0E-37 8.1E-04 Min 0.8626 0.7863 0.6412 0.7354 0.0000 0.0000 Min 1.191	Max 0.9104 0.9201 0.8955 0.8371 0.0000 0.0000	Std Err 0.0089 0.0248 0.0476 0.0176 0.0000 0.0000 Std Err 0.01416	CV% 2.24% 6.43% 12.95% 5.08% CV% 2.56%	0.00% 3.14% 7.71% 13.21% 100.00% 100.00%
Attribute Variances Distribution Combined P Conc-µg/L 0 2.5 5 10 20 40 Angular (Corc-µg/L 0 2.5	roport	Test Bartlett Equal Shapiro-Wilk Con Normal State Code Code Code Code Code Code Code Cod	W Norma ummary ount	Mean 0.8907 0.8627 0.8220 0.7730 0.0000 0.0000 ary Mean 1.235 1.197	0.8659 0.7938 0.6899 0.7243 0.0000 0.0000 95% LCL 1.196 1.097	7est St 87.58 0.8554 95% UC 0.9155 0.9317 0.9542 0.8218 0.0000 0.0000 95% UC 1.274 1.296	CL	15.09 0.9031 Median 0.8974 0.8855 0.8664 0.7697 0.0000 0.0000 Median 1.245 1.226	<1.0E-37 8.1E-04 Min 0.8626 0.7863 0.6412 0.7354 0.0000 0.0000 Min 1.191 1.09	Max 0.9104 0.9201 0.8955 0.8371 0.0000 0.0000 Max 1.267 1.284	Std Err 0.0089 0.0248 0.0476 0.0176 0.0000 0.0000 Std Err 0.01416 0.03574	CV% 2.24% 6.43% 12.95% 5.08% CV% 2.56% 6.68%	0.00% 3.14% 7.71% 13.21% 100.00% 100.00% %Effect 0.00% 3.09%
Attribute Variances Distribution Combined P Conc-µg/L 0 2.5 5 10 20 40 Angular (Conc-µg/L 0 2.5 5 5	roport	Test Bartlett Equal Shapiro-Wilk Code C LC 5 5 5 5 5 Code C LC 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	W Norma ummary ount	Mean 0.8907 0.8627 0.8220 0.7730 0.0000 0.0000 ary Mean 1.235 1.197 1.146	0.8659 0.7938 0.6899 0.7243 0.0000 0.0000 95% LCL 1.196 1.097 0.9838	7est St 87.58 0.8554 95% UC 0.9155 0.9317 0.9542 0.8218 0.0000 0.0000 95% UC 1.274 1.296 1.308	CL	15.09 0.9031 Median 0.8974 0.8855 0.8664 0.7697 0.0000 0.0000 Median 1.245 1.226 1.197	<1.0E-37 8.1E-04 Min 0.8626 0.7863 0.6412 0.7354 0.0000 0.0000 Min 1.191 1.09 0.9286	Max 0.9104 0.9201 0.8955 0.8371 0.0000 0.0000 Max 1.267 1.284 1.242	Std Err 0.0089 0.0248 0.0476 0.0176 0.0000 0.0000 Std Err 0.01416 0.03574 0.0584	CV% 2.24% 6.43% 12.95% 5.08% CV% 2.56% 6.68% 11.40% 4.50%	0.00% 3.14% 7.71% 13.21% 100.00% 100.00% %Effect 0.00% 3.09% 7.20%

Analyst: D QA: L

002-883-387-8 CETIS™ v1.9.3.0

03 May-22 17:03 (p 2 of 6) 220322mgrd | 07-3402-8050



Analyst: QA: SC

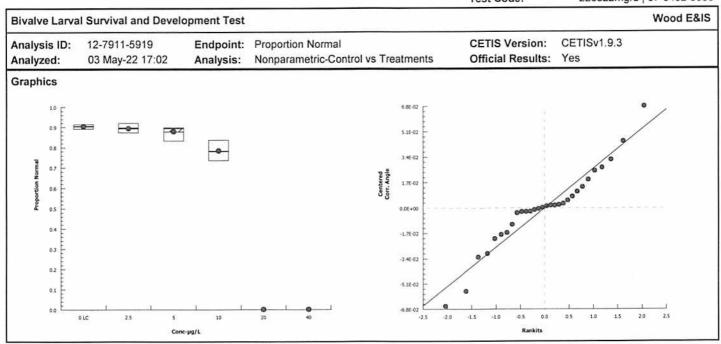
03 May-22 17:03 (p 3 of 6) 220322mgrd | 07-3402-8050

									rest	Code:	22032	2mgra 0	7-3402-8050
Bivalve Larv	al Sur	vival and l	Developme	ent Test								10	Wood E&IS
Analysis ID:		7911-5919		15	portion Norr		-	525 p. 6 6 6 4 50 6 50 6 6 6 7 6 4 6 7 6		S Version:	CETISv1.9	9.3	
Analyzed:	03	May-22 17:	02 An	alysis: No	nparametric-	Control vs	SII	reatments	Offic	ial Results:	Yes		
Data Transfo	orm		Alt Hyp						NOEL	LOEL	TOEL	TU	PMSD
Angular (Cor	rected)		C > T						5	10	7.071		3.01%
Steel Many-0	One Ra	ank Sum T	est										
Control	vs	Conc-µg	ı/L	Test Stat	Critical	Ties [DF	P-Type	P-Value	Decision(d	n:5%)		
Lab Control		2.5		23	16	0 8	_	Asymp	0.4416	Non-Signifi	cant Effect		
		5		19	16	0 8	3	Asymp	0.1314	Non-Signifi	cant Effect		
		10*		15	16	0 8	3	Asymp	0.0191	Significant	Effect		
		20*		15	16	0 8	3	Asymp	0.0191	Significant	Effect		
		40*		15	16	0 8	3	Asymp	0.0191	Significant	Effect		
ANOVA Tabl	e												
Source		Sum Squ	ares	Mean Squ	uare	DF		F Stat	P-Value	Decision(x:5%)		
Between		9.16119		1.83224		5		2122	<1.0E-37	Significant	Effect		
Error		0.020725	7	0.0008636	3	24							
Total		9.18191				29							
Distribution	al Test	s											
Attribute		Test				Test Sta	at	Critical	P-Value	Decision(r:1%)		
Variances		Bartlett E	quality of V	ariance Test		35.9		15.09	1.0E-06	Unequal Va	ariances		
Distribution		Shapiro-V	Vilk W Norr	mality Test		0.9457		0.9031	0.1295	Normal Dis	tribution		
Proportion N	Norma	Summary											
Conc-µg/L		Code	Count	Mean	95% LCL	95% UC	L	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	0.9039	0.8921	0.9157		0.9051	0.8915	0.9150	0.0043	1.05%	0.00%
2.5			5	0.8935	0.8687	0.9183		0.8973	0.8729	0.9201	0.0089	2.24%	1.15%
5			5	0.8773	0.8418	0.9128		0.8942	0.8317	0.8987	0.0128	3.26%	2.94%
10			5	0.7826	0.7369	0.8283		0.7809	0.7354	0.8371	0.0165	4.70%	13.42%
20			5	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000		100.00%
40			5	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000		100.00%
Angular (Co	rrecte	d) Transfo	rmed Sumi	mary									
Conc-µg/L		Code	Count	Mean	95% LCL	95% UC	L	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	1.256	1.236	1.276		1.258	1.235	1.275	0.007217	1.28%	0.00%
			5	1.239	1.199	1.28		1.245	1.206	1.284	0.01464	2.64%	1.30%
2.5					4 400	1 267		1.239	1.148	1.247	0.0189	3.48%	3.29%
2.5 5			5	1.215	1.162	1.267		1.200	1.140	1.144 1.7	0.0100		
			5 5	1.215 1.087	1.162	1.143		1.084	1.03	1.155	0.02027	4.17%	13.46%
5							es .						

Analyst: RV QA: K

002-883-387-8 CETIS™ v1.9.3.0

03 May-22 17:03 (p 4 of 6) 220322mgrd | 07-3402-8050



Analyst: W QA: SC

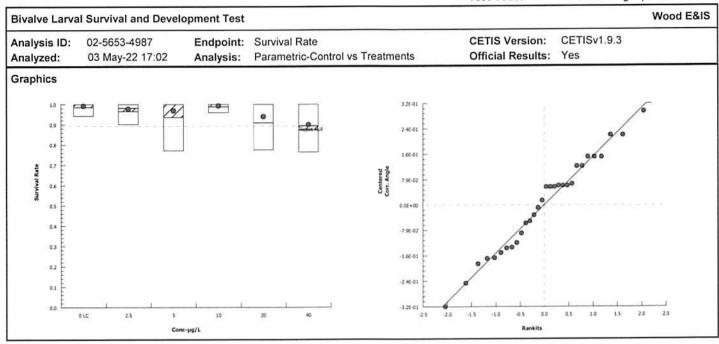
CETIS Analytical Report

Report Date: Test Code: 03 May-22 17:03 (p 5 of 6) 220322mgrd | 07-3402-8050

Bivalve Larv	al Survival a	nd Developm	ent Test							٧	Vood E&I
Analysis ID:	02-5653-49	987 E	ndpoint: Sur	vival Rate			CET	S Version	: CETISv1.	9.3	
Analyzed:	03 May-22	17:02 A	nalysis: Par	rametric-Con	trol vs Tre	atments	Official Results: Yes				
Data Transfo	orm	Alt Hyp)				NOEL	LOEL	TOEL	TU	PMSD
Angular (Corr	rected)	C > T					40	> 40	n/a		9.56%
Dunnett Mul	tiple Compar	ison Test									
Control	vs Cond	c-µg/L	Test Stat	Critical	MSD I	F P-Type	P-Value	Decision	n(a:5%)		
Lab Control	2.5		0.5881	2.362	0.244 8	CDF	0.6079	Non-Sigr	nificant Effect		
	5		0.865	2.362	0.244 8	CDF	0.4810	Non-Sigr	nificant Effect		
	10		-0.03971	2.362	0.244 8	CDF	0.8448	Non-Sigr	nificant Effect		
	20		1.528	2.362	0.244 8	CDF	0.2149	Non-Sigr	nificant Effect		
	40		2.244	2.362	0.244 8	CDF	0.0630	Non-Sigr	nificant Effect		
ANOVA Tabl	e										
Source	Sum	Sum Squares Mean Square				F Stat	P-Value	Decision	n(α:5%)		
Between	0.213	41	0.0426821	1	5	1.594	0.1997	Non-Sigr	nificant Effect		
Error	0.642	445	0.0267686	3	24						
Total	0.855	856			29						
Distribution	al Tests										
Attribute	Test				Test Sta	t Critical	P-Value	Decision	n(a:1%)		
Variances	Bartle	tt Equality of	Variance Test		5.864	15.09	0.3197	Equal Va	riances		
Distribution	Shapi	iro-Wilk W No	rmality Test		0.978	0.9031	0.7690	Normal [Distribution		
Survival Rat	e Summary										
	Code	Count	Mean	95% LCL	95% UC	L Median	Min	Max	Std Err	CV%	%Effect
Conc-µg/L	Code LC	Count 5	Mean 0.9855	95% LCL 0.9547	95% UC	1.0000	Min 0.9427	Max 1.0000	Std Err 0.0111	CV% 2.52%	%Effect 0.00%
Conc-µg/L					1.81.81.80.181.30		11.000.011	ALTONOVANO.	Restaurant.	Joseph Hallington	
Conc-μg/L 0 2.5		5	0.9855	0.9547	1.0000	1.0000	0.9427	1.0000	0.0111	2.52%	0.00%
Conc-μg/L 0 2.5 5		5 5	0.9855 0.9649	0.9547 0.9118	1.0000	1.0000 0.9809	0.9427 0.9008	1.0000	0.0111 0.0191	2.52% 4.43%	0.00%
Conc-μg/L 0 2.5 5		5 5 5	0.9855 0.9649 0.9351	0.9547 0.9118 0.8102	1.0000 1.0000 1.0000	1.0000 0.9809 1.0000	0.9427 0.9008 0.7710	1.0000 1.0000 1.0000	0.0111 0.0191 0.0450	2.52% 4.43% 10.76%	0.00% 2.09% 5.11%
Conc-µg/L		5 5 5 5	0.9855 0.9649 0.9351 0.9878	0.9547 0.9118 0.8102 0.9647	1.0000 1.0000 1.0000 1.0000	1.0000 0.9809 1.0000 1.0000	0.9427 0.9008 0.7710 0.9580	1.0000 1.0000 1.0000 1.0000	0.0111 0.0191 0.0450 0.0083	2.52% 4.43% 10.76% 1.88%	0.00% 2.09% 5.11% -0.23%
Conc-μg/L 0 2.5 5 10 20 40	LC	5 5 5 5	0.9855 0.9649 0.9351 0.9878 0.9084 0.8740	0.9547 0.9118 0.8102 0.9647 0.7888	1.0000 1.0000 1.0000 1.0000 1.0000	1.0000 0.9809 1.0000 1.0000 0.9084	0.9427 0.9008 0.7710 0.9580 0.7748	1.0000 1.0000 1.0000 1.0000 1.0000	0.0111 0.0191 0.0450 0.0083 0.0431	2.52% 4.43% 10.76% 1.88% 10.60%	0.00% 2.09% 5.11% -0.23% 7.82%
Conc-μg/L 0 2.5 5 10 20 40 Angular (Co	LC	5 5 5 5 5 5 5	0.9855 0.9649 0.9351 0.9878 0.9084 0.8740	0.9547 0.9118 0.8102 0.9647 0.7888	1.0000 1.0000 1.0000 1.0000 1.0000	1.0000 0.9809 1.0000 1.0000 0.9084 0.8931	0.9427 0.9008 0.7710 0.9580 0.7748	1.0000 1.0000 1.0000 1.0000 1.0000	0.0111 0.0191 0.0450 0.0083 0.0431	2.52% 4.43% 10.76% 1.88% 10.60%	0.00% 2.09% 5.11% -0.23% 7.82%
Conc-µg/L 0 2.5 5 10 20 40 Angular (Co.	LC rrected) Tran	5 5 5 5 5 5 5	0.9855 0.9649 0.9351 0.9878 0.9084 0.8740	0.9547 0.9118 0.8102 0.9647 0.7888 0.7479	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	1.0000 0.9809 1.0000 1.0000 0.9084 0.8931	0.9427 0.9008 0.7710 0.9580 0.7748 0.7634	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	0.0111 0.0191 0.0450 0.0083 0.0431 0.0455	2.52% 4.43% 10.76% 1.88% 10.60% 11.63%	0.00% 2.09% 5.11% -0.23% 7.82% 11.31%
Conc-μg/L 0 2.5 5 10 20 40 Angular (Co. Conc-μg/L 0	LC rrected) Tran Code	5 5 5 5 5 5 5 5 Count	0.9855 0.9649 0.9351 0.9878 0.9084 0.8740	0.9547 0.9118 0.8102 0.9647 0.7888 0.7479	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	1.0000 0.9809 1.0000 1.0000 0.9084 0.8931	0.9427 0.9008 0.7710 0.9580 0.7748 0.7634	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	0.0111 0.0191 0.0450 0.0083 0.0431 0.0455	2.52% 4.43% 10.76% 1.88% 10.60% 11.63%	0.00% 2.09% 5.11% -0.23% 7.82% 11.31%
Conc-μg/L 0 2.5 5 10 20 40 Angular (Co. Conc-μg/L 0	LC rrected) Tran Code	5 5 5 5 5 5 5 Count	0.9855 0.9649 0.9351 0.9878 0.9084 0.8740 mmary Mean 1.479	0.9547 0.9118 0.8102 0.9647 0.7888 0.7479 95% LCL 1.364	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 95% UC	1.0000 0.9809 1.0000 1.0000 0.9084 0.8931 L Median	0.9427 0.9008 0.7710 0.9580 0.7748 0.7634 Min 1.329	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 Max 1.54	0.0111 0.0191 0.0450 0.0083 0.0431 0.0455 Std Err 0.04159	2.52% 4.43% 10.76% 1.88% 10.60% 11.63% CV% 6.29%	0.00% 2.09% 5.11% -0.23% 7.82% 11.31% %Effec 0.00%
Conc-μg/L 0 2.5 5 10 20 40 Angular (Co Conc-μg/L 0 2.5	LC rrected) Tran Code	5 5 5 5 5 5 5 Seformed Sum • Count 5	0.9855 0.9649 0.9351 0.9878 0.9084 0.8740 mmary Mean 1.479 1.418	0.9547 0.9118 0.8102 0.9647 0.7888 0.7479 95% LCL 1.364 1.259	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 95% UC 1.595 1.578	1.0000 0.9809 1.0000 1.0000 0.9084 0.8931 L Median 1.54 1.432	0.9427 0.9008 0.7710 0.9580 0.7748 0.7634 Min 1.329 1.25	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 Max 1.54 1.54	0.0111 0.0191 0.0450 0.0083 0.0431 0.0455 Std Err 0.04159 0.05741	2.52% 4.43% 10.76% 1.88% 10.60% 11.63% CV% 6.29% 9.05%	0.00% 2.09% 5.11% -0.23% 7.82% 11.31% %Effect 0.00% 4.11%
Conc-μg/L 0 2.5 5 10 20 40 Angular (Co. Conc-μg/L 0 2.5 5	LC rrected) Tran Code	5 5 5 5 5 5 sformed Sum • Count 5 5	0.9855 0.9649 0.9351 0.9878 0.9084 0.8740 mmary Mean 1.479 1.418 1.39	0.9547 0.9118 0.8102 0.9647 0.7888 0.7479 95% LCL 1.364 1.259 1.122	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 95% UC 1.595 1.578 1.658	1.0000 0.9809 1.0000 1.0000 0.9084 0.8931 L Median 1.54 1.432 1.54	0.9427 0.9008 0.7710 0.9580 0.7748 0.7634 Min 1.329 1.25 1.072	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 Max 1.54 1.54 1.54	0.0111 0.0191 0.0450 0.0083 0.0431 0.0455 Std Err 0.04159 0.05741 0.09654	2.52% 4.43% 10.76% 1.88% 10.60% 11.63% CV% 6.29% 9.05% 15.53%	0.00% 2.09% 5.11% -0.23% 7.82% 11.31% %Effect 0.00% 4.11% 6.05%

Analyst: QA: Je

03 May-22 17:03 (p 6 of 6) 220322mgrd | 07-3402-8050



Analyst: QA:

CETIS Analytical Report

Report Date:

03 May-22 17:03 (p 1 of 1) 220322mgrd | 07-3402-8050

Test Code:

0322mgra | 07 0402 0000

Bivalve Larval Survival and Dev	velopment Test
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Wood E&IS

Analysis ID: Analyzed: 17-5105-1124 03 May-22 17:02 Endpoint: Combined Proportion Normal Analysis: Trimmed Spearman-Kärber

CETIS Version: CET Official Results: Yes

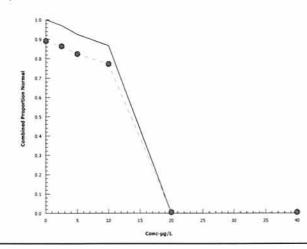
CETISv1.9.3

Trimmed	Spearman-Kärber	Estimates
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Inresnoid Option	Inresnoid	i rim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0.109	3.04%	1.099	0.003799	12.55	12.33	12.77

Combined Proportion Normal Summary			Calculated Variate(A/B)							Isotonic Varia	
Conc-µg/L	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect	A/B	Mean	%Effect
0	LC	5	0.8907	0.8626	0.9104	0.0200	2.24%	0.0%	1193/1339	0.8907	0.0%
2.5		5	0.8627	0.7863	0.9201	0.0555	6.44%	3.14%	1155/1337	0.8627	3.14%
5		5	0.8220	0.6412	0.8955	0.1065	12.95%	7.71%	1110/1347	0.822	7.71%
10		5	0.7730	0.7354	0.8371	0.0392	5.08%	13.21%	1068/1383	0.773	13.21%
20		5	0.0000	0.0000	0.0000	0.0000		100.0%	0/1352	0	100.0%
40		5	0.0000	0.0000	0.0000	0.0000		100.0%	0/1312	0	100.0%

Graphics



Analyst: QA: 1

002-883-387-8 CETIS™ v1.9.3.0

Report Date: 03 May-2

Bivalve Larval Survival and Development Test

Wood E&IS

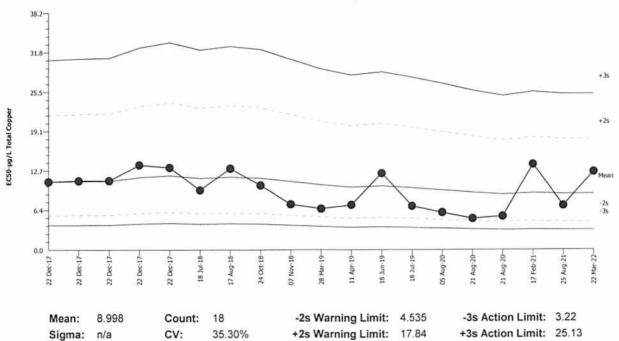
Test Type: Development-Survival Protocol: EPA/600/R-95/136 (1995) Organism: Mytilis galloprovincialis (Bay Mussel)

Endpoint: Combined Proportion Normal

Material: Total Copper

Source: Reference Toxicant-REF





Qualit	ty Con	trol Data	а								
Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2017	Dec	22	15:00	10.95	1.948	0.5724			13-8076-0092	04-7666-8867
2			22	15:00	11.1	2.107	0.6144			18-9173-1279	00-8804-3805
3			22	15:00	11.13	2.131	0.6207			19-1537-3013	20-7428-0259
4			22	15:10	13.69	4.689	1.225			05-2148-4604	14-2190-9809
5			22	15:10	13.26	4.263	1.133			07-4924-1298	02-9536-6591
6	2018	Jul	18	12:30	9.593	0.5954	0.1871			17-4700-2672	19-1834-7581
7		Aug	17	18:15	13.11	4.109	1.099			06-6531-4070	03-3159-5721
8		Oct	24	14:25	10.37	1.375	0.4154			10-5049-1350	21-2167-7967
9		Nov	7	14:40	7.288	-1.71	-0.6154			21-2560-8966	08-1725-7308
10	2019	Mar	28	15:00	6.57	-2.428	-0.9184			01-1205-3490	09-9916-0601
11		Apr	11	15:05	7.2	-1.798	-0.6509			09-5126-5022	11-0264-5925
12		Jun	18	15:35	12.33	3.331	0.92			20-1050-4622	12-9168-6963
13		Jul	18	14:55	7	-1.998	-0.7333			14-0843-5203	16-2395-2147
14	2020	Aug	5	16:15	5.97	-3.028	-1.198			01-5363-1852	03-9719-1127
15			21	17:45	4.994	-4.004	-1.719			02-6167-5910	09-0147-8078
16			21	17:45	5.371	-3.627	-1.507			09-7758-0702	07-5383-0657
17	2021	Feb	17	16:05	13.75	4.752	1.238			02-0888-9810	19-5282-1839
18		Aug	25	16:50	7.088	-1.91	-0.6969			01-4286-8892	09-6353-7527
19	2022	Mar	22	16:15	12.55	3.548	0.9709			07-3402-8050	17-5105-1124

CETIS Test Data Worksheet

Bivalve Larval Survival and Development Test

Report Date: Test Code/ID: 19 Mar-22 15:30 (p 1 of 1) 07-3402-8050/220322mgrd

Wood E&IS

Start Date: 22 Mar-22 Species: Mytilis galloprovincialis Sample Code: 220322mgrd

End Date: 24 Mar-22 Protocol: EPA/600/R-95/136 (1995) Sample Source: Reference Toxicant

Sample Date: 22 Mar-22 Material: Total Copper Sample Station:

Sample Date:	22 N	lar-22		Materia	al: Total	Copper		Sample Station:
Conc-µg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
			301			288	265	BI 4/21/22
			302			274	248	
			303			304	234	
			304				0	many disintegrated
			305			251	196	
			306			281	0	
			307			236	206	
			308			204	0	many disintegrated
			309			245	0	4
			310				226	
			311			264	0	many disintegrated
			312			287	257	
			313			257	203	4/22/22
			314			237	213	
			315			257	232	
			316		B	275,3	2452	36 263 - 236
			317			273	245	
			318			238	Ð	
			319			268	244	
			320			291	214	
			321			247	216	
			322				0	
			323			264	221	
			324			274	245	
			325			262	227	
			326			200	0	a lot disintegrated
			327				0	9
			328			202	168	
			329			258	230	
			330			285	0	

CETIS Test Data Worksheet

Report Date:

19 Mar-22 15:30 (p 1 of 1)

Test Code/ID:

07-3402-8050/220322mgrd

Bivalve	Larval	Survival	and Deve	lopment Test	

Wood E&IS

Start Date: End Date: 24 Mar-22 Sample Date: 22 Mar-22

22 Mar-22 665 Species: Mytilis galloprovincialis 24 Mar-22 665 Protocol: EPA/600/R-95/136 (1995)

Sample Source: Reference Toxicant

Sample Code: 220322mgrd

Sample Station:

ample Date	: 22 N	lar-22		Materia	al: Total (Copper		Sample Station:
Conc-µg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	LC	1	329		•	258	230	BI 4/21/22
0	LC	2	310		_	2572r	232-181	BI 4/21/22
0	LC	3	319			-7.71		
0	LC	4	317					
0	LC	5	302					
2.5		1	315		1	257	222	
2.5		2	321			231	250	
2.5		3	316					
			10000000					
2.5		4	301					
2.5		5	307					
5		1	324			274	245	
5		2	325					
5		3	314					
5		4	328					
5		5	312					
10		1	320			291	214	
10		2	303					
10		3	305					
10		4	323					
10		5	313					
20		1	318			238	0	
20		2	330					
20		3	327					
20		4	322					
20		5	306					
40		1	326			200	0	mostly disintegrated
40		2	304					
40		3	309					
40		4	311					
40		5	308					

QC: 103

Water Quality for Bivalve Development

Client: Internal
Project ID: Cu Reftox
Test No. 220322mgrd

Test Species: M. galloprovincialis
Start Date/Time: 3/22/2022 /6/5
End Date/Time: 3/24/2022 /6/5

Test Conc.		Water Quality N	Measurements	
(µg/L Cu)	Parameter	0hr	24hr	48hr
	Temp. (°C)	15.8	15.8	15.6
	Salinity (ppt)	32.6	33.08A	33.3
Lab Control	pH (units)	7.88	7.80	7.84
	DO (mg/L)	7.9	8.9	8.7
	Temp. (°C)	14.8	15.5	15.6
3.5	Salinity (ppt)	33.0	33.5	33.7
2.5	pH (units)	7.94	7.82	7.85
	DO (mg/L)	8.3	9.0	WST 8.8
	Temp. (°C)	14.6	15.6	15.5
5	Salinity (ppt)	32.8	33.7	33.8
, [pH (units)	7.95	7.83	7.85
	DO (mg/L)	8.2	3.8	8.6
	Temp. (°C)	14.6	15.4	15,5
	Salinity (ppt)	32.9	33.6	33.7
10	pH (units)	7.95	7.83	7.87
	DO (mg/L)	8.1	9.2	8.8
	Temp. (°C)	14.6	15.3	15.5
20	Salinity (ppt)	32-9	33.6	33.6
20	pH (units)	7.95	7.83	7.87
	DO (mg/L)	8.2	8:.9	8.8
	Temp. (°C)	14.5	15.3	15.4
40	Salinity (ppt)	32.8	33.6	33.5
40	pH (units)	7.97	7.84	7.88
	DO (mg/L)	8.1	9.9	8.7
	Temp. (°C)			
	Salinity (ppt)			
	pH (units)			
	DO (mg/L)			
	Tech Initials:	BA	CB	Des

	741			
Source of Animals:	AG Mission	Bay	Date Received: _	3/23/22
Comments:		U		
OC Check:	AL 412912-2	•	Final Review:	& shope

Embryo-Larval Development Test Stock Preparation Worksheet

Test Species:

M. galloprovincialis

Test Date: 3/23/22

Batch ID:

Analyst:

Test Type:

Task	
Spawning Induction	1230
Spawning Begins	1315
# Males/# Females	5/3
Spawn Condition	9000
Fertilization Initiated	1345
Fertilzation End/Eggs Rinsed	+3 MOO/1415
Embryo Counts	1500
Test Initiation	1615

Embryo Density Counts

per 100 µL

Stock #	Stock Volume (mL)	Rep 1	Rep 2	Rep 3	Rep 4	Mean #/100 μL	Mean #/mL (x10)
Stock 1	300	55	60	64	65	61	610
Stock 2							
Stock 3							

Cell Division:

	% Divided
Stock 1	X1939-1
Stock 2	1.5
Stock 3	

Selected Stock:	i

Stock Density

Dil Factor

Adjust selected embryo stock to 500 embryos/mL.

1.22

Dilution Factor = Stock Density/mL/500

In 10 mL sample volume add 500 µl of 500 embryo/ml stock to obtain 25 embryos/mL in test vials.

Notes:

75, TO2=261 TO3=268 TO4=255, +05=250

QA Review:

Acute Topsmelt
Reference Toxicant Test

CETIS Summary Report

Report Date:

13 Apr-22 17:54 (p 1 of 1)

Test Code:

220323aara | 09-7418-9044

Pacific Topsn	nelt 96-h Acute S	urvival Test									W	ood E	&IS
Batch ID: Start Date: Ending Date: Duration:	08-5663-3415 23 Mar-22 13:05 27 Mar-22 13:30 4d 0h		ol: EF		D B	nalyst: iluent: rine: ge:		d Natural S pplicable	Seawater				
Sample ID: Sample Date: Receipt Date: Sample Age:	23 Mar-22	Code: Material Source: Station:	I: To	0323aara stal Copper eference Toxid		. 5	lient: roject:	Intern	al				
Analysis ID	parison Summar Endpoint 96h Survival Rat	Co	•	son Method ny-One Rank	Sum Test		NOEL 50	LOE 100		TOEL 70.71	TU	PMS	17.1
Point Estimat Analysis ID 03-1482-7264	e Summary Endpoint 96h Survival Rat			timate Metho	od		Level LC50	μg/L 158.		95% LCL 132.8	95% UCL 189.8	TU	✓
96h Survival	Rate Summary												
Conc-µg/L	Code	Count Me	ean	95% LCL	95% UCL	Min	Max	Std I	Err	Std Dev	CV%	%Eff	100
0 25 50 100 200 400	LC	6 1.0 6 0.9 6 0.6 6 0.6	0000 0000 9000 8000 4667 0000	1.0000 1.0000 0.7850 0.6673 0.2953 0.0000	1.0000 1.0000 1.0000 0.9327 0.6380 0.0000	1.0000 1.0000 0.8000 0.6000 0.2000 0.0000	1.0000 1.0000 1.0000 0.6000 0.0000	0.000 0.044 0.055 0.066	00 47 16 67	0.0000 0.0000 0.1095 0.1265 0.1633 0.0000	0.00% 0.00% 12.17% 15.81% 34.99%	0.00° 0.00° 10.00 20.00 53.3° 100.0	% 0% 0% 3%
96h Survival	Rate Detail												
Conc-µg/L	Code	Rep 1 Re	ep 2	Rep 3	Rep 4	Rep 5	Rep 6						
0 25 50 100 200 400	LC	1.0000 1.0 1.0000 1.0 0.8000 1.0 0.8000 1.0 0.2000 0.4	0000 0000 0000 0000 4000	1.0000 1.0000 1.0000 0.8000 0.6000 0.0000	1.0000 1.0000 0.8000 0.6000 0.6000 0.0000	1.0000 1.0000 1.0000 0.8000 0.4000 0.0000	1.0000 1.0000 0.8000 0.8000 0.6000 0.0000						

Analyst: PV QA: Re 5/20/22

CETIS Analytical Report

Report Date: Test Code: 13 Apr-22 17:54 (p 1 of 2) 220323aara | 09-7418-9044

												11	The second second
Pacific Tops	melt 9	6-h Acute S	urvival Te	st								V	Vood E&IS
Analysis ID:	16-7	7555-8362	End	point: 96h	Survival Ra	te			CETI	S Version:	CETISv1	.9.3	
Analyzed:	13 /				parametric-		s T	reatments	Offic	ial Results	: Yes		
Data Transfo	orm		Alt Hyp						NOEL	LOEL	TOEL	TU	PMSD
Angular (Corr	rected)		C > T						50	100	70.71		13.61%
Steel Many-C	One Ra	ınk Sum Tes	st										
Control	vs	Conc-µg/L	-	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision	(a:5%)		-
Lab Control					25	1	10	Asymp	0.8000	Non-Sign	ificant Effect		
		50		30	25	1	10	Asymp	0.2033	Non-Sign	ificant Effect		
		100*		24	25	1	10	Asymp	0.0277	Significan	t Effect		
		200*		21	25			Asymp	0.0072	Significan	t Effect		
ANOVA Table	e												
Source		Sum Squa	res	Mean Squ	are	DF		F Stat	P-Value	Decision	(a:5%)		
Between		1.46827		0.367068		4		27.26	<1.0E-37	Significan	t Effect		
Error		0.336653		0.0134661		25							
	The contract of the contract o					29		-					
Total		1.80492				29							
Total Distributiona	al Test	ODES OF STATE				29							
	al Test	ODES OF STATE					at	Critical	P-Value	Decision	(α:1%)		
Distributiona	al Test	s Test	uality of Va	riance Test			at		P-Value 0.0013		(α:1%) Variances		
Distributiona Attribute	al Test	s Test Levene Equ	보기를 다듬하는 것이 되었다.	riance Test	Test	Test St	at	Critical 4.177 4.177		Unequal \			
Distributiona Attribute Variances	al Test	s Test Levene Equ	e Equality	of Variance	Test	Test St	at	4.177	0.0013	Unequal \	Variances	on	
Distributiona Attribute Variances Variances		s Test Levene Equ Mod Levene Shapiro-Wi	e Equality	of Variance	Test	Test St. 6.222 5.651	at	4.177 4.177	0.0013 0.0022	Unequal \	Variances Variances	on	
Distributional Attribute Variances Variances Distribution		s Test Levene Equ Mod Levene Shapiro-Wi	e Equality	of Variance	Test 95% LCL	Test St. 6.222 5.651		4.177 4.177	0.0013 0.0022	Unequal \	Variances Variances	on CV%	%Effect
Distributional Attribute Variances Variances Distribution 96h Survival		s Test Levene Equ Mod Levene Shapiro-Wi	e Equality lk W Norm	of Variance ality Test		Test St. 6.222 5.651 0.8898		4.177 4.177 0.9031	0.0013 0.0022 0.0048	Unequal \ Unequal \ Non-Norm	Variances Variances nal Distribution		%Effect 0.00%
Distributional Attribute Variances Variances Distribution 96h Survival Conc-µg/L		Test Levene Equ Mod Levene Shapiro-Wi Summary Code	e Equality lk W Norm	of Variance ality Test Mean	95% LCL	Test St. 6.222 5.651 0.8898		4.177 4.177 0.9031 Median	0.0013 0.0022 0.0048	Unequal \ Unequal \ Non-Norm	Variances Variances nal Distribution	CV%	CHI CONTRACTOR
Distributional Attribute Variances Variances Distribution 96h Survival Conc-µg/L		Test Levene Equ Mod Levene Shapiro-Wi Summary Code	e Equality lk W Norm Count	of Variance ality Test Mean 1.0000	95% LCL 1.0000	Test St. 6.222 5.651 0.8898 95% UC		4.177 4.177 0.9031 Median 1.0000	0.0013 0.0022 0.0048 Min 1.0000	Unequal \ Unequal \ Non-Norm	Variances Variances nal Distribution Std Err 0.0000	CV% 0.00%	0.00%
Distributional Attribute Variances Variances Distribution 96h Survival Conc-µg/L 0 25		Test Levene Equ Mod Levene Shapiro-Wi Summary Code	e Equality lk W Norm Count 6 6	Mean 1.0000 1.0000	95% LCL 1.0000 1.0000	Test St. 6.222 5.651 0.8898 95% UC 1.0000 1.0000		4.177 4.177 0.9031 Median 1.0000 1.0000	0.0013 0.0022 0.0048 Min 1.0000 1.0000	Unequal Non-Norm Max 1.0000 1.0000	Variances Variances nal Distribution Std Err 0.0000 0.0000	CV% 0.00% 0.00%	0.00% 0.00%
Distributional Attribute Variances Variances Distribution 96h Survival Conc-µg/L 0 25 50		Test Levene Equ Mod Levene Shapiro-Wi Summary Code	e Equality lk W Norm Count 6 6 6 6	Mean 1.0000 1.0000 0.9000	95% LCL 1.0000 1.0000 0.7850	7est St. 6.222 5.651 0.8898 95% UC 1.0000 1.0000 1.0000		4.177 4.177 0.9031 Median 1.0000 1.0000 0.9000	0.0013 0.0022 0.0048 Min 1.0000 1.0000 0.8000	Unequal Non-Norm Max 1.0000 1.0000	Variances Variances nal Distribution Std Err 0.0000 0.0000 0.0447	CV% 0.00% 0.00% 12.17%	0.00% 0.00% 10.00%
Distributional Attribute Variances Variances Distribution 96h Survival Conc-µg/L 0 25 50 100		Test Levene Equ Mod Levene Shapiro-Wi Summary Code	Count 6 6 6 6	Mean 1.0000 1.0000 0.9000 0.8000	95% LCL 1.0000 1.0000 0.7850 0.6673	7est St. 6.222 5.651 0.8898 95% UC 1.0000 1.0000 1.0000 0.9327		4.177 4.177 0.9031 Median 1.0000 1.0000 0.9000 0.8000	0.0013 0.0022 0.0048 Min 1.0000 1.0000 0.8000 0.6000	Unequal Non-Norm Max 1.0000 1.0000 1.0000	Variances Variances Variances nal Distribution Std Err 0.0000 0.0000 0.0447 0.0516	CV% 0.00% 0.00% 12.17% 15.81%	0.00% 0.00% 10.00% 20.00%
Distributional Attribute Variances Variances Distribution 96h Survival Conc-µg/L 0 25 50 100 200	Rate	Test Levene Equ Mod Levene Shapiro-Wi Summary Code LC	Count 6 6 6 6 6 6	Mean 1.0000 1.0000 0.9000 0.8000 0.4667 0.0000	95% LCL 1.0000 1.0000 0.7850 0.6673 0.2953	7est St. 6.222 5.651 0.8898 95% UC 1.0000 1.0000 0.9327 0.6380		4.177 4.177 0.9031 Median 1.0000 1.0000 0.9000 0.8000 0.5000	0.0013 0.0022 0.0048 Min 1.0000 1.0000 0.8000 0.6000 0.2000	Unequal Non-Norm Max 1.0000 1.0000 1.0000 1.0000 0.6000	Variances Variances Variances nal Distributio Std Err 0.0000 0.0000 0.0447 0.0516 0.0667	CV% 0.00% 0.00% 12.17% 15.81%	0.00% 0.00% 10.00% 20.00% 53.33%
Distributional Attribute Variances Variances Distribution 96h Survival Conc-µg/L 0 25 50 100 200 400	Rate	Test Levene Equ Mod Levene Shapiro-Wi Summary Code LC	Count 6 6 6 6 6 6	Mean 1.0000 1.0000 0.9000 0.8000 0.4667 0.0000	95% LCL 1.0000 1.0000 0.7850 0.6673 0.2953	7est St. 6.222 5.651 0.8898 95% UC 1.0000 1.0000 0.9327 0.6380	CL	4.177 4.177 0.9031 Median 1.0000 1.0000 0.9000 0.8000 0.5000	0.0013 0.0022 0.0048 Min 1.0000 1.0000 0.8000 0.6000 0.2000 0.0000	Unequal Non-Norm Max 1.0000 1.0000 1.0000 1.0000 0.6000	Variances Variances Variances nal Distributio Std Err 0.0000 0.0000 0.0447 0.0516 0.0667	CV% 0.00% 0.00% 12.17% 15.81%	0.00% 0.00% 10.00% 20.00% 53.33% 100.00%
Distributiona Attribute Variances Variances Distribution 96h Survival Conc-μg/L 0 25 50 100 200 400 Angular (Con	Rate	Test Levene Equ Mod Levene Shapiro-Wi Summary Code LC	Count 6 6 6 6 6 6 6 med Summ	Mean 1.0000 1.0000 0.9000 0.4667 0.0000	95% LCL 1.0000 1.0000 0.7850 0.6673 0.2953 0.0000	7est St. 6.222 5.651 0.8898 95% UC 1.0000 1.0000 0.9327 0.6380 0.0000	CL	4.177 4.177 0.9031 Median 1.0000 1.0000 0.9000 0.8000 0.5000 0.0000	0.0013 0.0022 0.0048 Min 1.0000 1.0000 0.8000 0.6000 0.2000 0.0000	Max 1.0000 1.0000 1.0000 0.6000 0.0000	Variances Variances Variances nal Distribution Std Err 0.0000 0.0000 0.0447 0.0516 0.0667 0.0000	CV% 0.00% 0.00% 12.17% 15.81% 34.99%	0.00% 0.00% 10.00% 20.00% 53.33% 100.00% %Effect 0.00%
Distributional Attribute Variances Variances Distribution 96h Survival Conc-µg/L 0 25 50 100 200 400 Angular (Conc-µg/L	Rate	Test Levene Equ Mod Levene Shapiro-Wi Summary Code LC	Count 6 6 6 6 6 6 Count Count	Mean 1.0000 1.0000 0.9000 0.4667 0.0000 Dary Mean	95% LCL 1.0000 1.0000 0.7850 0.6673 0.2953 0.0000	7est St. 6.222 5.651 0.8898 95% UC 1.0000 1.0000 0.9327 0.6380 0.0000 95% UC	CL	4.177 4.177 0.9031 Median 1.0000 1.0000 0.9000 0.8000 0.5000 0.0000	0.0013 0.0022 0.0048 Min 1.0000 1.0000 0.8000 0.6000 0.2000 0.0000	Max 1.0000 1.0000 1.0000 0.6000 0.0000	Variances Variances Variances nal Distribution Std Err 0.0000 0.0000 0.0447 0.0516 0.0667 0.0000 Std Err	CV% 0.00% 0.00% 12.17% 15.81% 34.99%	0.00% 0.00% 10.00% 20.00% 53.33% 100.00%
Distributiona Attribute Variances Variances Distribution 96h Survival Conc-μg/L 0 25 50 100 200 400 Angular (Conc-μg/L 0 Conc-μg/L	Rate	Test Levene Equ Mod Levene Shapiro-Wi Summary Code LC	Count 6 6 6 6 6 Count Count Count 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Mean 1.0000 1.0000 0.9000 0.8000 0.4667 0.0000 mary Mean 1.345	95% LCL 1.0000 1.0000 0.7850 0.6673 0.2953 0.0000 95% LCL 1.345	7est St. 6.222 5.651 0.8898 95% UC 1.0000 1.0000 0.9327 0.6380 0.0000 95% UC 1.345	CL	4.177 4.177 0.9031 Median 1.0000 1.0000 0.9000 0.8000 0.5000 0.0000 Median 1.345	0.0013 0.0022 0.0048 Min 1.0000 1.0000 0.8000 0.2000 0.0000 Min 1.345	Max 1.0000 1.0000 1.0000 0.0000 Max 1.345	Variances Variances Variances nal Distribution Std Err 0.0000 0.0000 0.0447 0.0516 0.0667 0.0000 Std Err 0	CV% 0.00% 0.00% 12.17% 15.81% 34.99% CV% 0.00%	0.00% 0.00% 10.00% 20.00% 53.33% 100.00% %Effect 0.00%
Distributiona Attribute Variances Variances Distribution 96h Survival Conc-µg/L 0 25 50 100 200 400 Angular (Conc-µg/L 0 25	Rate	Test Levene Equ Mod Levene Shapiro-Wi Summary Code LC	Count 6 6 6 6 6 Count Count 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Mean 1.0000 1.0000 0.9000 0.8000 0.4667 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	95% LCL 1.0000 1.0000 0.7850 0.6673 0.2953 0.0000 95% LCL 1.345 1.345	7est St. 6.222 5.651 0.8898 95% UC 1.0000 1.0000 0.9327 0.6380 0.0000 95% UC 1.345 1.345	CL	4.177 4.177 0.9031 Median 1.0000 1.0000 0.9000 0.8000 0.5000 0.0000 Median 1.345 1.345	0.0013 0.0022 0.0048 Min 1.0000 1.0000 0.8000 0.6000 0.2000 0.0000 Min 1.345 1.345	Max 1.0000 1.0000 1.0000 0.0000 Max 1.345 1.345	Variances Variances Variances nal Distribution Std Err 0.0000 0.0000 0.0447 0.0516 0.0667 0.0000 Std Err 0 0	CV% 0.00% 0.00% 12.17% 15.81% 34.99% CV% 0.00% 0.00%	0.00% 0.00% 10.00% 20.00% 53.33% 100.00% %Effect 0.00% 0.00%
Distributiona Attribute Variances Variances Distribution 96h Survival Conc-µg/L 0 25 50 100 200 400 Angular (Conc-µg/L 0 25 50 50	Rate	Test Levene Equ Mod Levene Shapiro-Wi Summary Code LC	Count 6 6 6 6 Count Count 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Mean 1.0000 1.0000 0.9000 0.8000 0.4667 0.0000 0ary Mean 1.345 1.345 1.226	95% LCL 1.0000 1.0000 0.7850 0.6673 0.2953 0.0000 95% LCL 1.345 1.345 1.089	7est St. 6.222 5.651 0.8898 95% UC 1.0000 1.0000 0.9327 0.6380 0.0000 95% UC 1.345 1.345 1.363	CL	4.177 4.177 0.9031 Median 1.0000 1.0000 0.9000 0.8000 0.5000 0.0000 Median 1.345 1.345 1.226	0.0013 0.0022 0.0048 Min 1.0000 1.0000 0.8000 0.6000 0.2000 0.0000 Min 1.345 1.345 1.107	Max 1.0000 1.0000 1.0000 0.6000 0.0000 Max 1.345 1.345 1.345	Variances Variances Variances Variances nal Distribution Std Err 0.0000 0.0000 0.0447 0.0516 0.0667 0.0000 Std Err 0 0 0.05325	CV% 0.00% 0.00% 12.17% 15.81% 34.99% CV% 0.00% 0.00% 10.64%	0.00% 0.00% 10.00% 20.00% 53.33% 100.00% %Effect 0.00% 0.00% 8.85%

Analyst: PV QA: L

Conc-µg/L

Report Date: Test Code: 13 Apr-22 17:54 (p 2 of 2) 220323aara | 09-7418-9044

Wood E&IS Pacific Topsmelt 96-h Acute Survival Test **CETIS Version:** CETISv1.9.3 Analysis ID: 16-7555-8362 Endpoint: 96h Survival Rate Official Results: Yes Nonparametric-Control vs Treatments Analyzed: 13 Apr-22 17:54 Analysis: Graphics 2.66-01 0.9 2.1E-01 0.05+00 -7.1E-02 -1.4E-01 0.1

Analyst: RV QA: K

CETIS Analytical Report

Report Date:

13 Apr-22 17:54 (p 1 of 1)

Test Code: 220323aara | 09-7418-9044

Pacific Topsmelt 96-h Acute Survival Test

Wood E&IS

Analysis ID: Analyzed: 03-1482-7264 13 Apr-22 17:54 Endpoint: 96h Survival Rate
Analysis: Untrimmed Spearman-Kärber

CETIS Version: Official Results:

: Yes

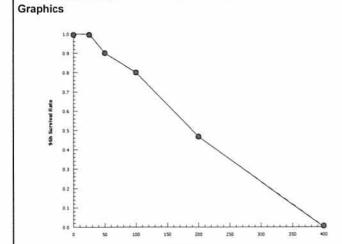
CETISv1.9.3

Spearman-Kärber Estimates

Threshold Option Threshold Trim Mu Sigma LC50 95% LCL 95% UCL

Control Threshold 0 0.00% 2.201 0.03882 158.7 132.8 189.8

96h Survival R	ate Summary				Isoton	ic Variate					
Conc-µg/L	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect	A/B	Mean	%Effect
0	LC	6	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	30/30	1	0.0%
25		6	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	30/30	1	0.0%
50		6	0.9000	0.8000	1.0000	0.1095	12.17%	10.0%	27/30	0.9	10.0%
100		6	0.8000	0.6000	1.0000	0.1265	15.81%	20.0%	24/30	0.8	20.0%
200		6	0.4667	0.2000	0.6000	0.1633	34.99%	53.33%	14/30	0.4667	53.33%
400		6	0.0000	0.0000	0.0000	0.0000		100.0%	0/30	0	100.0%



Analyst: QA: QA:

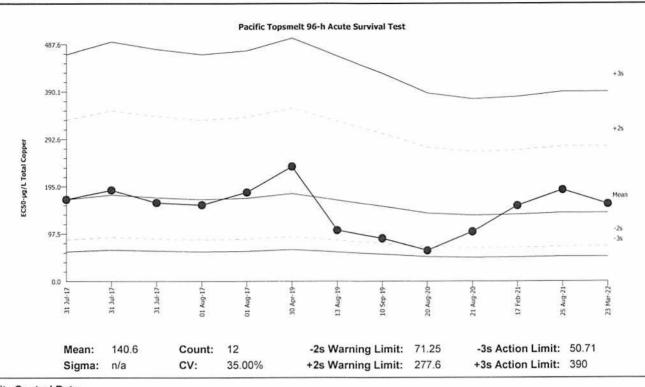
002-883-387-8 CETIS™ v1.9.3.0

Report Date:

Pacific Topsmelt 96-h Acute Survival Test Wood E&IS

Test Type: Survival (96h) Organism: Atherinops affinis (Topsmelt) Material: Total Copper

Protocol: EPA/821/R-02-012 (2002) Endpoint: 96h Survival Rate Source: Reference Toxicant-REF



auam	y Con	trol Data	d								
Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2017	Jul	31	16:00	168.3	27.7	0.5288			19-5584-5627	06-5699-4422
2			31	16:10	187.7	47.1	0.8497			08-6518-1949	12-2976-8720
3			31	16:20	161.5	20.9	0.4076			16-0803-3194	14-0325-5692
\$		Aug	1	14:20	156.9	16.31	0.3227			21-0766-0876	04-5806-5680
5		5.5	1	14:30	183.1	42.52	0.7771			08-2262-5738	12-8323-6897
6	2019	Apr	30	15:00	236.6	95.95	1.53			01-1235-0968	05-2157-6049
7		Aug	13	17:20	104.8	-35.82	-0.8647			15-7782-6769	06-7735-0148
3		Sep	10	16:30	88.01	-52.6	-1.378			00-1845-1071	18-3128-5862
9	2020	Aug	20	11:30	63	-77.62	-2.362	(-)		10-0704-2056	18-4092-2436
10			21	16:40	101.7	-38.95	-0.9539			04-1235-4342	09-8231-6847
11	2021	Feb	17	18:00	155.3	14.73	0.293			20-5527-3551	01-0267-4966
12		Aug	25	16:45	188.1	47.5	0.856			03-9028-8227	05-7488-9745
13	2022	Mar	23	13:05	158.7	18.13	0.3567			09-7418-9044	03-1482-7264

			,	96hr	ivia	rine	Acute	lest with 48hr i	kenev	vai				
Client:	Interna	al						Test Species	: Atheri	nops af	finis (to	psmelt)	
Sample ID:	Cu Ref	erenc	e Toxi	cant				Start Date/Time	: 3/23	122	130	25		
Test No.	2	207	230	lar	a			End Date/Time			2 13	30		
Sample ID	Rep			Counts			e Br		Water	Quality				
(µg/L Cu)	кер	0	24	48	72	96		Parameter	0	24	48f	48i	72	96
tr-or	A	5	5		5	5		Temp. (°C)	209	21.6	20.8	21.2	20.0	20.2
	В	5	5	5		5		Salinity (ppt)	29.8		30.8	30:7	3112	315
16.114	С	5	5	5	5	5		pH (units)	7.84	7.74	7.70		7.81	7.80
LC #4	D	5	5	5	5	5		DO (mg/L)	7.1	6.4	6.3	7.2	6.7	6.4
	Е	5	5	5.	5	5			-71		100			
	F	5	5	9	5	3								
	Α	5	5	5	5	5		Temp. (°C)	21.0	21.3	20.6	21.0	20,0	20.2
	В	5	5	5.	5	5		Salinity (ppt)	29-8	30.9	30.8	30.7	31.2	31.4
25	С	5	5	5	2	5		pH (units)	7.85	7.69	7.70	7.83	7.80	777
25	D	5	5	5	2	555		DO (mg/L)	7.2	6.1	6.5	7.3	6.8	64
	E	5	5	5,	5	5								
	F	5	5	5	5									
	Α	5	5	4	4	45		Temp. (°C)	20.9	21.2	20.6	21.0	201	20.3
	В	5	.5	5	7,	5		Salinity (ppt)	29-		30.8		31-1	31.3
50	С	5	5	5	5	5		pH (units)	7.85	7.68	7.70	7.83	7.81	7:79
30	D	5	5	5	5	ч		DO (mg/L)	7.3	6.7	6.5	1.3	6.9	6.5
	E	5	5	5	5	5								
	F	5	5	5	4	4								
	Α	5	2	14	4	£	15	Temp. (°C)	21.0		20.5	21-1	20.1	20.2
	В	5	2	5	5	5		Salinity (ppt)		31.0	31.0	30.7	31.1	31-3
100	С	5	2	5	5	4		pH (units)	785	7.66	7.70	7.82	7.82	7.79
100	D	5	5	3	3	3		DO (mg/L)	72	6.0	6.7	7.3	7.0	6.6
	E	5	4	4	4	H								
	F	5	4	4	4	4								
7	Α	5	3		1	ļ		Temp. (°C)		120,9	20.5	21.2		20.2
	В	5	4	2	7	Z	重	Salinity (ppt)			31.0		31,2	
200	С	5	5	4		3		pH (units)	7.82	7.64	7.70	7.78	783	7.80
200	D	5	4	4	4	3	EARCH CO.	DO (mg/L)	7.3	6.0	67	7,2	7.2	66
	E	5	5	3	3	2								
	F	5	5	14	4	13						1 50		
	Α	5	0			/		Temp. (°C)	2/.0	70.9		1011		
	В	5	0		10>			Salinity (ppt)	29.6	30.9		CM.	lead	
400	С	5	0	1	2/			pH (units)	7.7	7.58			19	
400	D	5	0	11/				DO (mg/L)	7.3	5.4				
	E	5	0	17										
	F	5	0	/_										ΙΛ.
Tec	h Initials:		SC	BU	SC	AG		Tech Initial	s: St	UB	A6	M	50	AL
Data	QU . () Animals R	eceived	. 3/1	Sho.	A	35		Feedings	0 ,	24	48	72	96	
Age of Anir				1 day	5	-		Initials (AM):	VX	50	Ab	50	A	,
Age of Ann	iiais at 16	st start		tan)			Initials (PM):						
Comments:								850 FEBRUARY MINISTRA						_
							×			-			,	
OC Chacks	Y	7 ~ \	41	3/22					Fin	al Review	. 1	15/	ohr	,

Wood Environmental Toxicology Lab, 4905 Morena Blvd, Ste. 1304, San Diego, CA 92117

Memo: Results from the 2022 and 2023 Winter Monitoring Events for the SIYB Dissolved Copper TMDL	April 2023
C-2: January 25, 2023 Event	

Results of Toxicity Testing for: Shelter Island Yacht Basin Total Maximum Daily Load Monitoring

Sample Collection: January 25, 2023
Winter Sampling Event

Submitted to:

WSP USA Environment & Infrastructure, Inc. 9177 Sky Park Court San Diego, CA 92123

Testing Performed by:



WSP USA Environment & Infrastructure, Inc. Environmental Toxicology Laboratory 4905 Morena Blvd., Suite 1304 San Diego, CA 92117

The WSP Environmental Toxicology Laboratory is certified by the State of California Department of Health Services – Environmental Lab Accreditation Program (ELAP) under Certificate Number 3010. All test results were obtained following EPA Protocol guidelines and internal QA Program requirements. The data and test results have been reviewed and verified by the following laboratory representative:

Verified by:	Steve Carlein	Date:	4/3/23	
vermed by.	24/10	Datc	1, -, -	

INTRODUCTION

Located in the Port of San Diego, Shelter Island Yacht Basin (SIYB) was issued an Investigative Order (R9-2011-0036, amended from Resolution No. R9-2005-0019) from the San Diego Regional Water Quality Control Board that requires annual monitoring for the SIYB Dissolved Copper Total Maximum Daily Load (TMDL) program. The monitoring program requires the performance of water column toxicity testing at 7 locations within the basin area. Chronic toxicity is monitored with a marine invertebrate species, while acute toxicity is monitored with a marine fish species. Chronic testing has routinely used the mussel species *Mytilus galloprovincialis*, and acute testing has previously been performed with the Pacific topsmelt *Atherinops affinis*. However, due to the many challenges experienced using Pacific topsmelt during previous years (limited test organism supply and availability, difficulties in culturing and holding in a laboratory environment, and overall organism health and sensitivity), acute toxicity testing was performed using the Inland silverside minnow *Menidia beryllina*, a USEPA-approved alternate marine fish species, for the most recent winter monitoring event conducted in January 2023.

Staff from WSP USA Environment & Infrastructure, Inc. (WSP; formerly known as Wood Environment & Infrastructure Solutions, Inc.) collected and delivered all 7 samples to WSP's in-house Environmental Toxicology Laboratory located in San Diego, California. The samples were collected on January 25th, 2023, and both acute and chronic testing was initiated on January 26th, 2023.

MATERIALS & METHODS

Sample Information

Client: Port of San Diego

Project Name: Shelter Island Yacht Basin Annual TMDL Monitoring

Monitoring Period: January 2023 (Winter event)

Sample IDs (7 sites): SIYB-1, SIYB-2, SIYB-3, SIYB-4, SIYB-5, SIYB-6, and

SIYB-REF-1

Sample Collection Date, Times: 1/25/23, 08:00 to 14:00

Sample Receipt Date, Time: 1/25/23, 12:40 (1st batch) and 17:00 (2nd batch)

Water Quality Measurements: See Table 1 (measured upon sample receipt at lab)

Table 1. Water Quality Measured Upon Sample Receipt

Sample ID	Temp.	pH (units)	DO (mg/L)	Salinity (ppt)	Alkalinity (mg/L)	TRC (mg/L)
SIYB-1	15.7	7.83	9.1	32.9	109	0.03
SIYB-2	15.7	7.83	8.5	32.8	112	<0.02
SIYB-3	14.9	7.92	8.8	32.7	111	NR
SIYB-4	17.8	7.92	8.4	32.8	108	0.02
SIYB-5	15.8	7.92	8.2	32.7	110	<0.02
SIYB-6	16.1	7.88	8.1	32.6	114	0.06
SIYB-REF-1	15.6	7.90	7.8	32.3	107	0.02

DO = dissolved oxygen, TRC = total residual chlorine, NR= not recorded

Chronic Mussel Development Test Specifications

Test Period:	1/26/23, 17:30 – 1/28/23, 16:00
Test Organism:	Mytilus galloprovincialis (bivalve - mussel)
Test Organism Source:	Field-collected – Mission Bay (San Diego, CA)
Test Organism Age at Start:	Fertilized embryos (<4 hours old)
Test Procedure:	48-hour embryo-larval development
Test Endpoint:	Combined survival & proportion normal (ASTM)
Test Concentrations:	Lab Control, 6.25, 12.5, 25, 50, and 100% sample
Treatment Concentrations:	Filter Control and 100% Filtered (1.2 μ m filter)
Lab Control/Dilution Water:	Natural seawater from the inlet at Scripps Institution of Oceanography (20- μ m filtered)
Test Protocols Used:	EPA 1995 West Coast Manual (EPA/600/R-95/136); and ASTM 1998 (E 724-98).
EPA Test Acceptability Criteria:	Control: ≥50% survival; ≥90% proportion normal; and minimum significant difference (MSD) <25%
ASTM Test Acceptability Criteria:	Control: ≥70% combined survival/proportion normal
Reference Toxicant Test:	Lab Control, 2.5, 5.0, 10, 20, and 40 μg/L copper
Statistical Analysis Software:	CETIS™ v.2.1.3.5

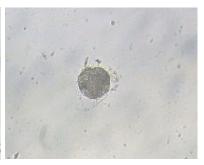
Client: Port of San Diego Project: Shelter Island Yacht Basin TMDL Monitoring

Calculating the mussel test endpoint: Embryos within each test replicate are scored under a microscope by counting all larvae observed in the vial. Percent survival is evaluated by comparing the total number of larvae observed in each vial to an initial (time-zero) density count derived from 5 surrogate exposure chambers (vials) interspersed within the test and preserved immediately after adding embryos. Each larva is scored as normal or abnormal resulting in a second test endpoint: proportion normal. Normal development is exhibited by a clearly defined "D-shaped" shell with a clear straight line as a hinge, while abnormal development is exhibited by any clear abnormalities or differences to the normal "D-shaped" shell. This includes larva that have not fully developed a clear straight hinge (this is exhibited by a slightly curved hinge). Abnormal development was further enumerated to determine the magnitude of effect. The abnormal larvae were counted as having 1) a curved hinge, which indicates a moderate effect, or 2) more significant defects or abnormalities, which indicates a more severe effect. Examples of each of the larva (normal, abnormal with curved hinge, and abnormal with severe effects) are presented in Figure 1. A final combined surviving normal embryo endpoint is calculated by comparing the number of recovered normal embryos in each replicate test chamber to the average number of fertilized embryos counted in the time zero vials. Results for the combined embryo development endpoint are presented herein in the main report, with supporting summaries and full analyses of the individual percent survival and percent normal endpoints included in Appendix A

Figure 1. Images of Bivalve Embryo Development Showing Normal vs Abnormal Morphology







1) Normal D-shape/straight hinge

2) Abnormal with curved hinge

3) Abnormal with severe effects

Inland Silverside Acute Survival Test Specifications

Test Start Date, Time: 1/26/23, 12:15 – 13:12

Test End Date, Time: 1/30/23, 11:00 – 11:45

Test Organism: *Menidia beryllina* (Inland Silverside minnow)

Organism Source; Age at Start: Aquatic BioSystems (Fort Collins, CO); 12-days old

Test Procedure and Endpoint: 96-hour static-renewal acute survival test

Test Concentrations: Lab Control, 25, 50, and 100% each sample

Replicates/Number of Organisms: 6 replicates/5 fish per replicate (30 fish/conc.)

Lab Control/Dilution Water: Natural seawater collected from the inlet at Scripps

Institution of Oceanography (34 ppt salinity)

USEPA Protocol: EPA/821/R-02/012, 2002 Acute Manual

Test Acceptability Criteria: ≥90% mean survival in the control

Reference Toxicant Test: Lab Control, 25, 50, 100, 200, and 400 µg/L copper

Statistical Software: CETIS™ v.2.1.3.5

RESULTS

Test results were evaluated using two USEPA methods of analysis. The results were first analyzed using the traditional EPA statistical approach with multiple comparisons on a dilution series of concentrations to develop a No Observed Effect Concentration (NOEC) as described in the EPA documents (EPA 1995 and EPA 2002). Then, the results were analyzed using the newer EPA Test of Significant Toxicity (TST) approach, as referenced in USEPA 2010. The TST approach applies a modified t-test that accounts for the statistical power of the test and the magnitude of the biological effect in determining the presence of toxicity. The instream waste concentration (IWC) is the 100% sample, which is compared to the Control for statistical analysis. The TST results in a "Pass" if there are no effects or effects are considered to not be biologically significant in the sample (non-toxic), or it will result in a "Fail" if there are significant effects (toxic).

Chronic Mussel Test:

For the chronic mussel test, embryos were exposed to a serial dilution series of 6.25, 12.5, 25, 50, and 100% unfiltered sample from each of the 7 sites. Significant effects were observed for embryos exposed to water from Site SIYB-1 and Site SIYB-2. Site SIYB-1 had a 9.7% effect observed in the 100% undiluted sample when compared to the Lab Control, and SIYB-2 had a 9.3% effect in the 100% undiluted sample. Both the 9.7% and 9.3% effects were statistically significant using the traditional EPA method of analysis, resulting in a NOEC equal to the 50% concentration. However, the newer TST approach showed no biologically significant effects, resulting in a Pass result. Samples from the other 5 sites all resulted in less than a 1.0% effect, resulting in a NOEC equal to 100% sample and a Pass with the TST. The chronic test results for the unfiltered samples are summarized and presented in Table 2.

Client: Port of San Diego Project: Shelter Island Yacht Basin TMDL Monitoring

The 100% concentration for each sample was also tested after filtering with a 1.2 micron (μm) mesh screen to remove any potential algae or other native organisms. The 100% filtered sample was compared to a Filter Control (lab control water with the same filtered treatment). The greatest effect was observed in the SIYB-1 sample with a 28.1% effect which resulted in a Fail with the TST. The filtering process appeared to increase the toxicity of the sample (the effect rose from 9.7% to 28.1% when filtered). Samples from the other 6 sites all resulted in less than an 11% effect resulting in a Pass using the TST. Summary results for the filtered samples are presented in Table 3.

As described in the Methods section, abnormal larvae were further enumerated as either having a curved hinge (moderate effect) or having clear abnormalities or defects (severe effect). During this round of testing, the frequency of curved hinges observed remained low as presented in Table 4. The greatest effect was observed in the 100% concentration of SIYB-1, with 8.1% with curved hinges in the unfiltered 100% sample and 20.9% with curved hinges in the filtered sample. There was also 5.4% with curved hinges observed in the 100% filtered sample of SIYB-2. All other samples and concentrations resulted in less than 1.0% with curved hinges. All raw data and statistical analyses for the mussel tests are provided for reference in Appendix A.

Table 2. Summary of Chronic Mussel Test Results: Unfiltered Samples

Sample	Sample ID / Combined Survival & Proportion Normal						%)
Concentration (%)	SIYB-1	SIYB-2	SIYB-3	SIYB-4	SIYB-5	SIYB-6	SIYB- REF-1
Lab Control	84.0	87.7	85.9	85.4	76.4	88.1	83.9
6.25	86.3	85.2	87.4	87.9	82.1	87.1	87.4
12.5	87.0	84.9	88.8	84.7	83.5	87.4	87.3
25	87.0	84.8	86.3	87.4	76.0	88.8	85.2
50	85.0	86.0	88.1	86.7	86.0	87.8	82.7
100	75.9*	79.6*	89.5	84.6	82.0	89.0	85.9
NOEC	50	50	100	100	100	100	100
EC ₅₀	>100	>100	>100	>100	>100	>100	>100
% Effect	9.7	9.3	-4.2	0.9	-7.4	-1.0	-2.4
TST Result	Pass	Pass	Pass	Pass	Pass	Pass	Pass

^{*} An asterisk indicates a statistically significant effect using the traditional EPA statistical approach NOEC = the highest concentration tested which results in No Observed Effect (using the traditional approach) EC₅₀ = the concentration expected to cause a 50% adverse effect to the organisms

% Effect = the % effect of the IWC compared to control; a negative value indicates the IWC outperformed the control TST = Test of Significant Toxicity; a "Pass" indicates no toxicity was observed with the 100% sample concentration

Table 3. Summary of Chronic Mussel Test Results: 1.2 μ m Filtered Samples

Sample	Sample ID / Combined Survival & Proportion Normal (%)						
Concentration (%)	SIYB-1	SIYB-2	SIYB-3	SIYB-4	SIYB-5	SIYB-6	SIYB- REF-1
Filter Control	85.1	85.0	84.9	88.8	75.6	82.0	83.3
100 filtered	61.2*	75.6	87.2	82.7	83.9	87.3	83.4
NOEC	<100	100	100	100	100	100	100
% Effect	28.1	11.0	-2.8	7.0	-11.0	-6.5	-0.1
TST Result	Fail	Pass	Pass	Pass	Pass	Pass	Pass

NOEC = the highest concentration tested which results in No Observed Effect

Table 4. Summary of Chronic Mussel Test: Percentage with Curved Hinges

Sample	Sample ID / Mean Number of Curved Hinges (%)						
Concentration (%)	SIYB-1	SIYB-2	SIYB-3	SIYB-4	SIYB-5	SIYB-6	SIYB- REF-1
Lab Control	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50	0.4	0.0	0.0	0.0	0.0	0.0	0.0
100	8.1	0.4	0.0	0.0	0.0	0.0	0.0
Filter Control	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100 Filtered	20.9	5.4	0.0	0.0	0.0	0.0	0.0

[%] Effect = the % effect of the IWC compared to control; a negative value indicates the IWC outperformed the control TST = Test of Significant Toxicity; a "Pass" indicates no toxicity was observed with the sample

A **bold** value with asterisk resulted in a significant effect using both the traditional approach and the TST approach

Acute Inland Silverside Test:

The 96-hour acute fish test was conducted using the Inland Silverside minnow (*Menidia beryllina*), which is an EPA-approved marine fish species. Acute testing was conducted on all 7 sample sites with a dilution series of 25, 50, and 100% for each sample location. Also, there were three sets of Lab Controls, one with SIYB-1 and 2, one with SIYB-3 and 4, and one with SIYB-5, 6, and Ref. Mean survival in the three Lab Controls ranged from 93.3% to 100%, exceeding the EPA TAC of 90% survival. Mean survival in all concentrations of the 7 sample sites also ranged from 93.3% to 100%. With less than a 7.0% effect when compared to the Lab Controls, all 7 sites resulted in a NOEC equal to the 100% concentration, and all 7 sites Passed the TST analysis. A summary of the acute Inland Silverside test results is presented in Table 5. All acute raw data and statistical analyses are presented in Appendix B.

Table 5. Summary of Acute Inland Silverside Test Results

Sample	Sample ID / Mean Survival (%)						
Concentration (%)	SIYB-1	SIYB-2	SIYB-3	SIYB-4	SIYB-5	SIYB-6	SIYB- REF-1
Lab Control	93.3	93.3	96.7	96.7	100	100	100
25	96.7	96.7	93.3	96.7	100	100	100
50	100	96.7	96.7	96.7	100	96.7	100
100	100	100	97.2	96.7	93.3	100	100
NOEC	100	100	100	100	100	100	100
LC ₅₀	>100	>100	>100	>100	>100	>100	>100
% Effect	-7.1	-7.1	-0.6	0.0	6.7	0.0	0.0
TST Result	Pass	Pass	Pass	Pass	Pass	Pass	Pass

NOEC = the highest concentration tested which results in No Observed Effect (using the traditional approach)

QUALITY ASSURANCE

Samples were received by the WSP laboratory in good condition the same day as collected. The samples were checked in, water quality measured, and then held in cold storage (4-6°C) until testing. Both chronic and acute tests were initiated the following day within the 36-hour holding time limit. For test organisms, mussels were collected locally by WSP staff the day of the test initiation (January 26th, 2023). The marine fish species (Inland Silverside) were received by a commercial supplier (Aquatic BioSystems in Fort Collins, Colorado) two days prior to test initiation. The fish were held in-house and allowed to acclimate to test conditions over a 48-hour period. There was greater than 10% mortality during the initial 24-hours of receiving the fish. However,

 LC_{50} = the concentration expected to cause a lethal effect to 50% of the fish

[%] Effect = the % effect of the IWC compared to control; a negative value indicates the IWC outperformed the control TST = Test of Significant Toxicity; a "Pass" indicates no toxicity was observed with the sample

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there was less than 2% mortality during the next 24-hour period prior to testing. The fish were deemed healthy and acceptable for testing. The acute tests conducted with the Silverside minnows met the EPA method TAC with greater than 90% survival in all three Lab Controls. Therefore, the acute test results were deemed valid and acceptable for reporting.

For the chronic mussel test, each sample site was tested with its own Lab Control. All 7 Lab Controls met the EPA TAC of 50% or greater survival and 90% or greater proportion normal. The Lab Controls also met the ASTM TAC of 70% or greater for the combined survival and proportion normal endpoint. All samples were analyzed for the combined endpoint to determine percent effects and statistical results using the TST. All chronic mussel test results were deemed valid for reporting.

Both acute and chronic tests were performed in accordance with EPA protocol guidelines and no major deviations were required or noted during this testing period. Any minor deviations or errors made with recordings are noted on the raw bench sheets for both test species. A list of data qualifier codes is provided in Appendix C. Sample receipt information and chain of custody forms are provided in Appendix D.

Concurrent reference toxicant tests were conducted with both test organisms. Both the acute fish test and the chronic mussel test had Lab Controls that met the EPA method TAC and were thus deemed valid. The median effect concentration for the mussels (EC_{50}) and lethal effect concentration for the fish species (EC_{50}) were within two standard deviations of the historical control chart means for the laboratory. This indicates that the mussels and Inland Silversides both produced a typical response or sensitivity to the copper toxicants. A summary of the reference toxicant results for both species is presented in Table 6. Raw data, statistical analyses, and control charts for the reference toxicant tests are provided in Appendix E.

Table 6. Summary of Copper Reference Toxicant Test Results

Test Species & Endpoint	NOEC (μg/L)	EC ₅₀ /LC ₅₀ (μg/L)	Historical EC ₅₀ /LC ₅₀ ± 2 SD range (μg/L)
Chronic Mussel Combined Surviving/Normal Embryo Development	5.0	7.73	4.72 - 17.8
Acute Inland Silverside 96-hour Survival	100	168	116 - 351

NOEC = the highest concentration tested which results in No Observed Effect

SD = Standard deviation, μ g/L = micrograms per liter

 EC_{50} = the concentration expected to cause a 50% adverse effect to the test organisms (mussels)

LC₅₀ = the concentration expected to cause a 50% lethal effect to the test organisms (fish)

Historical EC₅₀/ LC₅₀ = the mean EC₅₀/ LC₅₀ for previous testing by the lab, presented as a range of \pm 2 SD

Client: Port of San Diego Winter Monitoring: January 2023
Project: Shelter Island Yacht Basin TMDL Monitoring Test IDs: 23-01-043 to -056

REFERENCES

ASTM. 1998. Standard Guide for Conducting Static Acute Toxicity Tests Starting with Embryos of Four Species of Saltwater Bivalve Molluscs. ASTM E 724-98.

- Tidepool Scientific Software, 2009-2022. CETIS: Comprehensive Environmental Toxicity Information System software, version 2.1.3.5.
- USEPA (U.S. Environmental Protection Agency) 1995. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms (EPA/600/R-95/136). The USEPA, Office of Research and Development, Washington, DC.
- USEPA 2002. U.S. Environmental Protection Agency. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms. 5th Edition. EPA/821/R-02/012. USEPA, Office of Water, Washington, DC.
- USEPA 2010. Test of Significant Toxicity Implementation Document (EPA/833/R-10/003). The USEPA, Office of Wastewater Management, Washington, DC

APPENDIX A Chronic Mussel Development Test Raw Data & Statistical Analyses

Bivalve Summary Tables
For Combined, %Survival, & %Normal Endpoints

Summary Results for Chronic Bivalve Tests Final

Client: WSP USA Environment & Infrastructure

Project ID: Shelter Island Yacht Basin TMDL Monitoring

Species Mytilus galloprovincialis (Mussel)

Endpoint: Combined Survival & Normal Development

Unfiltered Sample:

Test	Sample ID / Combined Survival & Normal Development (%)										
Concentration (% Sample)	SIYB-1	SIYB-2	SIYB-3	SIYB-4	SIYB-5	SIYB-6	SIYB-REF				
Lab Control	84.0	87.7	85.9	85.4	76.4	88.1	83.9				
6.25	86.3	85.2	87.4	87.9	82.1	87.1	87.4				
12.5	87.0	84.9	88.8	84.7	83.5	87.4	87.3				
25	87.0	84.8	86.3	87.4	76.0	88.8	85.2				
50	85.0	86.0	88.1	86.7	86.0	87.8	82.7				
100	75.9	80.0	89.5	84.6	82.0	89.0	85.9				
NOEC	50	50	100	100	100	100	100				
% Effect	9.7	9.3	-4.2	0.9	-7.4	-1.0	-2.4				
TST Result	Pass	Pass	Pass	Pass	Pass	Pass	Pass				

NOEC = the highest Concentration tested with No Observed Effect (using standard method of analysis).

% Effect = the percent effect in the 100% sample compared to the Lab Control. A negative value indicates the 100% sample outperformed the Lab Control.

TST = Test of Significant Toxicity (Pass/Fail) in 100%. A Pass indicates no significant effects were observed.

Filtered Sample:

Test	Sample ID / Combined Survival & Normal Development (%)											
Concentration (% Sample)	SIYB-1	SIYB-2	SIYB-3	SIYB-4	SIYB-5	SIYB-6	SIYB-REF					
Filter Control	85.1	85.0	84.9	88.8	75.6	82.0	83.3					
100 filtered	61.2*	75.6	87.2	82.7	83.9	87.3	83.4					
NOEC	<100	100	100	100	100	100	100					
% Effect	28.1	11.0	-2.8	7.0	-11.0	-6.5	-0.1					
TST Result	Fail	Pass	Pass	Pass	Pass	Pass	Pass					

Summary Results for Chronic Bivalve Tests Final

Client: WSP USA Environment & Infrastructure

Project ID: Shelter Island Yacht Basin TMDL Monitoring

Species Mytilus galloprovincialis (Mussel)

Endpoint: Percent Survival

Unfiltered Sample:

Test	Sample ID / Percent Survival (%)										
Concentration (% Sample)	SIYB-1	SIYB-2	SIYB-3	SIYB-4	SIYB-5	SIYB-6	SIYB-REF				
Lab Control	93.7	97.1	95.6	95.2	84.7	97.5	93.6				
6.25	98.6	94.8	96.0	98.1	94.2	96.5	97.9				
12.5	97.5	94.3	97.1	95.1	93.0	96.8	94.9				
25	98.0	94.9	94.9	97.5	85.7	98.3	93.9				
50	97.7	95.2	96.1	96.2	97.3	97.6	93.7				
100	93.8	89.0	97.8	95.4	94.5	98.0	95.7				
NOEC	100	50	100	100	100	100	100				
% Effect	-0.1	8.3	-2.3	-0.2	-11.6	-0.6	-2.3				

NOEC = the highest Concentration tested with No Observed Effect.

% Effect = the percent effect in the 100% sample compared to the Lab Control. A negative value indicates the 100% sample outperformed the Lab Control.

Filtered Sample:

Test	Sample ID / Percent Survival (%)										
Concentration (% Sample)	SIYB-1	SIYB-2	SIYB-3	SIYB-4	SIYB-5	SIYB-6	SIYB-REF				
Filter Control	95.0	95.0	94.0	99.5	84.4	91.9	91.7				
100 filtered	92.6	94.2	97.8	90.9	94.3	95.3	92.2				

Summary Results for Chronic Bivalve Tests Final

Client: WSP USA Environment & Infrastructure

Project ID: Shelter Island Yacht Basin TMDL Monitoring

Species Mytilus galloprovincialis (Mussel)

Endpoint: Percent Normal

Unfiltered Sample:

Test	Sample ID / Percent Normal (%)										
Concentration (% Sample)	SIYB-1	SIYB-2	SIYB-3	SIYB-4	SIYB-5	SIYB-6	SIYB-REF				
Lab Control	89.6	90.4	89.9	89.7	90.0	90.4	89.8				
6.25	87.6	90.1	91.0	89.6	87.0	90.2	89.2				
12.5	89.3	90.0	91.5	89.1	89.8	90.4	90.4				
25	88.7	89.3	91.0	89.6	88.6	90.4	90.7				
50	87.0	90.4	91.7	90.1	88.4	89.9	88.3				
100	80.8	89.3	91.5	88.6	86.8	90.8	89.7				
NOEC	50	100	100	100	100	100	100				
% Effect	9.8	1.2	-1.8	1.2	3.6	-0.4	0.2				

NOEC = the highest Concentration tested with No Observed Effect.

% Effect = the percent effect in the 100% sample compared to the Lab Control. A negative value indicates the 100% sample outperformed the Lab Control.

Filtered Sample:

Test	Sample ID / Percent Normal (%)										
(% Sample)	SIYB-1	SIYB-2	SIYB-3	SIYB-4	SIYB-5	SIYB-6	SIYB-REF				
Filter Control	89.6	89.6	90.3	89.3	89.7	89.2	90.9				
100 filtered	66.0*	80.0	89.2	90.8	89.0	91.7	89.0				

Site: SIYB-1

18-5852-8913 Proportion Normal

01-1269-0759 Survival Rate

Report Date: Test Code/ID: 07 Mar-23 11:48 (p 1 of 4) 23-01-050 / 06-0383-3046

WSP . Wood ESISTF

Bivalve Larval Survival and Development Test
--

Batch ID:	12-7737-3114 T	Test Type:	Development-Survival		Anal	yst:				
Start Date:	26 Jan-23 17:30 P	Protocol:	EPA/600/R-95/136 (1995)		Dilue	ent: N	latural Seawa	ter		
Ending Date:	28 Jan-23 16:00 S	Species:	Mytilis galloprovincialis		Brine	e: N	lot Applicable			
Test Length:	46h T	Taxon:			Sour	ce: F	ield Collected	1	Age:	
Sample ID:	11-7919-1635 C	Code:	23-W0236		Proje	ect: S	IYB TMDL M	onitoring		
Sample Date:	25 Jan-23 14:00 N	Material:	Seawater		Sour	ce: S	helter Island	Yacht Basin		
Receipt Date:	25 Jan-23 17:00 C	CAS (PC):	WSP		Stati	on: S	SIYB 1			
Sample Age:	27h (15.7 °C)	Client:	Wood Environment and Infrastr	ucture S	iolut i					
Comments:	FC = Filtered Control, 10)1 = 100%	(1.2um filtered)							
Single Compa	arison Summary									
Analysis ID	Endpoint	Comp	parison Method		P-Value	Compa	arison Resul	t		5
07-2001-9715	Combined Proportion No	orma TST-V	Welch's t Test		0.0021	100% p	assed combi	ned proporti	on norma	al '
05-1739-5468	Combined Proportion No	orma TST-V	Welch's t Test		0.3735	101% f	ailed combine	ed proportion	normal	
Multiple Com	parison Summary									
Analysis ID	Endpoint	Comp	parison Method	✓	NOEL	LOEL	TOEL	PMSD	TU	5
02-4943-4035	Combined Proportion No	orma Dunne	ett Multiple Comparison Test	1	50	100	70.71	7.6%	2	
18-5852-8913	Proportion Normal	Dunne	ett Multiple Comparison Test	1	50	100	70.71	3.32%	2	

Test Acceptal	bility			TAC	Limits		
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
18-5852-8913	Proportion Normal	Control Resp	0:8962	0.9	<<	Yes	Below Criteria
	Survival Rate	Control Resp	0.9366	0.5	<<	Yes	Passes Criteria
02-4943-4035	Combined Proportion Norm	a PMSD	0.07597	<<	0.25	No	Passes Criteria

√ 100

>100

Dunnett Multiple Comparison Test

Ook-rounds up to 90%

8.75%

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Bivalve Larval Survival and Development Test

WSP -Wood E&IS TF

										4. (27/10)	
Combined Pro	portion Norm	al Summar	/								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effec
0	LC	5	0.8396	0.7601	0.9191	0.7705	0.9158	0.0286	0.0640	7.63%	0.00%
0	FC	5	0.8513	0.7855	0.9171	0.7814	0.8984	0.0237	0.0530	6.22%	-1.39%
6.25		5	0.8634	0.8336	0.8932	0.8251	0.8830	0.0107	0.0240	2.78%	-2.83%
12.5		5	0.8703	0.8277	0.9129	0.8197	0.9021	0.0153	0.0343	3.94%	-3.66%
25		5	0.8697	0.8247	0.9147	0.8142	0.8995	0.0162	0.0362	4.17%	-3.58%
50		5	0.8497	0.8302	0.8693	0.8306	0.8723	0.0070	0.0158	1.85%	-1.20%
100		5	0.7585	0.6812	0.8358	0.6940	0.8307	0.0278	0.0623	8.21%	9.66%
101		5	0.6120	0.5095	0.7146	0.5082	0.6995	0.0369	0.0826	13.50%	27.11%
Proportion No	rmal Summar	у									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effec
0	LC	5	0.8962	0.8725	0.9199	0.8667	0.9158	0.0085	0.0191	2.13%	0.00%
0	FC	5	0.8961	0.8751	0.9171	0.8720	0.9195	0.0076	0.0169	1.89%	0.01%
6.25		5	0.8759	0.8551	0.8966	0.8548	0.8994	0.0075	0.0167	1.91%	2.27%
12.5		5	0.8928	0.8733	0.9122	0.8703	0.9116	0.0070	0.0157	1.75%	0.39%
25		5	0.8869	0.8705	0.9032	0.8663	0.8995	0.0059	0.0132	1.49%	1.04%
50		5	0.8702	0.8426	0.8978	0.8478	0.9059	0.0099	0.0222	2.55%	2.90%
100		5	0.8084	0.7625	0.8542	0.7515	0.8380	0.0165	0.0369	4.57%	9.80%
101		5	0.6596	0.5802	0.7390	0.5962	0.7485	0.0286	0.0639	9.69%	26.40%
Survival Rate	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effec
0	LC	5	0.9366	0.8571	1.0160	0.8525	1.0000	0.0286	0.0640	6.84%	0.00%
0	FC	5	0.9497	0.8869	1.0130	0.8962	1.0000	0.0226	0.0506	5.33%	-1.40%
6.25		5	0.9858	0.9588	1.0130	0.9508	1.0000	0.0097	0.0217	2.20%	-5.25%
12.5		5	0.9749	0.9321	1.0180	0.9180	1.0000	0.0154	0.0345	3.54%	-4.08%
25		5	0.9803	0.9455	1.0150	0.9399	1.0000	0.0125	0.0280	2.86%	-4.67%
50		5	0.9770	0.9362	1.0180	0.9290	1.0000	0.0147	0.0329	3.37%	-4.32%
100		5	0.9377	0.8745	1.0010	0.8743	1.0000	0.0228	0.0509	5.43%	-0.12%
101		5	0.9257	0.8601	0.9912	0.8525	1.0000	0.0236	0.0528	5.70%	1.17%

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US Wood E&IS TP

Bivalve	Larval	Survival	and	Development	Test
Diraite		oui ritui		DOTOIODINO	

Combined Pro	portion Norm	al Detail					MD5:	B6079B7E609735A704DC762EA09F7EF5
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.8415	0.7705	0.7814	0.9158	0.8889		
0	FC	0.7814	0.8984	0.8087	0.8743	0.8936		
6.25		0.8548	0.8830	0.8251	0.8798	0.8743		
12.5		0.9021	0.8197	0.8579	0.9016	0.8703		
25		0.8525	0.8848	0.8995	0.8973	0.8142		
50		0.8478	0.8723	0.8415	0.8306	0.8564		
100		0.6940	0.7213	0.7268	0.8197	0.8307		
101		0.5574	0.6066	0.6995	0.5082	0.6885		
Proportion No	rmal Detail						MD5:	7F68C1E15DF302148AF0A24EB8B1EC33
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.9059	0.9038	0.8667	0.9158	0.8889		
0	FC	0.8720	0.8984	0.8970	0.9195	0.8936		
6.25		0.8548	0.8830	0.8678	0.8994	0.8743		
12.5		0.9021	0.8929	0.8870	0.9116	0.8703		
25		0.8864	0.8848	0.8995	0.8973	0.8663		
50		0.8478	0.8723	0.9059	0.8686	0.8564		
100		0.7515	0.7904	0.8312	0.8380	0.8307		
101		0.6000	0.6647	0.7485	0.5962	0.6885		
Survival Rate	Detail			ð			MD5:	8F9ABFA31D9EBE02F1835375E76E7DCE
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.9290	0.8525	0.9016	1.0000	1.0000		
0	FC	0.8962	1.0000	0.9016	0.9508	1.0000		
6.25		1.0000	1.0000	0.9508	0.9781	1.0000		
12.5		1.0000	0.9180	0.9672	0.9891	1.0000		
25		0.9617	1.0000	1.0000	1.0000	0.9399		
50		1.0000	1.0000	0.9290	0.9563	1.0000		
100		0.9235	0.9126	0.8743	0.9781	1.0000		
101		0.9290	0.9126	0.9344	0.8525	1.0000		

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Web -Mood E813 JE

Bivalve Larval Survival and Development Test

Combined Pro	portion Norm	al Binomials	5				
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	154/183	141/183	143/183	174/190	176/198	
0	FC	143/183	168/187	148/183	160/183	168/188	
6.25		159/186	166/188	151/183	161/183	160/183	
12.5		175/194	150/183	157/183	165/183	161/185	
25		156/183	169/191	179/199	166/185	149/183	
50		156/184	164/188	154/183	152/183	167/195	
100		127/183	132/183	133/183	150/183	157/189	
101		102/183	111/183	128/183	93/183	126/183	
Proportion No	rmal Binomia	ls					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	154/170	141/156	143/165	174/190	176/198	
0	FC	143/164	168/187	148/165	160/174	168/188	
6.25		159/186	166/188	151/174	161/179	160/183	
12.5		175/194	150/168	157/177	165/181	161/185	
25		156/176	169/191	179/199	166/185	149/172	
50		156/184	164/188	154/170	152/175	167/195	
100		127/169	132/167	133/160	150/179	157/189	
101		102/170	111/167	128/171	93/156	126/183	
Survival Rate	Binomials				- 037		
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	170/183	156/183	165/183	183/183	183/183	
0	FC	164/183	183/183	165/183	174/183	183/183	
6.25		183/183	183/183	174/183	179/183	183/183	
12.5		183/183	168/183	177/183	181/183	183/183	
25		176/183	183/183	183/183	183/183	172/183	
50		183/183	183/183	170/183	175/183	183/183	
100		169/183	167/183	160/183	179/183	183/183	
101		170/183	167/183	171/183	156/183	183/183	

Report Date: Test Code/ID: 07 Mar-23 11:48 (p 1 of 8) 23-01-050 / 06-0383-3046

Wood E&IS TF WSP

CETISv2.1.3

LC US 100% **Bivalve Larval Survival and Development Test**

Analysis ID: 07-2001-9715 Analyzed:

07 Mar-23 11:25

07 Mar-23 11:44 Analysis:

Endpoint: Combined Proportion Normal Parametric Bioequivalence-Two Sample **CETIS Version:**

Status Level:

002-883-387-8 MD5 Hash: FA90F020C04DC7B47D57B7DEDE04F04F Editor ID:

FC = Filtered Control, 101 = 100% (1.2um filtered) Comments:

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	100% passed combined proportion normal endpoint

TST-Welch's t Test

Edit Date:

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(a:5%)
Lab Control		100*	7	4.16	1.895	CDF	0.0021	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0275854	0.0275854	1	4.08	0.0781	Non-Significant Effect
Error	0.0540905	0.0067613	8			
Total	0.0816758		9			

ANOVA Assumptions Tests

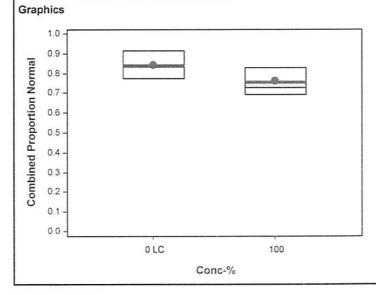
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variance	Variance Ratio F Test	1.457	23.15	0.7242	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.8909	0.7411	0.1737	Normal Distribution

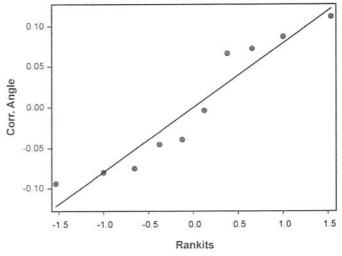
Combined Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.8396	0.7601	0.9191	0.8415	0.7705	0.9158	0.0286	7.63%	0.00%
100		5	0.7585	0.6812	0.8358	0.7268	0.6940	0.8307	0.0278	8.21%	9.66%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.1650	1.0540	1.2760	1.1610	1.0710	1.2760	0.0401	7.69%	0.00%
100		5	1.0600	0.9677	1.1520	1.0210	0.9846	1.1470	0.0332	7.00%	9.02%





Report Date: Test Code/ID: 07 Mar-23 11:48 (p 2 of 8) 23-01-050 / 06-0383-3046

FC vs 100% filtered Bivalve Larval Survival and Development Test

USP -Wood E&IST

Analysis ID: 05-1739-5468

Analyzed:

07 Mar-23 11:45

Endpoint: Combined Proportion Normal Analysis: Parametric Bioequivalence-Two Sample **CETIS Version:** Status Level:

Edit Date:

07 Mar-23 11:25

MD5 Hash: 5490966515668B4C38075307FB9241B6

Editor ID:

002-883-387-8

CETISv2.1.3

Comments: FC = Filtered Control, 101 = 100% (1.2um filtered)

Data Transform	Alt Hyp	TST_b	Comparison Result	
Angular (Corrected)	C*b < T	0.75	101% failed combined proportion normal endpoint	

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:5%)
Filter Control		101	6	0.3379	1.943	CDF	0.3735	Significant Effect

ANOVA Table

AITOTA TUDIC							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.195237	0.195237	1	30.84	0.0005	Significant Effect	
Error	0.050647	0.0063309	8				
Total	0.245884		9	= == 8			

ANOVA Assumptions Tests

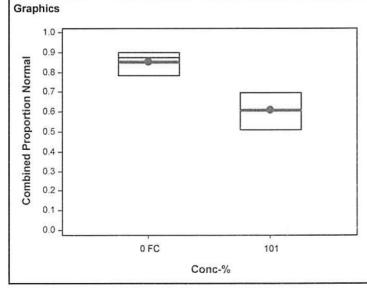
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variance	Variance Ratio F Test	1.343	23.15	0.7821	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.8991	0.7411	0.2141	Normal Distribution	

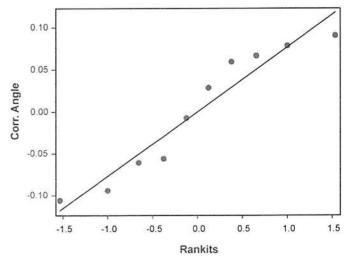
Combined Proportion Normal Summary

TOTAL STATE OF THE		The section of the se									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	0.8513	0.7855	0.9171	0.8743	0.7814	0.8984	0.0237	6.22%	0.00%
101		5	0.6120	0.5095	0.7146	0.6066	0.5082	0.6995	0.0369	13.50%	28.11%

Angular (Corrected) Transformed Summary

Aligular (Golf	cotca, manare	mica oann	y								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	1.1790	1.0880	1.2700	1.2080	1.0840	1.2460	0.0329	6.23%	0.00%
101		5	0.8997	0.7939	1.0050	0.8928	0.7936	0.9906	0.0381	9.47%	23.70%





Report Date: Test Code/ID: 07 Mar-23 11:48 (p 3 of 8) 23-01-050 / 06-0383-3046

Bivalve Larval Survival and Development Test Wood E&IS Analysis ID: 02-4943-4035 Endpoint: Combined Proportion Normal **CETIS Version:** CETISv2.1.3 Analyzed: 07 Mar-23 11:45 Analysis: Parametric-Control vs Treatments Status Level: Edit Date: 07 Mar-23 11:25 MD5 Hash: C5F5156452D7E3BC3B8CBF054D24B750 Editor ID: 002-883-387-8 Comments: FC = Filtered Control, 101 = 100% (1.2um filtered) **Data Transform** Alt Hyp NOEL LOEL TOEL Tox Units MSDu **PMSD** Angular (Corrected) C>T 50 100 70.71 2 0.06379 7.60% **Dunnett Multiple Comparison Test** Control Conc-% df Test Stat Critical MSD P-Value Decision(a:5%) P-Type Lab Control 6.25 8 2.362 -0.76790.08726 CDF 0.9689 Non-Significant Effect 12.5 8 -1.0772.362 0.08726 0.9866 Non-Significant Effect CDF 25 8 -1.055 2.362 0.08726 CDF 0.9857 Non-Significant Effect 50 8 -0.22422.362 0.08726 CDF 0.8911 Non-Significant Effect 100* 8 2.843 2.362 0.08726 CDF 0.0181 Significant Effect **ANOVA Table** Source Sum Squares Mean Square DF F Stat P-Value Decision(a:5%) 0.0749551 5 4.393 0.0056 Significant Effect Between 0.014991 Error 0.081902 0.0034126 24 Total 0.156857 29 **ANOVA Assumptions Tests** Critical P-Value Decision(a:1%) Attribute Test Test Stat 7.962 15.09 0.1584 Equal Variances Variance Bartlett Equality of Variance Test Normal Distribution Shapiro-Wilk W Normality Test 0.9804 0.9031 0.8363 Distribution **Combined Proportion Normal Summary** CV% %Effect 95% UCL Max Std Err Code Median Min Conc-% Count Mean 95% LCL 0 LC 5 0.8396 0.7601 0.9191 0.8415 0.7705 0.9158 0.0286 7.63% 0.00% 2.78% -2.83% 6.25 5 0.8336 0.8932 0.8743 0.8251 0.8830 0.0107 0.8634 -3.66% 0.8197 0.9021 0.0153 3.94% 5 0.9129 0.8703 12.5 0.8703 0.8277 -3.58% 5 0.8848 0.8142 0.8995 0.0162 4.17% 25 0.8697 0.8247 0.9147 0.0070 1.85% -1.20% 50 5 0.8693 0.8478 0.8306 0.8723 0.8497 0.8302 0.6940 0.8307 0.0278 8.21% 9.66% 100 5 0.7585 0.6812 0.8358 0.7268 Angular (Corrected) Transformed Summary Code 95% LCL 95% UCL Median Min Max Std Err CV% %Effect Conc-% Count Mean 0.0401 7.69% 0.00% 0 LC 5 1.1650 1.0540 1.2760 1.1610 1.0710 1.2760 0.0153 2.86% -2.44% 5 1.2360 1.2080 1.1390 1.2220 6.25 1.1930 1.1510 0.0226 4.19% -3.42% 5 12.5 1.2050 1.1420 1.2670 1.2020 1.1320 1.2520 -3.34% 0.0234 4.35% 25 5 1.2040 1.1390 1.2690 1.2250 1.1250 1.2480 -0.71% 1.2010 1.1470 1.2050 0.0099 1.89% 50 5 1.1730 1.1460 1.1700



7.00%

9.02%

0.0332

1.1470

100

5

1.0600

0.9677

1.1520

1.0210

0.9846

Report Date: Test Code/ID: 07 Mar-23 11:48 (p 4 of 8) 23-01-050 / 06-0383-3046

-Wood-E&IS use **Bivalve Larval Survival and Development Test** CETISv2.1.3 Analysis ID: 02-4943-4035 Endpoint: Combined Proportion Normal **CETIS Version:** Analyzed: 07 Mar-23 11:45 Analysis: Parametric-Control vs Treatments Status Level: Edit Date: 07 Mar-23 11:25 002-883-387-8 Graphics 1.0 0.10 0.9 Combined Proportion Normal 0.8 0.05 0.7 Corr. Angle 0.6 0.00 0.5 0.4 0.3 -0.05 0.2 0.1 -0.10 0.0 2.0 -0.5 0.0 0.5 1.0 1.5 0 LC 6.25 12.5 25 50 100 -1.5 -1.0 Rankits Conc-%

Report Date: Test Code/ID: 07 Mar-23 11:48 (p 5 of 8) 23-01-050 / 06-0383-3046

Bivalve Larval Survival and Development Test WOOD EXIS

Analysis ID: 18-5852-8913 07 Mar-23 11:45 Endpoint: Proportion Normal

CETIS Version: Analysis: Parametric-Control vs Treatments

Analyzed: Edit Date: 07 Mar-23 11:25

MD5 Hash: D282DD7917B6C088A62662CB1158F8BD Editor ID:

CETISv2.1.3 Status Level:

002-883-387-8

Comments: FC = Filtered Control, 101 = 100% (1.2um filtered)

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corrected)	C > T	50	100	70.71	2	0.02971	3.32%

Dunnett Mul	tiple (Comparison Test							
Control	vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)
Lab Control		6.25	8	1.628	2.362	0.047	CDF	0.1848	Non-Significant Effect
		12.5	8	0.2993	2.362	0.047	CDF	0.7302	Non-Significant Effect
		25	8	0.7851	2.362	0.047	CDF	0.5178	Non-Significant Effect
		50	8	2.034	2.362	0.047	CDF	0.0934	Non-Significant Effect
		100*	8	6.27	2.362	0.047	CDF	<1.0E-05	Significant Effect

Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
0.0526347	0.0105269	5	10.63	1.8E-05	Significant Effect
0.0237627	0.0009901	24			
0.0763974		29			
	0.0526347 0.0237627	0.0526347	0.0526347 0.0105269 5 0.0237627 0.0009901 24	0.0526347 0.0105269 5 10.63 0.0237627 0.0009901 24	0.0526347

ANOVA Assum	IOVA Assumptions Tests									
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)					
Variance	Bartlett Equality of Variance Test	3.032	15.09	0.6950	Equal Variances					
Distribution	Shapiro-Wilk W Normality Test	0.9836	0.9031	0.9102	Normal Distribution					

Proportion No	ormal Summar	ry									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.8962	0.8725	0.9200	0.9038	0.8667	0.9158	0.0085	2.13%	0.00%
6.25		5	0.8759	0.8551	0.8966	0.8743	0.8548	0.8994	0.0075	1.91%	2.27%
12.5		5	0.8928	0.8733	0.9122	0.8929	0.8703	0.9116	0.0070	1.75%	0.39%
25		5	0.8869	0.8705	0.9032	0.8864	0.8663	0.8995	0.0059	1.49%	1.04%
50		5	0.8702	0.8426	0.8978	0.8686	0.8478	0.9059	0.0099	2.55%	2.90%
100		5	0.8084	0.7625	0.8542	0.8307	0.7515	0.8380	0.0165	4.57%	9.80%

Angular (Corr	ected) Transfo	rmed Sumr	nary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.2440	1.2060	1.2820	1.2560	1.1970	1.2760	0.0138	2.47%	0.00%
6.25		5	1.2110	1.1800	1.2430	1.2080	1.1800	1.2480	0.0114	2.11%	2.61%
12.5		5	1.2380	1.2070	1.2690	1.2370	1.2020	1.2690	0.0113	2.04%	0.48%
25		5	1.2280	1.2030	1.2540	1.2270	1.1960	1.2480	0.0092	1.67%	1.26%
50		5	1.2030	1.1610	1.2460	1.2000	1.1700	1.2590	0.0153	2.84%	3.25%
100		5	1.1190	1.0620	1.1760	1.1470	1.0490	1.1570	0.0206	4.11%	10.03%

0.2

0.0

0 LC

6.25

12.5

Conc-%

25

50

100

Report Date: Test Code/ID:

-0.5

-1.5

-1.0

0.0

Rankits

0.5

1.0

1.5

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2.0

-Wood-E&IS 259 Bivalve Larval Survival and Development Test CETISv2.1.3 Analysis ID: 18-5852-8913 **CETIS Version:** Endpoint: Proportion Normal Parametric-Control vs Treatments Analyzed: 07 Mar-23 11:45 Analysis: Status Level: Edit Date: 07 Mar-23 11:25 MD5 Hash: D282DD7917B6C088A62662CB1158F8BD Editor ID: 002-883-387-8 Graphics 0.06 1.0 0.9 0.04 0.8 Proportion Normal 0.7 0.02 Corr. Angle 0.6 0.00 0.5 0.4 -0.02 0.3 -0.04

-0.06

Report Date: Test Code/ID: 07 Mar-23 11:48 (p 7 of 8) 23-01-050 / 06-0383-3046

Bivalve Larval Survival and Development Test											wse.	-Wood E&IS
Analysis ID: Analyzed: Edit Date:	07 N	269-0759 lar-23 11:45 lar-23 11:25	Ana		ametric-Cor	ntrol vs Trea		Stati	IS Version: us Level: or ID:	CETISv2. 1 002-883-3		
Comments:	FC =	Filtered Co	ntrol, 101 =	100% (1.2)	ım filtered)							
Data Transfo	orm		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Cor	rected)		C > T				100	>100		1	0.082	8.75%
Dunnett Mul	tiple C	omparison	Test									
Control	vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision((a:5%)		
Lab Control		6.25	8	-1.508	2.362	0.1798	CDF	0.9963	Non-Signi	ficant Effect		
		12.5	8	-1.066	2.362	0.1798	CDF	0.9862	Non-Signi	ficant Effect		
		25	8	-1.318	2.362	0.1798	CDF	0.9934	Non-Signi	ficant Effect		
		50	8	-1.223	2.362	0.1798	CDF	0.9912	Non-Signi	ficant Effect		
		100	8	0.187	2.362	0.1798	CDF	0.7722	Non-Signi	ficant Effect	3	
ANOVA Tabl	le											
Source		Sum Squa	res	Mean Squ	iare	DF	F Stat	P-Value	Decision((a:5%)		
Between		0.0762392		0.0152478	3	5	1.052	0.4107	Non-Signi	ficant Effect		
Error		0.347755		0.0144898	3	24						
Total		0.423995				29						
ANOVA Ass	umptic	ns Tests										
Attribute		Test				Test Stat	Critical	P-Value	Decision((a:1%)		
Variance		Bartlett Equ	uality of Var	riance Test		1.914	15.09	0.8608	Equal Var	iances		
Distribution		Shapiro-W	ilk W Norm	ality Test		0.9213	0.9031	0.0291	Normal Di	istribution		
Survival Rat	e Sum	mary										
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	0.9366	0.8571	1.0000	0.9290	0.8525	1.0000	0.0286	6.84%	0.00%
6.25			5	0.9858	0.9588	1.0000	1.0000	0.9508	1.0000	0.0097	2.20%	-5.25%
12.5			5	0.9749	0.9321	1.0000	0.9891	0.9180	1.0000	0.0154	3.54%	-4.08%
25			5	0.9803	0.9455	1.0000	1.0000	0.9399	1.0000	0.0125	2.86%	-4.67%
50			5	0.9770	0.9362	1.0000	1.0000	0.9290	1.0000	0.0147	3.37%	-4.32%
100			5	0.9377	0.8745	1.0000	0.9235	0.8743	1.0000	0.0228	5.43%	-0.12%
Angular (Co	rrected	i) Transforn	ned Summ	ary								
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	1.3590	1.1540	1.5650	1.3010	1.1770	1.5340	0.0739	12.16%	0.00%
6.25			5	1.4740	1.3680	1.5810	1.5340	1.3470	1.5340	0.0384	5.82%	-8.45%
12.5			5	1.4410	1.3070	1.5740	1.4660	1.2800	1.5340	0.0482	7.47%	-5.97%
25			5	1.4600	1.3320	1.5880	1.5340	1.3230	1.5340	0.0461	7.06%	-7.38%
50			5	1.4530	1.3120	1.5930	1.5340	1.3010	1.5340	0.0507	7.80%	-6.85%
100				1 2450	1 1020	1 5000	1 2010	1 2000	1 5240	0.0597	0.75%	1.05%

9.75%

1.05%

5

1.3450

1.1820

1.5080

1.2910

1.2080

1.5340

0.0587

100

Report Date: Test Code/ID: 07 Mar-23 11:48 (p 8 of 8) 23-01-050 / 06-0383-3046

Wood E&IS ... WSP

CETISv2.1.3

Bivalve Larval Survival and Development Test

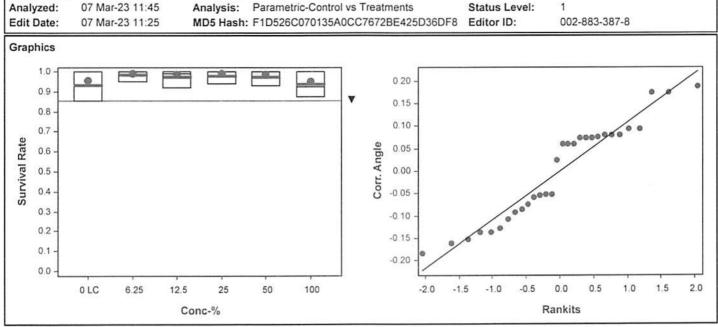
Analysis ID: 01-1269-0759

07 Mar-23 11:45

Endpoint: Survival Rate

Analysis: Parametric-Control vs Treatments

CETIS Version: Status Level:



Mean # of Corned Hinges

CETIS Summary Report

Report Date: Test Code/ID: 09 Mar-23 11:24 (p 1 of 1) 23-01-064 / 16-5533-7299

Wor Laboratory	WSP	Laboratory
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Bivalve Larva	I Survival and D	evelopme	nt Test							WSP I	_aborat	tory
Batch ID: Start Date: Ending Date: Test Length:	19-8592-5793 26 Jan-23 17:30 28 Jan-23 16:00 46h	Pro Sp	st Type: otocol: ecies: con:	Development-S EPA/600/R-95/ Mytilis galloprov	136 (1995)		Dilu Brir	ne: N irce: F	atural Seawate ot Applicable ield Collected		Age:	
0.50	17-0883-6847 25 Jan-23 14:00 25 Jan-23 17:00 27h (15.7 °C)	Ma CA	de: terial: S (PC): ent:	65DAC7EF Seawater WSP			Sou	rce: S	IYB TMDL Mo helter Island Y IYB 1			
	parison Summa	iry	-				(NOTI	1.051	TOF	PMSD	TU	s
Analysis ID	Endpoint Proportion Norn	nal		arison Method Many-One Rank	Sum Test	٧	NOEL 101	>10EL	TOEL		1	1
			Oteci	many one runn	-							一
Test Acceptal	ACCOUNTS TO THE COUNTS		A 4415-		Test Stat		Limits	Overla	p Decision			
Analysis ID	Endpoint Branation Norm	aal	Attrib	ol Resp	0	0.9	Upper <<	Yes	Below Cri	teria		\dashv
	Proportion Norn	1			J	0.5		103	201011 011			\dashv
000	ormal Summary	C .			050/ 1101			Ctd E	Std Dev	CV%	%Eff	fact
Conc-%	Code	Count	Mean		95% UCL	Min	0.0000	0.0000	the street was		/6LII	ect
0	LC	5	0.000		0.0000	0.0000	0.0000	0.0000	0.0000			
0	FC	5 5	0.000		0.0000	0.0000	0.0000	0.0000	0.0000			
6.25 12.5		5	0.000		0.0000	0.0000	0.0000	0.0000	0.0000			- 1
25		5	0.000		0.0000	0.0000	0.0000	0.0000	0.0000			
50		5	0.004		0.0073	0.0000	0.0057	0.0011	0.0024	56.12%		- 1
100		5	0.080		0.1285	0.0438	0.1361	0.0172	0.0384	47.49%		- 1
101		5	0.208	7 0.1471	0.2703	0.1404	0.2706	0.0222	0.0496	23.76%		
Proportion N	ormal Detail						ME	05: 85D2F	3B625AFE5C	6EA7DA36	C224B6	5A36
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5						
0	LC	0.0000	0.000	A 1 7 (2000) A Discussion	0.0000	0.0000						
0	FC	0.0000	0.000	0.0000	0.0000	0.0000						
6.25		0.0000	0.000		0.0000	0.0000						
12.5		0.0000	0.000		0.0000	0.0000						- 1
25		0.0000	0.000		0.0000	0.0000						
50		0.0054	0.005		0.0057	0.0051						
100		0.1361	0.089		0.0447	0.0900						
101		0.2706	0.209		0.2372	0.1858						
	ormal Binomial	*4000000000000000										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5						
0	LC	0/170	0/156		0/190	0/198						
0	FC	0/1/0	0/187		0/174	0/188						
6.25	. 0	0/186	0/188		0/179	0/183						
12.5		0/194	0/168		0/181	0/185						
25		0/176	0/191		0/185	0/172						
50		1/184	1/188		1/175	1/195						1
100		23/169	15/16		8/179	17/189						
101		46/170	35/16		37/156	34/183						
			200 m (C) 1 / 2 / 2	, white the contract of		- Argust Gratiste						

Report Date: Test Code/ID:

Rankits

09 Mar-23 11:24 (p 2 of 2) 23-01-064 / 16-5533-7299

WSP Laboratory Bivalve Larval Survival and Development Test CETISv2.1.3 Analysis ID: 07-4277-1022 Endpoint: Proportion Normal **CETIS Version:** Analyzed: 09 Mar-23 11:21 Analysis: Nonparametric-Control vs Treatments Status Level: Edit Date: MD5 Hash: 8F278600214A5677C6D7E5EF36AE66B4 Editor ID: 002-883-387-8 09 Mar-23 11:12 Graphics 0.08 0.06 0.04 Corr. Angle 0.02 0.00 -0.02 -0.04 -0.06 -0.08 2.0 -1.0 -0.5 0.0 0.5 1.0 1.5 0 LC 6.25 12.5 25 50 100 101 -1.5

Conc-%

Bivalve Larval Survival and Development Test

Report Date: Test Code/ID: 20 Jan-23 13:23 (p 1 of 1) 23FDC2D6 / 06-0383-3046

Wood E&IS

Start Date: 26 Jan-23 1730 Species: Mytilis galloprovincialis Sample Code: 46490953

End Date: 28 Jan-23 1600 Protocol: EPA/600/R-95/136 (1995) Sample Source: Shelter Island Yacht Basin

Sample Date: 25 Jan-23 1400 Material: Seawater Sample Station: SIYB 1

Sample Date:	25 Jan-23		1400	Material:	Seawater	Sample Station: SIYB 1						
Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes				
			31			169	127	23 corred				
			32			177	157					
			33			184	156	I corred, copeped observed				
			34			170 HOSA	102	46 conved				
			35			184 170 168 AC	143	,				
			36			188195Nb	216716	1 1 corred				
			37			179	161					
			38			170	154					
			39			156	141					
			40			174	160					
			41			185	166					
			42			190	174					
			43			188	166					
			44			172	149					
			45			167	149	15 curred, copeped observed				
			46			167	111	35 curred				
			47			181	165					
			48			175	152	land				
			49			179	150	8 curved, copepad observed				
			50			171	128	24 wried				
			51			195	167	I world				
			52			183	126	34 curved				
			53			188	168					
			54			185	161					
			55			194	175					
			56			168	150					
			57			198	1716					
			58			165	148					
			59			160	133	copeped observed, 7 curred				
			60			170	154					
			61			176	156					
			62			183	160					
			63			187	168					
			64			165	143					
			65			174	151					
			66			199	179					
			67			191	169					
			68			186	159					
			69			189	157	17 curred, copeped observed 37 curred				
			70			156	93	37 corred				

Analyst: QA:

CETIS Test Data Worksheet

Report Date:

20 Jan-23 13:24 (p 1 of 1)

Test Code/ID:

23FDC2D6 / 06-0383-3046

Wood E&IS

Bivalve Larval Survival and Development Test

26 Jan-23

28 Jan-23

Start Date:

End Date:

Sample Date: 25 Jan-23

Material: Seawater

Species: Mytilis galloprovincialis

Protocol: EPA/600/R-95/136 (1995)

Sample Code:

46490953

Sample Source: Shelter Island Yacht Basin

Sample Station: SIYB 1

				Initial Density	Final Density	# Counted	# Normal	
onc-%	Code		Pos	it is	ity l	ed	nal	Notes
0	FC	1	35					
0	FC	2	63					
0	FC	3	58					
0	FC	4	40					
0	FC	5	53					
0	LC	1	38			170	154	
0	LC	2	39					
0	LC	3	64					
0	LC	4	42					
0	LC	5	57					
6.25		1	68					
6.25		2	43					
6.25		3	65					
6.25		4	37					
6.25		5	62					
12.5		1	55					
12.5		2	56					
12.5		3	32					
12.5		4	47					
12.5		5	54					
25		1	61					
25		2	67					
25		3	66					
25		4	41					
25		5	44					
50		1	33					
50	-	2	36					
50	-	3	60					
50		4	48					
50		5	51					
100		1	31			169	127	23 are
100		2	45			10 (2000
100		3	59					
100		4	49					
100		5	69					
101		1	34					
101		2	46				-	
101		3	50					
101		4	70					
101	-	5	52					

Analyst: A6 QA: Sc

Water Quality for Bivalve Development

Client: Wood - Port of San Diego

Test Species: M. galloprovincialis

Sample ID: SIYB-1

Start Date/Time: 1/26/2023 1730 End Date/Time: 1/36/2023 1600

Test No. 23-01-050

Test Conc.	Water Quality Measurements								
(%)	Parameter	0hr	24hr	48hr					
	Temp. (°C)	15.8	15.5	15.4					
lah Cartari	Salinity (ppt)	33.5	33.4	33.6					
Lab Control	pH (units)	7.92	7.13	7.75					
	DO (mg/L)	8-1	8.3	33					
	Temp. (°C)	15.6	15.5	15.4					
	Salinity (ppt)	33.0	33.2	33.4					
ilter Control	pH (units)	7.89	7.75	7.77					
	DO (mg/L)	7.7	જ.પ	8.3					
	Temp. (°C)	15.8	15.4	15.3					
	Salinity (ppt)	33.5	33.€	33.7					
6.25	pH (units)	7.90	7.75	7.77					
	DO (mg/L)	8.2	8.4	8.4					
	Temp. (°C)	15.8	15.3	15.3					
	Salinity (ppt)	335	33.5	33.6					
12.5	pH (units)	7.89	7.15	7.78					
	DO (mg/L)	8.2	8.4	8.4					
	Temp. (°C)	15.9	15.le	15,4					
	Salinity (ppt)	33.3	33.4	33.6					
25	pH (units)	7-87	7.70	7.76					
	DO (mg/L)	8.1	8,4	8.4					
	Temp. (°C)	15.9	15.Le	15.4					
	Salinity (ppt)	33.1	33.2	33.5					
50	pH (units)	7.86	7.10	7.74					
	DO (mg/L)	8.1	8.3	8.4					
	Temp. (°C)	15.9	15.265¢	15.5					
100	Salinity (ppt)	32.2	32.7	33.0					
100	pH (units)	7.83	7:71	7,74					
	DO (mg/L)	8.1	8.3	8.4					
	Temp. (°C)	15.5	15.7	155					
00 Filtered	Salinity (ppt)	32.3	32.3	32.5					
(1.2μm)	pH (units)	7.76	7.72	7.74					
	DO (mg/L)	8.4	8.3	8.4					
	Tech Initials: Missian Bay	H14	TF	No					

Comments:

Embryo-Larval Development Test Stock Preparation Worksheet

Test Species:

M. galloprovincialis

Test Date:

1/26/2023

Batch ID:

1/26/23 Mirston Bay Colle

Analyst:

Test Type:

Task	BASE TO SERVICE TO
Spawning Induction	1430
Spawning Begins	1510
# Males/# Females	515
Spawn Condition	good
Fertilization Initiated	1600
Fertilzation End/Eggs Rinsed	1620/1640
Embryo Counts	1700
Test Initiation	1730

Embryo Density Counts

20 # per 100 μL

io. yo Denoity	Counts		. P 7 - P					
Stock #	Stock Volume (mL)	Rep 1	Rep 2	Rep 3	Rep 4	Mean #/100 μL	Mean #/mL (x10)	
Stock 1						76	7 72	
Stock 2	500							
Stock 3	500	21	19	11	13	1.6	800	

Cell Division:

	% Divided
Stock 1	
Stock 2	90
Stock 3	98

Selected Stock:	3	

Stock Density

Dil Factor

Adjust selected embryo stock to 500 embryos/mL.

Dilution Factor = Stock Density/mL/500

600 500

In 10 mL sample volume add 500 μ l of 500 embryo/ml stock to obtain 25 embryos/mL in test vials.

Notes:

QA Review:

Final Review: 8 3/9/23

Site: SIYB-2

CETIS Summary Report

1 700

Report Date: Test Code/ID: 07 Mar-23 13:41 (p 1 of 4) 23-01-051 / 20-8910-3070

Bivalve Larval Survival and Development Test	WSP Laboratory

Batch ID:	13-6528-0512	Test Type:	Development-Survival	Analyst:		
Start Date:	26 Jan-23 17:30	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Natural Seawater	
Ending Date:	28 Jan-23 16:00	Species:	Mytilis galloprovincialis	Brine:	Not Applicable	
Test Length:	46h	Taxon:		Source:	Field Collected	Age:
Sample ID:	15-7870-5602	Code:	23_W027	Project:	SIYB TMDL Monitoring	
Sample Date:	25 Jan-23 13:00	Material:	Seawater	Source:	Shelter Island Yacht Basin	
Receipt Date:	25 Jan-23 17:00	CAS (PC):		Station:	SIYB 2	

Sample Age: 28h (15.7 °C) Client: WSP

Comments: FC = Filtered Control, 101 = 100% (1.2um filtered)

Single Comp	arison Summary				- 1
Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	s
08-4779-6573	Combined Proportion Norma	TST-Welch's t Test	0.0050	100% passed combined proportion normal	1
02-4301-4096	Combined Proportion Norma	TST-Welch's t Test	0.0134	101% passed combined proportion normal	1

Multiple Com	parison Summary								
Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	TU	s
12-1128-9758	Combined Proportion Norma	Dunnett Multiple Comparison Test	✓	50	100	70.71	7.66%	2	1
16-6597-4163	Proportion Normal	Dunnett Multiple Comparison Test	1	100	>100		4.02%	1	1
11-8891-1433	Survival Rate	Dunnett Multiple Comparison Test	1	50	100	70.71	6.28%	2	1

Test Acceptal	pility		TAC	_imits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
16-6597-4163	Proportion Normal	Control Resp	0.9035	0.9	<<	Yes	Passes Criteria
11-8891-1433	Survival Rate	Control Resp	0.9705	0.5	<<	Yes	Passes Criteria
12-1128-9758	Combined Proportion Norma	PMSD	0.0766	<<	0.25	No	Passes Criteria

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Bivalve Larval Survival and Development Test

WSP Laboratory

Combined Pro	portion Norm	nal Summar	y								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.8770	0.8232	0.9307	0.8033	0.9105	0.0194	0.0433	4.94%	0.00%
0	FC	5	0.8497	0.8072	0.8922	0.8197	0.8934	0.0153	0.0342	4.03%	3.11%
6.25		5	0.8522	0.8160	0.8883	0.8087	0.8783	0.0130	0.0291	3.41%	2.83%
12.5		5	0.8487	0.7940	0.9034	0.7869	0.8937	0.0197	0.0440	5.19%	3.22%
25		5	0.8478	0.7872	0.9084	0.7814	0.9000	0.0218	0.0488	5.76%	3.33%
50		5	0.8601	0.8274	0.8929	0.8306	0.8907	0.0118	0.0264	3.07%	1.92%
100		5	0.7956	0.6997	0.8915	0.6940	0.8962	0.0345	0.0772	9.71%	9.27%
101		5	0.7560	0.6390	0.8731	0.6503	0.8495	0.0422	0.0943	12.47%	13.79%
Proportion No	rmal Summar	ry									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9035	0.8848	0.9222	0.8855	0.9249	0.0067	0.0151	1.67%	0.00%
0	FC	5	0.8955	0.8653	0.9257	0.8779	0.9375	0.0109	0.0243	2.72%	0.89%
6.25		5	0.9007	0.8600	0.9414	0.8644	0.9487	0.0147	0.0328	3.64%	0.31%
12.5		5	0.9002	0.8786	0.9219	0.8779	0.9231	0.0078	0.0174	1.94%	0.37%
25		5	0.8934	0.8697	0.9171	0.8701	0.9209	0.0085	0.0191	2.14%	1.12%
50		5	0.9035	0.8944	0.9125	0.8977	0.9157	0.0033	0.0073	0.81%	0.01%
100		5	0.8931	0.8482	0.9380	0.8301	0.9162	0.0162	0.0362	4.05%	1.16%
101		5	0.8002	0.7435	0.8569	0.7532	0.8495	0.0204	0.0457	5.71%	11.44%
Survival Rate	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9705	0.9176	1.0230	0.9071	1.0000	0.0191	0.0426	4.39%	0.00%
0	FC	5	0.9497	0.8844	1.0150	0.8743	1.0000	0.0235	0.0526	5.54%	2.14%
6.25		5	0.9475	0.8779	1.0170	0.8525	1.0000	0.0251	0.0561	5.92%	2.36%
12.5		5	0.9432	0.8749	1.0110	0.8634	1.0000	0.0246	0.0550	5.83%	2.82%
25		5	0.9486	0.8932	1.0040	0.8852	1.0000	0.0200	0.0447	4.71%	2.25%
50		5	0.9519	0.9222	0.9816	0.9235	0.9727	0.0107	0.0239	2.52%	1.91%
100		5	0.8896	0.8165	0.9628	0.8361	0.9781	0.0263	0.0589	6.62%	8.33%
101		5	0.9421	0.8578	1.0260	0.8634	1.0000	0.0304	0.0679	7.21%	2.93%

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Bivalve Larval Survival and Development Test

WSP Laboratory

Combined Pro	portion Norm	al Detail					MD5:	68F9C052572156A815E14EF26303B5EF
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.8743	0.8947	0.8033	0.9105	0.9020		
0	FC	0.8251	0.8934	0.8197	0.8306	0.8798		
6.25		0.8689	0.8087	0.8689	0.8361	0.8783		
12.5		0.8525	0.8937	0.7869	0.8852	0.8251		
25		0.8415	0.8251	0.8907	0.9000	0.7814		
50		0.8306	0.8634	0.8907	0.8798	0.8361		
100		0.7486	0.8251	0.8142	0.8962	0.6940		
101		0.6721	0.6503	0.7596	0.8486	0.8495		
Proportion No	ormal Detail						MD5:	695114B2C500D79AEDE269784B3EA7EE
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.9249	0.8947	0.8855	0.9105	0.9020		
0	FC	0.8779	0.8934	0.9375	0.8889	0.8798		
6.25		0.9138	0.9487	0.8983	0.8644	0.8783		
12.5		0.9231	0.8937	0.9114	0.8950	0.8779		
25		0.8701	0.8935	0.9209	0.9000	0.8827		
50		0.8994	0.8977	0.9157	0.9045	0.9000		
100		0.8954	0.9096	0.9141	0.9162	0.8301		
101		0.7688	0.7532	0.7809	0.8486	0.8495		
Survival Rate	Detail						MD5:	04C45CD6299120F013C4830042BDC5CF
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.9454	1.0000	0.9071	1.0000	1.0000		
0	FC	0.9399	1.0000	0.8743	0.9344	1.0000		
6.25		0.9508	0.8525	0.9672	0.9672	1.0000		
12.5		0.9235	1.0000	0.8634	0.9891	0.9399		
25		0.9672	0.9235	0.9672	1.0000	0.8852		
50		0.9235	0.9617	0.9727	0.9727	0.9290		
100		0.8361	0.9071	0.8907	0.9781	0.8361		
101		0.8743	0.8634	0.9727	1.0000	1.0000		

Analyst: JF QA:

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Bivalve Larval Survival and Development Test

WSP Laboratory

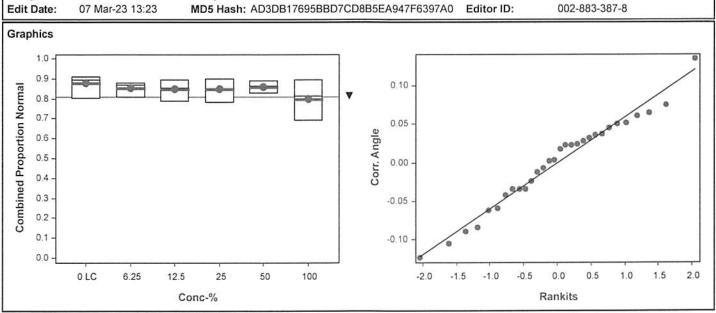
Combined Prop	ortion Norm	al Binomials	3				
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	160/183	170/190	147/183	173/190	184/204	
0	FC	151/183	176/197	150/183	152/183	161/183	
6.25		159/183	148/183	159/183	153/183	166/189	
12.5		156/183	185/207	144/183	162/183	151/183	
25		154/183	151/183	163/183	171/190	143/183	
50		152/183	158/183	163/183	161/183	153/183	
100		137/183	151/183	149/183	164/183	127/183	
101		123/183	119/183	139/183	157/185	158/186	
Proportion Norm	nal Binomia	ls					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	160/173	170/190	147/166	173/190	184/204	
0	FC	151/172	176/197	150/160	152/171	161/183	
6.25		159/174	148/156	159/177	153/177	166/189	
12.5		156/169	185/207	144/158	162/181	151/172	
25		154/177	151/169	163/177	171/190	143/162	
50		152/169	158/176	163/178	161/178	153/170	
100		137/153	151/166	149/163	164/179	127/153	
101		123/160	119/158	139/178	157/185	158/186	
Survival Rate Bi	nomials						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	173/183	183/183	166/183	183/183	183/183	
0	FC	172/183	183/183	160/183	171/183	183/183	
6.25		174/183	156/183	177/183	177/183	183/183	
12.5		169/183	183/183	158/183	181/183	172/183	
25		177/183	169/183	177/183	183/183	162/183	
50		169/183	176/183	178/183	178/183	170/183	
100		153/183	166/183	163/183	179/183	153/183	
101		160/183	158/183	178/183	183/183	183/183	

Report Date: Test Code/ID: 07 Mar-23 13:41 (p 1 of 8) 23-01-051 / 20-8910-3070

WSP Laboratory Bivalve Larval Survival and Development Test CETISv2.1.3 Analysis ID: 12-1128-9758 Endpoint: Combined Proportion Normal **CETIS Version:** Analyzed: 07 Mar-23 13:40 Analysis: Parametric-Control vs Treatments Status Level: 002-883-387-8 Edit Date: 07 Mar-23 13:23 MD5 Hash: AD3DB17695BBD7CD8B5EA947F6397A0 Editor ID: Comments: FC = Filtered Control, 101 = 100% (1.2um filtered) Tox Units MSDu **PMSD Data Transform** Alt Hyp NOEL LOEL TOEL 50 100 70.71 2 0.06717 7.66% C > T Angular (Corrected) **Dunnett Multiple Comparison Test** P-Value Decision(a:5%) Control Conc-% df Test Stat Critical MSD P-Type Lab Control 6.25 8 0.9428 2.362 0.09638 CDF 0.4456 Non-Significant Effect 12.5 8 1.022 2.362 0.09638 CDF 0.4100 Non-Significant Effect 25 8 1.036 2.362 0.09638 CDF 0.4039 Non-Significant Effect 50 8 0.6668 2.362 0.09638 CDF 0.5722 Non-Significant Effect 100* 8 2.656 2.362 0.09638 CDF 0.0272 Significant Effect **ANOVA Table** Source Sum Squares Mean Square DF F Stat P-Value Decision(a:5%) 5 0.2161 Non-Significant Effect 0.0063955 1.536 Between 0.0319774 0.0999117 0.004163 24 Error 29 Total 0.131889 **ANOVA Assumptions Tests** Test Stat Critical P-Value Decision(a:1%) Attribute 0.4847 Equal Variances 4.464 15.09 Variance Bartlett Equality of Variance Test Normal Distribution Distribution Shapiro-Wilk W Normality Test 0.9776 0.9031 0.7575 Combined Proportion Normal Summary %Effect Std Err CV% Median Max Conc-% Code Count Mean 95% LCL 95% UCL Min 0 LC 5 0.8770 0.8232 0.9307 0.8947 0.8033 0.9105 0.0194 4.94% 0.00% 2.83% 0.8883 0.8689 0.8087 0.8783 0.0130 3.41% 6.25 5 0.8522 0.8160 0.0197 5.19% 3.22% 0.7869 0.8937 5 0.7940 0.9034 0.8525 12.5 0.8487 0.8478 0.0218 5.76% 3.33% 25 5 0.7872 0.9084 0.8415 0.7814 0.9000 1.92% 0.8306 0.8907 0.0118 3.07% 50 5 0.8601 0.8274 0.8929 0.8634 0.0345 9.71% 9.27% 100 5 0.7956 0.6997 0.8915 0.8142 0.6940 0.8962 Angular (Corrected) Transformed Summary 95% LCL 95% UCL Median Min Max Std Err CV% %Effect Conc-% Code Count Mean 0.0279 5.13% 0.00% 5 1.1380 1.2930 1.2400 1.1110 1.2670 0 LC 1.2160 0.0180 3.42% 3.16% 1.2270 1.2000 1.1180 1.2140 6.25 5 1.1770 1.1270 0.0273 5.20% 3.43% 1.2390 12.5 5 1.1740 1.0980 1.2500 1.1770 1.0910 3.48% 5.81% 25 5 1.1740 1.0890 1.2580 1.1610 1.0840 1.2490 0.0305 0.0171 3.21% 2.24% 50 5 1.1890 1.1410 1.2360 1.1920 1.1470 1.2340 8.91% 0.9846 1.2430 0.0439 8.86% 100 5 1.1070 0.9856 1.2290 1.1250 **Combined Proportion Normal Binomials** Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 LC 0 160/183 170/190 147/183 173/190 184/204 148/183 159/183 153/183 166/189 6.25 159/183 162/183 12.5 156/183 185/207 144/183 151/183 25 163/183 171/190 143/183 154/183 151/183 50 152/183 158/183 163/183 161/183 153/183 137/183 151/183 149/183 164/183 127/183 100

Report Date: Test Code/ID: 07 Mar-23 13:41 (p 2 of 8) 23-01-051 / 20-8910-3070

Analyzed: 07 Mar-23 13:40 Analysis: Parametric-Control vs Treatments Status Level: 1



Report Date: Test Code/ID: 07 Mar-23 13:41 (p 3 of 8) 23-01-051 / 20-8910-3070

WSP Laboratory

LC US 100% Bivalve Larval Survival and Development Test

Analysis ID: 08-4779-6573

Endpoint: Combined Proportion Normal Analysis: Parametric Bioequivalence-Two Sample **CETIS Version:**

Status Level:

CETISv2.1.3

Analyzed: 07 Mar-23 13:40 Edit Date: 07 Mar-23 13:23

MD5 Hash: 2A176530F758F6F89A3487864C5C19CF

Editor ID:

002-883-387-8

Comments: FC = Filtered Control, 101 = 100% (1.2um filtered)

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	100% passed combined proportion normal endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:5%)
Lab Control		100*	5	4.022	2.015	CDF	0.0050	Non-Significant Effect

ANOVA Table

AITOTA TUDIO							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.0293652	0.0293652	1	4.343	0.0707	Non-Significant Effect	
Error	0.0540877	0.006761	8				
Total	0.0834528		9				

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variance	Variance Ratio F Test	2.479	23.15	0.4007	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9402	0.7411	0.5550	Normal Distribution

Combined Proportion Normal Summary

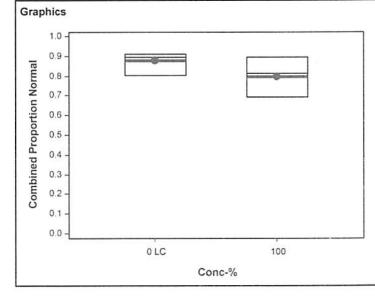
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.8770	0.8232	0.9307	0.8947	0.8033	0.9105	0.0194	4.94%	0.00%
100		5	0.7956	0.6997	0.8915	0.8142	0.6940	0.8962	0.0345	9.71%	9.27%

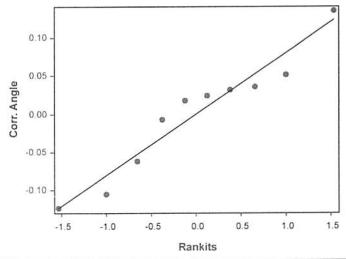
Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.2160	1.1380	1.2930	1.2400	1.1110	1.2670	0.0279	5.13%	0.00%
100		5	1.1070	0.9856	1.2290	1.1250	0.9846	1.2430	0.0439	8.86%	8.91%

Combined Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	LC	160/183	170/190	147/183	173/190	184/204
100		137/183	151/183	149/183	164/183	127/183





Report Date: Test Code/ID: 07 Mar-23 13:41 (p 4 of 8) 23-01-051 / 20-8910-3070

Bivalve Larval Survival and Development Test

us 100% Faltered

WSP Laboratory

Analysis ID: 02-4301-4096

Endpoint: Combined Proportion Normal

CETIS Version:

CETISv2.1.3

Analyzed:

07 Mar-23 13:41

Analysis: Parametric Bioequivalence-Two Sample

Status Level:

002-883-387-8

Edit Date: 07 Mar-23 13:23 MD5 Hash: 1951562735DAB8F287AB9C2B78772473

Editor ID:

Comments:	FC = Filtered Control,	101 = 100%	(1.2um filtered))
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Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	101% passed combined proportion normal endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(a:5%)
Filter Control		101*	4	3.416	2.132	CDF	0.0134	Non-Significant Effect

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.0327299	0.0327299	1	4.417	0.0688	Non-Significant Effect	
Error	0.059284	0.0074105	8				
Total	0.092014		9				

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variance	Variance Ratio F Test	5.15	23.15	0.1414	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9459	0.7411	0.6201	Normal Distribution

Combined Proportion Normal Summary

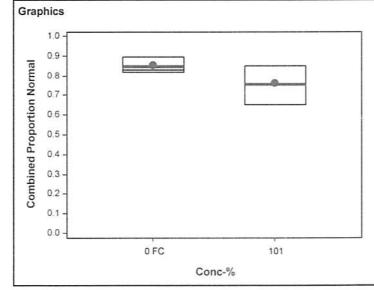
			610								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	0.8497	0.8072	0.8922	0.8306	0.8197	0.8934	0.0153	4.03%	0.00%
101		5	0.7560	0.6390	0.8731	0.7596	0.6503	0.8495	0.0422	12.47%	11.03%

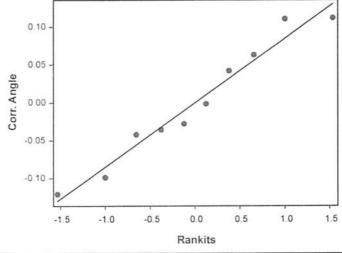
Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	1.1750	1.1140	1.2360	1.1470	1.1320	1.2380	0.0220	4.18%	0.00%
101		5	1.0600	0.9219	1.1990	1.0580	0.9380	1.1720	0.0498	10.51%	9.74%

Combined Proportion Normal Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	FC	151/183	176/197	150/183	152/183	161/183	
101		123/183	119/183	139/183	157/185	158/186	





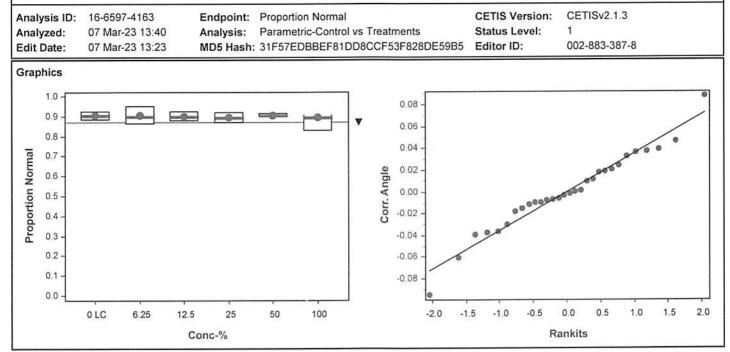
Report Date: Test Code/ID: 07 Mar-23 13:41 (p 5 of 8) 23-01-051 / 20-8910-3070

Bivalve Larva	al Sur			1001 (107) E							2000000	_aborato			
Analysis ID: Analyzed: Edit Date:	16-6597-4163			ametric-Cor	trol vs Trea		Statu	S Version: us Level: or ID:	CETISv2. 1 002-883-3						
Comments:		Filtered Co	2000												
Data Transfo	rm		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD			
Angular (Corre			C > T				100	>100		1	0.03635	4.02%			
Dunnett Mult	tiple C	omparison	Test												
Control	vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(a:5%)					
Lab Control		6.25	8	0.07316	2.362	0.05796	CDF	0.8108	Non-Signif	ficant Effect					
		12.5	8	0.2183	2.362	0.05796	CDF	0.7609	Non-Signif	ficant Effect					
		25	8	0.6694	2.362	0.05796	CDF	0.5710	Non-Signif	ficant Effect					
		50	8	0.0265	2.362	0.05796	CDF	0.8254		ficant Effect					
		100	8	0.6127	2.362	0.05796	CDF	0.5968	Non-Signif	ficant Effect					
ANOVA Table	е														
Source		Sum Squa		Mean Squ		DF	F Stat	P-Value	Decision(
Between		0.0013564		0.0002713		5	0.1802	0.9674	Non-Signif	ficant Effect					
Error		0.0361336		0.0015056		24	_								
Total		0.0374901				29									
ANOVA Assu	ımptio	ns Tests													
		Test				Test Stat	Critical	P-Value	Decision(a:1%)					
Attribute		iest									Equal Variances				
Variance			uality of Var	riance Test		9.299	15.09	0.0977							
		Bartlett Eq	uality of Var			9.299 0.9731		0.0977 0.6271		ances					
Variance Distribution	lormal	Bartlett Eq Shapiro-W					15.09		Equal Vari	ances					
Variance Distribution Proportion N	lormal	Bartlett Eq Shapiro-W			95% LCL		15.09		Equal Vari	ances	CV%	%Effec			
Variance Distribution	lormal	Bartlett Eq Shapiro-W	ilk W Norma	ality Test	95% LCL 0.8848	0.9731	15.09 0.9031	0.6271	Equal Vari Normal Di	ances stribution	CV% 1.67%	%Effect			
Variance Distribution Proportion N Conc-% 0	lormal	Bartlett Eq Shapiro-W Summary Code	ilk W Norma	Mean		0.9731 95% UCL	15.09 0.9031 Median	0.6271 Min	Equal Vari Normal Di	stribution Std Err		10.000.000.000			
Variance Distribution Proportion N Conc-% 0	lormal	Bartlett Eq Shapiro-W Summary Code	Count 5	Mean 0.9035	0.8848	0.9731 95% UCL 0.9222	15.09 0.9031 Median 0.9020	0.6271 Min 0.8855	Equal Vari Normal Dis Max 0.9249	stribution Std Err 0.0067	1.67%	0.00%			
Variance Distribution Proportion N Conc-% 0 6.25	lormal	Bartlett Eq Shapiro-W Summary Code	Count 5 5	Mean 0.9035 0.9007	0.8848 0.8600	95% UCL 0.9222 0.9414	15.09 0.9031 Median 0.9020 0.8983	0.6271 Min 0.8855 0.8644	Max 0.9249 0.9487	Std Err 0.0067 0.0147	1.67% 3.64%	0.00% 0.31%			
Variance Distribution Proportion N Conc-% 0 6.25 12.5	lormal	Bartlett Eq Shapiro-W Summary Code	Count 5 5 5	Mean 0.9035 0.9007 0.9002	0.8848 0.8600 0.8786	95% UCL 0.9222 0.9414 0.9219	15.09 0.9031 Median 0.9020 0.8983 0.8950	0.6271 Min 0.8855 0.8644 0.8779	Max 0.9249 0.9487 0.9231	Std Err 0.0067 0.0147 0.0078	1.67% 3.64% 1.94%	0.31% 0.37%			
Variance Distribution Proportion N Conc-% 0 6.25 12.5 25	lormal	Bartlett Eq Shapiro-W Summary Code	Count 5 5 5 5	Mean 0.9035 0.9007 0.9002 0.8934	0.8848 0.8600 0.8786 0.8697	95% UCL 0.9222 0.9414 0.9219 0.9171	15.09 0.9031 Median 0.9020 0.8983 0.8950 0.8935	0.6271 Min 0.8855 0.8644 0.8779 0.8701	Max 0.9249 0.9487 0.9231 0.9209	Std Err 0.0067 0.0147 0.0078 0.0085	1.67% 3.64% 1.94% 2.14%	0.00% 0.31% 0.37% 1.12%			
Variance Distribution Proportion N Conc-% 0 6.25 12.5 25		Bartlett Eq Shapiro-W Summary Code LC	Count 5 5 5 5 5 5	Mean 0.9035 0.9007 0.9002 0.8934 0.9035 0.8931	0.8848 0.8600 0.8786 0.8697 0.8944	95% UCL 0.9222 0.9414 0.9219 0.9171 0.9125	15.09 0.9031 Median 0.9020 0.8983 0.8950 0.8935 0.9000	0.6271 Min 0.8855 0.8644 0.8779 0.8701 0.8977	Max 0.9249 0.9487 0.9231 0.9209 0.9157	Std Err 0.0067 0.0147 0.0078 0.0085 0.0033	1.67% 3.64% 1.94% 2.14% 0.81%	0.00% 0.31% 0.37% 1.12% 0.01%			
Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100 Angular (Cor		Bartlett Eq Shapiro-W Summary Code LC	Count 5 5 5 5 5 5	Mean 0.9035 0.9007 0.9002 0.8934 0.9035 0.8931	0.8848 0.8600 0.8786 0.8697 0.8944	95% UCL 0.9222 0.9414 0.9219 0.9171 0.9125	Median 0.9020 0.8983 0.8950 0.8935 0.9000 0.9096	0.6271 Min 0.8855 0.8644 0.8779 0.8701 0.8977	Max 0.9249 0.9487 0.9231 0.9209 0.9157	Std Err 0.0067 0.0147 0.0078 0.0085 0.0033	1.67% 3.64% 1.94% 2.14% 0.81%	0.00% 0.31% 0.37% 1.12% 0.01% 1.16%			
Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100 Angular (Cor		Bartlett Eq Shapiro-W Summary Code LC	Count 5 5 5 5 5 med Summ	Mean 0.9035 0.9007 0.9002 0.8934 0.9035 0.8931	0.8848 0.8600 0.8786 0.8697 0.8944 0.8482	95% UCL 0.9222 0.9414 0.9219 0.9171 0.9125 0.9380	Median 0.9020 0.8983 0.8950 0.8935 0.9000 0.9096	Min 0.8855 0.8644 0.8779 0.8701 0.8977 0.8301	Max 0.9249 0.9487 0.9231 0.9209 0.9157 0.9162	Std Err 0.0067 0.0147 0.0078 0.0085 0.0033 0.0162	1.67% 3.64% 1.94% 2.14% 0.81% 4.05%	0.00% 0.31% 0.37% 1.12% 0.01%			
Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100 Angular (Cor Conc-% 0		Bartlett Eq Shapiro-W I Summary Code LC	Count 5 5 5 5 5 med Summ Count	Mean 0.9035 0.9007 0.9002 0.8934 0.9035 0.8931 ary Mean	0.8848 0.8600 0.8786 0.8697 0.8944 0.8482	95% UCL 0.9222 0.9414 0.9219 0.9171 0.9125 0.9380	Median 0.9020 0.8983 0.8950 0.8935 0.9000 0.9096	Min 0.8855 0.8644 0.8779 0.8701 0.8977 0.8301	Max 0.9249 0.9487 0.9231 0.9209 0.9157 0.9162	Std Err 0.0067 0.0147 0.0078 0.0085 0.0033 0.0162	1.67% 3.64% 1.94% 2.14% 0.81% 4.05%	0.00% 0.31% 0.37% 1.12% 0.01% 1.16%			
Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100 Angular (Cor Conc-% 0		Bartlett Eq Shapiro-W I Summary Code LC	Count 5 5 5 5 5 count Count Count 5 5 5 5 5 5 7 7 8 8 8 8 8 8 8 8 8 8 8 8	Mean 0.9035 0.9007 0.9002 0.8934 0.9035 0.8931 ary Mean 1.2560	0.8848 0.8600 0.8786 0.8697 0.8944 0.8482 95% LCL 1.2240	95% UCL 0.9222 0.9414 0.9219 0.9171 0.9125 0.9380 95% UCL 1.2880	Median 0.9020 0.8983 0.8950 0.8935 0.9000 0.9096 Median 1.2520	0.6271 Min 0.8855 0.8644 0.8779 0.8701 0.8977 0.8301 Min 1.2260	Max 0.9249 0.9487 0.9231 0.9209 0.9157 0.9162 Max 1.2930	Std Err 0.0067 0.0147 0.0078 0.0085 0.0033 0.0162 Std Err 0.0116	1.67% 3.64% 1.94% 2.14% 0.81% 4.05% CV% 2.06%	0.00% 0.31% 0.37% 1.12% 0.01% 1.16%			
Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100 Angular (Cor Conc-% 0 6.25 12.5		Bartlett Eq Shapiro-W I Summary Code LC	Count 5 5 5 5 5 med Summ Count 5 5 5	Mean 0.9035 0.9007 0.9002 0.8934 0.9035 0.8931 ary Mean 1.2560 1.2540	0.8848 0.8600 0.8786 0.8697 0.8944 0.8482 95% LCL 1.2240 1.1820	95% UCL 0.9222 0.9414 0.9219 0.9171 0.9125 0.9380 95% UCL 1.2880 1.3260	Median 0.9020 0.8983 0.8950 0.8935 0.9000 0.9096 Median 1.2520 1.2460	0.6271 Min 0.8855 0.8644 0.8779 0.8701 0.8977 0.8301 Min 1.2260 1.1940	Max 0.9249 0.9487 0.9231 0.9209 0.9157 0.9162 Max 1.2930 1.3420	Std Err 0.0067 0.0147 0.0078 0.0085 0.0033 0.0162 Std Err 0.0116 0.0259	1.67% 3.64% 1.94% 2.14% 0.81% 4.05% CV% 2.06% 4.62% 2.35% 2.54%	0.00% 0.31% 0.37% 1.12% 0.01% 1.16% %Effec 0.00% 0.14% 0.43% 1.31%			
Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100 Angular (Cor Conc-% 0 6.25 12.5		Bartlett Eq Shapiro-W I Summary Code LC	Count 5 5 5 5 med Summ Count 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Mean 0.9035 0.9007 0.9002 0.8934 0.9035 0.8931 ary Mean 1.2560 1.2500 1.2390 1.2550	0.8848 0.8600 0.8786 0.8697 0.8944 0.8482 95% LCL 1.2240 1.1820 1.2140 1.2000 1.2390	95% UCL 0.9222 0.9414 0.9219 0.9171 0.9125 0.9380 95% UCL 1.2880 1.3260 1.2870 1.2780 1.2710	Median 0.9020 0.8983 0.8950 0.8935 0.9000 0.9096 Median 1.2520 1.2460 1.2410 1.2380 1.2490	Min 0.8855 0.8644 0.8779 0.8701 0.8977 0.8301 Min 1.2260 1.1940 1.2140 1.2020 1.2450	Max 0.9249 0.9487 0.9231 0.9209 0.9157 0.9162 Max 1.2930 1.3420 1.2900 1.2860 1.2760	Std Err 0.0067 0.0147 0.0078 0.0085 0.0033 0.0162 Std Err 0.0116 0.0259 0.0131 0.0141 0.0056	1.67% 3.64% 1.94% 2.14% 0.81% 4.05% CV% 2.06% 4.62% 2.35% 2.54% 1.00%	0.00% 0.31% 0.37% 1.12% 0.01% 1.16% %Effec 0.00% 0.14% 0.43% 1.31% 0.05%			
Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100 Angular (Cor Conc-% 0 6.25 12.5 25 50		Bartlett Eq Shapiro-W I Summary Code LC	Count 5 5 5 5 med Summ Count 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Mean 0.9035 0.9007 0.9002 0.8934 0.9035 0.8931 ary Mean 1.2560 1.2540 1.2500 1.2390	0.8848 0.8600 0.8786 0.8697 0.8944 0.8482 95% LCL 1.2240 1.1820 1.2140 1.2000	95% UCL 0.9222 0.9414 0.9219 0.9171 0.9125 0.9380 95% UCL 1.2880 1.3260 1.2870 1.2780	Median 0.9020 0.8983 0.8950 0.8935 0.9000 0.9096 Median 1.2520 1.2460 1.2410 1.2380	Min 0.8855 0.8644 0.8779 0.8701 0.8977 0.8301 Min 1.2260 1.1940 1.2140 1.2020	Max 0.9249 0.9487 0.9231 0.9209 0.9157 0.9162 Max 1.2930 1.3420 1.2900 1.2860	Std Err 0.0067 0.0147 0.0078 0.0085 0.0033 0.0162 Std Err 0.0116 0.0259 0.0131 0.0141	1.67% 3.64% 1.94% 2.14% 0.81% 4.05% CV% 2.06% 4.62% 2.35% 2.54%	0.00% 0.31% 0.37% 1.12% 0.01% 1.16% %Effec 0.00% 0.14% 0.43% 1.31%			
Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100 Angular (Cor Conc-% 0 6.25 12.5 25 50	rected	Bartlett Eq Shapiro-W Summary Code LC	Count 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Mean 0.9035 0.9007 0.9002 0.8934 0.9035 0.8931 ary Mean 1.2560 1.2500 1.2390 1.2550	0.8848 0.8600 0.8786 0.8697 0.8944 0.8482 95% LCL 1.2240 1.1820 1.2140 1.2000 1.2390	95% UCL 0.9222 0.9414 0.9219 0.9171 0.9125 0.9380 95% UCL 1.2880 1.3260 1.2870 1.2780 1.2710	Median 0.9020 0.8983 0.8950 0.8935 0.9000 0.9096 Median 1.2520 1.2460 1.2410 1.2380 1.2490	Min 0.8855 0.8644 0.8779 0.8701 0.8977 0.8301 Min 1.2260 1.1940 1.2140 1.2020 1.2450	Max 0.9249 0.9487 0.9231 0.9209 0.9157 0.9162 Max 1.2930 1.3420 1.2900 1.2860 1.2760	Std Err 0.0067 0.0147 0.0078 0.0085 0.0033 0.0162 Std Err 0.0116 0.0259 0.0131 0.0141 0.0056	1.67% 3.64% 1.94% 2.14% 0.81% 4.05% CV% 2.06% 4.62% 2.35% 2.54% 1.00%	0.00% 0.31% 0.37% 1.12% 0.01% 1.16% %Effec 0.00% 0.14% 0.43% 1.31% 0.05%			
Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100 Angular (Cor Conc-% 0 6.25 12.5 25 50 100 Proportion N	rected	Bartlett Eq Shapiro-W Summary Code LC	Count 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Mean 0.9035 0.9007 0.9002 0.8934 0.9035 0.8931 ary Mean 1.2560 1.2500 1.2390 1.2550	0.8848 0.8600 0.8786 0.8697 0.8944 0.8482 95% LCL 1.2240 1.1820 1.2140 1.2000 1.2390	95% UCL 0.9222 0.9414 0.9219 0.9171 0.9125 0.9380 95% UCL 1.2880 1.3260 1.2870 1.2780 1.2710	Median 0.9020 0.8983 0.8950 0.8935 0.9000 0.9096 Median 1.2520 1.2460 1.2410 1.2380 1.2490	Min 0.8855 0.8644 0.8779 0.8701 0.8977 0.8301 Min 1.2260 1.1940 1.2140 1.2020 1.2450	Max 0.9249 0.9487 0.9231 0.9209 0.9157 0.9162 Max 1.2930 1.3420 1.2900 1.2860 1.2760	Std Err 0.0067 0.0147 0.0078 0.0085 0.0033 0.0162 Std Err 0.0116 0.0259 0.0131 0.0141 0.0056	1.67% 3.64% 1.94% 2.14% 0.81% 4.05% CV% 2.06% 4.62% 2.35% 2.54% 1.00%	0.00% 0.31% 0.37% 1.12% 0.01% 1.16% %Effec 0.00% 0.14% 0.43% 1.31% 0.05%			
Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100 Angular (Cor Conc-% 0 6.25 12.5 25 50 100 Proportion N	rected	Bartlett Eq Shapiro-W Summary Code LC	Count 5 5 5 5 med Summ Count 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Mean 0.9035 0.9007 0.9002 0.8934 0.9035 0.8931 ary Mean 1.2560 1.2540 1.2500 1.2550 1.2410	0.8848 0.8600 0.8786 0.8697 0.8944 0.8482 95% LCL 1.2240 1.1820 1.2140 1.2000 1.2390 1.1730	95% UCL 0.9222 0.9414 0.9219 0.9171 0.9125 0.9380 95% UCL 1.2880 1.3260 1.2870 1.2780 1.2710 1.3090	15.09 0.9031 Median 0.9020 0.8983 0.8950 0.9090 0.9096 Median 1.2520 1.2460 1.2410 1.2380 1.2490 1.2650	Min 0.8855 0.8644 0.8779 0.8701 0.8977 0.8301 Min 1.2260 1.1940 1.2140 1.2020 1.2450	Max 0.9249 0.9487 0.9231 0.9209 0.9157 0.9162 Max 1.2930 1.3420 1.2900 1.2860 1.2760	Std Err 0.0067 0.0147 0.0078 0.0085 0.0033 0.0162 Std Err 0.0116 0.0259 0.0131 0.0141 0.0056	1.67% 3.64% 1.94% 2.14% 0.81% 4.05% CV% 2.06% 4.62% 2.35% 2.54% 1.00%	0.00% 0.31% 0.37% 1.12% 0.01% 1.16% %Effec 0.00% 0.14% 0.43% 1.31% 0.05%			
Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100 Angular (Cor Conc-% 0 6.25 12.5 25 50 100 Proportion N Conc-% 0	rected	Bartlett Eq Shapiro-W Summary Code LC d) Transform Code LC	Count 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Mean 0.9035 0.9007 0.9002 0.8934 0.9035 0.8931 ary Mean 1.2560 1.2540 1.2500 1.2390 1.2410 Rep 2	0.8848 0.8600 0.8786 0.8697 0.8944 0.8482 95% LCL 1.2240 1.1820 1.2140 1.2000 1.2390 1.1730	95% UCL 0.9222 0.9414 0.9219 0.9171 0.9125 0.9380 95% UCL 1.2880 1.3260 1.2870 1.2780 1.2710 1.3090	Median 0.9020 0.8983 0.8950 0.8935 0.9000 0.9096 Median 1.2520 1.2460 1.2410 1.2380 1.2490 1.2650	Min 0.8855 0.8644 0.8779 0.8701 0.8977 0.8301 Min 1.2260 1.1940 1.2140 1.2020 1.2450	Max 0.9249 0.9487 0.9231 0.9209 0.9157 0.9162 Max 1.2930 1.3420 1.2900 1.2860 1.2760	Std Err 0.0067 0.0147 0.0078 0.0085 0.0033 0.0162 Std Err 0.0116 0.0259 0.0131 0.0141 0.0056	1.67% 3.64% 1.94% 2.14% 0.81% 4.05% CV% 2.06% 4.62% 2.35% 2.54% 1.00%	0.00% 0.31% 0.37% 1.12% 0.01% 1.16% %Effec 0.00% 0.14% 0.43% 1.31% 0.05%			
Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100 Angular (Cor Conc-% 0 6.25 12.5 25 50 100 Proportion N Conc-% 0	rected	Bartlett Eq Shapiro-W Summary Code LC d) Transform Code LC	Count 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Mean 0.9035 0.9007 0.9002 0.8934 0.9035 0.8931 ary Mean 1.2560 1.2540 1.2500 1.2550 1.2410 Rep 2 170/190	0.8848 0.8600 0.8786 0.8697 0.8944 0.8482 95% LCL 1.2240 1.1820 1.2140 1.2000 1.2390 1.1730 Rep 3	95% UCL 0.9222 0.9414 0.9219 0.9171 0.9125 0.9380 95% UCL 1.2880 1.3260 1.2870 1.2780 1.2710 1.3090 Rep 4 173/190	Median 0.9020 0.8983 0.8950 0.8935 0.9000 0.9096 Median 1.2520 1.2460 1.2410 1.2380 1.2490 1.2650 Rep 5 184/204	Min 0.8855 0.8644 0.8779 0.8701 0.8977 0.8301 Min 1.2260 1.1940 1.2140 1.2020 1.2450	Max 0.9249 0.9487 0.9231 0.9209 0.9157 0.9162 Max 1.2930 1.3420 1.2900 1.2860 1.2760	Std Err 0.0067 0.0147 0.0078 0.0085 0.0033 0.0162 Std Err 0.0116 0.0259 0.0131 0.0141 0.0056	1.67% 3.64% 1.94% 2.14% 0.81% 4.05% CV% 2.06% 4.62% 2.35% 2.54% 1.00%	0.00% 0.31% 0.37% 1.12% 0.01% 1.16% %Effec 0.00% 0.14% 0.43% 1.31% 0.05%			
Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100 Angular (Corconc-% 0 6.25 12.5 25 50 100 Proportion N Conc-% 0 6.25	rected	Bartlett Eq Shapiro-W Summary Code LC d) Transform Code LC	Count 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Mean 0.9035 0.9007 0.9002 0.8934 0.9035 0.8931 ary Mean 1.2560 1.2540 1.2500 1.2550 1.2410 Rep 2 170/190 148/156	0.8848 0.8600 0.8786 0.8697 0.8944 0.8482 95% LCL 1.2240 1.1820 1.2140 1.2000 1.2390 1.1730 Rep 3	95% UCL 0.9222 0.9414 0.9219 0.9171 0.9125 0.9380 95% UCL 1.2880 1.3260 1.2870 1.2780 1.2710 1.3090 Rep 4 173/190 153/177	Median 0.9020 0.8983 0.8950 0.8935 0.9000 0.9096 Median 1.2520 1.2460 1.2410 1.2380 1.2490 1.2650 Rep 5 184/204 166/189	Min 0.8855 0.8644 0.8779 0.8701 0.8977 0.8301 Min 1.2260 1.1940 1.2140 1.2020 1.2450	Max 0.9249 0.9487 0.9231 0.9209 0.9157 0.9162 Max 1.2930 1.3420 1.2900 1.2860 1.2760	Std Err 0.0067 0.0147 0.0078 0.0085 0.0033 0.0162 Std Err 0.0116 0.0259 0.0131 0.0141 0.0056	1.67% 3.64% 1.94% 2.14% 0.81% 4.05% CV% 2.06% 4.62% 2.35% 2.54% 1.00%	0.00% 0.31% 0.37% 1.12% 0.01% 1.16% %Effec 0.00% 0.14% 0.43% 1.31% 0.05%			
Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100 Angular (Corconc-% 0 6.25 12.5 25 50 100 Proportion N Conc-% 0 6.25 12.5 25 50 100	rected	Bartlett Eq Shapiro-W Summary Code LC d) Transform Code LC	Count 5 5 5 5 5 5 7 7 8 7 8 7 8 7 8 7 8 7 8 7	Mean 0.9035 0.9007 0.9002 0.8934 0.9035 0.8931 ary Mean 1.2560 1.2540 1.2550 1.2410 Rep 2 170/190 148/156 185/207	0.8848 0.8600 0.8786 0.8697 0.8944 0.8482 95% LCL 1.2240 1.1820 1.2140 1.2000 1.2390 1.1730 Rep 3 147/166 159/177 144/158	95% UCL 0.9222 0.9414 0.9219 0.9171 0.9125 0.9380 95% UCL 1.2880 1.3260 1.2870 1.2780 1.2710 1.3090 Rep 4 173/190 153/177 162/181	Median 0.9020 0.8983 0.8950 0.8935 0.9000 0.9096 Median 1.2520 1.2460 1.2410 1.2380 1.2490 1.2650 Rep 5 184/204 166/189 151/172	Min 0.8855 0.8644 0.8779 0.8701 0.8977 0.8301 Min 1.2260 1.1940 1.2140 1.2020 1.2450	Max 0.9249 0.9487 0.9231 0.9209 0.9157 0.9162 Max 1.2930 1.3420 1.2900 1.2860 1.2760	Std Err 0.0067 0.0147 0.0078 0.0085 0.0033 0.0162 Std Err 0.0116 0.0259 0.0131 0.0141 0.0056	1.67% 3.64% 1.94% 2.14% 0.81% 4.05% CV% 2.06% 4.62% 2.35% 2.54% 1.00%	0.00% 0.31% 0.37% 1.12% 0.01% 1.16% %Effec 0.00% 0.14% 0.43% 1.31% 0.05%			

Report Date: Test Code/ID: 07 Mar-23 13:41 (p 6 of 8) 23-01-051 / 20-8910-3070

Bivalve Larval Survival and Development Test

WSP Laboratory



Report Date: Test Code/ID: 07 Mar-23 13:41 (p 7 of 8) 23-01-051 / 20-8910-3070

WSP Laboratory Bivalve Larval Survival and Development Test Analysis ID: 11-8891-1433 Endpoint: Survival Rate **CETIS Version:** CETISv2.1.3 Analyzed: 07 Mar-23 13:40 Analysis: Parametric-Control vs Treatments Status Level: Edit Date: 07 Mar-23 13:23 MD5 Hash: 1ABDCF2A51106B4D021D2C96FF8C3C31 Editor ID: 002-883-387-8 Comments: FC = Filtered Control, 101 = 100% (1.2um filtered) TOEL Tox Units MSDu **PMSD Data Transform** Alt Hyp NOEL LOEL 70.71 2 0.06093 6.28% Angular (Corrected) C > T 50 100 **Dunnett Multiple Comparison Test** Control Conc-% df Test Stat Critical MSD P-Type P-Value Decision(a:5%) Lab Control 6.25 8 0.983 2.362 0.1742 CDF 0.4275 Non-Significant Effect 12.5 8 1.062 2.362 0.1742 CDF 0.3925 Non-Significant Effect 25 8 1.005 2.362 0.1742 CDF 0.4179 Non-Significant Effect 50 8 1.146 2.362 0.1742 CDF 0.3568 Non-Significant Effect 100* 8 2.637 2.362 0.1742 CDF 0.0283 Significant Effect **ANOVA Table** Source Sum Squares Mean Square DF F Stat P-Value Decision(a:5%) 5 Non-Significant Effect 0.0975767 1.436 0.2476 Between 0.0195153 Error 0.326243 0.0135935 24 29 Total 0.42382 **ANOVA Assumptions Tests** Attribute Test Stat Critical P-Value Decision(a:1%) **Equal Variances** 3.015 15.09 0.6977 Variance Bartlett Equality of Variance Test Distribution Shapiro-Wilk W Normality Test 0.9634 0.9031 0.3778 Normal Distribution Survival Rate Summary CV% %Effect Std Err 95% UCL Median Min Max Conc-% Code Count Mean 95% LCL LC 5 0.9176 1.0000 1.0000 0.9071 1.0000 0.0191 4.39% 0.00% 0 0.9705 2.36% 5 0.8779 1.0000 0.9672 0.8525 1.0000 0.0251 5.92% 6.25 0.9475 0.0246 5.83% 2.82% 5 1.0000 0.8634 1.0000 12.5 0.9432 0.8749 0.9399 2.25% 25 5 0.9486 0.8932 1.0000 0.9672 0.8852 1.0000 0.0200 4.71% 0.0107 50 5 0.9816 0.9235 0.9727 2.52% 1.91% 0.9519 0.9222 0.9617 0.9781 0.0263 6.62% 8.33% 100 5 0.8896 0.8165 0.9628 0.8907 0.8361 Angular (Corrected) Transformed Summary Std Err CV% %Effect Code 95% LCL 95% UCL Median Min Max Conc-% Count Mean 0.00% 9.16% 0 LC 5 1.4390 1.2760 1.6030 1.5340 1.2610 1.5340 0.0589 0.0572 9.36% 5.04% 5 1.3670 1.2080 1.5260 1.3890 1.1770 1.5340 6.25 0.0616 5.44% 5 1.1900 1.5320 1.3230 1.1920 1.5340 10.11% 12.5 1.3610 5 1.3650 1.2200 1.5110 1.3890 1.2250 1.5340 0.0523 8.57% 5.15% 25 50 5 1.3550 1.2860 1.4240 1.3740 1.2910 1.4050 0.0249 4.11% 5.87% 13.51% 5 1.2450 1.1080 1.3820 1.2340 1.1540 1.4220 0.0492 8.84% 100 Survival Rate Binomials Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 LC 0 183/183 183/183 173/183 183/183 166/183 177/183 6.25 174/183 156/183 177/183 183/183 181/183 183/183 172/183 12.5 169/183 158/183 183/183 25 177/183 169/183 177/183 162/183 50 169/183 176/183 178/183 178/183 170/183 100 153/183 166/183 163/183 179/183 153/183

Report Date: Test Code/ID: 07 Mar-23 13:41 (p 8 of 8) 23-01-051 / 20-8910-3070

WSP Laboratory Bivalve Larval Survival and Development Test

Analyzed:

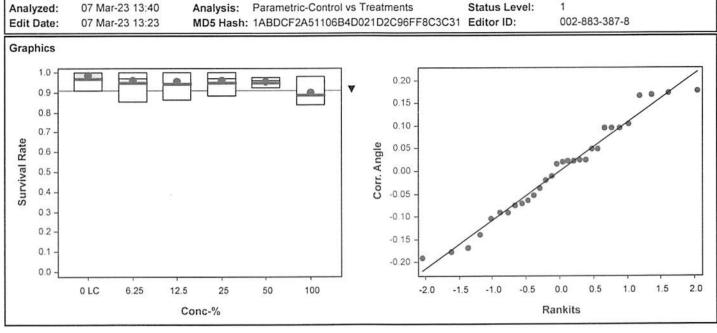
Analysis ID: 11-8891-1433

Endpoint: Survival Rate

CETIS Version:

CETISv2.1.3

Analysis: Parametric-Control vs Treatments Status Level:



CETIS Summary Report

Report Date: Test Code/ID: 09 Mar-23 11:32 (p 1 of 1) 23-01-065 / 09-3674-9409

								Test Co	ode/ID:		23-	01-065 / 09	-3674-9	3409
Bivalve Larva	I Survival and D	evelopme	nt Test									WSP L	.aborat	ory
Batch ID: Start Date: Ending Date: Test Length:	20-1528-4906 26 Jan-23 17:30 28 Jan-23 16:00 46h	Pro Spe	t Type: tocol: ecies:	Development-S EPA/600/R-95/ Mytilis galloprov	136 (1995)			Anal Dilue Brin Sou	ent: 1 e: 1	Not A	ral Seawate Applicable Collected	er	Age:	
Receipt Date:	20-2467-5178 25 Jan-23 13:00 25 Jan-23 17:00 28h (15.7 °C)		terial: S (PC):	78AE176A Seawater WSP				Proj Sour Stati	rce:		3 TMDL Mor ter Island Y 3 2			
Analysis ID	parison Summa Endpoint Proportion Norm			arison Method Many-One Rank	Sum Test			OEL 01	LOEL >101		TOEL	PMSD	TU 1	S 1
Test Acceptal	Endpoint		Attrib		Test Stat		U	pper	Overla	эр	Decision	- 22-		
	Proportion Norm			ol Resp	0	0.9	<	<	Yes		Below Crit	eria		
Proportion No Conc-%	ormal Summary Code	Count	ved ト Mean	95% LCL	95% UCL	Min	M	lax	Std Er	r	Std Dev	CV%	%Eff	ect
0 0 6.25 12.5 25 50 100 101 Proportion N		5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0.000 0.000 0.000 0.000 0.000 0.003 0.053	0 0.0000 0 0.0000 0 0.0000 0 0.0000 0 0.0000 7 -0.0031 7 0.0177	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0105 0.0897	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0270	0 0 0 0 0 0	.0000 .0000 .0000 .0000 .0000 .0000 .0121 .0886	0.0000 0.0000 0.0000 0.0000 0.0000 0.0024 0.0130	0	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0055 0.0290	146.63% 53.94%	 028D79	B0
Conc-% 0 0 6.25 12.5 25 50 100 101	LC FC	Rep 1 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0813	Rep 2 0.000 0.000 0.000 0.000 0.000 0.000 0.012 0.088	0 0.0000 0 0.0000 0 0.0000 0 0.0000 0 0.0000 0 0.0000 1 0.0000	Rep 4 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00270	Rep 5 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0065 0.0323								
	ormal Binomials													
0 0 6.25	LC FC	0/173 0/172 0/174	0/190 0/197 0/156	0/166 0/160 0/177	0/190 0/171 0/177	0/204 0/183 0/189				-				

Analyst: JF QA: LC

0/181

0/190

0/178

0/179

5/185

0/172

0/162

0/170

1/153

6/186

12.5

25

50

100

101

0/169

0/177

0/169

0/153

13/160

0/158

0/177

0/178

0/163

7/178

0/207

0/169

0/176

2/166

14/158

Report Date: Test Code/ID: 09 Mar-23 11:32 (p 2 of 2) 23-01-065 / 09-3674-9409

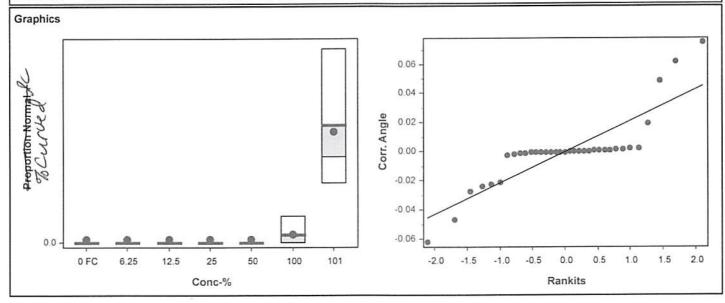
Bivalve Larval Survival and Development Test

WSP Laboratory

Analysis ID: 15-0470-5158 Endpoint: Proportion Normal CETIS Version: CETISv2.1.3

Analyzed: 09 Mar-23 11:32 Analysis: Nonparametric-Control vs Treatments Status Level: 1

Edit Date: 09 Mar-23 11:28 MD5 Hash: 9AF0ACCE5D9617224DA576B78D57EA4 Editor ID: 002-883-387-8



CETIS Test Data Worksheet

Bivalve Larval Survival and Development Test

Report Date: Test Code/ID:

20 Jan-23 13:24 (p 1 of 1) TITO852EDE / 20-8910-3070

23-01-051 Wood E&IS

26 Jan-23 1730 Sample Code: 5E1922C2 Species: Mytilis galloprovincialis

Start Date: Sample Source: Shelter Island Yacht Basin End Date: 28 Jan-23 1606 Protocol: EPA/600/R-95/136 (1995)

Sample Station: SIYB 2 Sample Date: 25 Jan-23 [300 Material: Seawater

ample Date	. 20 Ja	dil-23	1300	Material:	Deawater		Cum	pie Station: 31182
Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
00110-70	Oout	пор	71		200	197	176	
			72			177	153	
			73			178	163	
			74			153	137	
			75			169	152	
			76			158	144	
			77			170	153	
			78			162	143	
			79			163	149	copepal observed
			80			173	160	(1502200)
			81			179	164	
			82				173	
			83			190	173	
			84			204	184	
			85			172	151	
			86			172	161	
			87			166	147	
			88			172	151	
			89			177	154	
			90			186	158	6 curved
			91			207	185	
			92			153	127	I conved copepadobserved
	-		93			177	159	, 00, 000,
			94			166	151	2 corred, copeped observed 5 corred
			95			185	157	5 cined
			96			183	161	3 2014
			97			190	170	
		-	98				1 : 0	
			99			160	123	13 comed
			100			160	150	.5 20.1 2
			101			177	163	
			102			15/157	148	
			103			1/00	156	
			104			171	1459 15	52
			105			190	Mb 171	T
			106			176	158	13 comed 52 7 comed 14 comed
			107			178	1301	Torred
			108			158	119	Homed
			109			174	159	
			110			169	151	

CETIS Test Data Worksheet

Report Date: Test Code/ID: 20 Jan-23 13:24 (p 1 of 1) 7C852EDE / 20-8910-3070

Bivalve Larval Survival and Development Test

Wood E&IS

Start Date: 26 Jan-23 Species: Mytilis galloprovincialis Sample Code: 5E1922C2

End Date: 28 Jan-23 Protocol: EPA/600/R-95/136 (1995) Sample Source: Shelter Island Yacht Basin

Sample Date: 25 Jan-23 Material: Seawater Sample Station: SIYB 2

imple Date:	25 5	111-23		material:	Seawater		Jamp	le Station. STID 2
Conc-%	Code	Ren	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	FC	1	85					
0	FC	2	71					
0	FC	3	100					
0	FC	4	104					
0	FC	5	96					
0	LC	1	80					
0	LC	2	97					
0	LC	3	87					
0	LC	4	82					
0	LC	5	84					
6.25		1	109					
6.25		2	102					
6.25		3	93					
6.25		4	72					
6.25		5	83					
12.5		1	103					
		-	91					
12.5 12.5		2	76					
		3	98					
12.5			88					
12.5 25		5			-			
		1	89					
25		2	110					
25		3			-			
25		4	105					
25		5	78					
50		1	75					
50		2	106				*	
50		3	73					
50		4	86					
50		5	77					
100		1	74					
100		2	94					
100		3	79					
100		4	81					
100		5	92					
101		1	99					
101		2	108					
101		3	107					
101		4	95					
101		5	90					

QC=TO

Analyst: Ab QA:

CETIS™ v2.1.3.5

Water Quality for Bivalve Development

Client: Wood- Port of San Diego

Sample ID: SIYB-2

Test No. 23-01-051

Test Species: M. galloprovincialis

Start Date/Time: 1/26/2023 1730 End Date/Time: 1/30/2023 1600

Test Conc.		Water Qualit	y Measurements	
(%)	Parameter	0hr	24hr	48hr
	Temp. (°C)	15.9	15.5	15.4
	Salinity (ppt)	33.4	33.\	33.3
Lab Control –	pH (units)	7.88	7.70	7.75
	DO (mg/L)	8.3	8.3	8.3
	Temp. (°C)	15.9	15.2	15.4
5114 6 4 1	Salinity (ppt)	33.2	32.9	33.1
Filter Control	pH (units)	7.89	7.54	7.70
	DO (mg/L)	4.7	8.2	83
	Temp. (°C)	15.9	15.5	15.4
6.35	Salinity (ppt)	33.1	33.4	33.5
6.25	pH (units)	7.88	7.13	7.75
	DO (mg/L)	8.3	8.3	8.4
	Temp. (°C)	16.0	15.5	15.5
12.5	Salinity (ppt)	33.5	53.3	33.5
12.5	pH (units)	7.87	7.74	7.75
	DO (mg/L)	8.4	8.4	8.4
	Temp. (°C)	15.9	15.6	15.5
25	Salinity (ppt)	33.4	33.3	33.5
23	pH (units)	7.87	7.74	7.76
	DO (mg/L)	8.4	8.4	8.4
	Temp. (°C)	15.9	15.6	15.5
50	Salinity (ppt)	33.2	33.0	33.2
30	pH (units)	7.87	7.75	7.76
	DO (mg/L)	8.5	8.4	8.4
	Temp. (°C)	15.8	15.6	15.6
100	Salinity (ppt)	32.7	32.7	33.0
100	pH (units)	7.88	7.75	7.77
	DO (mg/L)	4.8	8.3	8.4
	Temp. (°C)	16.0	15.6	15,6
LOO Filtered	Salinity (ppt)	31.9	31.9	32.2
(1.2μm)	pH (units)	7.83	7.75	7.78
	DO (mg/L)	8.2	8,5	8.4

Source of Animals:	Massian	Bay	
		10	

Date Received: 1/26/23

Intral QC: # 3/7/23

Fral Qc: Sc 3/9/23

Embryo-Larval Development Test Stock Preparation Worksheet

Test Species:

M. galloprovincialis

Test Date: 1/26/2023

Batch ID:

1/26/23 MITSON Bay Colle

Analyst:

Test Type:

Task	PSV 915-11
Spawning Induction	1430
Spawning Begins	1510
# Males/# Females	515
Spawn Condition	good
Fertilization Initiated	1600
Fertilzation End/Eggs Rinsed	1620/1640
Embryo Counts	1700
Test Initiation	1730

Embryo Density Counts

per 100 μL

ibi yo believy	Counts		. P 9 P				
Stock #	Stock Volume (mL)	Rep 1	Rep 2	Rep 3	Rep 4	Mean #/100 μL	Mean #/mL (x10)
Stock 1						7.6	/ /~
Stock 2	500						
Stock 3	500	21	19	11	13	1.6	800

Cell Division:

	% Divided
Stock 1	
Stock 2	90
Stock 3	98

Selected Stock:	3

Stock Density

Dil Factor

Adjust selected embryo stock to 500 embryos/mL. Dilution Factor = Stock Density/mL/500

600 500

In 10 mL sample volume add 500 μ l of 500 embryo/ml stock to obtain 25 embryos/mL in test vials.

Notes:

QA Review:

Final Review: 8 3/9/23

Site: SIYB-3

CETIS Summary Report

Report Date: Test Code/ID: 07 Mar-23 14:31 (p 1 of 4) 23-01-052 / 00-4977-5980

WCD Laboratory

Bivalve Larva	Survival and Developr	nent Test								WSP I	aborate	ory
Batch ID: Start Date: Ending Date: Test Length:	26 Jan-23 17:30 I 28 Jan-23 16:00 S	Test Type: Protocol: Species: Taxon:	Development-S EPA/600/R-95/ Mytilis galloprov	136 (1995)			Analy Dilue Brine Sour	nt: N	latural Seawa lot Applicable ield Collected	2008) m	Age:	
C	25 Jan-23 12:00 25 Jan-23 17:00	Code: Material: CAS (PC): Client:	23-W028 Seawater WSP				Proje Sour Statio	ce: S	SIYB TMDL Mo Shelter Island SIYB 3			
Comments:	FC= Filtered Control, 10	1= 100% (1	.2um filtered)									
Analysis ID 17-3426-3578	Endpoint Combined Proportion No Combined Proportion No	orma TST-V					P-Value <1.0E-05 <1.0E-05	100% p	arison Resul passed combi	ned proportio		100
Analysis ID 11-6123-0405	parison Summary Endpoint Combined Proportion No Proportion Normal Survival Rate	orma Steel Dunne	parison Method Many-One Rank ett Multiple Com ett Multiple Com	Sum Test parison Test		✓	NOEL 100 100 100	LOEL >100 >100 >100	TOEL 	PMSD 8.44% 2.58% 8.85%	TU 1 1 1 1	S 1 1 1
Test Acceptate Analysis ID	Endpoint Proportion Normal	Attrib	ute ol Resp	Test Stat		Li	mits Upper	Overla Yes		n riteria 🕖		
01-1347-8503	and the officers of the property of the proper	Contr	ol Resp	0.9563 0.08442	0.5		<< 0.25	Yes No	Passes (Criteria	0-0	

Ook-rounds up to 90%

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Bivalve Larval Survival and Development Test

Combined Pro	oportion Norm	al Summar	1								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.8593	0.8063	0.9123	0.7869	0.8962	0.0191	0.0427	4.97%	0.00%
0	FC	5	0.8486	0.7910	0.9062	0.7923	0.8962	0.0207	0.0464	5.46%	1.24%
6.25		5	0.8737	0.8209	0.9265	0.8142	0.9175	0.0190	0.0425	4.87%	-1.68%
12.5		5	0.8883	0.8212	0.9554	0.8142	0.9297	0.0242	0.0540	6.08%	-3.37%
25		5	0.8627	0.8041	0.9213	0.7869	0.9016	0.0211	0.0472	5.47%	-0.40%
50		5	0.8809	0.8305	0.9313	0.8306	0.9235	0.0182	0.0406	4.61%	-2.51%
100		5	0.8950	0.8504	0.9395	0.8361	0.9297	0.0161	0.0359	4.01%	-4.15%
101		5	0.8721	0.8421	0.9020	0.8415	0.9071	0.0108	0.0241	2.77%	-1.49%
Proportion No	ormal Summar	у									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.8988	0.8814	0.9162	0.8756	0.9128	0.0063	0.0140	1.56%	0.00%
0	FC	5	0.9029	0.8893	0.9164	0.8896	0.9141	0.0049	0.0109	1.21%	-0.46%
6.25		5	0.9103	0.9008	0.9198	0.8976	0.9175	0.0034	0.0076	0.84%	-1.29%
12.5		5	0.9147	0.8934	0.9360	0.8922	0.9297	0.0077	0.0171	1.87%	-1.77%
25		5	0.9101	0.8829	0.9373	0.8873	0.9375	0.0098	0.0219	2.41%	-1.26%
50		5	0.9168	0.9052	0.9283	0.9048	0.9278	0.0042	0.0093	1.02%	-2.00%
100		5	0.9149	0.9031	0.9267	0.9037	0.9297	0.0043	0.0095	1.04%	-1.79%
101		5	0.8919	0.8677	0.9160	0.8677	0.9121	0.0087	0.0194	2.18%	0.77%
Survival Rate	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9563	0.8928	1.0200	0.8743	1.0000	0.0229	0.0511	5.35%	0.00%
0	FC	5	0.9399	0.8766	1.0030	0.8907	1.0000	0.0228	0.0510	5.42%	1.71%
6.25		5	0.9596	0.9089	1.0100	0.9071	1.0000	0.0183	0.0408	4.25%	-0.34%
12.5		5	0.9705	0.9189	1.0220	0.9126	1.0000	0.0186	0.0415	4.28%	-1.49%
25		5	0.9486	0.8731	1.0240	0.8470	1.0000	0.0272	0.0608	6.41%	0.80%
50		5	0.9607	0.9143	1.0070	0.9180	1.0000	0.0167	0.0373	3.89%	-0.46%
100		5	0.9781	0.9339	1.0220	0.9180	1.0000	0.0159	0.0356	3.64%	-2.29%
101		5	0.9781	0.9377	1.0190	0.9235	1.0000	0.0146	0.0326	3.33%	-2.29%

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Bivalve Larval Survival and Development Test

Combined Pro	portion Norm	al Detail					MD5:	7ACA6BC89F190C49310ABB1193E177CD
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.8798	0.8962	0.8756	0.8579	0.7869		
0	FC	0.8932	0.8962	0.8470	0.8142	0.7923		
6.25		0.9175	0.9100	0.8525	0.8142	0.8743		
12.5		0.9297	0.8142	0.9208	0.8470	0.9296		
25		0.7869	0.8470	0.8907	0.9016	0.8873		
50		0.8306	0.8470	0.9126	0.8907	0.9235		
100		0.9297	0.8907	0.8361	0.9037	0.9146		
101		0.8677	0.8806	0.8634	0.9071	0.8415		
Proportion No	rmal Detail						MD5:	AD6577E225E60C8305C1937786339CBF
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.8994	0.9061	0.8756	0.9128	0.9000		
0	FC	0.8932	0.9111	0.9064	0.9141	0.8896		
6.25		0.9175	0.9100	0.9123	0.8976	0.9143		
12.5		0.9297	0.8922	0.9208	0.9012	0.9296		
25		0.9290	0.8960	0.9006	0.9375	0.8873		
50		0.9048	0.9172	0.9278	0.9106	0.9235		
100		0.9297	0.9157	0.9107	0.9037	0.9146		
101		0.8677	0.8806	0.8876	0.9121	0.9112		
Survival Rate	Detail				九市		MD5:	E41AE949FC795E1877E52F7F0D4AE5CC
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.9781	0.9891	1.0000	0.9399	0.8743		
0	FC	1.0000	0.9836	0.9344	0.8907	0.8907		
6.25		1.0000	1.0000	0.9344	0.9071	0.9563		
12.5		1.0000	0.9126	1.0000	0.9399	1.0000		
25		0.8470	0.9454	0.9891	0.9617	1.0000		
50		0.9180	0.9235	0.9836	0.9781	1.0000		
100		1.0000	0.9727	0.9180	1.0000	1.0000		
101		1.0000	1.0000	0.9727	0.9945	0.9235		

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Bivalve Larval Survival and Development Test

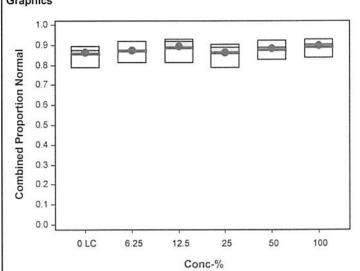
Combined Prop	ortion Norm	al Binomials	5				
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	161/183	164/183	176/201	157/183	144/183	
0	FC	184/206	164/183	155/183	149/183	145/183	
6.25		178/194	182/200	156/183	149/183	160/183	
12.5		172/185	149/183	186/202	155/183	185/199	
25		144/183	155/183	163/183	165/183	189/213	
50		152/183	155/183	167/183	163/183	181/196	
100		172/185	163/183	153/183	169/187	182/199	
101		164/189	177/201	158/183	166/183	154/183	
Proportion Nor	mal Binomia	ls					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	161/179	164/181	176/201	157/172	144/160	
0	FC	184/206	164/180	155/171	149/163	145/163	
6.25		178/194	182/200	156/171	149/166	160/175	
12.5		172/185	149/167	186/202	155/172	185/199	
25		144/155	155/173	163/181	165/176	189/213	
50		152/168	155/169	167/180	163/179	181/196	
100		172/185	163/178	153/168	169/187	182/199	
101		164/189	177/201	158/178	166/182	154/169	
Survival Rate B	Binomials						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	179/183	181/183	183/183	172/183	160/183	
0	FC	183/183	180/183	171/183	163/183	163/183	
6.25		183/183	183/183	171/183	166/183	175/183	
12.5		183/183	167/183	183/183	172/183	183/183	
25		155/183	173/183	181/183	176/183	183/183	
50		168/183	169/183	180/183	179/183	183/183	
100		183/183	178/183	168/183	183/183	183/183	
101		183/183	183/183	178/183	182/183	169/183	

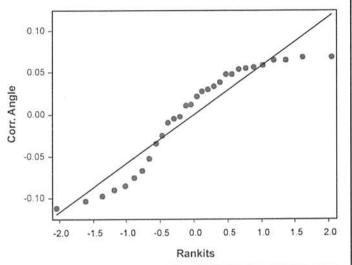
Report Date: Test Code/ID: 07 Mar-23 14:31 (p 1 of 8) 23-01-052 / 00-4977-5980

Bivalve Larva	al Surv	vival and D	evelopmen	t Test		6.76					WSP	aboratory
Analysis ID: Analyzed: Edit Date:	07 M	123-0405 ar-23 14:29 ar-23 14:23	Anal	ysis: Non	parametric-	ortion Norm Control vs T E6F4670D7	reatments	State	IS Version: us Level: or ID:	CETISv2. 1 002-883-3		
Comments:	FC=	Filtered Co	ntrol, 101= 1	00% (1.2un	n filtered)							
Data Transfor	rm		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corre	ected)		C > T				100	>100		1	0.07254	8.44%
Steel Many-O	ne Ra	ink Sum Te	est									
Control	vs	Conc-%	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(α:5%)		
Lab Control		6.25	8	29	16	0	CDF	0.9104		ficant Effect		
		12.5	8	32	16	0	CDF	0.9821		ficant Effect		
		25	8	29.5	16	1	CDF	0.9290		ficant Effect		
		50	8	31	16	0	CDF	0.9676		ficant Effect		
		100	8	35	16	0	CDF	0.9979	Non-Signi	ficant Effect		
ANOVA Table	•											
Source		Sum Squa	ares	Mean Squ	are	DF	F Stat	P-Value	Decision(α:5%)		
Dahuana		0.0122806	3	0.0024561		5	0.5677	0.7239	Non-Signi	ficant Effect		
Between												
Error		0.103838		0.0043266		24						
		0.103838 0.116119		0.0043266		29						
Error Total	mptio	0.116119		0.0043266								
Error	mptio	0.116119		0.0043266			Critical	P-Value	Decision((a:1%)		
Error Total ANOVA Assur	mptio	0.116119 ons Tests Test	quality of Va			29	Critical	P-Value 0.9785	Decision(
Error Total ANOVA Assur Attribute	mptio	0.116119 Ins Tests Test Bartlett Ed	quality of Vai	riance Test		29 Test Stat			Equal Var		on	
Error Total ANOVA Assur Attribute Variance		0.116119 Ins Tests Test Bartlett Ed Shapiro-W	/ilk W Norm	riance Test		29 Test Stat 0.776	15.09	0.9785	Equal Var	iances	on	
ANOVA Assur Attribute Variance Distribution		0.116119 Ins Tests Test Bartlett Ed Shapiro-W	/ilk W Norm	riance Test	95% LCL	29 Test Stat 0.776	15.09 0.9031	0.9785	Equal Var	iances	on CV%	%Effect
Error Total ANOVA Assur Attribute Variance Distribution Combined Pro		0.116119 ons Tests Test Bartlett Ed Shapiro-W ion Norma	lik W Norm	riance Test ality Test		7est Stat 0.776 0.8877	15.09 0.9031	0.9785 0.0043	Equal Var Non-Norm	iances nal Distribution		%Effect 0.00%
ANOVA Assur Attribute Variance Distribution Combined Pro		ons Tests Test Bartlett Ec Shapiro-W ion Norma Code	/ilk W Norm I Summary Count	riance Test ality Test Mean	95% LCL	79 Test Stat 0.776 0.8877 95% UCL	15.09 0.9031 Median	0.9785 0.0043 Min	Equal Var Non-Norm	iances nal Distribution	CV%	17 of the sprophists in 1
ANOVA Assur Attribute Variance Distribution Combined Pro Conc-%		ons Tests Test Bartlett Ec Shapiro-W ion Norma Code	Vilk W Normary Count 5	riance Test ality Test Mean 0.8593	95% LCL 0.8063	79 Test Stat 0.776 0.8877 95% UCL 0.9123	15.09 0.9031 Median 0.8756	0.9785 0.0043 Min 0.7869	Equal Var Non-Norm Max 0.8962	Std Err	CV% 4.97%	0.00%
ANOVA Assur Attribute Variance Distribution Combined Pro Conc-% 0 6.25		ons Tests Test Bartlett Ec Shapiro-W ion Norma Code	I Summary Count 5	miance Test ality Test Mean 0.8593 0.8737	95% LCL 0.8063 0.8209	29 Test Stat 0.776 0.8877 95% UCL 0.9123 0.9265	15.09 0.9031 Median 0.8756 0.8743	0.9785 0.0043 Min 0.7869 0.8142	Equal Var Non-Norm Max 0.8962 0.9175	Std Err 0.0191 0.0190	CV% 4.97% 4.87%	0.00%
ANOVA Assur Attribute Variance Distribution Combined Pro Conc-% 0 6.25 12.5		ons Tests Test Bartlett Ec Shapiro-W ion Norma Code	I Summary Count 5 5 5	mean 0.8593 0.8737 0.8883	95% LCL 0.8063 0.8209 0.8212	29 Test Stat 0.776 0.8877 95% UCL 0.9123 0.9265 0.9554	15.09 0.9031 Median 0.8756 0.8743 0.9208	0.9785 0.0043 Min 0.7869 0.8142 0.8142	Equal Var Non-Norm Max 0.8962 0.9175 0.9297	Std Err 0.0191 0.0190 0.0242	CV% 4.97% 4.87% 6.08%	0.00% -1.68% -3.37%
Error Total ANOVA Assur Attribute Variance Distribution Combined Pro Conc-% 0 6.25 12.5 25		ons Tests Test Bartlett Ec Shapiro-W ion Norma Code	I Summary Count 5 5 5 5	mean 0.8593 0.8737 0.8883 0.8627	95% LCL 0.8063 0.8209 0.8212 0.8041	29 Test Stat 0.776 0.8877 95% UCL 0.9123 0.9265 0.9554 0.9213	15.09 0.9031 Median 0.8756 0.8743 0.9208 0.8873	0.9785 0.0043 Min 0.7869 0.8142 0.8142 0.7869	Max 0.8962 0.9175 0.9297 0.9016	Std Err 0.0191 0.0242 0.0211	CV% 4.97% 4.87% 6.08% 5.47%	0.00% -1.68% -3.37% -0.40%
ANOVA Assur Attribute Variance Distribution Combined Pro Conc-% 0 6.25 12.5 25 50 100	oport	o.116119 ons Tests Test Bartlett Ec Shapiro-W ion Norma Code LC	Vilk W Norm I Summary Count 5 5 5 5 5	Mean 0.8593 0.8737 0.8883 0.8627 0.8809 0.8950	95% LCL 0.8063 0.8209 0.8212 0.8041 0.8305	29 Test Stat 0.776 0.8877 95% UCL 0.9123 0.9265 0.9554 0.9213 0.9313	15.09 0.9031 Median 0.8756 0.8743 0.9208 0.8873 0.8907	0.9785 0.0043 Min 0.7869 0.8142 0.8142 0.7869 0.8306	Max 0.8962 0.9175 0.9297 0.9016 0.9235	Std Err 0.0191 0.0190 0.0242 0.0211 0.0182	CV% 4.97% 4.87% 6.08% 5.47% 4.61%	0.00% -1.68% -3.37% -0.40% -2.51%
ANOVA Assur Attribute Variance Distribution Combined Pro Conc-% 0 6.25 12.5 25 50	oport	o.116119 ons Tests Test Bartlett Ec Shapiro-W ion Norma Code LC	Vilk W Norm I Summary Count 5 5 5 5 5	Mean 0.8593 0.8737 0.8883 0.8627 0.8809 0.8950	95% LCL 0.8063 0.8209 0.8212 0.8041 0.8305 0.8504	29 Test Stat 0.776 0.8877 95% UCL 0.9123 0.9265 0.9554 0.9213 0.9313	15.09 0.9031 Median 0.8756 0.8743 0.9208 0.8873 0.8907 0.9037	0.9785 0.0043 Min 0.7869 0.8142 0.8142 0.7869 0.8306	Max 0.8962 0.9175 0.9297 0.9016 0.9235	Std Err 0.0191 0.0190 0.0242 0.0211 0.0182	CV% 4.97% 4.87% 6.08% 5.47% 4.61%	0.00% -1.68% -3.37% -0.40% -2.51%
ANOVA Assur Attribute Variance Distribution Combined Pro Conc-% 0 6.25 12.5 25 50 100	oport	o.116119 ons Tests Test Bartlett Ec Shapiro-W ion Norma Code LC	I Summary Count 5 5 5 5 5 5 med Summ	Mean 0.8593 0.8737 0.8883 0.8627 0.8809 0.8950 ary	95% LCL 0.8063 0.8209 0.8212 0.8041 0.8305 0.8504	29 Test Stat 0.776 0.8877 95% UCL 0.9123 0.9265 0.9554 0.9213 0.9313 0.9395	15.09 0.9031 Median 0.8756 0.8743 0.9208 0.8873 0.8907 0.9037	0.9785 0.0043 Min 0.7869 0.8142 0.8142 0.7869 0.8306 0.8361	Max 0.8962 0.9175 0.9297 0.9016 0.9235 0.9297	Std Err 0.0191 0.0190 0.0242 0.0211 0.0182 0.0161	CV% 4.97% 4.87% 6.08% 5.47% 4.61% 4.01%	0.00% -1.68% -3.37% -0.40% -2.51% -4.15%
ANOVA Assur Attribute Variance Distribution Combined Pro Conc-% 0 6.25 12.5 25 50 100 Angular (Corr Conc-% 0	oport	o.116119 Ins Tests Test Bartlett Ec Shapiro-W Ion Norma Code LC I) Transfor Code	I Summary Count 5 5 5 5 5 5 Count Count	Mean 0.8593 0.8737 0.8883 0.8627 0.8809 0.8950 ary Mean	95% LCL 0.8063 0.8209 0.8212 0.8041 0.8305 0.8504	29 Test Stat 0.776 0.8877 95% UCL 0.9123 0.9265 0.9554 0.9213 0.9313 0.9395	15.09 0.9031 Median 0.8756 0.8743 0.9208 0.8873 0.8907 0.9037	0.9785 0.0043 Min 0.7869 0.8142 0.8142 0.7869 0.8306 0.8361	Max 0.8962 0.9175 0.9297 0.9016 0.9235 0.9297	Std Err 0.0191 0.0190 0.0242 0.0211 0.0182 0.0161	CV% 4.97% 4.87% 6.08% 5.47% 4.61% 4.01%	0.00% -1.68% -3.37% -0.40% -2.51% -4.15%
ANOVA Assur Attribute Variance Distribution Combined Proconc-% 0 6.25 12.5 25 50 100 Angular (Corr Conc-% 0 6.25	oport	o.116119 Ins Tests Test Bartlett Ec Shapiro-W Ion Norma Code LC I) Transfor Code	I Summary Count 5 5 5 5 5 med Summ Count 5	Mean 0.8593 0.8737 0.8883 0.8627 0.8809 0.8950 ary Mean 1.1890	95% LCL 0.8063 0.8209 0.8212 0.8041 0.8305 0.8504 95% LCL 1.1160	79 Test Stat 0.776 0.8877 95% UCL 0.9123 0.9265 0.9554 0.9213 0.9313 0.9395 95% UCL 1.2620	15.09 0.9031 Median 0.8756 0.8743 0.9208 0.8873 0.8907 0.9037 Median 1.2100	0.9785 0.0043 Min 0.7869 0.8142 0.8142 0.7869 0.8306 0.8361 Min 1.0910	Max 0.8962 0.9175 0.9297 0.9016 0.9235 0.9297 Max 1.2430	Std Err 0.0191 0.0190 0.0242 0.0211 0.0182 0.0161 Std Err 0.0262	CV% 4.97% 4.87% 6.08% 5.47% 4.61% 4.01% CV%	0.00% -1.68% -3.37% -0.40% -2.51% -4.15% %Effect 0.00%
ANOVA Assur Attribute Variance Distribution Combined Pro Conc-% 0 6.25 12.5 25 50 100 Angular (Corr Conc-% 0	oport	o.116119 Ins Tests Test Bartlett Ec Shapiro-W Ion Norma Code LC I) Transfor Code	I Summary Count 5 5 5 5 5 Count Count Count 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Mean 0.8593 0.8737 0.8883 0.8627 0.8809 0.8950 ary Mean 1.1890 1.2110	95% LCL 0.8063 0.8209 0.8212 0.8041 0.8305 0.8504 95% LCL 1.1160 1.1320	29 Test Stat 0.776 0.8877 95% UCL 0.9123 0.9265 0.9554 0.9213 0.9313 0.9395 95% UCL 1.2620 1.2900	15.09 0.9031 Median 0.8756 0.8743 0.9208 0.8873 0.8907 0.9037 Median 1.2100 1.2080	0.9785 0.0043 Min 0.7869 0.8142 0.7869 0.8306 0.8361 Min 1.0910 1.1250	Max 0.8962 0.9175 0.9297 0.9016 0.9235 0.9297 Max 1.2430 1.2800	Std Err 0.0191 0.0190 0.0242 0.0211 0.0182 0.0161 Std Err 0.0262 0.0285	CV% 4.97% 4.87% 6.08% 5.47% 4.61% 4.01% CV% 4.93% 5.27%	0.00% -1.68% -3.37% -0.40% -2.51% -4.15% %Effect 0.00% -1.86% -4.03% -0.49%
ANOVA Assur Attribute Variance Distribution Combined Pro Conc-% 0 6.25 12.5 25 50 100 Angular (Corr Conc-% 0 6.25 12.5	oport	o.116119 Ins Tests Test Bartlett Ec Shapiro-W Ion Norma Code LC I) Transfor Code	I Summary Count 5 5 5 5 5 Count Count Count 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Mean 0.8593 0.8737 0.8883 0.8627 0.8809 0.8950 ary Mean 1.1890 1.2110 1.2370	95% LCL 0.8063 0.8209 0.8212 0.8041 0.8305 0.8504 95% LCL 1.1160 1.1320 1.1330	79 Test Stat 0.776 0.8877 95% UCL 0.9123 0.9265 0.9554 0.9213 0.9395 95% UCL 1.2620 1.2900 1.3410	15.09 0.9031 Median 0.8756 0.8743 0.9208 0.8873 0.8907 0.9037 Median 1.2100 1.2080 1.2860	0.9785 0.0043 Min 0.7869 0.8142 0.7869 0.8306 0.8361 Min 1.0910 1.1250 1.1250	Max 0.8962 0.9175 0.9297 0.9016 0.9235 0.9297 Max 1.2430 1.2800 1.3030	Std Err 0.0191 0.0190 0.0242 0.0211 0.0182 0.0161 Std Err 0.0262 0.0285 0.0375	CV% 4.97% 4.87% 6.08% 5.47% 4.61% 4.01% CV% 4.93% 5.27% 6.77%	0.00% -1.68% -3.37% -0.40% -2.51% -4.15% %Effect 0.00% -1.86% -4.03%

Report Date: Test Code/ID: 07 Mar-23 14:31 (p 2 of 8) 23-01-052 / 00-4977-5980

WSP Laboratory Bivalve Larval Survival and Development Test Analysis ID: 11-6123-0405 Endpoint: Combined Proportion Normal **CETIS Version:** CETISv2.1.3 Nonparametric-Control vs Treatments Analyzed: 07 Mar-23 14:29 Analysis: Status Level: Edit Date: 07 Mar-23 14:23 MD5 Hash: 6EA9C5F0729FE6F4670D7A683219174A Editor ID: 002-883-387-8 Graphics 1.0 0.10 0.9





Report Date: Test Code/ID: 07 Mar-23 14:31 (p 3 of 8) 23-01-052 / 00-4977-5980

Bivalve Larval Survival and Development Test (LC US 100%)

WSP Laboratory

Analysis ID: 17-3426-3578 Endpoint: Combined Proportion Normal CETIS Version: CETISv2.1.3

Analyzed: 07 Mar-23 14:30 Analysis: Parametric Bioequivalence-Two Sample Status Level: 1

Edit Date: 07 Mar-23 14:23 MD5 Hash: BBC841DF7CD647BC86C1B0A8032F1B06 Editor ID: 002-883-387-8

Comments: FC= Filtered Control, 101= 100% (1.2um filtered)

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	100% passed combined proportion normal endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:5%)
Lab Control		100*	7	11.03	1.895	CDF	<1.0E-05	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.0075492	0.0075492	1	2.286	0.1690	Non-Significant Effect	
Error	0.0264231	0.0033029	8				
Total	0.0339723		9				1

ANOVA Assumptions Tests

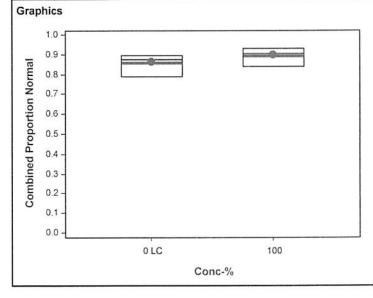
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variance	Variance Ratio F Test	1.085	23.15	0.9392	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.8532	0.7411	0.0635	Normal Distribution

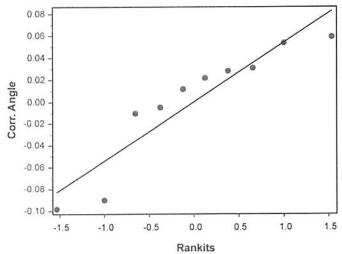
Combined Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.8593	0.8063	0.9123	0.8756	0.7869	0.8962	0.0191	4.97%	0.00%
100		5	0.8950	0.8504	0.9395	0.9037	0.8361	0.9297	0.0161	4.01%	-4.15%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.1890	1.1160	1.2620	1.2100	1.0910	1.2430	0.0262	4.93%	0.00%
100		5	1.2440	1.1740	1.3140	1.2550	1.1540	1.3030	0.0252	4.53%	-4.62%





Report Date: Test Code/ID: 07 Mar-23 14:31 (p 4 of 8) 23-01-052 / 00-4977-5980

Bivalve Larval Survival and Development Test (FC vs 100% Filtered) WSP Laboratory

Analysis ID: 15-9930-4992 Endpoint: Combined Proportion Normal

CETIS Version: CETISv2.1.3

Analyzed: 07 Mar-23 14:30 Analysis: Parametric Bioequivalence-Two Sample Status Level:

Edit Date: 07 Mar-23 14:23 MD5 Hash: 920C4294A453C22A8C65E510DAABDD13 Editor ID: 002-883-387-8

Comments: FC= Filtered Control, 101= 100% (1.2um filtered)

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	101% passed combined proportion normal endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(a:5%)	
Filter Control		101*	7	11.88	1.895	CDF	<1.0E-05	Non-Significant Effect	

ANOVA Table

AITOTA TABLE							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.0025240	0.0025240	1	0.8991	0.3708	Non-Significant Effect	
Error	0.0224579	0.0028072	8				
Total	0.024982		9				

ANOVA Assumptions Tests

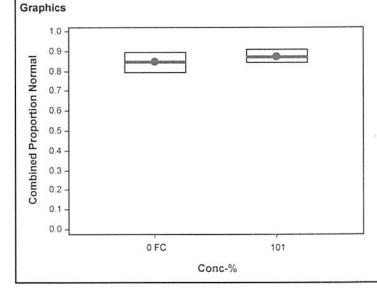
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variance	Variance Ratio F Test	3.148	23.15	0.2927	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9354	0.7411	0.5026	Normal Distribution

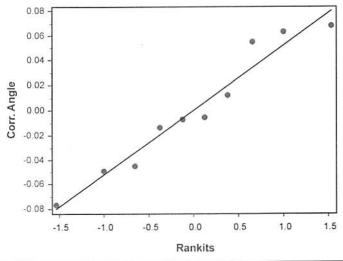
Combined Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	0.8486	0.7910	0.9062	0.8470	0.7923	0.8962	0.0207	5.46%	0.00%
101		5	0.8721	0.8421	0.9020	0.8677	0.8415	0.9071	0.0108	2.77%	-2.77%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	1.1740	1.0930	1.2560	1.1690	1.0980	1.2430	0.0292	5.56%	0.00%
101		5	1.2060	1.1610	1.2520	1.1990	1.1610	1.2610	0.0165	3.05%	-2.71%





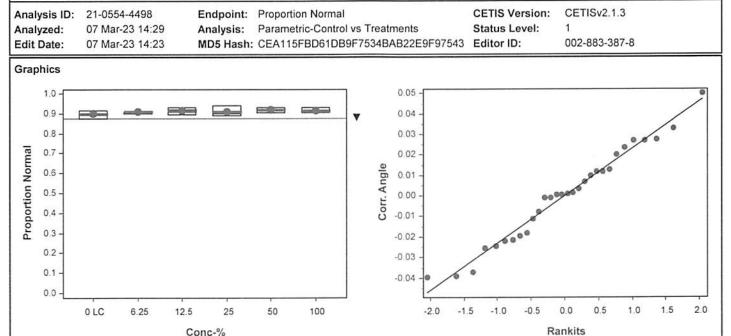
Report Date: Test Code/ID: 07 Mar-23 14:31 (p 5 of 8) 23-01-052 / 00-4977-5980

Bivalve Larv	al Sur	vival and D	evelopmer	t Test							WSP I	aboratory
Analysis ID: Analyzed: Edit Date:	07 M	554-4498 ar-23 14:29 ar-23 14:23	Ana	l ysis: Par	portion Norr ametric-Cor A115FBD61	trol vs Treat		Statu	S Version: us Level: or ID:	CETISv2. 1 002-883-3		
Comments:	FC=	Filtered Cor	ntrol, 101=	100% (1.2un	n filtered)							
Data Transfo	orm		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corr	rected)		C > T				100	>100		1	0.02322	2.58%
Dunnett Mult	tiple C	omparison	Test									
Control	vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision	(a:5%)		
Lab Control		6.25	8	-1.224	2.362	0.03728	CDF	0.9912	[10] 왕조리 마인영화 (2011)	ficant Effect		
		12.5	8	-1.771	2.362	0.03728	CDF	0.9984	[12] 15 TO THE STATE OF THE ST	ficant Effect		
		25	8	-1.295	2.362	0.03728	CDF	0.9929		ficant Effect		
		50	8	-1.957	2.362	0.03728	CDF	0.9992	100 HERE HERE HERE	ficant Effect		
		100	8	-1.746	2.362	0.03728	CDF	0.9983	Non-Signi	ficant Effect		
ANOVA Tabl	е						onlikaran (==) -a					
Source		Sum Squa	ares	Mean Squ	iare	DF	F Stat	P-Value	Decision	(a:5%)		
Between		0.0031663	3	0.0006333	3	5	1.016	0.4299	Non-Signi	ficant Effect		
				0.0006231		24						
Error		0.0149538	5	0.0000231		24						
Total		0.0149538)	0.0006231		29	-					
-	umptio	0.01812	-	0.0006231								
Total ANOVA Assu	umptio	0.01812 ons Tests	-	0.0006231			Critical	P-Value	Decision	(a:1%)		
Total ANOVA Assu Attribute	umptio	0.01812 ons Tests Test				29 Test Stat						
Total ANOVA Assu	umptio	0.01812 ons Tests Test Bartlett Eq		riance Test		29	Critical 15.09 0.9031	P-Value 0.2952 0.6685	Decision Equal Var Normal D	riances		
ANOVA Assu Attribute Variance Distribution	0	0.01812 ons Tests Test Bartlett Eq Shapiro-W	uality of Va	riance Test		29 Test Stat 6.115	15.09	0.2952	Equal Var	riances		
ANOVA Assu Attribute Variance	0	0.01812 ons Tests Test Bartlett Eq Shapiro-W	uality of Va	riance Test	95% LCL	29 Test Stat 6.115	15.09	0.2952	Equal Var	riances	CV%	%Effect
ANOVA Assu Attribute Variance Distribution Proportion N Conc-%	0	ons Tests Test Bartlett Eq Shapiro-W Summary Code	uality of Va /ilk W Norm Count	riance Test ality Test Mean	95% LCL	Test Stat 6.115 0.9745	15.09 0.9031	0.2952 0.6685	Equal Var Normal D	iances istribution	CV% 1.56%	%Effect 0.00%
ANOVA Assu Attribute Variance Distribution Proportion N Conc-%	0	ons Tests Test Bartlett Eq Shapiro-W	juality of Va /ilk W Norm Count 5	riance Test ality Test Mean 0.8988	95% LCL 0.8814	Test Stat 6.115 0.9745 95% UCL 0.9162	15.09 0.9031 Median 0.9000	0.2952 0.6685 Min	Equal Var Normal D	istribution Std Err		DESCRIPTION OF THE PARTY OF THE
ANOVA Assu Attribute Variance Distribution Proportion N Conc-% 0 6.25	0	ons Tests Test Bartlett Eq Shapiro-W Summary Code	uality of Va filk W Norm Count 5	riance Test ality Test Mean 0.8988 0.9103	95% LCL 0.8814 0.9008	Test Stat 6.115 0.9745 95% UCL 0.9162 0.9198	15.09 0.9031 Median 0.9000 0.9123	0.2952 0.6685 Min 0.8756	Equal Var Normal D Max 0.9128	Std Err 0.0063	1.56%	0.00%
ANOVA Assu Attribute Variance Distribution Proportion N Conc-% 0 6.25 12.5	0	ons Tests Test Bartlett Eq Shapiro-W Summary Code	quality of Va filk W Norm Count 5 5 5	mean 0.8988 0.9103 0.9147	95% LCL 0.8814 0.9008 0.8934	Test Stat 6.115 0.9745 95% UCL 0.9162 0.9198 0.9360	15.09 0.9031 Median 0.9000 0.9123 0.9208	0.2952 0.6685 Min 0.8756 0.8976 0.8922	Equal Var Normal D Max 0.9128 0.9175	Std Err 0.0063 0.0034	1.56% 0.84%	0.00%
ANOVA Assu Attribute Variance Distribution Proportion N Conc-% 0 6.25 12.5 25	0	ons Tests Test Bartlett Eq Shapiro-W Summary Code	Quality of Va filk W Norm Count 5 5 5 5	mean 0.8988 0.9103 0.9147 0.9101	95% LCL 0.8814 0.9008 0.8934 0.8829	Test Stat 6.115 0.9745 95% UCL 0.9162 0.9198 0.9360 0.9373	15.09 0.9031 Median 0.9000 0.9123 0.9208 0.9006	0.2952 0.6685 Min 0.8756 0.8976 0.8922 0.8873	Max 0.9128 0.9175 0.9297 0.9375	Std Err 0.0063 0.0034 0.0077	1.56% 0.84% 1.87%	0.00% -1.29% -1.77% -1.26%
ANOVA Assu Attribute Variance Distribution Proportion N Conc-% 0 6.25 12.5	0	ons Tests Test Bartlett Eq Shapiro-W Summary Code	quality of Va filk W Norm Count 5 5 5	mean 0.8988 0.9103 0.9147	95% LCL 0.8814 0.9008 0.8934	Test Stat 6.115 0.9745 95% UCL 0.9162 0.9198 0.9360	15.09 0.9031 Median 0.9000 0.9123 0.9208	0.2952 0.6685 Min 0.8756 0.8976 0.8922	Max 0.9128 0.9175 0.9297	Std Err 0.0063 0.0034 0.0077 0.0098	1.56% 0.84% 1.87% 2.41%	0.00% -1.29% -1.77%
ANOVA Assu Attribute Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100	Normal	o.01812 ons Tests Test Bartlett Eq Shapiro-W Summary Code LC	Count 5 5 5 5 5	mean 0.8988 0.9103 0.9147 0.9101 0.9168 0.9149	95% LCL 0.8814 0.9008 0.8934 0.8829 0.9052	Test Stat 6.115 0.9745 95% UCL 0.9162 0.9198 0.9360 0.9373 0.9283	15.09 0.9031 Median 0.9000 0.9123 0.9208 0.9006 0.9172	0.2952 0.6685 Min 0.8756 0.8976 0.8922 0.8873 0.9048	Max 0.9128 0.9175 0.9297 0.9375 0.9278	Std Err 0.0063 0.0034 0.0077 0.0098 0.0042	1.56% 0.84% 1.87% 2.41% 1.02%	0.00% -1.29% -1.77% -1.26% -2.00%
ANOVA Assu Attribute Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100	Normal	o.01812 ons Tests Test Bartlett Eq Shapiro-W Summary Code LC	Count 5 5 5 5 med Summ	Mean 0.8988 0.9103 0.9147 0.9101 0.9168 0.9149	95% LCL 0.8814 0.9008 0.8934 0.8829 0.9052 0.9031	7est Stat 6.115 0.9745 95% UCL 0.9162 0.9198 0.9360 0.9373 0.9283 0.9267	15.09 0.9031 Median 0.9000 0.9123 0.9208 0.9006 0.9172 0.9146	0.2952 0.6685 Min 0.8756 0.8976 0.8922 0.8873 0.9048 0.9037	Max 0.9128 0.9175 0.9297 0.9375 0.9278 0.9297	Std Err 0.0063 0.0034 0.0077 0.0098 0.0042 0.0043	1.56% 0.84% 1.87% 2.41% 1.02%	0.00% -1.29% -1.77% -1.26% -2.00% -1.79%
ANOVA Assu Attribute Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100 Angular (Conc-%	Normal	o.01812 ons Tests Test Bartlett Eq Shapiro-W Summary Code LC	Count 5 5 5 5 med Summ	mean 0.8988 0.9103 0.9147 0.9101 0.9168 0.9149 mary Mean	95% LCL 0.8814 0.9008 0.8934 0.8829 0.9052 0.9031	Test Stat 6.115 0.9745 95% UCL 0.9162 0.9198 0.9360 0.9373 0.9283 0.9267	Median 0.9000 0.9123 0.9208 0.9006 0.9172 0.9146 Median	0.2952 0.6685 Min 0.8756 0.8976 0.8922 0.8873 0.9048 0.9037	Max 0.9128 0.9175 0.9297 0.9375 0.9278 0.9297	Std Err 0.0063 0.0034 0.0077 0.0098 0.0042 0.0043	1.56% 0.84% 1.87% 2.41% 1.02% 1.04%	0.00% -1.29% -1.77% -1.26% -2.00% -1.79%
ANOVA Assu Attribute Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100 Angular (Conconconconconconconconconconconconconco	Normal	o.01812 ons Tests Test Bartlett Eq Shapiro-W Summary Code LC	Count 5 5 5 5 med Summ Count 5	mean 0.8988 0.9103 0.9147 0.9101 0.9168 0.9149 mary Mean 1.2480	95% LCL 0.8814 0.9008 0.8934 0.8829 0.9052 0.9031 95% LCL 1.2190	7est Stat 6.115 0.9745 95% UCL 0.9162 0.9198 0.9360 0.9373 0.9283 0.9267 95% UCL 1.2760	Median 0.9000 0.9123 0.9208 0.9006 0.9172 0.9146 Median 1.2490	0.2952 0.6685 Min 0.8756 0.8976 0.8922 0.8873 0.9048 0.9037	Max 0.9128 0.9175 0.9297 0.9375 0.9278 0.9297 Max 1.2710	Std Err 0.0063 0.0034 0.0077 0.0098 0.0042 0.0043 Std Err 0.0102	1.56% 0.84% 1.87% 2.41% 1.02% 1.04% CV%	0.00% -1.29% -1.77% -1.26% -2.00% -1.79% %Effect 0.00%
ANOVA Assu Attribute Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100 Angular (Conconconconconconconconconconconconconco	Normal	o.01812 ons Tests Test Bartlett Eq Shapiro-W Summary Code LC	Count 5 5 5 5 med Summ Count 5 5 5	Mean 0.8988 0.9103 0.9147 0.9101 0.9168 0.9149 mary Mean 1.2480 1.2670	95% LCL 0.8814 0.9008 0.8934 0.8829 0.9052 0.9031 95% LCL 1.2190 1.2510	7est Stat 6.115 0.9745 95% UCL 0.9162 0.9198 0.9360 0.9373 0.9283 0.9267 95% UCL 1.2760 1.2830	Median 0.9000 0.9123 0.9208 0.9006 0.9172 0.9146 Median 1.2490 1.2700	0.2952 0.6685 Min 0.8756 0.8976 0.8922 0.8873 0.9048 0.9037 Min 1.2100 1.2450	Max 0.9128 0.9175 0.9297 0.9375 0.9278 0.9297 Max 1.2710 1.2800	Std Err 0.0063 0.0034 0.0077 0.0098 0.0042 0.0043 Std Err 0.0102 0.0059	1.56% 0.84% 1.87% 2.41% 1.02% 1.04% CV% 1.83% 1.04%	0.00% -1.29% -1.77% -1.26% -2.00% -1.79% %Effect 0.00% -1.55%
ANOVA Assu Attribute Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100 Angular (Conc-% 0 6.25 12.5	Normal	o.01812 ons Tests Test Bartlett Eq Shapiro-W Summary Code LC	Count 5 5 5 5 med Summ Count 5 5 5 5 5 5 5 5 5 6 6 7 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Mean 0.8988 0.9103 0.9147 0.9101 0.9168 0.9149 ary Mean 1.2480 1.2670 1.2760	95% LCL 0.8814 0.9008 0.8934 0.8829 0.9052 0.9031 95% LCL 1.2190 1.2510 1.2380	7est Stat 6.115 0.9745 95% UCL 0.9162 0.9198 0.9360 0.9373 0.9283 0.9267 95% UCL 1.2760 1.2830 1.3130	Median 0.9000 0.9123 0.9208 0.9006 0.9172 0.9146 Median 1.2490 1.2700 1.2860	0.2952 0.6685 Min 0.8756 0.8976 0.8922 0.8873 0.9048 0.9037 Min 1.2100 1.2450 1.2360	Max 0.9128 0.9175 0.9297 0.9375 0.9278 0.9297 Max 1.2710 1.2800 1.3030	Std Err 0.0063 0.0034 0.0077 0.0098 0.0042 0.0043 Std Err 0.0102	1.56% 0.84% 1.87% 2.41% 1.02% 1.04% CV%	0.00% -1.29% -1.77% -1.26% -2.00% -1.79% %Effect 0.00%
ANOVA Assu Attribute Variance Distribution Proportion N Conc-% 0 6.25 12.5 25 50 100 Angular (Conconconconconconconconconconconconconco	Normal	o.01812 ons Tests Test Bartlett Eq Shapiro-W Summary Code LC	Count 5 5 5 5 med Summ Count 5 5 5	Mean 0.8988 0.9103 0.9147 0.9101 0.9168 0.9149 mary Mean 1.2480 1.2670	95% LCL 0.8814 0.9008 0.8934 0.8829 0.9052 0.9031 95% LCL 1.2190 1.2510	7est Stat 6.115 0.9745 95% UCL 0.9162 0.9198 0.9360 0.9373 0.9283 0.9267 95% UCL 1.2760 1.2830	Median 0.9000 0.9123 0.9208 0.9006 0.9172 0.9146 Median 1.2490 1.2700	0.2952 0.6685 Min 0.8756 0.8976 0.8922 0.8873 0.9048 0.9037 Min 1.2100 1.2450	Max 0.9128 0.9175 0.9297 0.9375 0.9278 0.9297 Max 1.2710 1.2800	Std Err 0.0063 0.0034 0.0077 0.0098 0.0042 0.0043 Std Err 0.0102 0.0059 0.0136	1.56% 0.84% 1.87% 2.41% 1.02% 1.04% CV% 1.83% 1.04% 2.38%	0.00% -1.29% -1.77% -1.26% -2.00% -1.79% %Effect 0.00% -1.55% -2.24%

Conc-%

Report Date: Test Code/ID: 07 Mar-23 14:31 (p 6 of 8) 23-01-052 / 00-4977-5980

WSP Laboratory Bivalve Larval Survival and Development Test



Report Date: Test Code/ID: 07 Mar-23 14:31 (p 7 of 8) 23-01-052 / 00-4977-5980

Bivalve Larval St	urvival and D	evelopmen	t Test							WSPI	Laboratory
Analyzed: 07	-1347-8503 Mar-23 14:29 Mar-23 14:23	Anal		ametric-Cor	ntrol vs Trea		Statu	IS Version: us Level: or ID:	CETISv2. 1 002-883-3		
Comments: FC	= Filtered Cor	ntrol, 101= 1	00% (1.2un	n filtered)							
Data Transform		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corrected	d)	C > T				100	>100		1	0.08465	8.85%
Dunnett Multiple	Comparison	Test									
Control vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(
Lab Control	6.25	8	-0.1189	2.362	0.1864	CDF	0.8661		ficant Effect		
	12.5	8	-0.6117	2.362	0.1864	CDF	0.9540		ficant Effect		
	25	8	0.1931	2.362	0.1864	CDF	0.7700		ficant Effect		
	50	8	-0.04012	2.362	0.1864	CDF	0.8449		ficant Effect		
	100	8	-0.8435	2.362	0.1864	CDF	0.9745	Non-Signit	ficant Effect		
ANOVA Table											
Source	Sum Squa	ares	Mean Squ	iare	DF	F Stat	P-Value	Decision(α:5%)		
Between	0.0249819	9	0.0049964		5	0.3209	0.8955	Non-Signif	ficant Effect		
Error	0.373732		0.0155722	2	24						
Total	0.398714				29						
					. (3.33)						
ANOVA Assumpt	tions Tests										
ANOVA Assumpt	tions Tests Test				Test Stat	Critical	P-Value	Decision(α:1%)		
Attribute	Test	uality of Var	iance Test			Critical	P-Value 0.9971	Decision(
	Test Bartlett Eq	quality of Var Vilk W Norma			Test Stat 0.325 0.922				iances		
Attribute Variance	Test Bartlett Eq Shapiro-W				0.325	15.09	0.9971	Equal Vari	iances		
Attribute Variance Distribution Survival Rate Su	Test Bartlett Eq Shapiro-W			95% LCL	0.325 0.922	15.09	0.9971	Equal Vari	iances	CV%	%Effect
Attribute Variance Distribution	Test Bartlett Eq Shapiro-W	Vilk W Norma	ality Test	95% LCL 0.8928	0.325 0.922	15.09 0.9031	0.9971 0.0303	Equal Vari Normal Di	iances stribution	CV% 5.35%	%Effect
Attribute Variance Distribution Survival Rate Su Conc-% 0	Test Bartlett Eq Shapiro-W mmary Code	Count 5	Mean		0.325 0.922 95% UCL	15.09 0.9031 Median	0.9971 0.0303 Min	Equal Vari Normal Di	stribution Std Err		SALANDER EXPONEN
Attribute Variance Distribution Survival Rate Su Conc-% 0 6.25	Test Bartlett Eq Shapiro-W mmary Code	Vilk W Norma	Mean 0.9563	0.8928	0.325 0.922 95% UCL 1.0000	15.09 0.9031 Median 0.9781	0.9971 0.0303 Min 0.8743	Equal Vari Normal Di Max 1.0000	stribution Std Err 0.0229	5.35%	0.00%
Attribute Variance Distribution Survival Rate Su Conc-% 0 6.25 12.5	Test Bartlett Eq Shapiro-W mmary Code	Count 5 5	Mean 0.9563 0.9596	0.8928 0.9089 0.9189	0.325 0.922 95% UCL 1.0000 1.0000	15.09 0.9031 Median 0.9781 0.9563	0.9971 0.0303 Min 0.8743 0.9071	Max 1.0000 1.0000	Std Err 0.0229 0.0183	5.35% 4.25%	0.00% -0.34%
Attribute Variance Distribution Survival Rate Su Conc-% 0 6.25	Test Bartlett Eq Shapiro-W mmary Code	Count 5 5 5 5	Mean 0.9563 0.9596 0.9705	0.8928 0.9089	0.325 0.922 95% UCL 1.0000 1.0000	15.09 0.9031 Median 0.9781 0.9563 1.0000	0.9971 0.0303 Min 0.8743 0.9071 0.9126	Equal Vari Normal Di Max 1.0000 1.0000	Std Err 0.0229 0.0183 0.0186	5.35% 4.25% 4.28%	0.00% -0.34% -1.49%
Attribute Variance Distribution Survival Rate Su Conc-% 0 6.25 12.5 25	Test Bartlett Eq Shapiro-W mmary Code	Count 5 5 5	Mean 0.9563 0.9596 0.9705 0.9486	0.8928 0.9089 0.9189 0.8731	0.325 0.922 95% UCL 1.0000 1.0000 1.0000	15.09 0.9031 Median 0.9781 0.9563 1.0000 0.9617	0.9971 0.0303 Min 0.8743 0.9071 0.9126 0.8470	Max 1.0000 1.0000 1.0000	Std Err 0.0229 0.0183 0.0186 0.0272	5.35% 4.25% 4.28% 6.41%	0.00% -0.34% -1.49% 0.80%
Attribute Variance Distribution Survival Rate Su Conc-% 0 6.25 12.5 25 50	Test Bartlett Eq Shapiro-W mmary Code LC	Count 5 5 5 5 5 5 5 5 5	Mean 0.9563 0.9596 0.9705 0.9486 0.9607 0.9781	0.8928 0.9089 0.9189 0.8731 0.9143	0.325 0.922 95% UCL 1.0000 1.0000 1.0000 1.0000	15.09 0.9031 Median 0.9781 0.9563 1.0000 0.9617 0.9781	0.9971 0.0303 Min 0.8743 0.9071 0.9126 0.8470 0.9180	Max 1.0000 1.0000 1.0000 1.0000	Std Err 0.0229 0.0183 0.0186 0.0272 0.0167	5.35% 4.25% 4.28% 6.41% 3.89%	0.00% -0.34% -1.49% 0.80% -0.46%
Attribute Variance Distribution Survival Rate Su Conc-% 0 6.25 12.5 25 50 100	Test Bartlett Eq Shapiro-W mmary Code LC	Count 5 5 5 5 5 5 5 5 5	Mean 0.9563 0.9596 0.9705 0.9486 0.9607 0.9781	0.8928 0.9089 0.9189 0.8731 0.9143	95% UCL 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	15.09 0.9031 Median 0.9781 0.9563 1.0000 0.9617 0.9781 1.0000	0.9971 0.0303 Min 0.8743 0.9071 0.9126 0.8470 0.9180	Max 1.0000 1.0000 1.0000 1.0000	Std Err 0.0229 0.0183 0.0186 0.0272 0.0167	5.35% 4.25% 4.28% 6.41% 3.89%	0.00% -0.34% -1.49% 0.80% -0.46%
Attribute Variance Distribution Survival Rate Su Conc-% 0 6.25 12.5 25 50 100 Angular (Correct Conc-%	Test Bartlett Eq Shapiro-W mmary Code LC	Count 5 5 5 5 5 5 comed Summ	Mean 0.9563 0.9596 0.9705 0.9486 0.9607 0.9781 ary Mean	0.8928 0.9089 0.9189 0.8731 0.9143 0.9339	95% UCL 1.0000 1.0000 1.0000 1.0000 1.0000 95% UCL	Median 0.9781 0.9563 1.0000 0.9617 0.9781 1.0000 Median	0.9971 0.0303 Min 0.8743 0.9071 0.9126 0.8470 0.9180 0.9180	Max 1.0000 1.0000 1.0000 1.0000 1.0000	Std Err 0.0229 0.0183 0.0186 0.0272 0.0167 0.0159	5.35% 4.25% 4.28% 6.41% 3.89% 3.64%	0.00% -0.34% -1.49% 0.80% -0.46% -2.29%
Attribute Variance Distribution Survival Rate Su Conc-% 0 6.25 12.5 25 50 100 Angular (Correct Conc-% 0	Test Bartlett Eq Shapiro-W mmary Code LC	Count 5 5 5 5 5 med Summ Count 5	Mean 0.9563 0.9596 0.9705 0.9486 0.9607 0.9781 ary Mean 1.3910	0.8928 0.9089 0.9189 0.8731 0.9143 0.9339 95% LCL 1.2330	95% UCL 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	Median 0.9781 0.9563 1.0000 0.9617 0.9781 1.0000	0.9971 0.0303 Min 0.8743 0.9071 0.9126 0.8470 0.9180 0.9180	Max 1.0000 1.0000 1.0000 1.0000 1.0000 Max	Std Err 0.0229 0.0183 0.0186 0.0272 0.0167 0.0159	5.35% 4.25% 4.28% 6.41% 3.89% 3.64%	0.00% -0.34% -1.49% 0.80% -0.46% -2.29%
Attribute Variance Distribution Survival Rate Su Conc-% 0 6.25 12.5 25 50 100 Angular (Correct Conc-% 0 6.25	Test Bartlett Eq Shapiro-W mmary Code LC	Count 5 5 5 5 5 med Summ Count 5 5 5	Mean 0.9563 0.9596 0.9705 0.9486 0.9607 0.9781 ary Mean	0.8928 0.9089 0.9189 0.8731 0.9143 0.9339	95% UCL 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	Median 0.9781 0.9563 1.0000 0.9617 0.9781 1.0000 Median 1.4220	0.9971 0.0303 Min 0.8743 0.9071 0.9126 0.8470 0.9180 0.9180 Min 1.2080	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	Std Err 0.0229 0.0183 0.0186 0.0272 0.0167 0.0159 Std Err 0.0570	5.35% 4.25% 4.28% 6.41% 3.89% 3.64% CV% 9.16%	0.00% -0.34% -1.49% 0.80% -0.46% -2.29% %Effect 0.00%
Attribute Variance Distribution Survival Rate Su Conc-% 0 6.25 12.5 25 50 100 Angular (Correct Conc-% 0	Test Bartlett Eq Shapiro-W mmary Code LC	Count 5 5 5 5 5 med Summ Count 5	Mean 0.9563 0.9596 0.9705 0.9486 0.9607 0.9781 ary Mean 1.3910 1.4000	0.8928 0.9089 0.9189 0.8731 0.9143 0.9339 95% LCL 1.2330 1.2430	95% UCL 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.5490 1.5580	Median 0.9781 0.9563 1.0000 0.9617 0.9781 1.0000 Median 1.4220 1.3600	0.9971 0.0303 Min 0.8743 0.9071 0.9126 0.8470 0.9180 0.9180 Min 1.2080 1.2610	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	Std Err 0.0229 0.0183 0.0186 0.0272 0.0167 0.0159 Std Err 0.0570 0.0568	5.35% 4.25% 4.28% 6.41% 3.89% 3.64% CV% 9.16% 9.07%	0.00% -0.34% -1.49% 0.80% -0.46% -2.29% %Effect 0.00% -0.67%
Attribute Variance Distribution Survival Rate Su Conc-% 0 6.25 12.5 25 50 100 Angular (Correct Conc-% 0 6.25 12.5	Test Bartlett Eq Shapiro-W mmary Code LC	Count 5 5 5 5 5 Count Count 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 6 6 7 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Mean 0.9563 0.9596 0.9705 0.9486 0.9607 0.9781 ary Mean 1.3910 1.4000 1.4390	0.8928 0.9089 0.9189 0.8731 0.9143 0.9339 95% LCL 1.2330 1.2430 1.2760	95% UCL 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.5490 1.5580 1.6020	Median 0.9781 0.9563 1.0000 0.9617 0.9781 1.0000 Median 1.4220 1.3600 1.5340	0.9971 0.0303 Min 0.8743 0.9071 0.9126 0.8470 0.9180 0.9180 Min 1.2080 1.2610 1.2710	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.5340 1.5340 1.5340	Std Err 0.0229 0.0183 0.0186 0.0272 0.0167 0.0159 Std Err 0.0570 0.0568 0.0586	5.35% 4.25% 4.28% 6.41% 3.89% 3.64% CV% 9.16% 9.07% 9.11%	0.00% -0.34% -1.49% 0.80% -0.46% -2.29% %Effect 0.00% -0.67% -3.47%

Bivalve Larval Survival and Development Test

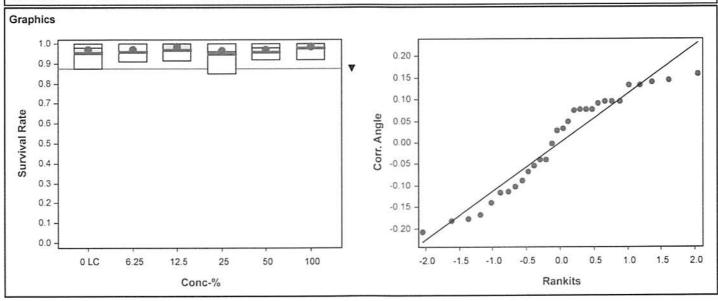
Report Date: Test Code/ID: 07 Mar-23 14:31 (p 8 of 8) 23-01-052 / 00-4977-5980

WSP Laboratory

Analysis ID: 01-1347-8503 Endpoint: Survival Rate CETIS Version: CETISv2.1.3

Analyzed: 07 Mar-23 14:29 Analysis: Parametric-Control vs Treatments Status Level:

Edit Date: 07 Mar-23 14:23 MD5 Hash: B846EF97F28A0FFD2DCD855EAF449453 Editor ID: 002-883-387-8



CETIS Test Data Worksheet

Report Date: Test Code/ID: 20 Jan-23 13:25 (p 1 of 1)

-2F7856C / 00-4977-5980

23-04-05ZWood E&IS

Bivalve Larval Survival and Development Test

Start Date: 28 Jan-23 (600) End Date:

26 Jan-23 1730 Species: Mytilis galloprovincialis

Protocol: EPA/600/R-95/136 (1995)

Sample Code: 107328F6

Sample Source: Shelter Island Yacht Basin

onc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
			111			196	181	
			112			173	155	
			113			173	167	
			114			175	160	
			115			169	154	
			116				157	
			117			172	153	
			118			199	182	
			119			155	144	
			120			155	149	
			121			185	172	
			122			202	186	
			123			200	182	
			124			178	158	
			125			187	169	copepad observed
			126			169	155	
			127			201	177	
			128			171	156	
			129			160	144	
			130			163	145	
			131			181	163	
			132			171	163	
			133			166	149	
			134			179	163	
			135			185	172	
			136			180	164	
			137			181	164	
			138			179	161	
			139			189	161	
			140			168	152	
			141			194	118	
			142			206	184	
			143			176	165	
			144			167	149	
			145			201	176	
			146			213	189	
			147			178	163	
			148			199	182	
			149			182	166	
			150			172	155	

CETIS Test Data Worksheet

Report Date: Test Code/ID: 20 Jan-23 13:25 (p 1 of 1) 2F7856C / 00-4977-5980

Bivalve Larval Survival and Development Test

Wood E&IS

Start Date: End Date:

Sample Date: 25 Jan-23

26 Jan-23 28 Jan-23 Species: Mytilis galloprovincialis

Protocol: EPA/600/R-95/136 (1995)

Material: Seawater

Sample Code: 107328F6

Sample Source: Shelter Island Yacht Basin

Sample Station: SIYB 3

				Initial Density	Final Density	# Counted	#Normal	
Conc-%	Code	Ren	Pos	nitia	inal	nted	ma	Notes
0	FC	1	142	NG 11				
0	FC	2	136					
0	FC	3	132					
0	FC	4	120					
0	FC	5	130					
0	LC	1	138					
0	LC	2	137					
0	LC	3	145					
0	LC	4	116					
0	LC	5	129					
6.25		1	141					•
6.25		2	123					
6.25		3	128					
6.25		4	133					
6.25		5	114					
12.5		1	135					
12.5		2	144					
12.5		3	122					
12.5		4	150					
12.5		5	148					
25		1	119					
25		2	112					
25		3	131					
25		4	143					
25		5	146					
50		1	140					
50		2	126					
50		3	113					
50		4	134					
50		5	111					
100		1	121					
100		2	147					
100		3	117					
100		4	125					
100		5	118					
101		1	139					
101		2	127					
101		3	124					
101		4	149					
101		5	115					

QC=TD

Analyst: At QA: JC

Water Quality for Bivalve Development

下いい Client: Wood- Port of San Diego

Sample ID: SIYB-3

Test No. 23-01-052

Test Species: M. galloprovincialis

Start Date/Time: 1/26/2023 1736

End Date/Time: 1/30/2023 \600

Test Conc.		Water Qualit	y Measurements	
(%)	Parameter	0hr	24hr	48hr
	Temp. (°C)	15.9	15.6	15.5
Lab Cantral	Salinity (ppt)	33.4	33.9	340
Lab Control	pH (units)	7.90	7.78	7.80
	DO (mg/L)	8.3	8.4	83
	Temp. (°C)	15.9	15.5	15.4
	Salinity (ppt)	33.3	33.8	34.0
Filter Control	pH (units)	7.90	7.78	7.81
	DO (mg/L)	7.7	7.5	8.0
	Temp. (°C)	15.8	15.8	15.4
6.35	Salinity (ppt)	33.4	33.9	34.0
6.25	pH (units)	7.90	7.74	7.79
	DO (mg/L)	9.4	8.4	8.3
	Temp. (°C)	15.9	15.4	15.5
12.5	Salinity (ppt)	33.4	34,0	34.1
12.5	pH (units)	7.90	7.76	7.78
	DO (mg/L)	8.4	8.4	83
	Temp. (°C)	16.0	15.6	15.5
25	Salinity (ppt)	33.2	33.9	34.0
25	pH (units)	7-90	7.74	7:77
	DO (mg/L)	8.3	8.5	8.4
	Temp. (°C)	15.9	15.6	15.5
	Salinity (ppt)	33.0	33.9	34.0
50	pH (units)	7-91	7.74	7.77
	DO (mg/L)	3.4	8.5	8.4
	Temp. (°C)	15-7	15.6e	15.5
	Salinity (ppt)	32.7	33.3	33.6
100	pH (units)	7.91	7.75	7.76
	DO (mg/L)	8.6	8.4	8.3
	Temp. (°C)	16.0	15.5	15.4
.00 Filtered	Salinity (ppt)	31.9	32.3	32.6
(1.2μm)	pH (units)	7-84	7.76	7.16
	DO (mg/L)	8.2	6.4	8.3
	Tech Initia	ls: HX	JE	A.

Source of Animals:	M	1	stan	B	9	1
					-	-

Date Received: 1/26/23

omments:

Intra (QC: JE 3/7/23

Embryo-Larval Development Test Stock Preparation Worksheet

Test Species:

M. galloprovincialis

Test Date: 1/26/2023

Batch ID:

1/26/23 MITSON Bay Collection

Analyst:

Test Type:

48hr Bivalue Development

Task	HE THE
Spawning Induction	1430
Spawning Begins	1510
# Males/# Females	515
Spawn Condition	good
Fertilization Initiated	1600
Fertilzation End/Eggs Rinsed	1620/1640
Embryo Counts	1700
Test Initiation	1730

Embryo Density Counts

per 100 μL

ibi yo belisity	Counts		, pc. 900 p	-			
Stock #	Stock Volume (mL)	Rep 1	Rep 2	Rep 3	Rep 4	Mean #/100 μL	Mean #/mL (x10)
Stock 1						7.6	770
Stock 2	500						
Stock 3	500	21	19	11	13	1.6	800

Cell Division:

	% Divided
Stock 1	
Stock 2	90
Stock 3	98

Selected Stock:	3
-----------------	---

Stock Density

Dil Factor

Adjust selected embryo stock to 500 embryos/mL.

Dilution Factor = Stock Density/mL/500

<u>ζδΟ</u> 500 1,6

In 10 mL sample volume add 500 µl of 500 embryo/ml stock to obtain 25 embryos/mL in test vials.

Notes:

TO,=195, TO2=175, TO3=175, TO4=192, TOS=184

X= 183

QA Review:

AG 2/9/23

Final Review: 1 3/9/13

Site: SIYB-4

CETIS Summary Report

01-7259-2876 Proportion Normal

07-8651-7941 Survival Rate

Bivalve Larval Survival and Development Test

Report Date:

07 Mar-23 14:56 (p 1 of 4) 23-01-053 / 16-5809-9496

rest Code/ID:	23-01-

WSP Laboratory

Batch ID:	00-9037-2630	Test Type:	Development-Survival		Anal	yst:				
Start Date:	26 Jan-23 17:30	Protocol:	EPA/600/R-95/136 (1995)		Dilue	ent: N	Natural Seawa	iter		
Ending Date:	28 Jan-23 16:00	Species:	Mytilis galloprovincialis		Brin	e: N	Not Applicable			
Test Length:	46h	Taxon:			Sour	rce: F	Field Collected	i	Age:	
Sample ID:	12-1230-7538	Code:	23-W029		Proje	ect: S	SIYB TMDL M	onitoring		
Sample Date:	25 Jan-23 11:00	Material:	Seawater		Sour	rce: S	Shelter Island	Yacht Basin		
Receipt Date:	25 Jan-23 12:40	CAS (PC):			Stati	on: S	SIYB 4			
Sample Age:	30h (17.8 °C)	Client:	WSP							
Comments:	FC= Filtered Contro	I, 101= 100% (1	1.2um Filtered)							
Single Compa	arison Summary									
Analysis ID	Endpoint	Comp	parison Method		P-Value	Compa	arison Resul	lt		S
11-9999-6181	Combined Proportio	n Norma TST-\	Welch's t Test		0.0001	100%	passed combi	ined proporti	on norm	al 1
20-6655-4017	Combined Proportio	n Norma TST-\	Welch's t Test		0.0090	101%	passed combi	ined proporti	on norm	al 1
Multiple Com	parison Summary									
Analysis ID	Endpoint	Comp	parison Method	✓	NOEL	LOEL	TOEL	PMSD	TU	S
14-5704-5111	Combined Proportio	n Norma Dunn	ett Multiple Comparison Test		100	>100		7.93%	1	1
	and the same of th				2000-0-0					- 2

Test Acceptal	pility			TAC	Limits		
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
01-7259-2876	Proportion Normal	Control Resp	0.8974	0.9	<<	Yes	Below Criteria
07-8651-7941	Survival Rate	Control Resp	0.9519	0.5	<<	Yes	Passes Criteria
14-5704-5111	Combined Proportion Norma	PMSD	0.07928	<<	0.25	No	Passes Criteria

Dunnett Multiple Comparison Test

Dunnett Multiple Comparison Test

100

100

>100

>100

Ook-rounds up to 90%

4.41%

7.31%

1

Analyst: JF QA: \$63/9/23

07 Mar-23 14:56 (p 2 of 4) 23-01-053 / 16-5809-9496

Bivalve Larval Survival and Development Test

Combined Propo	ortion Norm	al Summar	/								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.8537	0.8076	0.8998	0.8033	0.8907	0.0166	0.0371	4.35%	0.00%
0	FC	5	0.8883	0.8661	0.9105	0.8743	0.9180	0.0080	0.0179	2.01%	-4.05%
6.25		5	0.8792	0.8347	0.9237	0.8197	0.9126	0.0160	0.0358	4.08%	-2.98%
12.5		5	0.8474	0.8003	0.8944	0.7923	0.8907	0.0170	0.0379	4.48%	0.74%
25		5	0.8737	0.8422	0.9053	0.8470	0.8985	0.0114	0.0254	2.91%	-2.35%
50		5	0.8672	0.7948	0.9396	0.7869	0.9235	0.0261	0.0583	6.72%	-1.58%
100		5	0.8459	0.7842	0.9076	0.8033	0.9126	0.0222	0.0497	5.87%	0.91%
101		5	0.8265	0.7080	0.9449	0.7268	0.9344	0.0427	0.0954	11.54%	3.19%
Proportion Norm	nal Summar	у									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.8974	0.8723	0.9225	0.8674	0.9157	0.0090	0.0202	2.25%	0.00%
0	FC	5	0.8932	0.8679	0.9186	0.8769	0.9282	0.0091	0.0204	2.28%	0.47%
6.25		5	0.8958	0.8714	0.9201	0.8763	0.9278	0.0088	0.0196	2.19%	0.18%
12.5		5	0.8914	0.8704	0.9124	0.8706	0.9157	0.0076	0.0169	1.90%	0.67%
25		5	0.8964	0.8661	0.9268	0.8757	0.9371	0.0109	0.0245	2.73%	0.11%
50		5	0.9009	0.8671	0.9348	0.8623	0.9337	0.0122	0.0273	3.03%	-0.39%
100		5	0.8863	0.8409	0.9317	0.8400	0.9257	0.0164	0.0366	4.12%	1.24%
101		5	0.9080	0.8691	0.9469	0.8590	0.9448	0.0140	0.0314	3.45%	-1.18%
Survival Rate Su	ımmary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9519	0.8873	1.0170	0.8852	1.0000	0.0233	0.0520	5.47%	0.00%
0	FC	5	0.9945	0.9849	1.0040	0.9836	1.0000	0.0035	0.0077	0.78%	-4.48%
6.25		5	0.9814	0.9403	1.0230	0.9235	1.0000	0.0148	0.0332	3.38%	-3.10%
12.5		5	0.9508	0.8955	1.0060	0.8852	1.0000	0.0199	0.0446	4.69%	0.11%
25		5	0.9749	0.9454	1.0040	0.9508	1.0000	0.0106	0.0237	2.43%	-2.41%
50		5	0.9617	0.9138	1.0100	0.9126	1.0000	0.0173	0.0386	4.02%	-1.03%
100		5	0.9541	0.9213	0.9868	0.9235	0.9945	0.0118	0.0264	2.76%	-0.23%
101		5	0.9093	0.7991	1.0190	0.7923	1.0000	0.0397	0.0888	9.76%	4.48%

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Bivalve Larval Survival and Development Test

Combined Pro	portion Norm	al Detail					MD5:	137709973C9556CA571C9A119325C32F
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.8860	0.8579	0.8033	0.8306	0.8907		
0	FC	0.8914	0.8769	0.8808	0.8743	0.9180		
6.25		0.8989	0.8763	0.8197	0.9126	0.8883		
12.5		0.8706	0.8525	0.7923	0.8907	0.8306		
25		0.8985	0.8800	0.8470	0.8962	0.8470		
50		0.7869	0.9235	0.8962	0.9043	0.8251		
100		0.8087	0.8197	0.8033	0.8852	0.9126		
101		0.7268	0.9344	0.8361	0.9029	0.7322		
Proportion No	rmal Detail						MD5:	15B7D8CFE447C4906D10C53A2D6DA37F
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.8860	0.8674	0.9074	0.9157	0.9106		
0	FC	0.8914	0.8769	0.8808	0.8889	0.9282		
6.25		0.8989	0.8763	0.8876	0.9278	0.8883		
12.5		0.8706	0.8814	0.8951	0.9157	0.8941		
25		0.8985	0.8800	0.8908	0.9371	0.8757		
50		0.8623	0.9337	0.9162	0.9043	0.8882		
100		0.8605	0.8876	0.8400	0.9257	0.9176		
101		0.9172	0.9448	0.9162	0.9029	0.8590		
Survival Rate	Detail			*		18	MD5:	A0656CCB257320A52B043F2F7B6BBBB7
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	1.0000	0.9891	0.8852	0.9071	0.9781		
0	FC	1.0000	1.0000	1.0000	0.9836	0.9891		
6.25		1.0000	1.0000	0.9235	0.9836	1.0000		
12.5		1.0000	0.9672	0.8852	0.9727	0.9290		
25		1.0000	1.0000	0.9508	0.9563	0.9672		
50		0.9126	0.9891	0.9781	1.0000	0.9290		
100		0.9399	0.9235	0.9563	0.9563	0.9945		
101		0.7923	0.9891	0.9126	1.0000	0.8525		

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Bivalve Larval Survival and Development Test

			HENT I VERMANNA				
Combined Pro	portion Norm	al Binomials	3				
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	171/193	157/183	147/183	152/183	163/183	
0	FC	197/221	171/195	170/193	160/183	168/183	
6.25		169/188	170/194	150/183	167/183	167/188	
12.5		175/201	156/183	145/183	163/183	152/183	
25		177/197	176/200	155/183	164/183	155/183	
50		144/183	169/183	164/183	170/188	151/183	
100		148/183	150/183	147/183	162/183	167/183	
101		133/183	171/183	153/183	186/206	134/183	
Proportion No	rmal Binomial	s					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	171/193	157/181	147/162	152/166	163/179	
0	FC	197/221	171/195	170/193	160/180	168/181	
6.25		169/188	170/194	150/169	167/180	167/188	
12.5		175/201	156/177	145/162	163/178	152/170	
25		177/197	176/200	155/174	164/175	155/177	
50		144/167	169/181	164/179	170/188	151/170	
100		148/172	150/169	147/175	162/175	167/182	
101		133/145	171/181	153/167	186/206	134/156	
Survival Rate I	Binomials						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	183/183	181/183	162/183	166/183	179/183	
0	FC	183/183	183/183	183/183	180/183	181/183	
6.25		183/183	183/183	169/183	180/183	183/183	
12.5		183/183	177/183	162/183	178/183	170/183	
25		183/183	183/183	174/183	175/183	177/183	
50		167/183	181/183	179/183	183/183	170/183	
100		172/183	169/183	175/183	175/183	182/183	
101		145/183	181/183	167/183	183/183	156/183	

Report Date: Test Code/ID: 07 Mar-23 14:56 (p 1 of 8) 23-01-053 / 16-5809-9496

Bivalve Larva	al Survival and Dev	elopment Test			WSP Laboratory
Analysis ID:	14-5704-5111	Endpoint:	Combined Proportion Normal	CETIS Version:	CETISv2.1.3

Analyzed: 07 Mar-23 14:55 Analysis: Parametric-Control vs Treatments Status Level:

Edit Date: 07 Mar-23 14:50 MD5 Hash: 4A37CC422506C585613A0923CDCDDF39 Editor ID: 002-883-387-8

Comments: FC= Filtered Control, 101= 100% (1.2um Filtered)

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corrected)	C > T	100	>100		1	0.06768	7.93%

Dunnett Mul	unnett Multiple Comparison Test											
Control	vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(a:5%)			
Lab Control		6.25	8	-0.9858	2.362	0.09059	CDF	0.9827	Non-Significant Effect			
		12.5	8	0.234	2.362	0.09059	CDF	0.7551	Non-Significant Effect			
		25	8	-0.7386	2.362	0.09059	CDF	0.9665	Non-Significant Effect			
		50	8	-0.6118	2.362	0.09059	CDF	0.9540	Non-Significant Effect			
		100	8	0.2345	2.362	0.09059	CDF	0.7549	Non-Significant Effect			

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0104465	0.0020893	5	0.568	0.7236	Non-Significant Effect
Error	0.0882818	0.0036784	24			
Total	0.0987283		29			

ANOVA Assum	ptions Tests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variance	Bartlett Equality of Variance Test	2.859	15.09	0.7216	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9638	0.9031	0.3863	Normal Distribution

Combined Proportion Normal Summary												
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect	
0	LC	5	0.8537	0.8076	0.8998	0.8579	0.8033	0.8907	0.0166	4.35%	0.00%	
6.25		5	0.8792	0.8347	0.9237	0.8883	0.8197	0.9126	0.0160	4.08%	-2.98%	
12.5		5	0.8474	0.8003	0.8944	0.8525	0.7923	0.8907	0.0170	4.48%	0.74%	
25		5	0.8737	0.8422	0.9053	0.8800	0.8470	0.8985	0.0114	2.91%	-2.35%	
50		5	0.8672	0.7948	0.9396	0.8962	0.7869	0.9235	0.0261	6.72%	-1.58%	
100		5	0.8459	0.7842	0.9076	0.8197	0.8033	0.9126	0.0222	5.87%	0.91%	

Angular (Corr	angular (Corrected) Transformed Summary													
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect			
0	LC	5	1.1800	1.1160	1.2450	1.1840	1.1110	1.2340	0.0234	4.42%	0.00%			
6.25		5	1.2180	1.1530	1.2840	1.2300	1.1320	1.2710	0.0236	4.34%	-3.20%			
12.5		5	1.1720	1.1060	1.2370	1.1770	1.0980	1.2340	0.0234	4.47%	0.76%			
25		5	1.2090	1.1610	1.2560	1.2170	1.1690	1.2470	0.0171	3.16%	-2.40%			
50		5	1.2040	1.0990	1.3090	1.2430	1.0910	1.2910	0.0379	7.03%	-1.99%			
100		5	1.1710	1.0820	1.2610	1.1320	1.1110	1.2710	0.0322	6.14%	0.76%			

Report Date: Test Code/ID: 07 Mar-23 14:56 (p 2 of 8) 23-01-053 / 16-5809-9496

WSP Laboratory

Analysis ID: 14-5704-5111

07 Mar-23 14:55

Endpoint: Combined Proportion Normal **CETIS Version:**

CETISv2.1.3

Analyzed:

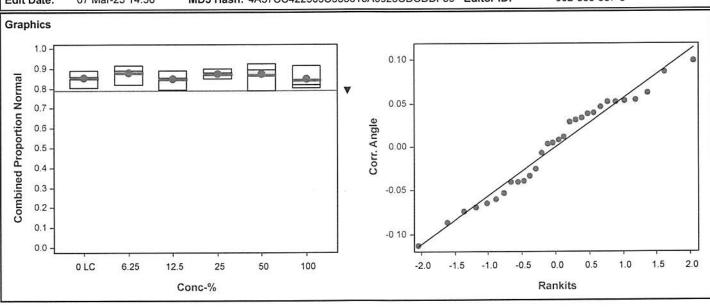
Bivalve Larval Survival and Development Test

Analysis: Parametric-Control vs Treatments Status Level:

Edit Date: 07 Mar-23 14:50

MD5 Hash: 4A37CC422506C585613A0923CDCDDF39 Editor ID:

002-883-387-8



Report Date: Test Code/ID: 07 Mar-23 14:56 (p 3 of 8) 23-01-053 / 16-5809-9496

Bivalve Larval Survival and Development Test (LC US 100%) WSP Laboratory

Analysis ID: 11-9999-6181 Endpoint: Combined Proportion Normal CETIS Version: CETISv2.1.3

Analyzed: 07 Mar-23 14:56 Analysis: Parametric Bioequivalence-Two Sample Status Level:

Edit Date: 07 Mar-23 14:50 MD5 Hash: 2EE6BAC62904C724432EF028FFCB1BDA Editor ID: 002-883-387-8

Comments: FC= Filtered Control, 101= 100% (1.2um Filtered)

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	100% passed combined proportion normal endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(a:5%)
Lab Control		100*	6	7.807	1.943	CDF	0.0001	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0002023	0.0002023	1	0.05117	0.8267	Non-Significant Effect
Error	0.0316377	0.0039547	8			
Total	0.03184		9			

ANOVA Assumptions Tests

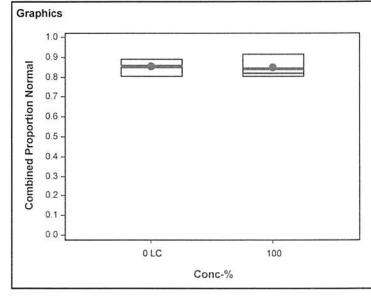
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variance	Variance Ratio F Test	1.899	23.15	0.5497	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9019	0.7411	0.2296	Normal Distribution

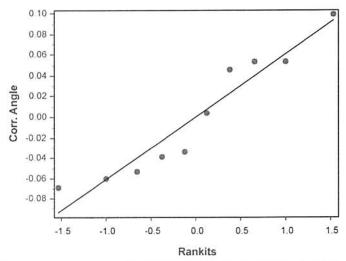
Combined Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.8537	0.8076	0.8998	0.8579	0.8033	0.8907	0.0166	4.35%	0.00%
100		5	0.8459	0.7842	0.9076	0.8197	0.8033	0.9126	0.0222	5.87%	0.91%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.1800	1.1160	1.2450	1.1840	1.1110	1.2340	0.0234	4.42%	0.00%
100		5	1.1710	1.0820	1.2610	1.1320	1.1110	1.2710	0.0322	6.14%	0.76%





Report Date:

07 Mar-23 14:56 (p 4 of 8) 23-01-053 / 16-5809-9496

Test Code/ID: WSP Laboratory

FC us 100% Filtere Bivalve Larval Survival and Development Test

Analysis ID: 20-6655-4017 Endpoint: Combined Proportion Normal

Analysis: Parametric Bioequivalence-Two Sample **CETIS Version:** Status Level:

CETISv2.1.3

Analyzed: 07 Mar-23 14:56 Edit Date: 07 Mar-23 14:50 MD5 Hash: F5B0A0C530F3A687FA8F04AFBE390AAF Editor ID:

002-883-387-8

Comments: FC= Filtered Control, 101= 100% (1.2um Filtered)

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	101% passed combined proportion normal endpoint

TST-Welch's t Test

Control	VS	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(a:5%)
Filter Control		101*	4	3.872	2.132	CDF	0.0090	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.0149835	0.0149835	1	1.658	0.2338	Non-Significant Effect	
Error	0.0722753	0.0090344	8				
Total	0.0872588		9				

ANOVA Assumptions Tests

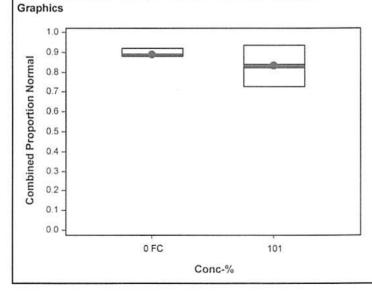
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Variance Ratio F Test	19.78	23.15	0.0135	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9383	0.7411	0.5339	Normal Distribution

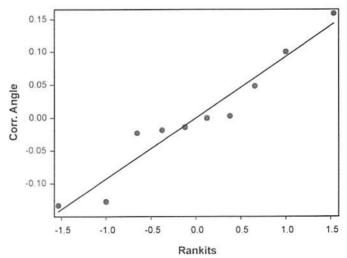
Combined Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	0.8883	0.8661	0.9105	0.8808	0.8743	0.9180	0.0080	2.01%	0.00%
101		5	0.8265	0.7080	0.9449	0.8361	0.7268	0.9344	0.0427	11.54%	6.96%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	1.2310	1.1940	1.2680	1.2180	1.2080	1.2800	0.0132	2.40%	0.00%
101		5	1.1530	0.9906	1.3160	1.1540	1.0210	1.3120	0.0587	11.37%	6.29%





Report Date: Test Code/ID: 07 Mar-23 14:56 (p 5 of 8) 23-01-053 / 16-5809-9496

Bivalve Larv	al Sur	vival and De	evelopmen	t Test							WSPI	aborator	
Analysis ID: Analyzed: Edit Date:	01-72 07 M	07 Mar-23 14:55		dpoint: Proportion Normal alysis: Parametric-Control vs Treatments D5 Hash: A65ED201B5324D77E1D57E4DC4758F			Statu	S Version: us Level: or ID:	1	CETISv2.1.3 1 002-883-387-8			
Comments:	FC=	Filtered Con	itrol, 101= 1	00% (1.2un	n Filtered)								
Data Transfo	rm		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD	
Angular (Corr	ected)		C > T				100	>100		1	0.03955	4.41%	
Dunnett Mul	tiple C	omparison	Test			277							
Control	vs	Conc-%	onc-% df Test Stat Critical				P-Type	P-Value	Decision(Decision(α:5%)			
Lab Control		6.25	8	0.1008	2.362	0.06164	CDF	0.8018	Non-Signif	ficant Effect			
		12.5	8	0.3896	2.362	0.06164	CDF	0.6939	Non-Signif	ficant Effect			
		25	8	0.03028	2.362	0.06164	CDF	0.8242	Non-Signif	ficant Effect			
		50	8	-0.2666	2.362	0.06164	CDF	0.9001	Non-Signif	ficant Effect			
		100	8	0.6048	2.362	0.06164	CDF	0.6004	Non-Signit	ficant Effect			
ANOVA Tabl	e												
Source	Sum Squares			res Mean Square		DF	F Stat	P-Value	Decision(a:5%)				
Between		0.0016240		0.0003248		5	0.1907	0.9632	Non-Signif	ficant Effect	i		
Error		0.040873		0.0017030)	24							
Total		0.042497				29							
ANOVA Assu	umptio	ns Tests											
Attribute		Test				Test Stat	Critical	P-Value	Decision(α:1%)			
Variance	ance Bartlett Equality of Variance Test					2.694	15.09	0.7470	Equal Vari	iances			
Distribution	[19] : [19] [19] [19] : [19] [19] [19] [19] [19] [19] [19] [19]					0.9757	0.9031	0.7027	Normal Di	stribution			
Proportion N	lormal	Summary											
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect	
0		LC	5	0.8974	0.8723	0.9225	0.9074	0.8674	0.9157	0.0090	2.25%	0.00%	
6.25			5	0.8958	0.8714	0.9201	0.8883	0.8763	0.9278	0.0088	2.19%	0.18%	
12.5			5	0.8914	0.8704	0.9124	0.8941	0.8706	0.9157	0.0076	1.90%	0.67%	
25			5	0.8964	0.8661	0.9268	0.8908	0.8757	0.9371	0.0109	2.73%	0.11%	
50			5	0.9009	0.8671	0.9348	0.9043	0.8623	0.9337	0.0122	3.03%	-0.39%	
100			5	0.8863	0.8409	0.9317	0.8876	0.8400	0.9257	0.0164	4.12%	1.24%	
Angular (Co	rrected	i) Transform	ned Summ	ary									
Conc-%	V (5.55 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effec	
0		LC	5	1.2460	1.2050	1.2860	1.2620	1.1980	1.2760	0.0146	2.63%	0.00%	
6.25			5	1.2430	1.2020	1.2850	1.2300	1.2110	1.2990	0.0150	2.69%	0.21%	
12.5			5	1.2360	1.2020	1.2700	1.2390	1.2030	1.2760	0.0123	2.23%	0.82%	
25			5	1.2450	1.1920	1.2980	1.2340	1.2100	1.3170	0.0192	3.44%	0.06%	
50			5	1.2530	1.1960	1.3090	1.2560	1.1910	1.3100	0.0204	3.64%	-0.56%	
100			5	1.2300	1.1580	1.3020	1.2290	1.1590	1.2950	0.0259	4.71%	1.27%	

Analyst: JF QA: 1

Report Date: Test Code/ID: 07 Mar-23 14:56 (p 6 of 8) 23-01-053 / 16-5809-9496

WSP Laboratory Bivalve Larval Survival and Development Test CETISv2.1.3 **CETIS Version:** Analysis ID: 01-7259-2876 Endpoint: Proportion Normal Analyzed: 07 Mar-23 14:55 Analysis: Parametric-Control vs Treatments Status Level: MD5 Hash: A65ED201B5324D77E1D57E4DC4758F8C Editor ID: 002-883-387-8 Edit Date: 07 Mar-23 14:50 Graphics 0.08 1.0 0.9 0.06 0.8 0.04 Proportion Normal 0.7 0.02 Corr. Angle 0.6 0.00 0.5 0.4 -0.02 0.3 -0.04 0.2 -0.06 0.1 0.0 -0.08 0.0 0.5 1.0 1.5 2.0 -1.0 -0.5 0 LC 6.25 12.5 25 50 100 -2.0 -1.5 Rankits Conc-%

Report Date: Test Code/ID: 07 Mar-23 14:56 (p 7 of 8) 23-01-053 / 16-5809-9496

Bivalve Larv	al Sur	vival and De	evelopmen	t Test							WSPI	_aboratory
Analysis ID: Analyzed: Edit Date:	nalyzed: 07 Mar-23 14:55 A		Anal					State	CETIS Version: CETISv2.1.3 Status Level: 1 Editor ID: 002-883-387-8			
Comments:	FC=	Filtered Cor	ntrol, 101= 1	00% (1.2un	n Filtered)							
Data Transfo	orm		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corr	rected)		C > T				100	>100		1	0.06961	7.31%
Dunnett Mul	tiple C	omparison	Test									
Control	vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(a:5%)			
Lab Control		6.25	8	-1.249	2.362	0.1611	CDF	0.9919	Non-Signif	ficant Effect		
		12.5	8	0.1615	2.362	0.1611	CDF	0.7812	Non-Signif	ficant Effect		
		25	8	-0.748	2.362	0.1611	CDF	0.9673	Non-Signif	ficant Effect		
		50	8	-0.2502	2.362	0.1611	CDF	0.8967	Non-Signif	ficant Effect		
		100	8	0.2281	2.362	0.1611	CDF	0.7573	Non-Signif	ficant Effect		
ANOVA Tabl	е											
Source	rce Sum Squares				iare	DF	F Stat	P-Value	Decision(a:5%)			
Between		0.0391882		0.0078376	5	5	0.6737	0.6473	Non-Signif	ficant Effect		
Error		0.279198		0.0116332	!	24	_8					
Total		0.318386				29						
ANOVA Assi	umptio	ns Tests										
Attribute		Test				Test Stat	Critical	P-Value	Decision(α:1%)		
Variance		Bartlett Eq	uality of Var	iance Test		1.16	15.09	0.9486	Equal Variances			
Distribution		Shapiro-W	ilk W Norm	ality Test		0.9637	0.9031	0.3843	Normal Distribution			
Survival Rat	e Sum	mary										
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	0.9519	0.8873	1.0000	0.9781	0.8852	1.0000	0.0233	5.47%	0.00%
6.25			5	0.9814	0.9403	1.0000	1.0000	0.9235	1.0000	0.0148	3.38%	-3.10%
12.5			5	0.9508	0.8955	1.0000	0.9672	0.8852	1.0000	0.0199	4.69%	0.11%
25			5	0.9749	0.9454	1.0000	0.9672	0.9508	1.0000	0.0106	2.43%	-2.41%
50			5	0.9617	0.9138	1.0000	0.9781	0.9126	1.0000	0.0173	4.02%	-1.03%
100			5	0.9541	0.9213	0.9868	0.9563	0.9235	0.9945	0.0118	2.76%	-0.23%
Angular (Co	rrected	d) Transforr	ned Summ	ary								
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	1.3820	1.2160	1.5470	1.4220	1.2250	1.5340	0.0596	9.64%	0.00%
6.25			5	1.4670	1.3350	1.5990	1.5340	1.2910	1.5340	0.0475	7.24%	-6.16%
12.5			5	1.3710	1.2260	1.5150	1.3890	1.2250	1.5340	0.0520	8.49%	0.80%
25			5	1.4330	1.3170	1.5490	1.3890	1.3470	1.5340	0.0418	6.53%	-3.69%
50			-	4 2000	4 0040	4 5270	4 4220	1 2710	1 5240	0.0407	7 04%	1 2/10/



7.94%

5.75%

-1.24%

1.13%

1.5340

1.4970

0.0497

0.0352

5

5

1.3990

1.3660

1.2610

1.2690

1.5370

1.4640

1.4220

1.3600

1.2710

1.2910

50

100

Report Date: Test Code/ID: 07 Mar-23 14:56 (p 8 of 8) 23-01-053 / 16-5809-9496

WSP Laboratory

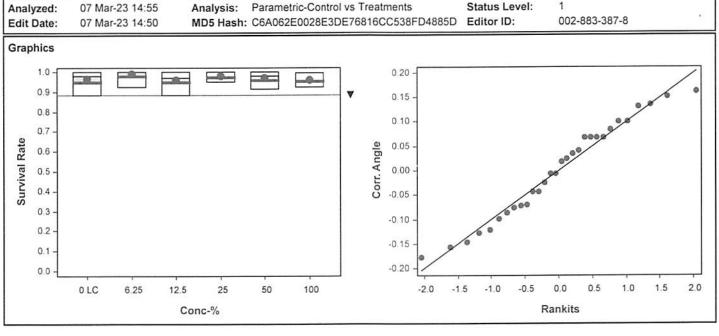
Bivalve Larval Survival and Development Test

Analysis ID: 07-8651-7941

Endpoint: Survival Rate

CETIS Version: 0

CETISv2.1.3



CETIS Test Data Worksheet

Bivalve Larval Survival and Development Test

Report Date: Test Code/ID: 20 Jan-23 13:27 (p 1 of 1)

D: <u>62D497281</u> 16-5809-9496

23-01-053 Wood E&IS

Start Date: 26 Jan-23 760 Species: Mytilis galloprovincialis Sample Code: 48425852

End Date: 28 Jan-23 (600 Protocol: EPA/600/R-95/136 (1995) Sample Source: Shelter Island Yacht Basin

Sample Date: 25 Jan-23 1165 Material: Seawater Sample Station: SIYB 4

Sample Date:	25 Ja	an-23	1100	Material:	: Seawater	Sample Station: SIYB 4							
Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal		Notes				
		•	151			145	133	HK	3/3/23				
			152			145	133	1					
			153			174	155						
			154			178	163						
	100		155			179	163						
			156			147 175 180 1191	144						
			157			175	147	1					
			158			180	(100						
			159			110443	170-19	0					
			160			193	170						
			161			221	197						
			162			221 177 180 182 178 1997 1900 1800	155 1633 44 7 100 00 10 10 10 10 10 10 10 10 10 10 10						
			163			100	107						
			164			1102	147						
			165			172	148						
			166			188	176						
			167			197	177						
			168			156	134						
			169			200	ine						
			170			lev	152	4					
			171			195	171 169 171 157	HK	. 3/4/23				
			172			181	1108						
			173			168	169						
			174			193	171						
			175			101	157						
			176			194	170						
			177			169	150	1					
			178			137	150	1					
			179			181	171						
			180			181	121	1					
			181			181	WH	1					
			182			170	157						
			183			170	151						
			184			175	162						
			185			701	175 167 180	1					
			186			107	153	1					
			187			182	167	1					
			188			200	180						
			189			1.49	164						
			190			175-1044	× 1124	느					

CETIS Test Data Worksheet

Report Date: Test Code/ID: 20 Jan-23 13:27 (p 1 of 1) 62D49728 / 16-5809-9496

Bivalve Larval Survival and Development Test

Wood E&IS

Start Date: End Date:

Sample Date: 25 Jan-23

26 Jan-23 28 Jan-23 Species: Mytilis galloprovincialis

Protocol: EPA/600/R-95/136 (1995)

Material: Seawater

Sample Code: 48425852

Sample Source: Shelter Island Yacht Basin

Sample Station: SIYB 4

mple Date:				wateriai:				otation. 61184
Conc-%	Code	Pan	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	FC	1	161		233.			
0	FC	2	171					
0	FC	3	160					
0	FC	4	158			2011		
0	FC	5	172					
0	LC	1	174					
0	LC	2	175					
	LC							
0	0.000	3	164					
0	LC	4	170					
0	LC	5	155					
6.25		1	173					
6.25		2	176					
6.25		3	177					
6.25		4	163					
6.25		5	181					
12.5		1	185					
12.5		2	178					
12.5		3	152					
12.5		4	154					
12.5		5	182					
25		1	167					
25		2	169					
25		3	153					
25		4	190					
25		5	162					
50		1	156					
50		2	180					
50		3	189					
50		4	166					
50		5	183					
100		1	165					
100		2	159					
100		3	157					
100	-	4	184					
100	-	5	187					
101	-	1	151					
101	-	2	179					
101		3	186					
	-	4						
101			188					
101		5	168					

OC=TO

Analyst: At QA: SC

Water Quality for Bivalve Development

がいら Client: .Wood -- Port of San Diego

Sample ID: SIYB-4

Test No. 23-01-053

Test Species: M. galloprovincialis

Start Date/Time: 1/26/2023 [7]

End Date/Time: 1/30/2023 (600

Test Conc.	Water Quality Measurements									
(%)	Parameter	0hr	24hr	48hr						
	Temp. (°C)	15-9	15.3	15.2						
	Salinity (ppt)	33.4	33.2	33.4						
Lab Control	pH (units)	7.91	7.71	7:15						
	DO (mg/L)	8.1	8.1	8.2						
	Temp. (°C)	15.9	15.2	15.3						
	Salinity (ppt)	33.3	33.3	33.5						
Filter Control –	pH (units)	7.89	7.73	7.76						
	DO (mg/L)	7.6	8.3	8.3						
	Temp. (°C)	15.9	15.2	15.3						
6.25	Salinity (ppt)	33.3	33.6	33.8						
6.25	pH (units)	7.90	7.73	7.76						
	DO (mg/L)	8.4	8.3	8,3						
	Temp. (°C)	15.9	15.2	15.3						
12.5	Salinity (ppt)	33.5	33.7	33.8						
12.5	pH (units)	7.90	7.73	7.77						
Γ	DO (mg/L)	8.4	85	8-4						
	Temp. (°C)	15-9	15.2	15.3						
25	Salinity (ppt)	33.3	33.3	33.5						
25	pH (units)	7.91	7.71	7.75						
	DO (mg/L)	8.5	8.4	83						
	Temp. (°C)	15.9	15.3	15.4						
50	Salinity (ppt)	33.2	33.2	33.4						
50	pH (units)	7.90	7.72	7:75						
	DO (mg/L)	8.7	8.4	83						
	Temp. (°C)	16.0	15.2	15.3						
100	Salinity (ppt)	32.7	32.9	33.						
100	pH (units)	7.92	7.73	7.75						
	DO (mg/L)	8.8	8.4	8.3						
	Temp. (°C)	15-9	15.3	15.4						
100 Filtered	Salinity (ppt)	31.8	37.1	323						
(1.2μm)	pH (units)	7.78	7.15	7:16						
=	DO (mg/L)	8.2	8.5	8.4						

Source of Animals:	Mission	Bay
_		-

Date Received: 1/26/23

Comments:

Embryo-Larval Development Test Stock Preparation Worksheet

Test Species:

M. galloprovincialis

Test Date: 1/26/2023

Analyst:

Batch ID:

Test Type:

Task	
Spawning Induction	1430
Spawning Begins	1510
# Males/# Females	515
Spawn Condition	good
Fertilization Initiated	1600
Fertilzation End/Eggs Rinsed	1620/1640
Embryo Counts	1700
Test Initiation	1730

Embryo Density Counts

20 # per 100 μL

HIDI YO DEHSILY		, bc. 200 b	-	No. of Concession, Name of	A STATE OF THE PARTY OF THE PAR	0.000	
Stock#	Stock Volume (mL)	Rep 1	Rep 2	Rep 3	Rep 4	Mean #/100 μL	Mean #/mL (x10)
Stock 1						76	//~
Stock 2	500						
Stock 3	500	21	19	11	13	1.6	800

Cell Division:

	% Divided
Stock 1	2 - 1 2 - 1
Stock 2	90
Stock 3	98

Selected Stock:	3

Stock Density

Dil Factor

Adjust selected embryo stock to 500 embryos/mL.

Dilution Factor = Stock Density/mL/500

600 500

In 10 mL sample volume add 500 µl of 500 embryo/ml stock to obtain 25 embryos/mL in test vials.

Notes:

QA Review:

Final Review: 1 3/9/23

Site: SIYB-5

CETIS Summary Report

Report Date: Test Code/ID: 08 Mar-23 13:26 (p 1 of 4) 23-01-054 / 09-1644-9934

Bivalve Larval Survival and Development Test

WSP Laboratory

Bivaive Larva	Survival and Develop	ment rest				11/					WSPL	aborat	огу
Batch ID: Start Date: Ending Date: Test Length:	26 Jan-23 17:30 28 Jan-23 16:00	Test Type: Protocol: Species: Taxon:	Developme EPA/600/R Mytilis gallo	-95/1	36 (1995)		0.519.6	Anal Dilue Brine Sour	ent: N	latural Seawa lot Applicable field Collected	8 -	Age:	
	25 Jan-23 10:00 25 Jan-23 12:40	Code: Material: CAS (PC): Client:	23-W030 Seawater WSP					Proje Sour Stati	ce: S	SIYB TMDL Mo Shelter Island ` SIYB 5			
Comments:	FC= Filtered Control, 10	01= 100% (1	.2um Filtere	ed)									
Analysis ID 05-0377-1384	Endpoint Combined Proportion N Combined Proportion N	orma TST-V		st				P-Value 0.0008 5.8E-05	100%	arison Result bassed combinates	ned proportio		
50 39 00 00000	parison Summary	Comp	arison Met	hod			✓	NOEL	LOEL	TOEL	PMSD	TU	
10-6335-2463	Combined Proportion N Proportion Normal	lorma Dunne Dunne		Comp	arison Test			100 100 100	>100 >100 >100		15.3% 5.19% 19.5%	1 1 1	
Test Acceptat	oility Endpoint	Attrib	ute		Test Stat		L	imits Upper	Overla	p Decision	1		
10-9404-9738 13-3323-0854	Proportion Normal	Contro	ol Resp ol Resp		0.9004 0.847 0.1533	0.9 0.5 <<		<< << 0.25	Yes Yes No	Passes (Passes (Passes (Criteria		

08 Mar-23 13:26 (p 2 of 4) 23-01-054 / 09-1644-9934

Bivalve Larval Survival and Development Test

WSP Laboratory

Combined Pro	portion Norm	al Summar	/								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.7639	0.6689	0.8590	0.6557	0.8251	0.0342	0.0765	10.02%	0.00%
0	FC	5	0.7563	0.7151	0.7974	0.7322	0.8142	0.0148	0.0332	4.38%	1.00%
6.25		5	0.8211	0.7149	0.9273	0.7104	0.9010	0.0382	0.0855	10.41%	-7.48%
12.5		5	0.8354	0.7678	0.9029	0.7705	0.8927	0.0243	0.0544	6.51%	-9.35%
25		5	0.7596	0.6852	0.8339	0.6612	0.8142	0.0268	0.0599	7.88%	0.57%
50		5	0.8596	0.8282	0.8910	0.8251	0.8907	0.0113	0.0253	2.94%	-12.52%
100		5	0.8201	0.6982	0.9420	0.6721	0.9180	0.0439	0.0982	11.97%	-7.35%
101		5	0.8393	0.7728	0.9058	0.7541	0.8811	0.0240	0.0536	6.38%	-9.86%
Proportion No	rmal Summar	у									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9004	0.8659	0.9350	0.8571	0.9264	0.0124	0.0278	3.09%	0.00%
0	FC	5	0.8974	0.8654	0.9294	0.8713	0.9257	0.0115	0.0258	2.87%	0.33%
6.25		5	0.8703	0.8366	0.9039	0.8280	0.9010	0.0121	0.0271	3.11%	3.35%
12.5		5	0.8982	0.8879	0.9085	0.8868	0.9062	0.0037	0.0083	0.92%	0.25%
25		5	0.8860	0.8566	0.9154	0.8671	0.9255	0.0106	0.0237	2.67%	1.60%
50		5	0.8842	0.8539	0.9145	0.8602	0.9157	0.0109	0.0244	2.76%	1.80%
100		5	0.8681	0.7936	0.9426	0.7725	0.9385	0.0268	0.0600	6.91%	3.60%
101		5	0.8902	0.8751	0.9053	0.8780	0.9080	0.0054	0.0122	1.37%	1.14%
Survival Rate S	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.8470	0.7713	0.9227	0.7650	0.8907	0.0273	0.0610	7.20%	0.00%
0	FC	5	0.8437	0.7764	0.9110	0.7978	0.9344	0.0242	0.0542	6.42%	0.39%
6.25		5	0.9421	0.8496	1.0350	0.8579	1.0000	0.0333	0.0745	7.91%	-11.23%
12.5		5	0.9301	0.8564	1.0040	0.8689	1.0000	0.0265	0.0593	6.37%	-9.81%
25		5	0.8568	0.7879	0.9258	0.7596	0.8907	0.0248	0.0555	6.48%	-1.16%
50		5	0.9727	0.9282	1.0170	0.9126	1.0000	0.0160	0.0358	3.68%	-14.84%
100		5	0.9454	0.8236	1.0670	0.7705	1.0000	0.0439	0.0981	10.37%	-11.61%
101		5	0.9432	0.8617	1.0250	0.8415	1.0000	0.0294	0.0656	6.96%	-11.35%

Analyst: TP QA: 12

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Bivalve Larval Survival and Development Test

WSP Laboratory

Combined Pro	oportion Norm	al Detail					MD5:	5CA0F768DD187FB0648D388F0CD1A59F
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.7104	0.8087	0.8251	0.6557	0.8197		
0	FC	0.7322	0.8142	0.7486	0.7486	0.7377		
6.25		0.9010	0.7104	0.7486	0.8711	0.8743		
12.5		0.8927	0.7923	0.8852	0.7705	0.8361		
25		0.8142	0.7814	0.7486	0.7923	0.6612		
50		0.8602	0.8251	0.8907	0.8470	0.8750		
100		0.7725	0.9180	0.8743	0.8634	0.6721		
101		0.8634	0.7541	0.8197	0.8811	0.8780		
Proportion No	ormal Detail						MD5:	06956FCC4141BCE1F761FF4E62D98636
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.8904	0.9080	0.9264	0.8571	0.9202		
0	FC	0.8816	0.8713	0.9257	0.8839	0.9247		
6.25		0.9010	0.8280	0.8671	0.8711	0.8840		36
12.5		0.8927	0.9062	0.9050	0.8868	0.9000		
25		0.9255	0.8773	0.8671	0.8896	0.8705		
50		0.8602	0.9042	0.9157	0.8659	0.8750		
100		0.7725	0.9385	0.8840	0.8729	0.8723		
101		0.9080	0.8961	0.8876	0.8811	0.8780		
Survival Rate	Detail			ti i			MD5:	473A59A1208B731002F2820A0601BDA4
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.7978	0.8907	0.8907	0.7650	0.8907		
0	FC	0.8306	0.9344	0.8087	0.8470	0.7978		
6.25		1.0000	0.8579	0.8634	1.0000	0.9891		
12.5		1.0000	0.8743	0.9781	0.8689	0.9290		
25		0.8798	0.8907	0.8634	0.8907	0.7596		
50		1.0000	0.9126	0.9727	0.9781	1.0000		
100		1.0000	0.9781	0.9891	0.9891	0.7705		
101		0.9508	0.8415	0.9235	1.0000	1.0000		

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Bivalve Larval Survival and Development Test

WSP Laboratory

Combined Prop	portion Norm	al Binomials	i				
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	130/183	148/183	151/183	120/183	150/183	
0	FC	134/183	149/183	137/183	137/183	135/183	
6.25		173/192	130/183	137/183	169/194	160/183	
12.5		183/205	145/183	162/183	141/183	153/183	
25		149/183	143/183	137/183	145/183	121/183	
50		160/186	151/183	163/183	155/183	168/192	
100		146/189	168/183	160/183	158/183	123/183	
101		158/183	138/183	150/183	163/185	180/205	
Proportion Nor	mal Binomia	ls					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	130/146	148/163	151/163	120/140	150/163	
0	FC	134/152	149/171	137/148	137/155	135/146	
6.25		173/192	130/157	137/158	169/194	160/181	
12.5		183/205	145/160	162/179	141/159	153/170	
25		149/161	143/163	137/158	145/163	121/139	
50		160/186	151/167	163/178	155/179	168/192	
100		146/189	168/179	160/181	158/181	123/141	
101		158/174	138/154	150/169	163/185	180/205	
Survival Rate B	Binomials						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	146/183	163/183	163/183	140/183	163/183	
0	FC	152/183	171/183	148/183	155/183	146/183	
6.25		183/183	157/183	158/183	183/183	181/183	
12.5		183/183	160/183	179/183	159/183	170/183	
25		161/183	163/183	158/183	163/183	139/183	
50		183/183	167/183	178/183	179/183	183/183	
100		183/183	179/183	181/183	181/183	141/183	
101		174/183	154/183	169/183	183/183	183/183	

Analyst: JF QA: JL

Report Date: Test Code/ID: 08 Mar-23 13:26 (p 1 of 8) 23-01-054 / 09-1644-9934

Bivalve Larva	al Survival and Deve	lopment Test			WSP Laboratory
Analysis ID:	10-6335-2463	Endpoint:	Combined Proportion Normal	CETIS Version:	CETISv2.1.3
Analyzed:	08 Mar-23 13:25	Analysis:	Parametric-Control vs Treatments	Status Level:	1
Edit Date:	08 Mar-23 13:22	MD5 Hash:	7DF525D5CC7149BFA41BDA87D230ACF	Editor ID:	002-883-387-8

Analyzed: Edit Date:		Mar-23 13:2: Mar-23 13:2:		lysis: Par 5 Hash: 7Df					us Level: or ID:	1 002-883-3	387-8		
Comments:	FC=	Filtered Co	ontrol, 101=	100% (1.2ur	n Filtered)								
Data Transfo	orm		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD	
Angular (Corr	rected))	C > T				100	>100		1	0.1171	15.33%	
Dunnett Mul	tiple C	Compariso	n Test										
Control	vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(a:5%)				
Lab Control		6.25	8	-1.334	2.362	0.1328	CDF	0.9937	Non-Significant Effect				
		12.5	8	-1.597	2.362	0.1328	CDF	0.9973	Non-Sigr	nificant Effect			
		25	8	0.1203	2.362	0.1328	CDF	0.7953	Non-Significant Effect				
		50	8	-2.146	2.362	0.1328	CDF	0.9996	Non-Significant Effect				
		100	8	-1.351	2.362	0.1328	CDF	0.9940	2770	nificant Effect			
ANOVA Tabl	e												
Source		Sum Squ	ares	Mean Squ	ıare	DF	F Stat	P-Value	Decision	n(a:5%)			
Between		0.065464		0.013093		5	1.657	0.1834	Non-Significant Effect				
Error		0.189618		0.0079007	7	24			970				
Total		0.255083				29							
ANOVA Assu	ımptic	ons Tests											
Attribute		Test				Test Stat	Critical	P-Value	Decision	n(a:1%)			
Variance			quality of Va	riance Test		5.656	15.09	0.3412	Equal Va				
Distribution			Vilk W Norm			0.9443	0.9031	0.1188		Distribution			
	8-20-20-0					0.0440	0.0001	0.1100	11011110112	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Combined P	ropor		37/		05% 01	050/ 1101				C44 F	C)/9/	0/ E ffoo	
Conc-%		Code	Count	Mean	95% LCL			Min	Max	Std Err	CV%	%Effec	
0		LC	5	0.7639	0.6689	0.8590	0.8087	0.6557	0.8251	0.0342	10.02%	0.00%	
6.25			5	0.8211	0.7149	0.9273	0.8711	0.7104	0.9010	0.0382	10.41%	-7.48%	
12.5			5	0.8354	0.7678	0.9029	0.8361	0.7705	0.8927	0.0243	6.51%	-9.35%	
25			5	0.7596	0.6852	0.8339	0.7814	0.6612	0.8142	0.0268	7.88%	0.57%	
50			5	0.8596	0.8282	0.8910	0.8602	0.8251	0.8907	0.0113	2.94%	-12.52%	
100			5	0.8201	0.6982	0.9420	0.8634	0.6721	0.9180	0.0439	11.97%	-7.35%	
Angular (Co	rrecte	d) Transfor	rmed Summ	ary									
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effec	
0		LC	5	1.0670	0.9571	1.1770	1.1180	0.9438	1.1390	0.0397	8.31%	0.00%	
6.25			5	1.1420	1.0050	1.2790	1.2040	1.0030	1.2510	0.0494	9.67%	-7.03%	
12.5			5	1.1570	1.0650	1.2490	1.1540	1.0710	1.2370	0.0331	6.40%	-8.41%	
25			5	1.0600	0.9756	1.1450	1.0840	0.9495	1.1250	0.0306	6.44%	0.63%	
50			-	1.0000	4.4400	4.0000	4.4000	4.4200	1.7240	0.0163	2.060/	11 200	

3.06%

11.02%

0.0163

0.0563

-11.30%

-7.12%

5

5

1.1880

1.1430

1.1430

0.9867

1.2330

1.3000

1.1880

1.1920

1.1390

0.9611

1.2340

1.2800

50

100

0.1

0.0

0 LC

6.25

12.5

Conc-%

25

50

100

Report Date: Test Code/ID: 08 Mar-23 13:26 (p 2 of 8) 23-01-054 / 09-1644-9934

2.0

0.5

0.0 Rankits 1.0

1.5

WSP Laboratory **Bivalve Larval Survival and Development Test** Analysis ID: 10-6335-2463 Endpoint: Combined Proportion Normal **CETIS Version:** CETISv2.1.3 Parametric-Control vs Treatments Status Level: 1 Analyzed: 08 Mar-23 13:25 Analysis: MD5 Hash: 7DF525D5CC7149BFA41BDA87D230ACF Editor ID: 002-883-387-8 Edit Date: 08 Mar-23 13:22 Graphics 1.0 0.15 0.9 Combined Proportion Normal 0.10 0.8 0.7 0.05 Corr. Angle 0.6 0.00 0.5 0.4 -0.05 0.3 -0.10 0.2

-0.15

-1.5

-1.0

-0.5

Report Date: Test Code/ID: 08 Mar-23 13:26 (p 3 of 8) 23-01-054 / 09-1644-9934

WSP Laboratory

LC US 100% **Bivalve Larval Survival and Development Test**

Analysis ID: 05-0377-1384 Analyzed: 08 Mar-23 13:25 Endpoint: Combined Proportion Normal Analysis: Parametric Bioequivalence-Two Sample **CETIS Version:** Status Level:

CETISv2.1.3

Edit Date: 08 Mar-23 13:22

MD5 Hash: 62741D19A3DF75C0EA554AF0091EA598

Editor ID:

002-883-387-8

FC= Filtered Control, 101= 100% (1.2um Filtered) Comments:

Data Transform	Alt Hyp	TST_b	Comparison Result	
Angular (Corrected)	C*b < T	0.75	100% passed combined proportion normal endpoint	

TST-Welch's t Test

Control	VS	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(a:5%)
Lab Control		100*	6	5.38	1.943	CDF	0.0008	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.0144146	0.0144146	1	1.215	0.3025	Non-Significant Effect	
Error	0.0949339	0.0118667	8				- 1
Total	0.109349		9				

ANOVA Assumptions Tests

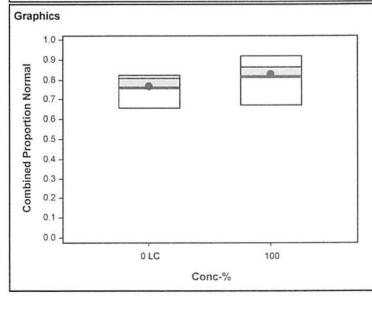
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)	
Variance	Variance Ratio F Test	2.019	23.15	0.5130	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.9008	0.7411	0.2237	Normal Distribution	

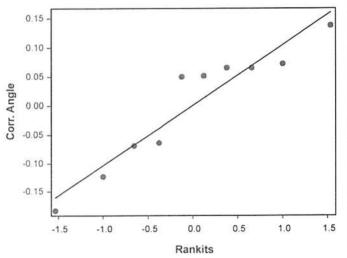
Combined Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.7639	0.6689	0.8590	0.8087	0.6557	0.8251	0.0342	10.02%	0.00%
100		5	0.8201	0.6982	0.9420	0.8634	0.6721	0.9180	0.0439	11.97%	-7.35%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.0670	0.9571	1.1770	1.1180	0.9438	1.1390	0.0397	8.31%	0.00%
100		5	1.1430	0.9867	1.3000	1.1920	0.9611	1.2800	0.0563	11.02%	-7.12%





Report Date: Test Code/ID: 08 Mar-23 13:26 (p 4 of 8) 23-01-054 / 09-1644-9934

WSP Laboratory

FC US 100% Fiftered Bivalve Larval Survival and Development Test

Analysis ID: 00-0876-0348 Analyzed: 08 Mar-23 13:25

08 Mar-23 13:22

Endpoint: Combined Proportion Normal Analysis: Parametric Bioequivalence-Two Sample

MD5 Hash: 81B9E2394CF33F0B1E5283E018C68EC3

CETIS Version: Status Level:

Editor ID:

002-883-387-8

CETISv2.1.3

Comments: FC= Filtered Control, 101= 100% (1.2um Filtered)

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	101% passed combined proportion normal endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(a:5%)
Filter Control		101*	5	10.82	2.015	CDF	5.8E-05	Non-Significant Effect

ANOVA Table

Edit Date:

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.0283791	0.0283791	1	8.664	0.0186	Significant Effect	
Error	0.0262042	0.0032755	8				
Total	0.0545833		9				

ANOVA Assumptions Tests

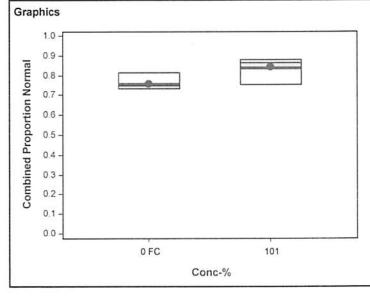
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variance	Variance Ratio F Test	3.117	23.15	0.2967	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9206	0.7411	0.3616	Normal Distribution

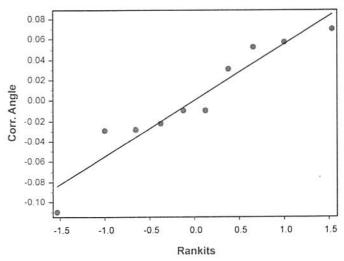
Combined Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	0.7563	0.7151	0.7974	0.7486	0.7322	0.8142	0.0148	4.38%	0.00%
101		5	0.8393	0.7728	0.9058	0.8634	0.7541	0.8811	0.0240	6.38%	-10.97%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	1.0550	1.0060	1.1050	1.0460	1.0270	1.1250	0.0178	3.78%	0.00%
101		5	1.1620	1.0740	1.2490	1.1920	1.0520	1.2190	0.0315	6.06%	-10.10%





Report Date: Test Code/ID: 08 Mar-23 13:26 (p 5 of 8) 23-01-054 / 09-1644-9934

Bivalve Larval Survival and Development Test WSP Laboratory

Analysis ID: 10-9404-9738 Endpoint: Proportion Normal CETIS Version: CETISv2.1.3

 Analyzed:
 08 Mar-23 13:25
 Analysis:
 Parametric-Control vs Treatments
 Status Level:
 1

 Edit Date:
 08 Mar-23 13:22
 MD5 Hash:
 0AE94591E3E47AFDBF56BD047F7AE771
 Editor ID:
 002-883-387-8

Comments: FC= Filtered Control, 101= 100% (1.2um Filtered)

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corrected)	C > T	100	>100		1	0.04677	5.19%
_							

Dunnett Mult	tiple (Comparison Test							
Control	vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)
Lab Control		6.25	8	1.547	2.362	0.07368	CDF	0.2092	Non-Significant Effect
		12.5	8	0.1848	2.362	0.07368	CDF	0.7730	Non-Significant Effect
		25	8	0.7701	2.362	0.07368	CDF	0.5247	Non-Significant Effect
		50	8	0.8614	2.362	0.07368	CDF	0.4827	Non-Significant Effect
		100	8	1.48	2.362	0.07368	CDF	0.2305	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0099404	0.0019881	5	0.817	0.5495	Non-Significant Effect
Error	0.0584033	0.0024335	24			
Total	0.0683437		29			

ANOVA Assumptions Tests							
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)		
Variance	Bartlett Equality of Variance Test	10.74	15.09	0.0568	Equal Variances		
Distribution	Shapiro-Wilk W Normality Test	0.9556	0.9031	0.2377	Normal Distribution		

Proportion No	Proportion Normal Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.9004	0.8659	0.9350	0.9080	0.8571	0.9264	0.0124	3.09%	0.00%
6.25		5	0.8703	0.8366	0.9039	0.8711	0.8280	0.9010	0.0121	3.11%	3.35%
12.5		5	0.8982	0.8879	0.9084	0.9000	0.8868	0.9062	0.0037	0.92%	0.25%
25		5	0.8860	0.8566	0.9154	0.8773	0.8671	0.9255	0.0106	2.67%	1.60%
50		5	0.8842	0.8539	0.9145	0.8750	0.8602	0.9157	0.0109	2.76%	1.80%
100		5	0.8681	0.7936	0.9426	0.8729	0.7725	0.9385	0.0268	6.91%	3.60%

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.2520	1.1960	1.3080	1.2630	1.1830	1.2960	0.0202	3.61%	0.00%
6.25		5	1.2040	1.1540	1.2530	1.2040	1.1430	1.2510	0.0177	3.30%	3.85%
12.5		5	1.2460	1.2290	1.2630	1.2490	1.2280	1.2600	0.0061	1.09%	0.46%
25		5	1.2280	1.1790	1.2770	1.2130	1.1980	1.2940	0.0176	3.21%	1.92%
50		5	1.2250	1.1770	1.2730	1.2090	1.1880	1.2760	0.0174	3.18%	2.15%
100		5	1.2060	1.0970	1.3150	1.2060	1.0740	1.3200	0.0393	7.29%	3.69%

Report Date: Test Code/ID: 08 Mar-23 13:26 (p 6 of 8) 23-01-054 / 09-1644-9934

WSP Laboratory

CETISv2.1.3

Analysis ID:

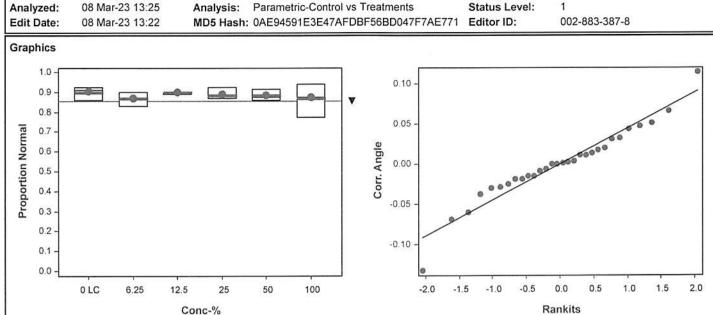
10-9404-9738

Bivalve Larval Survival and Development Test

Endpoint: Proportion Normal

CETIS Version:

Analysis: Parametric-Control vs Treatments Status Level:



Report Date: Test Code/ID: 08 Mar-23 13:26 (p 7 of 8) 23-01-054 / 09-1644-9934

Bivalve Larv	al Sur	vival and D	evelopmen	t Test							WSP	_aboratory
Analysis ID: Analyzed: Edit Date:	08 M	323-0854 ar-23 13:25 ar-23 13:22	Anal	ysis: Par		itrol vs Trea 84881EBCI		Stat	IS Version: us Level: or ID:	CETISv2. 1 002-883-3		
Comments:	FC=	Filtered Co	ntrol, 101= 1	00% (1.2un	r Filtered)							
Data Transfo	orm		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Cor	rected)		C > T				100	>100		1	0.1654	19.52%
Dunnett Mul	tiple C	omparison	Test									
Control	vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision	(a:5%)		
Lab Control		6.25	8	-2.42	2.362	0.2029	CDF	0.9998	Non-Sign	ificant Effect		
		12.5	8	-1.851	2.362	0.2029	CDF	0.9988	Non-Sign	ificant Effect		
		25	8	-0.1495	2.362	0.2029	CDF	0.8737	Non-Sign	ificant Effect		
		50	8	-3.014	2.362	0.2029	CDF	1.0000	Non-Sign	ificant Effect		
		100	8	-2.535	2.362	0.2029	CDF	0.9999	Non-Sign	ificant Effect		
ANOVA Tabl	le											
Source		Sum Squares Mean S			are	DF	F Stat	P-Value	Decision	ı(a:5%)		
Between		0.304437		0.0608874		5	3.301	0.0208	Significar	nt Effect		
Error		0.442702		0.0184459		24						
Total		0.747139				29						
ANOVA Ass	umptic	ns Tests										
Attribute		Test				Test Stat	Critical	P-Value	Decision	ı(a:1%)		
Variance		Bartlett Eq	uality of Var	riance Test		5.001	15.09	0.4157	Equal Va	riances		
Distribution			ilk W Norm			0.9448	0.9031	0.1227	Normal D	Distribution		
Survival Rat	te Sum	mary				.9						
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	0.8470	0.7713	0.9227	0.8907	0.7650	0.8907	0.0273	7.20%	0.00%
6.25			5	0.9421	0.8496	1.0000	0.9891	0.8579	1.0000	0.0333	7.91%	-11.23%
12.5			5	0.9301	0.8564	1.0000	0.9290	0.8689	1.0000	0.0265	6.37%	-9.81%
25			5	0.8568	0.7879	0.9258	0.8798	0.7596	0.8907	0.0248	6.48%	-1.16%
50			5	0.9727	0.9282	1.0000	0.9781	0.9126	1.0000	0.0160	3.68%	-14.84%
100			5	0.9454	0.8236	1.0000	0.9891	0.7705	1.0000	0.0439	10.37%	-11.61%
Angular (Co	rrected	d) Transfor	med Summ	arv								
3				•								

95% LCL 95% UCL Median

1.2770

1.6040

1.5110

1.2790

1.5690

1.6200

Min

1.0650

1.1840

1.2000

1.0580

1.2710

1.0710

1.2340

1.4660

1.3010

1.2170

1.4220

1.4660

Max

1.2340

1.5340

1.5340

1.2340

1.5340

1.5340

Std Err

0.0371

0.0801

0.0642

0.0331

0.0488

0.0821

CV%

7.07%

12.96%

10.77%

6.23%

7.61%

13.19%

%Effect

-17.71%

-13.54%

-1.09%

-22.05%

-18.55%

0.00%

Conc-%

0

6.25

12.5

25

50

100

Code

LC

Mean

1.1740

1.3820

1.3330

1.1870

1.4330

1.3920

1.0710

1.1600

1.1550

1.0950

1.2980

1.1640

Count

5

5

5

5

5

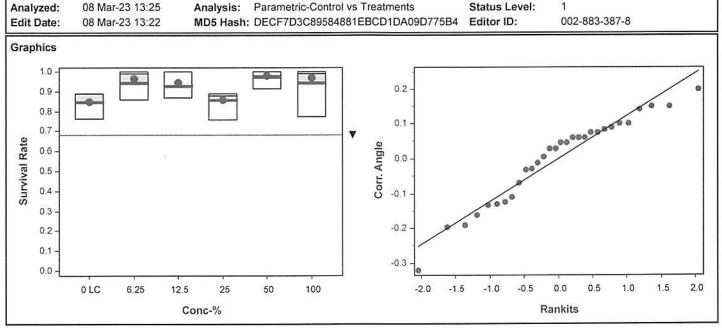
5

Report Date: Test Code/ID: 08 Mar-23 13:26 (p 8 of 8) 23-01-054 / 09-1644-9934

Bivalve Larval Survival and Development Test

WSP Laboratory

Analysis ID: 13-3323-0854 Endpoint: Survival Rate CETIS Version: CETISv2.1.3



20 Jan-23 13:27 (p 1 of 1) 369FEA8E / 09-1644-9934

Wood E&IS

Bivalve Larval Survival and Development Test

Start Date: 26 Jan-23 1730 Species: Mytilis galloprovincialis
End Date: 28 Jan-23 1600 Protocol: EPA/600/R-95/136 (1995)

Sample Date: 25 Jan-23 1000 Material: Seawater

Sample Code: 6BEBF57C

Sample Source: Shelter Island Yacht Basin

Sample Station: SIYB 5

Sample Date:	25 Ja	an-23	1000	Material:	Seawater		Samp	le Station: SIYB 5	
Conc-%	Code		Pos	Initial Density	Final Density	# Counted 2	# Normal	Notes	79.40
0,550		1.0	191			152	124	JF 2/21/23	1
			192			179	iss	about too obvious	
			193			148	137	plantin observed	7 les
			194			141	12.3	about a large of	
			195			123 1115	125	Pion o operate	
			196			148 141 133 i46	145	Olsakla alarmad	1
			197			157	130	Plankton observed Plankton observed Plankton observed Plankton observed TF 3/1/23	1
			198			11.3	143	plankton absented plankton plankton	
			199			163	11.0	plantfon ass	
			200			18/	160 121	Ol 46	
			201				150	of lan kin	
						163	130		
			202			171	149		
			203			205 143	195		
			204			14.5	190	-	1
			205			146	139	JF 3/6/23	
			206			129156	NJ 1375		
			207			161	144		
			208			194	149	plancton	
			209			181	158	of 3/6/23	
			210			174	158		
			211			205	180		
			212			192	173		
			213			192	168		
			214			159	168 -141 5/4/160 146	plankton	
			215			156718	THE ILES		
			216			185 186	160	Plankhen	
			217			189	146	Okakton	
30			218			178	11.03	Plankton	
			219			1101)	143	piant-10.	
			220			1103	151 137 119 125° 153		
			221			158	137		
			222			170,45	114 256		
			223			170	153	Oberto	
			224			154	138	phakha	
			225			155	137		
			226			169	150	ola vi	
		-	227			179		Plankton	
			228			117	162	ala-ri-a	
			229		-	179	151	planton planton	
			230		-		148	plantion	
			200			181	140	GION LAND	

CETIS Test Data Worksheet

Report Date:

20 Jan-23 13:27 (p 1 of 1) 369FEA8E / 09-1644-9934

Wood E&IS

Test Code/ID: 369

Bivalve Larval Survival and Development Test

Start Date: 26 Jan-23 End Date: 28 Jan-23

Jan-23 Species: Mytilis galloprovincialis
Jan-23 Protocol: EPA/600/R-95/136 (1995)

Sample Code: 6BEBF57C
Sample Source: Shelter Island Yacht Basin

Matarial: Segurates

Sample Station: SIYB 5

Sample Date: 25 Jan-23		Material: Se	awater		Sample Station: SIYB 5			
Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	FC	1	191					
0	FC	2	202					
0	FC	3	193					and the same
0	FC	4	225					
0	FC	5	195					
0	LC	1	205					
0	LC	2	204					
0	LC	3	220					
0	LC	4	222					
0	LC	5	201					
6.25		1	212			1		
6.25		2	197					
6.25		3	206					
6.25		4	208					
6.25		5	230					
12.5		1	203					
12.5		2	219					
12.5		3	227					
12.5		4	214					
12.5		5	223					
25		1	207					
25		2	198					
25		3	221					
25		4	196					
25		5	200					
50		1	216					
50		2	228					
50		3	218					
50		4	192					
50		5	213					
100		1	217					
100		2	229					
100		3	199					
100		4	209					
100		5	194					
101		1	210					
101		2	224					
101		3	226					
101		4	215					
101		5	211					

OT=JS

Analyst: Ab QA: LL

002-883-387-8 CETIS™ v2.1.3.5

Water Quality for Bivalve Development

Client: Wood - Port of San Diego

Test Species: M. galloprovincialis

Sample ID: SIYB-5

Start Date/Time: 1/26/2023 1730

End Date/Time: 1/30/2023 \600

Test No. 23-01-054

Water Quality Measurements Test Conc. 48hr 24hr Parameter Ohr (%) 15-6 15-0 15:2 Temp. (°C) 33.2 33.8 Salinity (ppt) 34.0 Lab Control 1.73 pH (units) 7.89 7.77 8.2 8.4 8.5 DO (mg/L) 15.9 15.1 15.2 Temp. (°C) 33.2 33.8 Salinity (ppt) 33.5 Filter Control 7.78 7.91 7.76 pH (units) 7.7 8.5 DO (mg/L) 8.5 15.2 16.0 15.1 Temp. (°C) 33.8 33.3 33.7 Salinity (ppt) 6.25 7.77 7.90 7.74 pH (units) 8.5 84 8.4 DO (mg/L) 15.9 15.0 15.1 Temp. (°C) 33.9 34.0 Salinity (ppt) 33.4 12.5 ファフ 7.080 7.75 pH (units) 8.5 8.3 8.5 DO (mg/L) 15.9 15.0 15-1 Temp. (°C) 33.9 340 Salinity (ppt) 33.3 25 7.77 pH (units) 7.88 7.74 8.4 8.5 DO (mg/L) 8.5 (5.1 Temp. (°C) 15.2 15.8 33.8 Salinity (ppt) 33.1 33.4 50 7.11 7.89 7.75 pH (units) 8.5 8.5 DO (mg/L) 9.7 15.8 15.1 15.2 Temp. (°C) 33.5 Salinity (ppt) 32.4 32.9 100 7,11 pH (units) 7.75 7.90 8.5 8.5 DO (mg/L) 8.9 15.1 15.9 15.2 Temp. (°C) 33.2 33.60 Salinity (ppt) 100 Filtered $(1.2\mu m)$ 7.76 pH (units) 7.85 DO (mg/L) Tech Initials:

///	71	_	1		_
Source of Animals: Mission Bay	Date Received:	1/	20	0/2	1

Comments:

Initial QC: JE 3/17/23

Embryo-Larval Development Test Stock Preparation Worksheet

Test Species:

M. galloprovincialis

Test Date: 1/26/2023

Batch ID:

1/26/23 MITSION Bay Collection

Test Type:

48hr Bivalue Development

Analyst:	AL
Allaryst	

Task	to the same of
Spawning Induction	1430
Spawning Begins	1510
# Males/# Females	515
Spawn Condition	good
Fertilization Initiated	1600
Fertilzation End/Eggs Rinsed	1620/1640
Embryo Counts	1700
Test Initiation	1730

Embryo Density Counts

per 100 μL

Lilibi yo Delibity	Counts		, pc. 500 p	-	NAME OF THE OWNER OW		
Stock#	Stock Volume (mL)	Rep 1	Rep 2	Rep 3	Rep 4	Mean #/100 μL	Mean #/mL (x10)
Stock 1						76	7 72
Stock 2	500						
Stock 3	500	21	19	11	13	1.6	800

Cell Division:

	% Divided
Stock 1	
Stock 2	90
Stock 3	98

Selected Stock:	3
CONTRACTOR OF STREET AND STREET A	was a second and a second a second and a second a second and a second a second and a second and a second and

Stock Density

Dil Factor

Adjust selected embryo stock to 500 embryos/mL.

Dilution Factor = Stock Density/mL/500

<u></u> ξδΟ 500 1,6

In 10 mL sample volume add 500 μ l of 500 embryo/ml stock to obtain 25 embryos/mL in test vials.

Notes:

TO,=195, TO2=+75, TO3=175, TO4=192, TO5=184

X= 183

QA Review:

AG 2/9/23

Final Review: 1 3 9 73

Site: SIYB-6

CETIS Summary Report

Report Date: Test Code/ID: 08 Mar-23 11:50 (p 1 of 4) 23-01-055 / 19-5440-2139

Bivalve Larval Survival and Development Test

WSP Laboratory

Divaive Laiva	Survivar and Developing	none rose									Laborat	o.,
Batch ID:		Test Type:					Analy					
Start Date:	[개경·조기에서 기존 : 111.10 프	Protocol:	EPA/600/R-95/	를 하였다. 그렇지 않아보다 -			Dilue		Natural Seawat			
Ending Date:	28 Jan-23 16:00	Species:	Mytilis gallopro	vincialis			Brine		Not Applicable			
Test Length:	46h	Taxon:					Sour	ce: F	Field Collected		Age:	
Sample ID:	14-9548-0044	Code:	23-W031				Proje	ct: S	SIYB TMDL Mo	onitoring		
Sample Date:	25 Jan-23 09:00	Material:	Seawater				Sour	ce: S	Shelter Island \	Yacht Basin		
Receipt Date:	25 Jan-23 12:40	CAS (PC):					Statio	on: S	SIYB 6			
Sample Age:	32h (16.1 °C)	Client:	WSP									
Comments:	FC= Filtered Control, 10	1=100% (1	.2um Filtered)									
Single Compa	arison Summary											
Analysis ID	Endpoint	Comp	arison Method				P-Value	Comp	arison Result	t		S
18-6742-4557	Combined Proportion No	orma TST-V	Velch's t Test				<1.0E-05	100%	passed combin	ned proportio	on norm	al 1
14-8304-8792	Combined Proportion No	orma TST-V	Velch's t Test				5.1E-05	101%	passed combin	ned proportion	n norm	al 1
Multiple Com	parison Summary											
Analysis ID	Endpoint	Comp	arison Method			1	NOEL	LOEL	TOEL	PMSD	TU	S
17-3873-0154	Combined Proportion No	orma Dunne	ett Multiple Com	parison Test			100	>100		8.67%	1	1
17-9995-4147	Proportion Normal	Dunne	ett Multiple Com	parison Test	S		100	>100		3.25%	1	1
11-6300-6571	Survival Rate	Steel	Many-One Rank	Sum Test			100	>100		8.95%	1	
Test Acceptal	oility				TAC) Li	imits					
Analysis ID	Endpoint	Attrib	ute	Test Stat	Lower		Upper	Overla	ap Decision	1		
17-9995-4147	Proportion Normal	Contr	ol Resp	0.904	0.9		<<	Yes	Passes C	Criteria		
11-6300-6571	Survival Rate	Contr	ol Resp	0.9749	0.5		<<	Yes	Passes C	Criteria		
17-3873-0154	Combined Proportion No	orma PMSI)	0.08674	<<		0.25	No	Passes C	Criteria		

08 Mar-23 11:50 (p 2 of 4) 23-01-055 / 19-5440-2139

Bivalve Larval Survival and Development Test

WSP Laboratory

Combined Pro	portion Norm	al Summar	1								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.8813	0.8505	0.9121	0.8579	0.9091	0.0111	0.0248	2.81%	0.00%
0	FC	5	0.8202	0.7200	0.9204	0.7322	0.9100	0.0361	0.0807	9.84%	6.93%
6.25		5	0.8706	0.7711	0.9700	0.7322	0.9394	0.0358	0.0801	9.20%	1.22%
12.5		5	0.8744	0.8045	0.9443	0.7760	0.9130	0.0252	0.0563	6.44%	0.78%
25		5	0.8878	0.8471	0.9285	0.8361	0.9185	0.0147	0.0328	3.69%	-0.74%
50		5	0.8779	0.8129	0.9429	0.8087	0.9293	0.0234	0.0523	5.96%	0.38%
100		5	0.8898	0.8530	0.9266	0.8470	0.9233	0.0132	0.0296	3.33%	-0.97%
101		5	0.8733	0.8242	0.9223	0.8197	0.9126	0.0177	0.0395	4.52%	0.91%
Proportion No	rmal Summar	у									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9040	0.8788	0.9293	0.8785	0.9326	0.0091	0.0203	2.25%	0.00%
0	FC	5	0.8917	0.8608	0.9226	0.8481	0.9100	0.0111	0.0249	2.79%	1.37%
6.25		5	0.9016	0.8738	0.9294	0.8827	0.9394	0.0100	0.0224	2.48%	0.27%
12.5		5	0.9037	0.8842	0.9231	0.8852	0.9221	0.0070	0.0157	1.73%	0.04%
25		5	0.9038	0.8828	0.9249	0.8776	0.9185	0.0076	0.0169	1.87%	0.02%
50		5	0.8991	0.8684	0.9297	0.8644	0.9293	0.0110	0.0247	2.74%	0.55%
100		5	0.9076	0.8964	0.9188	0.9006	0.9233	0.0040	0.0090	0.99%	-0.39%
101		5	0.9172	0.8868	0.9476	0.8811	0.9434	0.0109	0.0245	2.67%	-1.46%
Survival Rate	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9749	0.9501	0.9996	0.9508	1.0000	0.0089	0.0199	2.04%	0.00%
0	FC	5	0.9191	0.8237	1.0150	0.8361	1.0000	0.0344	0.0768	8.36%	5.72%
6.25		5	0.9650	0.8679	1.0620	0.8251	1.0000	0.0350	0.0782	8.10%	1.01%
12.5		5	0.9683	0.8803	1.0560	0.8415	1.0000	0.0317	0.0709	7.32%	0.67%
25		5	0.9825	0.9340	1.0310	0.9126	1.0000	0.0175	0.0391	3.98%	-0.78%
50		5	0.9760	0.9286	1.0230	0.9126	1.0000	0.0171	0.0382	3.91%	-0.11%
100		5	0.9803	0.9439	1.0170	0.9344	1.0000	0.0131	0.0293	2.99%	-0.56%
101		5	0.9530	0.8813	1.0250	0.8689	1.0000	0.0258	0.0578	6.06%	2.24%

Analyst: TF QA: JL

Bivalve Larval Survival and Development Test

Report Date:

08 Mar-23 11:50 (p 3 of 4) 23-01-055 / 19-5440-2139

Test Code/ID:

WSP Laboratory

Combined Prop	oortion Norm	al Detail					MD5:	2744FD4FDFD073B74469D4D350298858
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.8689	0.8634	0.9071	0.9091	0.8579		
0	FC	0.8960	0.7322	0.9100	0.7541	0.8087		
6.25		0.9394	0.8827	0.8990	0.8994	0.7322		
12.5		0.9082	0.8897	0.9130	0.7760	0.8852		
25		0.9185	0.9102	0.8361	0.8967	0.8776		
50		0.9091	0.9293	0.8361	0.9063	0.8087		
100		0.9038	0.9233	0.9006	0.8470	0.8743		
101		0.8197	0.8470	0.8811	0.9059	0.9126		
Proportion Nor	mal Detail						MD5:	E7FAF27834742A9FD522AB697B345C53
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.8785	0.9080	0.9326	0.9091	0.8920		
0	FC	0.8960	0.8481	0.9100	0.9020	0.9024		
6.25		0.9394	0.8827	0.8990	0.8994	0.8874		
12.5		0.9082	0.8897	0.9130	0.9221	0.8852		
25		0.9185	0.9102	0.9162	0.8967	0.8776		
50		0.9091	0.9293	0.8644	0.9063	0.8862		
100		0.9038	0.9233	0.9006	0.9064	0.9040		
101		0.9434	0.9226	0.8811	0.9059	0.9330		
Survival Rate D	Detail						MD5:	308D261638CF45AC4E03C5341E89A470
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.9891	0.9508	0.9727	1.0000	0.9617		
0	FC	1.0000	0.8634	1.0000	0.8361	0.8962		
6.25		1.0000	1.0000	1.0000	1.0000	0.8251		
12.5		1.0000	1.0000	1.0000	0.8415	1.0000		
25		1.0000	1.0000	0.9126	1.0000	1.0000		
50		1.0000	1.0000	0.9672	1.0000	0.9126		
100		1.0000	1.0000	1.0000	0.9344	0.9672		
101		0.8689	0.9180	1.0000	1.0000	0.9781		

08 Mar-23 11:50 (p 4 of 4) 23-01-055 / 19-5440-2139

Bivalve Larval Survival and Development Test

WSP Laboratory

Combined Prop	portion Norm	al Binomials	5					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	159/183	158/183	166/183	310/341	157/183		
0	FC	310/346	134/183	182/200	138/183	148/183		
6.25		186/198	346/392	187/208	322/358	134/183		
12.5		178/196	355/399	168/184	142/183	162/183		
25		169/184	304/334	153/183	165/184	172/196		
50		170/187	184/198	153/183	329/363	148/183		
100		310/343	301/326	317/352	155/183	160/183		
101		150/183	155/183	163/185	183/202	167/183		
Proportion Nor	mal Binomia	ls						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	159/181	158/174	166/178	310/341	157/176	0	
0	FC	310/346	134/158	182/200	138/153	148/164		
6.25		186/198	346/392	187/208	322/358	134/151		
12.5		178/196	355/399	168/184	142/154	162/183	1	
25		169/184	304/334	153/167	165/184	172/196		
50		170/187	184/198	153/177	329/363	148/167	1	
100		310/343	301/326	317/352	155/171	160/177		
101		150/159	155/168	163/185	183/202	167/179	V	
Survival Rate E	Binomials							
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	181/183	174/183	178/183	183/183	176/183		
0	FC	183/183	158/183	183/183	153/183	164/183		
6.25		183/183	183/183	183/183	183/183	151/183		
12.5		183/183	183/183	183/183	154/183	183/183		
25		183/183	183/183	167/183	183/183	183/183		
50		183/183	183/183	177/183	183/183	167/183		
100		183/183	183/183	183/183	171/183	177/183		
101		159/183	168/183	183/183	183/183	179/183		

1) vials with total counts >300 were accordently inoculated twice. However, this did not affect the Anal Percent or Proportion results.

Report Date: Test Code/ID: 08 Mar-23 11:50 (p 1 of 8) 23-01-055 / 19-5440-2139

Bivalve Larval Su	ırvival and [Developmen	t Test							WSP	aboratory
Analyzed: 07	3873-0154 Mar-23 15:3 Mar-23 15:3	9 Anal	ysis: Par	ametric-Cor	ortion Norm trol vs Trea 4C951AA38	tments		S Version: us Level: or ID:	CETISv2. 1 002-883-3		
Comments: FC	= Filtered Co	ontrol, 101=1	00% (1.2um	Filtered)							
Data Transform		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corrected	d)	C > T				100	>100		1	0.07644	8.67%
Dunnett Multiple	Compariso	n Test									
Control vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision	(a:5%)		
Lab Control	6.25	8	0.1614	2.362	0.1073	CDF	0.7812	Non-Sign	ficant Effect		
	12.5	8	0.1443	2.362	0.1073	CDF	0.7872		ficant Effect		
	25	8	-0.2475	2.362	0.1073	CDF	0.8961		ficant Effect		
	50	8	0.01899	2.362	0.1073	CDF	0.8277		ficant Effect		
	100	8	-0.3108	2.362	0.1073	CDF	0.9089	Non-Sign	ficant Effect		
ANOVA Table											
Source	Sum Squ	iares	Mean Squ	are	DF	F Stat	P-Value	Decision	(a:5%)		
Between	0.002021	0	0.0004042		5	0.07839	0.9950	Non-Sign	ficant Effect		
Error	0.123749		0.0051562		24						
Total	0.12577				29						
ANOVA Assumpt	ions Tests										
Attribute	Test				Test Stat	Critical	P-Value	Decision	(a:1%)		
Variance	The series	quality of Var	riance Test		5.617	15.09	0.3453	Equal Va			
Distribution		Vilk W Norm			0.9168	0.9031	0.0221		istribution		
Combined Propo	rtion Norma	al Summary									
Conc-%	Code										
The second secon		Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
10	LC	Count 5	Mean 0.8813	95% LCL 0.8505	95% UCL 0.9121	Median 0.8689	5500035	157035147X	Std Err 0.0111	CV%	
6 25	LC	5	0.8813	0.8505	0.9121	0.8689	0.8579	0.9091	0.0111	2.81%	0.00%
6.25	LC	5 5	0.8813 0.8706	0.8505 0.7711	0.9121 0.9700	0.8689 0.8990	0.8579 0.7322	0.9091 0.9394	0.0111 0.0358	2.81% 9.20%	0.00% 1.22%
6.25 12.5	LC	5 5 5	0.8813 0.8706 0.8744	0.8505 0.7711 0.8045	0.9121 0.9700 0.9443	0.8689 0.8990 0.8897	0.8579 0.7322 0.7760	0.9091 0.9394 0.9130	0.0111 0.0358 0.0252	2.81% 9.20% 6.44%	0.00% 1.22% 0.78%
6.25 12.5 25	LC	5 5 5 5	0.8813 0.8706 0.8744 0.8878	0.8505 0.7711 0.8045 0.8471	0.9121 0.9700 0.9443 0.9285	0.8689 0.8990 0.8897 0.8967	0.8579 0.7322 0.7760 0.8361	0.9091 0.9394 0.9130 0.9185	0.0111 0.0358 0.0252 0.0147	2.81% 9.20% 6.44% 3.69%	0.00% 1.22% 0.78% -0.74%
6.25 12.5 25 50	LC	5 5 5 5	0.8813 0.8706 0.8744 0.8878 0.8779	0.8505 0.7711 0.8045 0.8471 0.8129	0.9121 0.9700 0.9443 0.9285 0.9429	0.8689 0.8990 0.8897 0.8967 0.9063	0.8579 0.7322 0.7760 0.8361 0.8087	0.9091 0.9394 0.9130 0.9185 0.9293	0.0111 0.0358 0.0252 0.0147 0.0234	2.81% 9.20% 6.44% 3.69% 5.96%	0.00% 1.22% 0.78% -0.74% 0.38%
6.25 12.5 25	LC	5 5 5 5	0.8813 0.8706 0.8744 0.8878	0.8505 0.7711 0.8045 0.8471	0.9121 0.9700 0.9443 0.9285	0.8689 0.8990 0.8897 0.8967	0.8579 0.7322 0.7760 0.8361	0.9091 0.9394 0.9130 0.9185	0.0111 0.0358 0.0252 0.0147	2.81% 9.20% 6.44% 3.69%	0.00% 1.22% 0.78% -0.74%
6.25 12.5 25 50		5 5 5 5 5	0.8813 0.8706 0.8744 0.8878 0.8779 0.8898	0.8505 0.7711 0.8045 0.8471 0.8129	0.9121 0.9700 0.9443 0.9285 0.9429	0.8689 0.8990 0.8897 0.8967 0.9063	0.8579 0.7322 0.7760 0.8361 0.8087	0.9091 0.9394 0.9130 0.9185 0.9293	0.0111 0.0358 0.0252 0.0147 0.0234 0.0132	2.81% 9.20% 6.44% 3.69% 5.96% 3.33%	0.00% 1.22% 0.78% -0.74% 0.38% -0.97%
6.25 12.5 25 50 100 Angular (Corrector Conc-%	ed) Transfor Code	5 5 5 5 5	0.8813 0.8706 0.8744 0.8878 0.8779 0.8898	0.8505 0.7711 0.8045 0.8471 0.8129	0.9121 0.9700 0.9443 0.9285 0.9429 0.9266	0.8689 0.8990 0.8897 0.8967 0.9063 0.9006	0.8579 0.7322 0.7760 0.8361 0.8087 0.8470	0.9091 0.9394 0.9130 0.9185 0.9293 0.9233	0.0111 0.0358 0.0252 0.0147 0.0234 0.0132	2.81% 9.20% 6.44% 3.69% 5.96% 3.33%	0.00% 1.22% 0.78% -0.74% 0.38% -0.97%
6.25 12.5 25 50 100 Angular (Corrector Conc-%	ed) Transfor	5 5 5 5 5 5 7	0.8813 0.8706 0.8744 0.8878 0.8779 0.8898	0.8505 0.7711 0.8045 0.8471 0.8129 0.8530 95% LCL 1.1720	0.9121 0.9700 0.9443 0.9285 0.9429 0.9266 95% UCL 1.2690	0.8689 0.8990 0.8897 0.8967 0.9063 0.9006 Median 1.2000	0.8579 0.7322 0.7760 0.8361 0.8087 0.8470 Min 1.1840	0.9091 0.9394 0.9130 0.9185 0.9293 0.9233 Max 1.2650	0.0111 0.0358 0.0252 0.0147 0.0234 0.0132 Std Err 0.0175	2.81% 9.20% 6.44% 3.69% 5.96% 3.33% CV%	0.00% 1.22% 0.78% -0.74% 0.38% -0.97% %Effect 0.00%
6.25 12.5 25 50 100 Angular (Correcte Conc-% 0 6.25	ed) Transfor Code	5 5 5 5 5 5 rmed Summ Count 5 5	0.8813 0.8706 0.8744 0.8878 0.8779 0.8898 ary	0.8505 0.7711 0.8045 0.8471 0.8129 0.8530	0.9121 0.9700 0.9443 0.9285 0.9429 0.9266 95% UCL 1.2690 1.3510	0.8689 0.8990 0.8897 0.8967 0.9063 0.9006 Median 1.2000 1.2470	0.8579 0.7322 0.7760 0.8361 0.8087 0.8470 Min 1.1840 1.0270	0.9091 0.9394 0.9130 0.9185 0.9293 0.9233 Max 1.2650 1.3220	0.0111 0.0358 0.0252 0.0147 0.0234 0.0132 Std Err 0.0175 0.0495	2.81% 9.20% 6.44% 3.69% 5.96% 3.33% CV% 3.20% 9.12%	0.00% 1.22% 0.78% -0.74% 0.38% -0.97% %Effect 0.00% 0.60%
6.25 12.5 25 50 100 Angular (Corrector Conc-%	ed) Transfor Code	5 5 5 5 5 5 rmed Summ Count 5 5	0.8813 0.8706 0.8744 0.8878 0.8779 0.8898 ary Mean 1.2200 1.2130 1.2140	0.8505 0.7711 0.8045 0.8471 0.8129 0.8530 95% LCL 1.1720	0.9121 0.9700 0.9443 0.9285 0.9429 0.9266 95% UCL 1.2690	0.8689 0.8990 0.8897 0.8967 0.9063 0.9006 Median 1.2000 1.2470 1.2320	0.8579 0.7322 0.7760 0.8361 0.8087 0.8470 Min 1.1840 1.0270 1.0780	0.9091 0.9394 0.9130 0.9185 0.9293 0.9233 Max 1.2650 1.3220 1.2710	0.0111 0.0358 0.0252 0.0147 0.0234 0.0132 Std Err 0.0175 0.0495 0.0352	2.81% 9.20% 6.44% 3.69% 5.96% 3.33% CV% 9.12% 6.48%	0.00% 1.22% 0.78% -0.74% 0.38% -0.97% %Effect 0.00% 0.60% 0.54%
6.25 12.5 25 50 100 Angular (Correcte Conc-% 0 6.25 12.5 25	ed) Transfor Code	5 5 5 5 5 rmed Summ Count 5 5 5	0.8813 0.8706 0.8744 0.8878 0.8779 0.8898 ary Mean 1.2200 1.2130 1.2140 1.2320	0.8505 0.7711 0.8045 0.8471 0.8129 0.8530 95% LCL 1.1720 1.0760 1.1160 1.1690	0.9121 0.9700 0.9443 0.9285 0.9429 0.9266 95% UCL 1.2690 1.3510 1.3120 1.2940	0.8689 0.8990 0.8897 0.8967 0.9063 0.9006 Median 1.2000 1.2470 1.2320 1.2440	0.8579 0.7322 0.7760 0.8361 0.8087 0.8470 Min 1.1840 1.0270 1.0780 1.1540	0.9091 0.9394 0.9130 0.9185 0.9293 0.9233 Max 1.2650 1.3220 1.2710 1.2810	0.0111 0.0358 0.0252 0.0147 0.0234 0.0132 Std Err 0.0175 0.0495 0.0352 0.0226	2.81% 9.20% 6.44% 3.69% 5.96% 3.33% CV% 9.12% 6.48% 4.10%	0.00% 1.22% 0.78% -0.74% 0.38% -0.97% %Effect 0.00% 0.60% 0.54% -0.92%
6.25 12.5 25 50 100 Angular (Correcte Conc-% 0 6.25 12.5	ed) Transfor Code	5 5 5 5 5 5 rmed Summ Count 5 5	0.8813 0.8706 0.8744 0.8878 0.8779 0.8898 ary Mean 1.2200 1.2130 1.2140	0.8505 0.7711 0.8045 0.8471 0.8129 0.8530 95% LCL 1.1720 1.0760 1.1160	0.9121 0.9700 0.9443 0.9285 0.9429 0.9266 95% UCL 1.2690 1.3510 1.3120	0.8689 0.8990 0.8897 0.8967 0.9063 0.9006 Median 1.2000 1.2470 1.2320	0.8579 0.7322 0.7760 0.8361 0.8087 0.8470 Min 1.1840 1.0270 1.0780	0.9091 0.9394 0.9130 0.9185 0.9293 0.9233 Max 1.2650 1.3220 1.2710	0.0111 0.0358 0.0252 0.0147 0.0234 0.0132 Std Err 0.0175 0.0495 0.0352	2.81% 9.20% 6.44% 3.69% 5.96% 3.33% CV% 9.12% 6.48%	0.00% 1.22% 0.78% -0.74% 0.38% -0.97% %Effect 0.00% 0.60% 0.54%

Report Date: Test Code/ID: 08 Mar-23 11:50 (p 2 of 8) 23-01-055 / 19-5440-2139

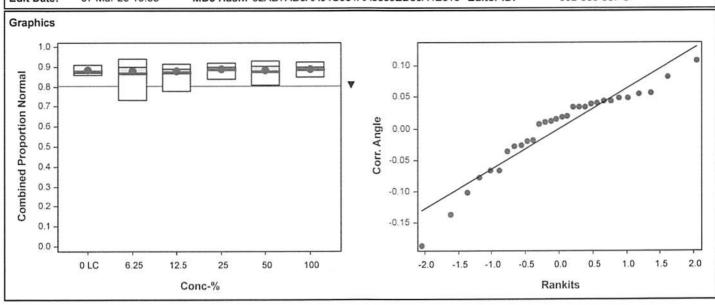
Bivalve Larval Survival and Development Test

WSP Laboratory

Analysis ID: 17-3873-0154 Endpoint: Combined Proportion Normal CETIS Version: CETISv2.1.3

Analyzed: 07 Mar-23 15:39 Analysis: Parametric-Control vs Treatments Status Level: 1

Edit Date: 07 Mar-23 15:33 MD5 Hash: 32AD7AD0AA04C951AA3803ED80A4E616 Editor ID: 002-883-387-8



Report Date: Test Code/ID: 08 Mar-23 11:50 (p 3 of 8) 23-01-055 / 19-5440-2139

Bivalve Larval Survival and Development Test (LC vs 160%) WSP Laboratory

Analysis ID: 18-6742-4557 Endpoint: Combined Proportion Normal CETIS Version: CETISv2.1.3

Analyzed: 07 Mar-23 15:40 Analysis: Parametric Bioequivalence-Two Sample Status Level: 1

Edit Date: 07 Mar-23 15:33 MD5 Hash: 0788170C23134125CDAE57434914CEB1 Editor ID: 002-883-387-8

Comments: FC= Filtered Control, 101=100% (1.2um Filtered)

Data Transform	Alt Hyp	TST_b	Comparison Result	
Angular (Corrected)	C*b < T	0.75	100% passed combined proportion normal endpoint	

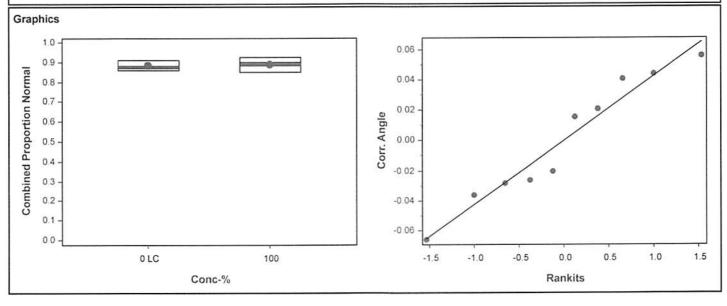
TST-Welch's t Test Control vs Conc-% df Test Stat Critical P-Type P-Value Decision(α:5%) Lab Control 100* 6 12.93 1.943 CDF <1.0E-05</td> Non-Significant Effect

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.000498	0.000498	1	0.2679	0.6187	Non-Significant Effect	
Error	0.0148695	0.0018587	8				
Total	0.0153675		9				

ANOVA Assumptions Tests									
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)				
Variance	Variance Ratio F Test	1.436	23.15	0.7346	Equal Variances				
Distribution	Shapiro-Wilk W Normality Test	0.9355	0.7411	0.5038	Normal Distribution				

Combined Pro	oportion Norm	al Summar	y								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.8813	0.8505	0.9121	0.8689	0.8579	0.9091	0.0111	2.81%	0.00%
100		5	0.8898	0.8530	0.9266	0.9006	0.8470	0.9233	0.0132	3.33%	-0.97%

Angular (Corr	rected) Transfo	rmed Sumr	nary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.2200	1.1720	1.2690	1.2000	1.1840	1.2650	0.0175	3.20%	0.00%
100		5	1.2350	1.1760	1.2930	1.2500	1.1690	1.2900	0.0209	3.79%	-1.16%



Report Date: Test Code/ID: 08 Mar-23 11:50 (p 4 of 8) 23-01-055 / 19-5440-2139

Bivalve Larval Survival and Development Test

FCUS 100% Fiftered

WSP Laboratory

Analysis ID: 14-8304-8792

Endpoint: Combined Proportion Normal

CETIS Version: Analysis: Parametric Bioequivalence-Two Sample

Analyzed: 07 Mar-23 15:40 **Edit Date:** 07 Mar-23 15:33

MD5 Hash: D83FD872764772A8732412383D71CB96

Status Level: Editor ID:

002-883-387-8

CETISv2.1.3

Comments: FC= Filtered Control, 101=100% (1.2um Filtered)

Data Transform	Alt Hyp	TST_b	Comparison Result
		5-4-5-4-2-5-5-1	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

101% passed combined proportion normal endpoint C*b < T 0.75 Angular (Corrected)

TST-Welch's t Test

Total

Control	VS	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(a:5%)
Filter Control		101*	7	7.863	1.895	CDF	5.1E-05	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.011837	0.011837	1	1.545	0.2491	Non-Significant Effect
Frror	0.0612893	0.0076612	8			

9

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variance	Variance Ratio F Test	3.41	23.15	0.2619	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.9545	0.7411	0.7223	Normal Distribution	

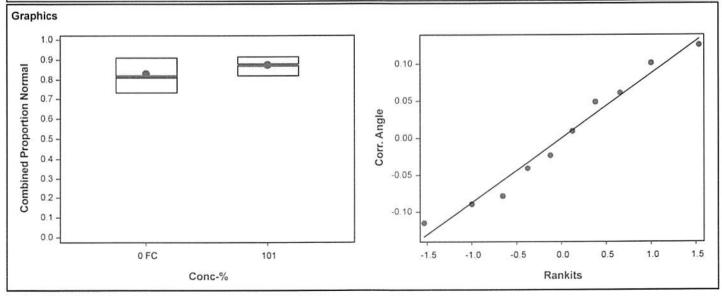
Combined Proportion Normal Summary

0.0731263

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	0.8202	0.7200	0.9204	0.8087	0.7322	0.9100	0.0361	9.84%	0.00%
101		5	0.8733	0.8242	0.9223	0.8811	0.8197	0.9126	0.0177	4.52%	-6.47%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	1.1410	1.0060	1.2760	1.1180	1.0270	1.2660	0.0487	9.54%	0.00%
101		5	1.2100	1.1370	1.2830	1.2190	1.1320	1.2710	0.0264	4.87%	-6.03%



Report Date: Test Code/ID: 08 Mar-23 11:50 (p 5 of 8) 23-01-055 / 19-5440-2139

Bivalve Larva	al Surv	vival and D	evelopmen	t Test							WSP	Laboratory
Analysis ID: Analyzed: Edit Date:	07 M	995-4147 ar-23 15:38 ar-23 15:33	Anal	ysis: Par		trol vs Trea	tments 498B8958F7	State	IS Version: us Level: or ID:	CETISv2. 1 002-883-3		
Comments:	FC=	Filtered Cor	ntrol, 101=1	00% (1.2um	Filtered)							
Data Transfor	rm		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corre	ected)		C > T				100	>100		1	0.02936	3.25%
Dunnett Multi	iple C	omparison	Test									
Control	vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)		
Lab Control		6.25	8	0.1826	2.362	0.04826	CDF	0.7738		icant Effect		
		12.5	8	0.06168	2.362	0.04826	CDF	0.8145	3077.03	icant Effect		
		25	8	0.04298	2.362	0.04826	CDF	0.8203	1000	icant Effect		
		50	8	0.3885	2.362	0.04826	CDF	0.6944		icant Effect		
		100	8	-0.2464	2.362	0.04826	CDF	0.8959	Non-Signif	icant Effect		
ANOVA Table	,											
Source		Sum Squa	ares	Mean Squ	iare	DF	F Stat	P-Value	Decision(a:5%)		
Between		0.0004592		9.183E-05		5	0.08797	0.9934		icant Effect		
Error		0.0250539		0.0010439		24						
Total		0.0255131				29	_					
ANOVA Assur	mptio	ns Tests										
Attribute	9.6	Test				Test Stat	Critical	P-Value	Decision(a:1%)		
Variance			uality of Var	riance Test		3.666	15.09	0.5984	Equal Vari			
Distribution			ilk W Norma			0.9832	0.9031	0.9036	Normal Di			
Proportion No	ormal											
Conc-%	Ullia	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	0.9040	0.8788	0.9293	0.9080	0.8785	0.9326	0.0091	2.25%	0.00%
6.25		LC		0.9040	0.8738	0.9293	0.8990	0.8827	0.9394	0.0100	2.48%	0.27%
			5	0.9016	0.8842	0.9294	0.9982	0.8852	0.9394	0.0070	1.73%	0.04%
12.5				0.9037	0.8828	0.9231	0.9082	0.88776	0.9221	0.0076	1.87%	0.02%
25			5				0.9102	0.8644	0.9293	0.0076	2.74%	0.55%
50			5	0.8991	0.8684	0.9297		0.8644	0.9293	0.0040	0.99%	-0.39%
100			5	0.9076	0.8964	0.9188	0.9040	0.9000	0.9233	0.0040	0.9570	-0.5570
Angular (Corr	rected) Transform	ned Summ	ary								
Conc-%		Code	Count	Mean	95% LCL	95% UCL		Min	Max	Std Err	CV%	%Effect
0		LC	5	1.2570	1.2140	1.3010	1.2630	1.2150	1.3080	0.0157	2.79%	0.00%
6.25			5	1.2530	1.2040	1.3030	1.2470	1.2210	1.3220	0.0179	3.20%	0.30%
12.5			5	1.2560	1.2230	1.2890	1.2630	1.2250	1.2880	0.0119	2.11%	0.10%
25			5	1.2560	1.2210	1.2910	1.2660	1.2130	1.2810	0.0126	2.24%	0.07%
50			5	1.2490	1.1990	1.3000	1.2600	1.1940	1.3020	0.0183	3.27%	0.63%
100			5	1.2620	1.2420	1.2820	1.2560	1.2500	1.2900	0.0072	1.27%	-0.40%

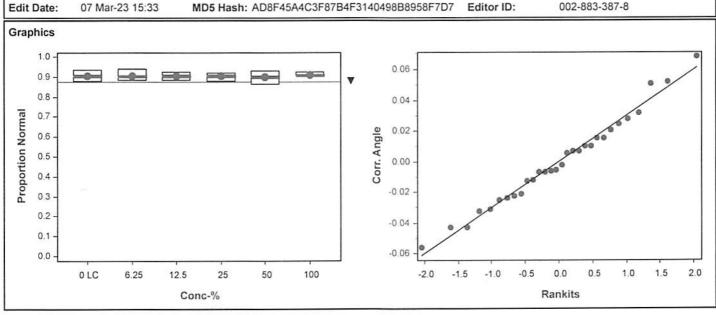
Report Date: Test Code/ID: 08 Mar-23 11:50 (p 6 of 8) 23-01-055 / 19-5440-2139

WSP Laboratory Bivalve Larval Survival and Development Test

CETIS Version: CETISv2.1.3 Analysis ID: 17-9995-4147 Endpoint: Proportion Normal

Analysis: Parametric-Control vs Treatments Analyzed: 07 Mar-23 15:38 Status Level:

002-883-387-8 07 Mar-23 15:33 Editor ID:



Report Date: Test Code/ID: 08 Mar-23 11:50 (p 7 of 8) 23-01-055 / 19-5440-2139

Bivalve Larv	al Sur	vival and D	Developmen	t Test							WSP	Laboratory
Analysis ID: Analyzed: Edit Date:	07 M	300-6571 ar-23 15:38 ar-23 15:33	8 Anal		parametric-	Control vs T		Statu	S Version: is Level: or ID:	CETISv2. 1 002-883-3		
Comments:	FC=	Filtered Co	ontrol, 101=1	00% (1.2um	Filtered)							
Data Transfo	rm		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corr	ected)		C > T				100	>100		1	0.08721	8.95%
Steel Many-C	One Ra	nk Sum Te	est									
Control	vs	Conc-%	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(a:5%)		
Lab Control		6.25	8	33	16	1	CDF	0.9907	Non-Signif	icant Effect		
		12.5	8	33	16	1	CDF	0.9907	Non-Signif	icant Effect		
		25	8	33	16	1	CDF	0.9907	Non-Signif	ficant Effect		
		50	8	30.5	16	1	CDF	0.9573	Non-Signif	icant Effect		
		100	8	30.5	16	1	CDF	0.9573	Non-Signif	icant Effect		
ANOVA Tabl	е											
Source		Sum Squ	ares	Mean Squ	are	DF	F Stat	P-Value	Decision(α:5%)		
Between		0.0081557	7	0.0016311	3)	5	0.09459	0.9922	Non-Signif	icant Effect		
Error		0.413854		0.0172439		24						
Total		0.42201				29						
ANOVA Assu	ımptic	ns Tests										
Attribute		Test				Test Stat	Critical	P-Value	Decision(α:1%)		
Variance		Bartlett Ed	quality of Var	riance Test		3.365	15.09	0.6439	Equal Vari	ances		
Distribution		Shapiro-W	Vilk W Norma	ality Test		0.7444	0.9031	<1.0E-05	Non-Norm	al Distribution	n	
Survival Rat	e Sum	mary										
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	0.9749	0.9501	0.9996	0.9727	0.9508	1.0000	0.0089	2.04%	0.00%
6.25			5	0.9650	0.8679	1.0000	1.0000	0.8251	1.0000	0.0350	8.10%	1.01%
12.5			5	0.9683	0.8803	1.0000	1.0000	0.8415	1.0000	0.0317	7.32%	0.67%
25			5	0.9825	0.9340	1.0000	1.0000	0.9126	1.0000	0.0175	3.98%	-0.78%
50			5	0.9760	0.9286	1.0000	1.0000	0.9126	1.0000	0.0171	3.91%	-0.11%
100			5	0.9803	0.9439	1.0000	1.0000	0.9344	1.0000	0.0131	2.99%	-0.56%
Angular (Co	rrected	d) Transfor	med Summ	ary								
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	1.4250	1.3320	1.5180	1.4050	1.3470	1.5340	0.0336	5.27%	0.00%
6.25			5	1.4550	1.2360	1.6740	1.5340	1.1390	1.5340	0.0789	12.12%	-2.09%
12.5			5	1.4590	1.2530	1.6660	1.5340	1.1610	1.5340	0.0745	11.41%	-2.40%
25			5	1.4810	1.3350	1.6270	1.5340	1.2710	1.5340	0.0526	7.95%	-3.93%
1202			55					The second second second			0.000/	4 000/

8.22%

7.13%

0.0534

0.0466

-1.90%

-2.47%

5

1.4520

1.4600

1.3040

1.3310

1.6000

1.5900

1.5340

1.5340

1.2710

1.3120

1.5340

1.5340

50

100

0.4 0.3

0.2 0.1

0.0

0 LC

6.25

12.5

Conc-%

25

50

100

Report Date: Test Code/ID: 08 Mar-23 11:50 (p 8 of 8) 23-01-055 / 19-5440-2139

2.0

1.5

0.5

1.0

-0.5

0.0

Rankits

WSP Laboratory Bivalve Larval Survival and Development Test Analysis ID: 11-6300-6571 Endpoint: Survival Rate CETIS Version: CETISv2.1.3 Analyzed: 07 Mar-23 15:38 Nonparametric-Control vs Treatments Status Level: Analysis: Editor ID: Edit Date: MD5 Hash: 32625E4E3E597F63CFE9B82EDF856F61 002-883-387-8 07 Mar-23 15:33 Graphics 1.0 0.2 0.9 0.8 0.1 0.7 Survival Rate Corr. Angle 0.6 0.0 0.5

-0.1

-0.2

-0.3

-2.0

-1.5

-1.0

CETIS Test Data Worksheet

Report Date:

20 Jan-23 13:29 (p 1 of 1)

Test Code/ID: TF

TF 747DCE5B-/ 19-5440-2139

23-01-055 Wood E&IS-

Bivalve Larval Survival and Development Test

Start Date: 26 Jan-23 Species: Mytilis galloprovincialis Sample Code: 592336EC

End Date: 28 Jan-23 Protocol: EPA/600/R-95/136 (1995) Sample Source: Shelter Island Yacht Basin

Sample Date: 25 Jan-23 Material: Seawater Sample Station: SIYB 6

ample Date:	25 Ja	an-23		Material:	Seawater		Samı	ole Station	n: SIYB 6
Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal		Notes
			231			HAT 8-1841	169	HK	2/23/25
			232			200	182	1	
			233			104	148		
			234			200 104 184	169 182 148 168		
			235			177	153		
			236			177	138	1	
			237			179	153 138 167		
			238			174	158	-	
			239			158	134	1	
			240			176	157		
			241			176	158 134 157 134	MK	3/1123
			242			198	186	ĺ	
			243			207	103		
			244			171	155		
			245			187	170		
			246			178	1610		
			247			ilet	148		
			248			101	159		
			249			171 187 178 167 161 208	146		
			250			177	ico		15
			251			WY307326	301		*Double-Inoculated by accident
			252			41/30T326	322		by accident
			253			341	310		
			254			343	310		
			255			352	315	1	
			256			352	317		
			257			392	34 Le		
			258			363	329		
			259			399	355		
			260			334	304		\checkmark
			261			196	178	3	
			262			148	155		
			263			183	155		
			264			198	184		
			265			159	150		
			266			196	172		
			267			184	165	1	
			268			154	142		
			269			167	153		
			270		4	185	163		

CETIS Test Data Worksheet

Start Date:

End Date:

Report Date:

20 Jan-23 13:29 (p 1 of 1) 747DCF5B / 19-5440-2139

Test Code/ID:

Sample Code:

Wood E&IS

592336EC

Bivalve Larval Survival and Development Test

26 Jan-23 Species: Mytilis galloprovincialis 28 Jan-23

Sample Source: Shelter Island Yacht Basin Protocol: EPA/600/R-95/136 (1995)

Sample Date: 25 Jan-23 Material: Seawater Sample Station: SIYB 6

Sample Date:	25 Ja	an-23		Material:	Seawater		Samp	le Station: SIYB 6
Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	FC	1	255					
0	FC	2	239					
0	FC	3	232					
0	FC	4	236					
0	FC	5	233					
0	LC	1	248					
0	LC	2	238					
0	LC	3	246					
0	LC	4	253					
0	LC	5	240					
6.25		1	242					
6.25		2	257					
6.25		3	249					
6.25		4	252					
6.25		5	241					
12.5		1	261					
12.5		2	259					
12.5		3	234					
12.5		4	268					
12.5		5	263					
25		1	231					
25		2	260					
25		3	269					
25		4	267					
25		5	266					
50		1	245					
50		2	264					
50		3	235					
50		4	258					
50		5	247		-			
100		1	254					
100		2	251					
100		3	256					
100		4	244					
100		5	250					
101		1	265					
101		2	262					
101		3	270					
101		4	243					
101		5	237					

Analyst: 46 QA: 10

Water Quality for Bivalve Development

Client: Wood - Port of San Diego

Test Species: M. galloprovincialis

Sample ID: SIYB-6

Test No. 23-01-055

Start Date/Time: 1/26/2023 /730 End Date/Time: 1/30/2023 1660

Test Conc.	Water Quality Measurements			
(%)	Parameter	0hr	24hr	48hr
Lab Control	Temp. (°C)	15-9	15.2	15.3
	Salinity (ppt)	33.2	33.4€	33.8
	pH (units)	7.91	7.75	7.77
	DO (mg/L)	8.3	8.3	8.2
Filter Control	Temp. (°C)	15.9	15.1	153
	Salinity (ppt)	33.1	33.7	33.8
	pH (units)	7.92	7.76	7:11
	DO (mg/L)	7-6	8.4	8.3
6.25	Temp. (°C)	15-9	15.1	15.2
	Salinity (ppt)	33.4	33.8	33.9
	pH (units)	7-91	7.74	7.76
	DO (mg/L)	8.5	8.3	8.3
12.5	Temp. (°C)	16.0	15.0	15.2
	Salinity (ppt)	33.4	34.1	34.2
	pH (units)	7.88	7.74	7.76
	DO (mg/L)	0.5	8.4	8.3
25 -	Temp. (°C)	15.8	15.2	15.2
	Salinity (ppt)	33.3	33.8	34.0
	pH (units)	7.90	7.73	7.15
	DO (mg/L)	9.7	8.5	8.4
50	Temp. (°C)	15.7	15.2	15.2
	Salinity (ppt)	33.1	33.7	34.0
	pH (units)	7.90	7.73	7.75
	DO (mg/L)	8.8	8.6	8.4
100	Temp. (°C)	15.7	15.4	55.3
	Salinity (ppt)	32.5	33.1	33.4
	pH (units)	7.90	7.74	7.15
	DO (mg/L)	8.8	8.4	8-4
100 Filtered (1.2μm)	Temp. (°C)	16.0	15.2	153
	Salinity (ppt)	32-3	32.8	33.1
	pH (units)	7.82	7.74	7.76
	DO (mg/L)	8.2	8.5	8.4
	Tech Initia		が	N/a

Source of Animals:	Mission Bay

Date Received: 1/26/23

Initial QC: JF 317/23,

Embryo-Larval Development Test Stock Preparation Worksheet

Test Species:

M. galloprovincialis

Test Date: 1/26/2023

Batch ID:

1/26/23 MITSON Bay Colle

Analyst:

Test Type:

Task	Marin Printer
Spawning Induction	1430
Spawning Begins	1510
# Males/# Females	515
Spawn Condition	good
Fertilization Initiated	1600
Fertilzation End/Eggs Rinsed	1620/1640
Embryo Counts	1700
Test Initiation	1730

Embryo Density Counts

DI YO DCIISICY	Counts		, pc. 900 p	-			A second
Stock #	Stock Volume (mL)	Rep 1	Rep 2	Rep 3	Rep 4	Mean #/100 μL	Mean #/mL (x10)
Stock 1						76	//~
Stock 2	500						
Stock 3	500	21	19	11	13	16	800

Cell Division:

	% Divided
Stock 1	
Stock 2	90
Stock 3	98

Selected Stock:	3
ocicotca otooni	

Stock Density

Dil Factor

Adjust selected embryo stock to 500 embryos/mL. Dilution Factor = Stock Density/mL/500

500

In 10 mL sample volume add 500 μl of 500 embryo/ml stock to obtain 25 embryos/mL in test vials.

Notes:

QA Review:

Final Review: 103/9/13

Site: SIYB-REF-1

CETIS Summary Report

Report Date: Test Code/ID: 08 Mar-23 11:57 (p 1 of 4) 23-01-056 / 10-2711-8389

Bivalve Larval Survival and Development Test

WSP Laboratory

D ID	10 0017 1105 -		D 1	2 - 1 -1									
Batch ID:			Development-S				Analy				_0		
Start Date:		rotocol:	EPA/600/R-95				Dilue		Natural Se		er		
		pecies:	Mytilis gallopro	vincialis			Brine		Not Applic				
Test Length:	46h T	axon:					Source	ce: F	Field Colle	ected		Age:	
Sample ID:	10-9402-6059 C	ode:	23-W032				Proje	ct: S	SIYB TME	DL Moi	nitoring		
Sample Date:	25 Jan-23 08:00 N	laterial:	Seawater				Source	ce: S	Shelter Isl	land Y	acht Basin		
Receipt Date:	25 Jan-23 12:40 C	AS (PC):					Statio	on: S	SIYB REF	-1			
Sample Age:	33h (15.6 °C) C	lient:	WSP										
Comments:	FC= Filtered Control, 101	I= 100% (1	.2um Filtered)										
Single Compa	arison Summary												
Analysis ID	Endpoint	Comp	arison Method	i			P-Value	Comp	arison R	Result			,
12-0600-4848	Combined Proportion No	rma TST-V	Velch's t Test				0.0009	100%	passed c	ombin	ed proportio	n norm	al
08-0755-1045	Combined Proportion No	rma TST-V	Velch's t Test				7.2E-05	101%	passed co	ombin	ed proportio	n norm	al
Multiple Com	parison Summary												
Analysis ID	Endpoint	Comp	arison Method	i	,	/	NOEL	LOEL	TOE	EL	PMSD	TU	5
12-2249-6451	Combined Proportion No	rma Dunne	ett Multiple Com	parison Test			100	>100			10.8%	1	
17-1354-8764	Proportion Normal	Dunne	ett Multiple Com	parison Test			100	>100			3.97%	1	
16-9688-8529	Survival Rate	Dunne	ett Multiple Com	nparison Test	Š		100	>100			12.2%	1	
Test Acceptal	oility				TAC	Lin	nits						
Analysis ID	Endpoint	Attrib	ute	Test Stat	Lower		Upper	Overla	p Dec	ision			
17-1354-8764	Proportion Normal	Contro	ol Resp	0.8981	0.9		<<	Yes	Belo	ow Crit	teria(i)		
16-9688-8529	Survival Rate	Contro	Control Resp 0.9355 0.5					Yes	Pas	ses Ci	riteria		
12-2249-6451	Combined Proportion No	rma PMSE)	0.108	<<		0.25	No	Pas	ses Ci	riteria		

OOK-rounds up to 90%

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Bivalve Larval Survival and Development Test

WSP Laboratory

Combined Pro	portion Norm	al Summar	y -								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.8394	0.7769	0.9019	0.7541	0.8798	0.0225	0.0504	6.00%	0.00%
0	FC	5	0.8329	0.7689	0.8969	0.7650	0.9076	0.0231	0.0515	6.19%	0.78%
6.25		5	0.8738	0.8230	0.9247	0.8087	0.9149	0.0183	0.0409	4.68%	-4.10%
12.5		5	0.8727	0.8217	0.9236	0.8087	0.9206	0.0183	0.0410	4.70%	-3.96%
25		5	0.8520	0.7756	0.9283	0.7760	0.9211	0.0275	0.0615	7.22%	-1.50%
50		5	0.8273	0.7654	0.8892	0.7541	0.8743	0.0223	0.0499	6.03%	1.44%
100		5	0.8591	0.7661	0.9521	0.7760	0.9457	0.0335	0.0749	8.72%	-2.35%
101		5	0.8339	0.7687	0.8991	0.7486	0.8798	0.0235	0.0525	6.30%	0.66%
Proportion No	rmal Summar	у									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.8981	0.8735	0.9227	0.8691	0.9181	0.0089	0.0198	2.21%	0.00%
0	FC	5	0.9086	0.8872	0.9301	0.8844	0.9312	0.0077	0.0173	1.90%	-1.17%
6.25		5	0.8924	0.8709	0.9139	0.8681	0.9149	0.0077	0.0173	1.94%	0.64%
12.5		5	0.9044	0.8792	0.9296	0.8791	0.9261	0.0091	0.0203	2.24%	-0.70%
25		5	0.9071	0.8922	0.9220	0.8931	0.9211	0.0054	0.0120	1.32%	-1.00%
50		5	0.8829	0.8515	0.9142	0.8466	0.9107	0.0113	0.0252	2.86%	1.70%
100		5	0.8967	0.8533	0.9400	0.8521	0.9457	0.0156	0.0349	3.89%	0.16%
101		5	0.8895	0.8509	0.9282	0.8407	0.9195	0.0139	0.0311	3.50%	0.96%
Survival Rate	Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9355	0.8494	1.0220	0.8251	1.0000	0.0310	0.0694	7.42%	0.00%
0	FC	5	0.9169	0.8424	0.9915	0.8470	1.0000	0.0269	0.0600	6.55%	1.99%
6.25		5	0.9792	0.9253	1.0330	0.9016	1.0000	0.0194	0.0434	4.44%	-4.67%
12.5		5	0.9486	0.8498	1.0470	0.8087	1.0000	0.0356	0.0796	8.39%	-1.40%
25		5	0.9388	0.8658	1.0120	0.8689	1.0000	0.0263	0.0588	6.26%	-0.35%
50		5	0.9366	0.8899	0.9833	0.8907	0.9781	0.0168	0.0376	4.01%	-0.12%
100		5	0.9574	0.8803	1.0350	0.8634	1.0000	0.0278	0.0621	6.49%	-2.34%
101		5	0.9224	0.8465	0.9983	0.8525	0.9945	0.0273	0.0611	6.63%	1.40%

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1631 00

Bivalve Larval Survival and Development Test

WSP Laboratory

Combined Pro	portion Norm	al Detail					MD5: 98ECF5	A76CE72F9113040752A928741A
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.8691	0.8798	0.7541	0.8579	0.8361		
0	FC	0.9076	0.8415	0.8142	0.7650	0.8361		
6.25		0.8634	0.8848	0.8973	0.8087	0.9149		
12.5		0.8743	0.8907	0.8689	0.9206	0.8087		
25		0.8142	0.7760	0.9071	0.8415	0.9211		
50		0.8361	0.8033	0.8743	0.8689	0.7541		
100		0.9086	0.7869	0.9457	0.8783	0.7760		
101		0.8306	0.8798	0.7486	0.8361	0.8743		
Proportion No	rmal Detail						MD5: 458F1CE	33EFFCFDCDD267ECD4C64208A
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.8691	0.8895	0.9139	0.9181	0.9000		
0	FC	0.9076	0.9167	0.9312	0.9032	0.8844		
6.25		0.8681	0.8848	0.8973	0.8970	0.9149		
12.5		0.8791	0.9261	0.8883	0.9206	0.9080		
25		0.8976	0.8931	0.9071	0.9167	0.9211		
50		0.9107	0.8698	0.8989	0.8883	0.8466		
100		0.9086	0.8521	0.9457	0.8783	0.8987		
101		0.9048	0.9045	0.8782	0.8407	0.9195		
Survival Rate	Detail						MD5: 3095A59	5860844586C5A5EEA56F0E7BC
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	1.0000	0.9891	0.8251	0.9344	0.9290		
0	FC	1.0000	0.9180	0.8743	0.8470	0.9454		
6.25		0.9945	1.0000	1.0000	0.9016	1.0000		
12.5		0.9945	0.9617	0.9781	1.0000	0.8087		
25		0.9071	0.8689	1.0000	0.9180	1.0000		
50		0.9180	0.9235	0.9727	0.9781	0.8907		
100		1.0000	0.9235	1.0000	1.0000	0.8634		
101		0.9180	0.9727	0.8525	0.9945	0.8743		

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Bivalve Larval	Survival and	Developmer	nt Test				WSP Laboratory
Combined Pro	portion Norm	al Binomials	3				
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	166/191	161/183	138/183	157/183	153/183	
0	FC	167/184	154/183	149/183	140/183	153/183	
6.25		158/183	169/191	166/185	148/183	172/188	
12.5		160/183	163/183	159/183	174/189	148/183	
25		149/183	142/183	166/183	154/183	175/190	
50		153/183	147/183	160/183	159/183	138/183	
100		169/186	144/183	174/184	166/189	142/183	
101		152/183	161/183	137/183	153/183	160/183	
Proportion No	rmal Binomia	ls					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	166/191	161/181	138/151	157/171	153/170	
0	FC	167/184	154/168	149/160	140/155	153/173	
6.25		158/182	169/191	166/185	148/165	172/188	
12.5		160/182	163/176	159/179	174/189	148/163	
25		149/166	142/159	166/183	154/168	175/190	
50		153/168	147/169	160/178	159/179	138/163	
100		169/186	144/169	174/184	166/189	142/158	
101		152/168	161/178	137/156	153/182	160/174	
Survival Rate	Binomials						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	LC	183/183	181/183	151/183	171/183	170/183	
0	FC	183/183	168/183	160/183	155/183	173/183	
6.25		182/183	183/183	183/183	165/183	183/183	
12.5		182/183	176/183	179/183	183/183	148/183	
25		166/183	159/183	183/183	168/183	183/183	
50		168/183	169/183	178/183	179/183	163/183	
100		183/183	169/183	183/183	183/183	158/183	
101		168/183	178/183	156/183	182/183	160/183	

Analyst: JF QA: LL

Report Date: Test Code/ID:

0.9206

0.9211

0.8743

0.9457

0.0183

0.0275

0.0223

0.0335

4.70%

7.22%

6.03%

8.72%

-3.96%

-1.50%

1.44%

-2.35%

08 Mar-23 11:56 (p 1 of 8) 23-01-056 / 10-2711-8389

Bivalve Larv	al Sur	vival and Devel	opmen	t Test							WSP	Laborator
Analysis ID: Analyzed: Edit Date:	08 N	249-6451 Mar-23 11:25 Feb-23 14:44	Ana	l ysis: Par	ametric-Cor	oortion Norm ntrol vs Trea D903DD661	tments	State	S Version: us Level: or ID:	CETISv2. 1 002-883-3		
Comments:	FC=	Filtered Control,	101= 1	100% (1.2un	n Filtered)							
Data Transfo	rm	Alt	Нур				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corrected) C > T							100	>100		1	0.09068	10.80%
Dunnett Mult	tiple (Comparison Tes	t									
Control	vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision	(a:5%)		
Lab Control		6.25	8	-1.006	2.362	0.1158	CDF	0.9836	Non-Sign	ificant Effect		
		12.5	8	-0.9724	2.362	0.1158	CDF	0.9820	Non-Sign	ificant Effect		
		25	8	-0.4234	2.362	0.1158	CDF	0.9287	Non-Sign	ificant Effect		
		50	8	0.3335	2.362	0.1158	CDF	0.7167	Non-Significant Effect			
		100	8	-0.713	2.362	0.1158	CDF	0.9642	Non-Significant Effect			
ANOVA Table	е											
Source		Sum Squares		Mean Squ	are	DF	F Stat	P-Value	Decision	(a:5%)		
Between		0.0176378		0.0035276		5	0.5871	0.7097	Non-Sign	ificant Effect		
Error		0.144208		0.0060087		24						
Total		0.161846				29	_					
ANOVA Assu	ımptio	ons Tests										
Attribute		Test				Test Stat	Critical	P-Value	Decision	(a:1%)		
Variance		Bartlett Equality	y of Var	riance Test		2.538	15.09	0.7707	Equal Va	riances		
Distribution		Shapiro-Wilk W	/ Norm	ality Test		0.9505	0.9031	0.1748	Normal D	istribution		
Combined P	ropor	tion Normal Sun	nmary	-								
Conc-%		Code Co	unt	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC 5		0.8394	0.7769	0.9019	0.8579	0.7541	0.8798	0.0225	6.00%	0.00%
6.25		5		0.8738	0.8230	0.9247	0.8848	0.8087	0.9149	0.0183	4.68%	-4.10%
		5										

Angular (Corrected) Transformed Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.1620	1.0800	1.2430	1.1840	1.0520	1.2170	0.0293	5.64%	0.00%
6.25		5	1.2110	1.1360	1.2850	1.2250	1.1180	1.2750	0.0268	4.95%	-4.25%
12.5		5	1.2090	1.1340	1.2850	1.2080	1.1180	1.2850	0.0272	5.02%	-4.10%
25		5	1.1820	1.0720	1.2930	1.1610	1.0780	1.2860	0.0398	7.52%	-1.79%
50		5	1.1450	1.0640	1.2260	1.1540	1.0520	1.2080	0.0291	5.68%	1.41%
100		5	1.1960	1.0580	1.3340	1.2140	1.0780	1.3360	0.0497	9.29%	-3.01%

0.9236

0.9283

0.8892

0.9521

0.8743

0.8415

0.8361

0.8783

0.8087

0.7760

0.7541

0.7760

0.8217

0.7756

0.7654

0.7661

0.8727

0.8520

0.8273

0.8591

12.5

25

50

100

5

5

5

5

Report Date: Test Code/ID: 08 Mar-23 11:56 (p 2 of 8) 23-01-056 / 10-2711-8389

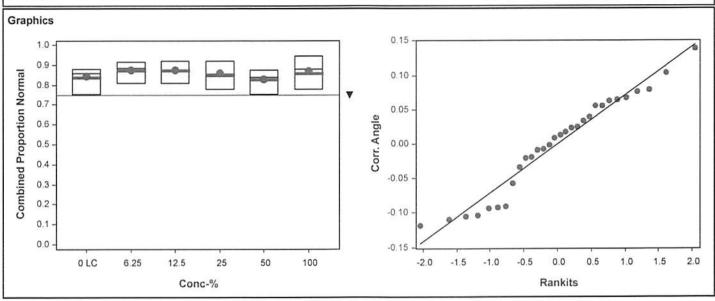
Bivalve Larval Survival and Development Test

WSP Laboratory

Analysis ID: 12-2249-6451 Endpoint: Combined Proportion Normal CETIS Version: CETISv2.1.3

Analyzed: 08 Mar-23 11:25 Analysis: Parametric-Control vs Treatments Status Level: 1

Edit Date: 21 Feb-23 14:44 MD5 Hash: 26F8BD4ECC1D903DD6619A8D44B23632 Editor ID: 002-883-387-8



Report Date: Test Code/ID: 08 Mar-23 11:56 (p 3 of 8) 23-01-056 / 10-2711-8389

Bivalve Larval Survival and Development Test (LC vs 100%) WSP Laboratory

Analysis ID: 12-0600-4848 Endpoint: Combined Proportion Normal CETIS Version: CETISv2.1.3

Analyzed: 08 Mar-23 11:25 Analysis: Parametric Bioequivalence-Two Sample Status Level: 1

Edit Date: 21 Feb-23 14:44 MD5 Hash: 436682D09995A007B31F40C093F46A9D Editor ID: 002-883-387-8

Comments: FC= Filtered Control, 101= 100% (1.2um Filtered)

Data Transform	Alt Hyp	TST_b	Comparison Result	
Angular (Corrected)	C*b < T	0.75	100% passed combined proportion normal endpoint	

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(a:5%)
Lab Control		100*	5	5.987	2.015	CDF	0.0009	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.0030547	0.0030547	1	0.3671	0.5614	Non-Significant Effect	
Error	0.0665642	0.0083205	8				
Total	0.0696189		9				

ANOVA Assumptions Tests

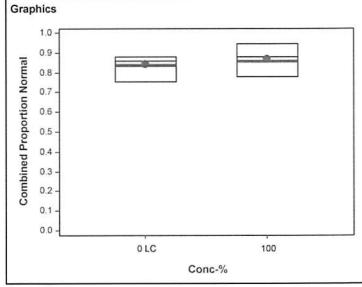
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variance	Variance Ratio F Test	2.879	23.15	0.3302	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9122	0.7411	0.2967	Normal Distribution

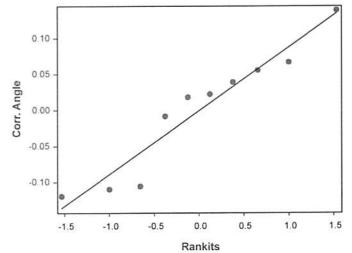
Combined Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.8394	0.7769	0.9019	0.8579	0.7541	0.8798	0.0225	6.00%	0.00%
100		5	0.8591	0.7661	0.9521	0.8783	0.7760	0.9457	0.0335	8.72%	-2.35%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.1620	1.0800	1.2430	1.1840	1.0520	1.2170	0.0293	5.64%	0.00%
100		5	1.1960	1.0580	1.3340	1.2140	1.0780	1.3360	0.0497	9.29%	-3.01%





Report Date: Test Code/ID: 08 Mar-23 11:56 (p 4 of 8) 23-01-056 / 10-2711-8389

us 100% Fitteted

WSP Laboratory

Analysis ID: 08-0755-1045

Endpoint: Combined Proportion Normal Analysis: Parametric Bioequivalence-Two Sample **CETIS Version:** Status Level:

CETISv2.1.3

Analyzed: 08 Mar-23 11:26 Edit Date:

21 Feb-23 14:44

Bivalve Larval Survival and Development Test

MD5 Hash: B228EE256BDCFB30D39DCFDB1BD3A04 Editor ID:

002-883-387-8

Comments: FC= Filtered Control, 101= 100% (1.2um Filtered)

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	101% passed combined proportion normal endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(a:5%)	
Filter Control		101*	7	7.439	1.895	CDF	7.2E-05	Non-Significant Effect	

ANOVA Table

, to 1, , tubic							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	1.713E-06	1.713E-06	1	0.0003497	0.9855	Non-Significant Effect	
Error	0.0391999	0.0049	8				
Total	0.0392017		9				

ANOVA Assumptions Tests

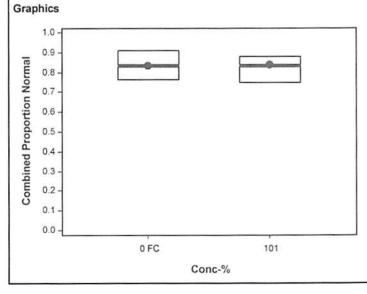
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variance	Variance Ratio F Test	1.097	23.15	0.9306	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9594	0.7411	0.7787	Normal Distribution

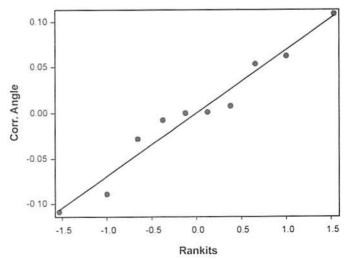
Combined Proportion Normal Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	0.8329	0.7689	0.8969	0.8361	0.7650	0.9076	0.0231	6.19%	0.00%
101		5	0.8339	0.7687	0.8991	0.8361	0.7486	0.8798	0.0235	6.30%	-0.12%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	1.1530	1.0650	1.2420	1.1540	1.0650	1.2620	0.0320	6.21%	0.00%
101		5	1.1540	1.0690	1.2390	1.1540	1.0460	1.2170	0.0306	5.92%	-0.07%





Report Date: Test Code/ID: 08 Mar-23 11:56 (p 5 of 8) 23-01-056 / 10-2711-8389

Bivalve Larva	Survi	val and De	evelopmen	t Test							WSP	Laboratory
Analyzed:	08 Ma	54-8764 r-23 11:25 b-23 14:44	Anal	ysis: Par		trol vs Treat			S Version: us Level: or ID:	CETISv2. 1 002-883-3		
Comments:	FC= F	iltered Cor	ntrol, 101= 1	00% (1.2un	n Filtered)							
Data Transfor	m		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corre	cted)		C > T				100	>100		1	0.0357	3.97%
Dunnett Multi	ple Co	mparison	Test									
Control	vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(a:5%)		
Lab Control		6.25	8	0.4045	2.362	0.05623	CDF	0.6877		ficant Effect		
		12.5	8	-0.4522	2.362	0.05623	CDF	0.9332		ficant Effect		
		25	8	-0.6095	2.362	0.05623	CDF	0.9538		ficant Effect		
		50	8	1.013	2.362	0.05623	CDF	0.4140		ficant Effect		
		100	8	-0.01157	2.362	0.05623	CDF	0.8367	Non-Signif	ficant Effect		
ANOVA Table												
Source		Sum Squa	res	Mean Squ	are	DF	F Stat	P-Value	Decision(a:5%)		
Between		0.0049508		0.0009902		5	0.6988	0.6297	Non-Signif	ficant Effect		
Error		0.0340085		0.0014170		24			10000 n 1500			
Total		0.0389593				29	-					
ANOVA Assur	nption	s Tests										
Attribute		Test				Test Stat	Critical	P-Value	Decision(α:1%)		
Variance			uality of Var	iance Test		4.72	15.09	0.4510	Equal Vari			
Distribution			ilk W Norma			0.984	0.9031	0.9188	Normal Di	stribution		
Proportion No	ormal S	Summary										
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	1	LC	5	0.8981	0.8735	0.9227	0.9000	0.8691	0.9181	0.0089	2.21%	0.00%
6.25			5	0.8924	0.8709	0.9139	0.8970	0.8681	0.9149	0.0077	1.94%	0.64%
12.5			5	0.9044	0.8792	0.9296	0.9080	0.8791	0.9261	0.0091	2.24%	-0.70%
25			5	0.9071	0.8922	0.9220	0.9071	0.8931	0.9211	0.0054	1.32%	-1.00%
50			5	0.8829	0.8515	0.9142	0.8883	0.8466	0.9107	0.0113	2.86%	1.70%
100			5	0.8967	0.8533	0.9400	0.8987	0.8521	0.9457	0.0156	3.89%	0.16%
Angular (Corr	ected)	Transform	ned Summ	ary		9						
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	1.2470	1.2070	1.2870	1.2490	1.2010	1.2810	0.0145	2.59%	0.00%
6.25		Marie Co.	5	1.2370	1.2030	1.2720	1.2440	1.1990	1.2750	0.0125	2.26%	0.77%
12.5			5	1.2580	1.2150	1.3010	1.2630	1.2160	1.2960	0.0154	2.74%	-0.86%
25		5 1.2620 1.2360				1.2870	1.2610	1.2380	1.2860	0.0092	1.64%	-1.16%
50		5 1.2230 1.1750				1.2710	1.2300	1.1680	1.2670	0.0174	3.18%	1.93%
100			5	1.2470	1.1730	1.3210	1.2470	1.1760	1.3360	0.0267	4.78%	-0.02%

Report Date: Test Code/ID: 08 Mar-23 11:56 (p 6 of 8) 23-01-056 / 10-2711-8389

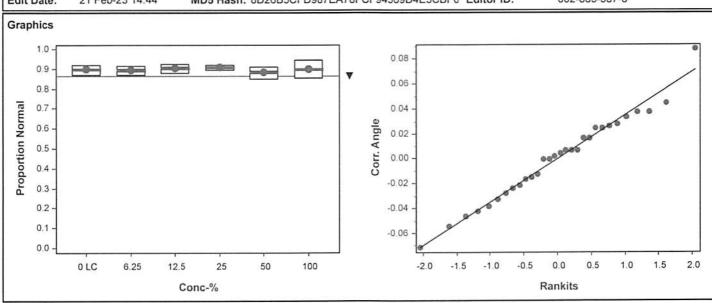
Bivalve Larval Survival and Development Test

WSP Laboratory

Analysis ID: 17-1354-8764 Endpoint: Proportion Normal CETIS Version: CETISv2.1.3

Analyzed: 08 Mar-23 11:25 Analysis: Parametric-Control vs Treatments Status Level:

Edit Date: 21 Feb-23 14:44 MD5 Hash: 8D26B5CFD987EA78FCF94369D4E3CBF0 Editor ID: 002-883-387-8



Report Date: Test Code/ID: 08 Mar-23 11:57 (p 7 of 8) 23-01-056 / 10-2711-8389

Bivalve Larv	al Sur	vival and [Developmen	t Test							WSP	Laborator
Analysis ID: Analyzed: Edit Date:	08 N	688-8529 lar-23 11:2 eb-23 14:4	5 Ana	•	ametric-Con		CETIS Versi Treatments Status Level C66A4B986D82B64 Editor ID:			1 002-883-3		
Comments:	FC=	Filtered Co	ontrol, 101=	100% (1.2un	n Filtered)							
Data Transfo	orm		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Cor	rected))	C > T				100	>100		1	0.1139	12.17%
Dunnett Mul	tiple C	ompariso	n Test									
Control	vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision	(α:5%)		
Lab Control		6.25	8	-1.31	2.362	0.2156	CDF	0.9932	Non-Sign	Non-Significant Effect		
and the second of the second o		12.5	8	-0.4229	2.362	0.2156	CDF	0.9286	Non-Significant Effect			
		25	8	-0.1255	2.362	0.2156	CDF	0.8677	Non-Sign	ificant Effect		
		50	8	0.2631	2.362	0.2156	CDF	0.7442	Non-Sign	ificant Effect		
		100	8	-0.7275	2.362	0.2156	CDF	0.9655	Non-Sigr	ificant Effect		
ANOVA Tabl	le											
Source		Sum Squares Mean Square				DF	F Stat	P-Value	Decision	ı(a:5%)		
Between		0.067094 0.0134188				5	0.6439	0.6686	Non-Sign	ificant Effect		
Error		0.500167		0.0208403	3	24						
Total		0.567261				29	_					
ANOVA Ass	umptio	ons Tests										
Attribute		Test				Test Stat	Critical	P-Value	Decision	ı(a:1%)		
Variance		Bartlett E	quality of Va	riance Test		2.154	15.09	0.8274	Equal Va	riances		
Distribution		Shapiro-V	Vilk W Norm	ality Test		0.9377	0.9031	0.0788	Normal D	Distribution		
Survival Rat	te Sum	mary										
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	0.9355	0.8494	1.0000	0.9344	0.8251	1.0000	0.0310	7.42%	0.00%
6.25			5	0.9792	0.9253	1.0000	1.0000	0.9016	1.0000	0.0194	4.44%	-4.67%
12.5			5	0.9486	0.8498	1.0000	0.9781	0.8087	1.0000	0.0356	8.39%	-1.40%
25			5	0.9388	0.8658	1.0000	0.9180	0.8689	1.0000	0.0263	6.26%	-0.35%
50			5	0.9366	0.8899	0.9833	0.9235	0.8907	0.9781	0.0168	4.01%	-0.12%
100			5	0.9574	0.8803	1.0000	1.0000	0.8634	1.0000	0.0278	6.49%	-2.34%
Angular (Co	rrecte	d) Transfo	rmed Summ	ary								
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	1.3500	1.1590	1.5420	1.3120	1.1390	1.5340	0.0691	11.44%	0.00%
6.25		(2)50	5	1.4700	1.3170	1.6230	1.5340	1.2520	1.5340	0.0550	8.37%	-8.86%
			8								4.4 700/	0.000/

0.0732

0.0714

0.0370

0.0733

-2.86%

-0.85%

1.78%

-4.92%

11.79%

11.73%

11.57%

6.23%

1.5920

1.5600

1.4290

1.6200

1.1860

1.1640

1.2240

1.2130

1.4220

1.2800

1.2910

1.5340

1.1180

1.2000

1.2340

1.1920

1.5340

1.5340

1.4220

1.5340

12.5

25

50

100

5

5

5

5

1.3890

1.3620

1.3260

1.4170

Report Date: Test Code/ID: 08 Mar-23 11:57 (p 8 of 8)

WSP Laboratory

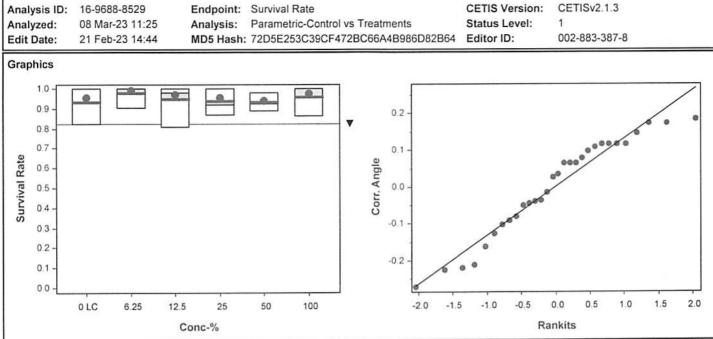
23-01-056 / 10-2711-8389

Bivalve Larval Survival and Development Test

Analysis ID: 16-9688-8529

Endpoint: Survival Rate

CETIS Version:



CETIS Test Data Worksheet

Bivalve Larval Survival and Development Test

Report Date: Test Code/ID: 20 Jan-23 13:30 (p 1 of 1)

-3D389535+10-2711-8389

23-01-656 Wood E&18

26 Jan-23 1730 Species: Mytilis galloprovincialis Start Date: Sample Code: 4135834B

28 Jan-23 /600 Protocol: EPA/600/R-95/136 (1995) Sample Source: Shelter Island Yacht Basin End Date:

				Material: S		#		
Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
			271			176	163	1 curved
			272			1891	174	
			273			173	174	1 curved
			274			186	169	
			275			160	149	
			276			168+88 W	17215	2_
			277		159.	41218 9 HZ		2
			278			185	166	
			279			182	153	
			280			103	138	
			281			184	174	
			282			156	137	
			283			166	149	
			284			183	160	
			285			191	1,60	
			286			181	147	HK 2/21/23
			287			181	161	
			288			170	153	*
			289			179	159	
			290			151	138	
			291			188	172	
			292			184	167	
			293		171		174ml	09
			294		Ü	23 140 HK	W163-14	8
			295			190	175.	
			296			155 1108ill	152 11	10
			297		(1407 652	71-18 (V5	
			298			HD 105	159	
			299			178	160	
			300			168	154	
			301			168	160 154 161 169	
			302			191	169	
			303			159	142	
			304			169	144	
			305			189	154	
			306			1690	154	
			307			171	157	
			308			160	153	
			309			162	153 160 158	
			310			182	150	

CETIS Test Data Worksheet

Report Date:

20 Jan-23 13:30 (p 1 of 1)

Test Code/ID:

3D389535 / 10-2711-8389

Bivalve Larval Survival and Development Test

Wood E&IS

Start Date: 26 Jan-23 End Date: 28 Jan-23

Species: Mytilis galloprovincialis Protocol: EPA/600/R-95/136 (1995)

4135834B Sample Code: Sample Source: Shelter Island Yacht Basin

Sample Date: 25 Jan-23

Material: Seawater

Sample Station: SIYB REF-1

Sample Date: 25 Jan-23			Material:	Seawater		Sample Station: SIYB REF-1				
Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes		
0	FC	1	292							
0	FC	2	300							
0	FC	3	275							
0	FC	4	296							
0	FC	5	273							
0	LC	1	285							
0	LC	2	287							
0	LC	3	290							
0	LC	4	307							
0	LC	5	288							
6.25		1	310							
6.25		2	302							
6.25		3	278							
6.25		4	297							
6.25		5	291							
12.5		1	309							
12.5		2	271							
12.5		3	298							
12.5		4	272							
12.5		5	294							
25		1	283							
25	-	2	303							
25		3	284							
25		4	306							
25		5	295							
50		1	308							
50		2	286							
50		3	299							
50		4	289							
50		5	280							
100		1	274							
100		2	304							
100		3	281							
100		4	305							
100		5	277							
101		1	276							
101		2	301							
101	-	3	282							
101		4	279							
101		5	293							

Analyst: AC QA: AC

Water Quality for Bivalve Development

た似? **Client: Wood** - Port of San Diego

Sample ID: SIYB-REF-1
Test No. 23 -0\-056

Test Species: M. galloprovincialis

Start Date/Time: 1/26/2023 1730 End Date/Time: 1/30/2023 \\ \(\text{OO}\)

Test Conc.	Water Quality Measurements								
(%)	Parameter	0hr	24hr	48hr					
	Temp. (°C)	15.9	15.)	153					
	Salinity (ppt)	33.4	33.6	33.8					
Lab Control	pH (units)	7.92	7.76	7.79					
	DO (mg/L)	8.3	8.4	8.3					
	Temp. (°C)	15-9	15.2	15.3					
	Salinity (ppt)	33.4	33.4	33.6					
ilter Control	pH (units)	7.90	7.74	7.78					
	DO (mg/L)	7.7	8.5	8.4					
	Temp. (°C)	16.0	15.7	15.3					
	Salinity (ppt)	33.4	33.6	33.7					
6.25	pH (units)	7-91	7.74	7.78					
	DO (mg/L)	8.5	8.4	8.4					
	Temp. (°C)	14.0	15.2	153					
649201100	Salinity (ppt)	33.4	33.60	33.7					
12.5	pH (units)	7.89	7.74	7.78					
	DO (mg/L)	8.5	8.le	8.5					
	Temp. (°C)	15.9	15.3	15.4					
	Salinity (ppt)	33.4	33.7	33.6					
25	pH (units)	7.90	7.75	7.78					
	DO (mg/L)	8.7	8.3	8.4					
	Temp. (°C)	15.9	15.4	15.4					
	Salinity (ppt)	33.2	33.2	33.4					
50	pH (units)	7.89	4.75	7.78					
	DO (mg/L)	8.7	8.60	8.5					
	Temp. (°C)	15.8	15.3	15.4					
	Salinity (ppt)	32-8	33.0	33.2					
100	pH (units)	7.89	7.76	7.78					
	DO (mg/L)	9.9	8.3	8.5					
	Temp. (°C)	15.9	15.4	15.3					
00 Filtered	Salinity (ppt)	32-0	32.2	32.5					
(1.2μm)	pH (units)	7-80	7.76	7.78					
	DO (mg/L)	8.2	8.4	84					
	Tech Initials:	HK	75	AG.					

	, ,
Comments:	
Comments	

Embryo-Larval Development Test Stock Preparation Worksheet

Test Species:

M. galloprovincialis

Test Date: 1/26/2023

Batch ID:

1/26/23 MITSON Bay Colle

Analyst:

Test Type:

Task	ART TO TAKE
Spawning Induction	1430
Spawning Begins	1510
# Males/# Females	515
Spawn Condition	good
Fertilization Initiated	1600
Fertilzation End/Eggs Rinsed	1620/1640
Embryo Counts	1700
Test Initiation	1730

Embryo Density Counts

20 # per 100 μL

Stock #	Stock Volume (mL)	Ren 1 Ren 2 Ren 3			Rep 4	Mean #/100 μL	Mean #/mL (x10)	
Stock 1						76	///	
Stock 2	500							
Stock 3	500	21	19	11	13	1.0	800	

Cell Division:

	% Divided
Stock 1	
Stock 2	90
Stock 3	98

Selected Stock:	3

Stock Density

Dil Factor

Adjust selected embryo stock to 500 embryos/mL.

Dilution Factor = Stock Density/mL/500

600 500

In 10 mL sample volume add 500 μ l of 500 embryo/ml stock to obtain 25 embryos/mL in test vials.

Notes:

QA Review:

Final Review: 1 3/9/13

APPENDIX B Acute Menidia Test Raw Data & Statistical Analyses

Site: SIYB-1

CETIS Summary Report

Report Date: Test Code/ID: 09 Feb-23 14:04 (p 1 of 1) 23-01-043 / 12-8001-6669

WSP	Labo	ratory

Inland Silvers	side 96-h Acute S	Survival Test								WSPL	aborat	tory
Batch ID:	09-0368-3327			Suprival (OSh)			Anal	uct:				•
				ype: Survival (96h) sol: EPA/821/R-02-012 (2002)				500 cm	atural Seawat			
Start Date:	26 Jan-23 12:15						Dilue			ei		
	30 Jan-23 11:00	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		Menidia beryllin	ıa		Brin	74. <i>1889</i>	ot Applicable	00		10-
Test Length:	95n	Taxon	:				Sour	rce: Ac	quatic Biosyst	ems, CO	Age:	120
Sample ID:	07-4212-2415	Code:	- 2	23-W026			Proje	ect: SI	YB TMDL Mo	nitoring		
Sample Date:	: 25 Jan-23 14:00	Materi	ial: /	Ambient Sampl	e		Sour	rce: Sh	nelter Island Y	acht Basin		
Receipt Date:	: 25 Jan-23 17:00	CAS (PC):				Stati	on: SI	YB 1			
Sample Age:	22h (15.7 °C)	Client	: 1	WSP								
Single Comp	arison Summary											
Analysis ID	Endpoint		Compa	rison Method			P-Value	Compar	rison Result			
14-0925-2485	96h Survival Rat	e -	TST-W	elch's t Test			0.0002	100% pa	assed 96h sur	vival rate		
Multiple Com	parison Summa	ry										
Analysis ID	Endpoint		Compa	rison Method		✓	NOEL	LOEL	TOEL	PMSD	TU	
	96h Survival Rat	e s	Steel N	lany-One Rank	Sum Test		100	>100		9.42%	1	
Test Accepta	bility					TAC L	imits.				- 1	
Analysis ID	Endpoint		Attribu	te	Test Stat	Lower	Upper	Overlap	Decision			
04-6147-0785	96h Survival Rat	e (Control	Resp	0.9333	0.9	<<	Yes	Passes C	riteria		
14-0925-2485	96h Survival Rat	e (Control	Resp	0.9333	0.9	<<	Yes	Passes C	riteria		
96h Survival	Rate Summary											
Conc-%	Code	Count I	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Eff	ect
0	LC	6 (0.9333	0.8249	1.0420	0.8000	1.0000	0.0422	0.1033	11.07%	0.009	%
25		6 (0.9667	0.8810	1.0520	0.8000	1.0000	0.0333	0.0817	8.45%	-3.57	%
50		6	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	-7.14	%
100		6	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	-7.14	%
96h Survival	Rate Detail						MD	5: C20E17	71668B581A6	A1D369E3	CE2A0	C26
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6					
Conc-%												
0	LC	0.8000	1.0000	1.0000	1.0000	1.0000	0.8000					
	LC		1.0000 1.0000	1.0000 0.8000	1.0000	1.0000	0.8000 1.0000					
0	LC	1.0000			0.0000000000000000000000000000000000000							

Report Date: Test Code/ID: 09 Feb-23 14:04 (p 1 of 2) 23-01-043 / 12-8001-6669

Inland Silverside 96-h Acute Survival Test WSP Laboratory

Analysis ID: 04-6147-0785 Endpoint: 96h Survival Rate CETIS Version: CETISv2.1.3

Analyzed: 09 Feb-23 14:03 Analysis: Nonparametric-Control vs Treatments Status Level: 1

Edit Date: 09 Feb-23 14:02 MD5 Hash: C20E171668B581A6A1D369E3CE2A0C26 Editor ID: 002-883-387-8

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corrected)	C > T	100	>100		1	0.08793	9.42%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(a:5%)
Lab Control		25	10	42	26	2	CDF	0.8900	Non-Significant Effect
		50	10	45	26	1	CDF	0.9626	Non-Significant Effect
		100	10	45	26	1	CDF	0.9626	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0259911	0.0086637	3	1.41	0.2691	Non-Significant Effect
Error	0.122867	0.0061434	20			
Total	0.148858		23			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test				Indeterminate
Distribution	Shapiro-Wilk W Normality Test	0.7409	0.884	3.7E-05	Non-Normal Distribution

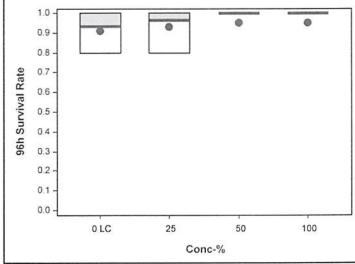
96h Survival Rate Summary

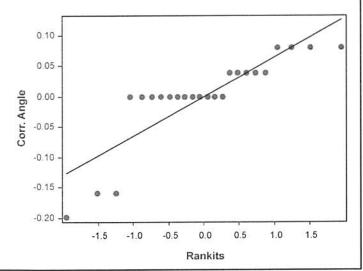
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	0.9333	0.8249	1.0000	1.0000	0.8000	1.0000	0.0422	11.07%	0.00%
25		6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	-3.57%
50		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-7.14%
100		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-7.14%

Angular (Corrected) Transformed Summary

Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
LC	6	1.2660	1.1370	1.3950	1.3450	1.1070	1.3450	0.0502	9.71%	0.00%
	6	1.3060	1.2040	1.4080	1.3450	1.1070	1.3450	0.0397	7.45%	-3.14%
	6	1.3450	1.3450	1.3450	1.3450	1.3450	1.3450	0.0000	0.00%	-6.27%
	6	1.3450	1.3450	1.3450	1.3450	1.3450	1.3450	0.0000	0.00%	-6.27%
	18000000	ASSESSED SOURCES	LC 6 1.2660 6 1.3060 6 1.3450	LC 6 1.2660 1.1370 6 1.3060 1.2040 6 1.3450 1.3450	LC 6 1.2660 1.1370 1.3950 6 1.3060 1.2040 1.4080 6 1.3450 1.3450 1.3450	LC 6 1.2660 1.1370 1.3950 1.3450 6 1.3060 1.2040 1.4080 1.3450 6 1.3450 1.3450 1.3450	LC 6 1.2660 1.1370 1.3950 1.3450 1.1070 6 1.3060 1.2040 1.4080 1.3450 1.1070 6 1.3450 1.3450 1.3450 1.3450	LC 6 1.2660 1.1370 1.3950 1.3450 1.1070 1.3450 6 1.3060 1.2040 1.4080 1.3450 1.1070 1.3450 6 1.3450 1.3450 1.3450 1.3450 1.3450	LC 6 1.2660 1.1370 1.3950 1.3450 1.1070 1.3450 0.0502 6 1.3060 1.2040 1.4080 1.3450 1.1070 1.3450 0.0397 6 1.3450 1.3450 1.3450 1.3450 1.3450 0.0000	LC 6 1.2660 1.1370 1.3950 1.3450 1.1070 1.3450 0.0502 9.71% 6 1.3060 1.2040 1.4080 1.3450 1.1070 1.3450 0.0397 7.45% 6 1.3450 1.3450 1.3450 1.3450 1.3450 1.3450 0.0000 0.00%

Graphics





Report Date: Test Code/ID: 09 Feb-23 14:04 (p 2 of 2) 23-01-043 / 12-8001-6669

Inland Silverside 96-h Acute Survival Test	WSP Laboratory
I mand Silverside 90-n Acute Survival Test	WSF Laboratory

CETISv2.1.3 **CETIS Version:** Analysis ID: 14-0925-2485 Endpoint: 96h Survival Rate

Analyzed: 09 Feb-23 14:03 Analysis: Parametric Bicequivalence-Two Sample Status Level:

Edit Date: 09 Feb-23 14:02 MD5 Hash: A5C23311803EB7B73A6DE5985BFDFAA6 Editor ID: 002-883-387-8

Data Transform	Alt Hyp	TST_b	Comparison Result	
Angular (Corrected)	C*b < T	0.8	100% passed 96h survival rate endpoint	

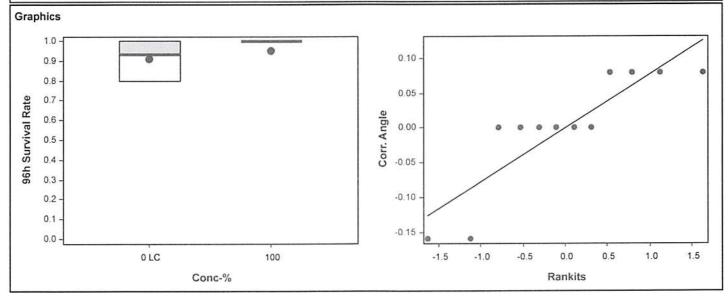
TST-Welch's t Test Control df Test Stat Critical P-Value Decision(a:10%) vs Conc-% P-Type 100* 1.476 CDF Non-Significant Effect Lab Control 5 8.28 0.0002

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.0189026	0.0189026	1	2.5	0.1449	Non-Significant Effect	
Error	0.0756105	0.0075611	10				
Total	0.0945132		11				

ANOVA Assumptions Tests									
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)				
Variance	Variance Ratio F Test				Indeterminate				
Distribution	Shapiro-Wilk W Normality Test	0.7668	0.8025	0.0040	Non-Normal Distribution				

96h Survival I	96h Survival Rate Summary												
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect		
0	LC	6	0.9333	0.8249	1.0000	1.0000	0.8000	1.0000	0.0422	11.07%	0.00%		
100		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-7.14%		

Angular (Corre	Angular (Corrected) Transformed Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect	
0	LC	6	1.2660	1.1370	1.3950	1.3450	1.1070	1.3450	0.0502	9.71%	0.00%	
100		6	1.3450	1.3450	1.3450	1.3450	1.3450	1.3450	0.0000	0.00%	-6.27%	



96hr Marine Acute Test with 48hr Renewal

Sample ID:	SIYB-1						Start Date/Time:	1/26/2	2023	1215			
Test No.			-04	3 40	-01	19	- End Date/Time:	1/30/2	2023	100			
Sample ID	Rep			Counts				Water	Quality	00-1			
(%)		0	24	48	72	96	Parameter	0	24 @		48i	72	96
	Α	5	5	5	5	4	Temp. (C)	24.0	23.7	25.5	28.0	243	24.8
	В	5	5	5	5	5	Salinity (ppt)	33.7	34.0			35,1	37.0
1041	С	5	5	5	5	5	pH (units)		7-73		7.87	7.84	7.8
LC #1	D	5	5	5	5	5	DO (mg/L)	7.2	7-2	6,6	7.4	7.2	63
	E	5	5	5	5	5							
	F	5	5	5	5	4							
	Α	5	5	5	5	5	Temp. (C)	24.0	24.2	25.8	24.1	245	25.2
	В	5	5	5	5	S	Salinity (ppt)	33.4		34.8	333		35.8
	С	5	5	4	4	4	pH (units)	7.97	7.82		8.00	7.90	
25	D	5	8	5	5	5	DO (mg/L)	78	0.5	7.0	7.3	6.9	4,5
	Ε	5	5	5	5	5		.4			No in the		
	F	5	5	5	5	5							
	Α	5	5	5	5	5	Temp. (C)	24 10	24:	1260	24.2	243	24.9
İ	В	5	5	5	5	5	Salinity (ppt)		533.1				
	С	5	5	5	5	5	pH (units) 7,918					791	
50	D	5	5	5	5	5	DO (mg/L)	7.0	6.8	6.5	7.4	6.9	
	E	5	5	5	5	5		1.0				786	/
	F	5	8	5	5	5		EN CA					
	Α	5	5	5	5	5	Temp. (C) 24.7	250	24.3	26.1	243	243	1947
	В	5	5	5	5	5	Salinity (ppt) 32.9	33.0	P33:0	34.0		34.3	35.7
500000	С	5	5	5	5	S	pH (units)	7.91	7.82	7.92	7,91	7.91	
100	D	5	5	5	5	5	DO (mg/L)	8.0	7.0	6.5	7.9	6.9	10,5
-	E	5	5	5	5	5		VIC			JIE ST		
	F	5	5	6	3	5							
	Α					3	Temp. (C)						
	В						Salinity (ppt)						
İ	С						pH (units)						
	D						DO (mg/L)						
	E										alime is		
	F												
	n Initials:	HK-	HK	Ro	Alo	1919	Tech Initials:	RV	HK	00	26	AL	PU
QC:	PN nimals Re	ani	112	412	3		Feedings	0	24	48	72	96	1
				10	,		Initials (AM):	_	HK	AL	M	PN	1
Age of Anim				100			Initials (PM):	RV	NF	AC	Re	FN .	
Comments: (H) Haj	USTEC	KI	1 TE	Wb								

Site: SIYB-2

CETIS Summary Report

Report Date: Test Code/ID: 09 Feb-23 14:23 (p 1 of 1) 23-01-044 / 05-9827-3788

Inland Silvers	ide 96-h Acute	Survival	Test							WSP L	.aborator
Batch ID: Start Date:	06-9278-8660 26 Jan-23 12:25		est Type: Protocol:	Survival (96h) EPA/821/R-02-	012 (2002)			Analyst: Diluent: Natural Seawater			
	30 Jan-23 11:15		Species:	Menidia beryllir	na				Applicable	101 600	
Test Length:	95h	I	axon:				Sour	rce: Aqı	uatic Biosyst	ems, CO	Age: 12
Sample ID:	05-4971-3455	c	Code:	23-W027			Project: SIYB TMDL Monitoring			선생이 하지 않았다.	
	25 Jan-23 13:00		/laterial:	Ambient Samp	le		Soul		elter Island Y	acht Basin	
50	25 Jan-23 17:00		CAS (PC):				Stati	ion: SIY	B 2		
Sample Age:	23h (15.7 °C)		Client:	WSP							
Single Compa	arison Summar	y									
Analysis ID	Endpoint		Comp	parison Method			P-Value		son Result		
03-2171-9816	96h Survival Ra	Welch's t Test			0.0002	100% pa	ssed 96h su	rvival rate			
Multiple Com	parison Summa	ary									
Analysis ID	Endpoint	oarison Method		✓	NOEL	LOEL	TOEL	PMSD	TU		
06-3549-0030	96h Survival Ra	ite	Steel	Many-One Rank	Sum Test		100	>100	(222)	10.8%	1
Test Accepta	bility					TAC L	imits				
Analysis ID	Endpoint		Attrib	ute	Test Stat	Lower	Upper	Overlap	Decision		
03-2171-9816	96h Survival Ra	ite	Contr	ol Resp	0.9333	0.9	<<	Yes Passes Criteria			
06-3549-0030	96h Survival Ra	ite	Contr	ol Resp	0.9333	0.9	<<	Yes	Passes C	riteria	
96h Survival	Rate Summary				12						
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	6	0.933	3 0.8249	1.0420	0.8000	1.0000	0.0422	0.1033	11.07%	0.00%
25		6	0.966		1.0520	0.8000	1.0000	0.0333	0.0817	8.45%	-3.57%
50		6	0.966		1.0520	0.8000	1.0000	0.0333	0.0817	8.45%	-3.57%
100		6	1.000	0 1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	-7.14%
96h Survival	Rate Detail						MD	5: 39D1359	98E7B169D	F1EAB8DE	9ECF233
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6				
0	LC	0.8000	1.000	0 1.0000	1.0000	1.0000	0.8000				
25		0.8000	1.000	0 1.0000	1.0000	1.0000	1.0000				
50		0 1.0000	1.0000	1.0000	1.0000						

100

1.0000

1.0000

1.0000

1.0000

1.0000

1.0000

Report Date: Test Code/ID: 09 Feb-23 14:23 (p 1 of 2) 23-01-044 / 05-9827-3788

Inland Silverside 96-h Acute Survival Test WSP Laboratory

Analysis ID: 06-3549-0030 Endpoint: 96h Survival Rate CETIS Version: CETISv2.1.3

Analyzed: 09 Feb-23 14:23 Analysis: Nonparametric-Control vs Treatments Status Level: 1

Edit Date: 09 Feb-23 14:22 MD5 Hash: 39D13598E7B169D5F1EAB8DE9ECF2332 Editor ID: 002-883-387-8

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corrected)	C > T	100	>100		1	0.1008	10.80%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(a:5%)
Lab Control		25	10	42	26	2	CDF	0.8900	Non-Significant Effect
		50	10	42	26	2	CDF	0.8900	Non-Significant Effect
		100	10	45	26	1	CDF	0.9626	Non-Significant Effect

ANOVA Table

Graphics

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.0189026	0.0063009	3	0.7407	0.5402	Non-Significant Effect	
Error	0.170124	0.0085062	20				
Total	0.189026		23				

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variance	Bartlett Equality of Variance Test				Indeterminate
Distribution	Shapiro-Wilk W Normality Test	0.7213	0.884	2.0E-05	Non-Normal Distribution

96h Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	0.9333	0.8249	1.0000	1.0000	0.8000	1.0000	0.0422	11.07%	0.00%
25		6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	-3.57%
50		6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	-3.57%
100		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-7.14%

Angular (Corrected) Transformed Summary

1533 N											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.2660	1.1370	1.3950	1.3450	1.1070	1.3450	0.0502	9.71%	0.00%
25		6	1.3060	1.2040	1.4080	1.3450	1.1070	1.3450	0.0397	7.45%	-3.14%
50		6	1.3060	1.2040	1.4080	1.3450	1.1070	1.3450	0.0397	7.45%	-3.14%
100		6	1.3450	1.3450	1.3450	1.3450	1.3450	1.3450	0.0000	0.00%	-6.27%

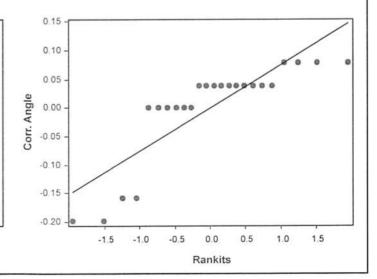
1.0 - 0.9 - 0.9 - 0.8 - 0.7 - 0.6 - 0.5 - 0.5 - 0.5 - 0.4 - 0.9 - 0.2 - 0.1 -

25

50

Conc-%

100



0 LC

0.0

100*

0.0945132

Lab Control

Total

Report Date:

09 Feb-23 14:23 (p 2 of 2) 23-01-044 / 05-9827-3788

Test Code/ID:

Inland Silverside 96-h Acute Survival Test	WSP Laboratory

Analysis ID: 03-2171-9816 Endpoint: 96h Survival Rate **CETIS Version:** CETISv2.1.3

Analyzed: 09 Feb-23 14:23 Analysis: Parametric Bioequivalence-Two Sample Status Level:

1.476

Edit Date: 09 Feb-23 14:22 MD5 Hash: A5C23311803EB7B73A6DE5985BFDFAA6 Editor ID: 002-883-387-8

Data Transform	Alt Hyp	TST_b	Comparison Result	
Angular (Corrected)	C*b < T	0.8	100% passed 96h survival rate endpoint	

8.28

TST-Welch's t Test Control P-Type P-Value Decision(a:10%) vs Conc-% df Test Stat Critical CDF 0.0002 Non-Significant Effect

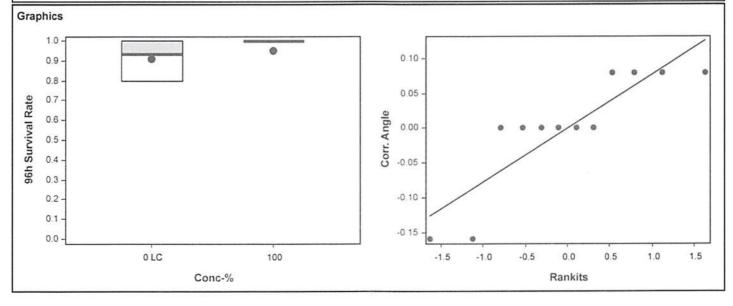
11

ANOVA Table			8			
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0189026	0.0189026	1	2.5	0.1449	Non-Significant Effect
Frror	0.0756105	0.0075611	10			

ANOVA Assum	ptions Tests					
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)	
Variance	Variance Ratio F Test				Indeterminate	
Distribution	Shapiro-Wilk W Normality Test	0.7668	0.8025	0.0040	Non-Normal Distribution	

96h Survival I	Rate Summary	1									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	0.9333	0.8249	1.0000	1.0000	0.8000	1.0000	0.0422	11.07%	0.00%
100		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-7.14%

Angular (Corrected) Transformed Summary												
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect	
0	LC	6	1.2660	1.1370	1.3950	1.3450	1.1070	1.3450	0.0502	9.71%	0.00%	
100		6	1.3450	1.3450	1.3450	1.3450	1.3450	1.3450	0.0000	0.00%	-6.27%	



96hr Marine Acute Test with 48hr Renewal

Januple ID.	ID: SIYB-2						Start Date/Time: 1/26/2023 1225								
Test No.			-0.112				End Date/Time			1115	>				
rest No.	25	-01	-04	5 40	-0	49		. 1/30/2	.023	111-)				
Sample ID	Rep			Counts	5			Water	Quality						
(%)		0	24	48	72	96	Parameter	0	24	48f	48i	72	96		
	Α	5	2	5	5	4	Temp. (°C)	24.0	23.30	255	25.0	24.0	24.9		
	В	5	2	5	5 5	5	Salinity (ppt)		34.0		33.6	3630	,37.		
LC #1	С	5	2	5	5	5	pH (units)	9.00	7.73	792	7.87	7.84	7.8		
LC#1	D	5	5	5	5	5	DO (mg/L)	7.2	12.2	6.6	7.4	7.2	63		
	E	5	5	5	5	5									
	F	5	5	5	5	4						p	45+		
	Α	5	5	5	5	#84	Temp. (C)	25.0	24.0	23,5	24.1	24.0	24/2		
	В	5	S	5	5	5	Salinity (ppt)	335	33.4	34.8	33.4	35.0	35,8		
25	С	5	5	5	5	5	pH (units)	7.95	7.03	7.92	8.00	7.91	7.0		
25	D	5	5	5	5	5	DO (mg/L)		4.5	66	7.3	7.0	4.5		
	Ε	5	5	5,	5	5									
	F	5	5	5	5	5									
	Α	5	5	5	5	5	Temp. (C)	24.3	24.2	25.4	24.3	24.0	25.4		
	В	5	4	4	4	4	Salinity (ppt)	33.2	33.4	34.3	33.2	34.8	35.8		
	С	5	5	5	4	5	pH (units)	7.94	7.83	7.92	7.97	7,91	7.87		
50	D	5	5	6	5	5	DO (mg/L)	7.6	6.7	6.7	7.5		0.5		
	E	5	5	5,	6	5									
	F	5	5	5	5	5									
	Α	5	5	5	5	5	Temp. (C)	24.2	24.3	25.6	246	24.2	28.5		
	В	5	5	5	5	5	Salinity (ppt)	33.0	32.4	333	32.9	33.6	34,		
100	С	5	5	5	5	5	pH (units)	7.89	7.83	7.93	7.93	7.91	7.89		
100	D	5	5	5	5	5	DO (mg/L)	7.5	6.8	6.8	8.2	6.9	1000		
	E	5	5	5	5	5									
	F	5	5	5	5	5									
	Α						Temp. (C)								
	В						Salinity (ppt)								
	С						pH (units)								
	D				-	1 8	DO (mg/L)								
	E														
	F			^,		I In									
	h Initials:	HK	FK	Re	BE	HK	Tech Initial	: RV	HK-	AS	Ab	86	RN		
	nimals Re	7	. 117	who	5		Feedings	0	24	48	72	96	1		
Age of Anin				2.4			Initials (AM):	_	HL	De	As	EN	1		
Comments:	iais at re	st start		00			Initials (PM):	RU		P)C					

WSP Environmental Laboratory, 4905 Morena Blvd, Ste. 1304, San Diego, CA 92117

Site: SIYB-3

09 Feb-23 14:51 (p 1 of 1) 23-01-045 / 04-5968-6923

Inland Silverside 96-h Acute Survival Test

WSP Laboratory

													- 44
Batch ID:	00-7487-2672	Test	Type: S	Survival (96h)			Anal	yst:					
Start Date:	26 Jan-23 12:37	Proto	col: E	EPA/821/R-02-0	012 (2002)		Dilue	ent:	Natural Sea	awater			
Ending Date:	30 Jan-23 11:30	Spec	ies: N	Menidia beryllin	а		Brine	e: 1	Not Applica	able			
Test Length:	95h	Taxo	n:				Sour	ce:	Aquatic Bio	system	ns, CO	Age:	12d
Sample ID:	13-0186-3818	Code	: 2	23-W028			Proje	ect:	SIYB TMDI	L Monit	oring		
Sample Date:	25 Jan-23 12:00	Mate	rial: /	Ambient Sample	е		Sour	ce:	Shelter Isla	and Yac	cht Basin		
Receipt Date:	: 25 Jan-23 17:00	CAS	(PC):				Stati	on:	SIYB 3				
Sample Age:	25h (14.9 °C)	Clien	t: \	WSP									
Single Compa	arison Summary												
Analysis ID	Endpoint		Compa	arison Method			P-Value	Comp	arison Re	sult			;
07-9354-4980	96h Survival Ra	te	TST-W	elch's t Test			0.0001	100%	passed 96	h survi	val rate		
Multiple Com	parison Summa	ry											
Analysis ID	Endpoint		Compa	rison Method		✓	NOEL	LOEL	TOE	L I	PMSD	TU	:
07-8760-3636	96h Survival Ra	te	Steel M	lany-One Rank	Sum Test		100	>100			13.8%	1	
Test Acceptal	bility					TAC Li	mits						
Analysis ID	Endpoint		Attribu	te	Test Stat	Lower	Upper	Overla	ap Decis	sion			
07-8760-3636	96h Survival Ra	te	Control	Resp	0.9667	0.0	<<	Yes	Dace	es Crite			
07-9354-4980	001-0				0.3007	0.9		165	F 433	es Crite	eria		
	96h Survival Ra	te	Control		0.9667	0.9	<<	Yes	0.000	es Crite			
96h Survival	Rate Summary	te							0.000				
96h Survival		Count				0.9			Pass	es Crite		%Ef	fect
	Rate Summary		Control	95% LCL	0.9667	0.9	<<	Yes	Pass rr Std [3 0.081	Dev 1	CV% 8.45%	0.00	%
Conc-%	Rate Summary Code	Count	Control Mean	95% LCL 0.8810	0.9667 95% UCL	0.9 Min	<< Max	Yes Std E 0.0333 0.0663	Pass rr Std I 3 0.081 7 0.163	Dev 0	CV% 8.45% 17.50%	0.00 3.45	% %
Conc-%	Rate Summary Code	Count 6	Mean 0.9667	95% LCL 0.8810 0.7620	95% UCL 1.0520	0.9 Min 0.8000	Max 1.0000	Yes Std E 0.0333	Pass rr Std I 3 0.081 7 0.163	Dev (17 133 17 17	CV% 8.45% 17.50% 8.45%	0.00 3.45 0.00	% % %
Conc-% 0 25	Rate Summary Code	Count 6 6	Mean 0.9667 0.9333	95% LCL 0.8810 0.7620 0.8810	95% UCL 1.0520 1.1050	0.9 Min 0.8000 0.6000	Max 1.0000 1.0000	Yes Std E 0.0333 0.0663	Pass rr Std I 3 0.081 7 0.163 3 0.081	Dev (17 133 17 17 17	CV% 8.45% 17.50%	0.00 3.45	% % %
Conc-% 0 25 50	Rate Summary Code LC	Count 6 6 6	Mean 0.9667 0.9333 0.9667	95% LCL 0.8810 0.7620 0.8810	95% UCL 1.0520 1.1050 1.0520	0.9 Min 0.8000 0.6000 0.8000	Max 1.0000 1.0000 1.0000 1.0000	Yes Std E 0.0333 0.0666 0.0333 0.0278	Pass rr Std I 3 0.081 7 0.163 3 0.081	Dev (17 133 17 130 130 130 130 130 130 130 130 130 130	CV% 8.45% 17.50% 8.45% 7.00%	0.00 3.45 0.00 -0.57	% % % 7%
Conc-% 0 25 50 100	Rate Summary Code LC	Count 6 6 6	Mean 0.9667 0.9333 0.9667	95% LCL 0.8810 0.7620 0.8810	95% UCL 1.0520 1.1050 1.0520	0.9 Min 0.8000 0.6000 0.8000	Max 1.0000 1.0000 1.0000 1.0000	Yes Std E 0.0333 0.0666 0.0333 0.0278	Pass rr Std I 3 0.081 7 0.163 3 0.081 8 0.068	Dev (17 133 17 130 130 130 130 130 130 130 130 130 130	CV% 8.45% 17.50% 8.45% 7.00%	0.00 3.45 0.00 -0.57	% % % 7%
Conc-% 0 25 50 100 96h Survival	Rate Summary Code LC	Count 6 6 6 6	Mean 0.9667 0.9333 0.9667 0.9722	95% LCL 0.8810 0.7620 0.8810 0.9008	95% UCL 1.0520 1.1050 1.0520 1.0440	Min 0.8000 0.6000 0.8000 0.8333	Max 1.0000 1.0000 1.0000 1.0000	Yes Std E 0.0333 0.0666 0.0333 0.0278	Pass rr Std I 3 0.081 7 0.163 3 0.081 8 0.068	Dev (17 133 17 130 130 130 130 130 130 130 130 130 130	CV% 8.45% 17.50% 8.45% 7.00%	0.00 3.45 0.00 -0.57	% % % 7%
Conc-% 0 25 50 100 96h Survival Conc-%	Rate Summary Code LC Rate Detail Code	Count 6 6 6 6 Rep 1	Mean 0.9667 0.9333 0.9667 0.9722	95% LCL 0.8810 0.7620 0.8810 0.9008 Rep 3 0.8000	95% UCL 1.0520 1.1050 1.0520 1.0440	0.9 Min 0.8000 0.6000 0.8000 0.8333	Max 1.0000 1.0000 1.0000 1.0000 MD5 Rep 6	Yes Std E 0.0333 0.0666 0.0333 0.0278	Pass rr Std I 3 0.081 7 0.163 3 0.081 8 0.068	Dev (17 133 17 130 130 130 130 130 130 130 130 130 130	CV% 8.45% 17.50% 8.45% 7.00%	0.00 3.45 0.00 -0.57	% % % 7%
Conc-% 0 25 50 100 96h Survival Conc-% 0	Rate Summary Code LC Rate Detail Code	Count 6 6 6 6 Rep 1 1.0000	Mean 0.9667 0.9333 0.9667 0.9722 Rep 2 1.0000	95% LCL 0.8810 0.7620 0.8810 0.9008 Rep 3 0.8000 1.0000	95% UCL 1.0520 1.1050 1.0520 1.0440 Rep 4 1.0000	0.9 Min 0.8000 0.6000 0.8000 0.8333 Rep 5 1.0000	Max 1.0000 1.0000 1.0000 1.0000 MD5 Rep 6 1.0000	Yes Std E 0.0333 0.0666 0.0333 0.0278	Pass rr Std I 3 0.081 7 0.163 3 0.081 8 0.068	Dev (17 133 17 130 130 130 130 130 130 130 130 130 130	CV% 8.45% 17.50% 8.45% 7.00%	0.00 3.45 0.00 -0.57	% % % 7%

Report Date:

09 Feb-23 14:51 (p 1 of 2) 23-01-045 / 04-5968-6923

Test Code/ID:

Editor ID:

Inland Silverside 96-h Acute Survival Test WSP Laboratory

Analysis ID: 07-8760-3636 Analyzed:

Edit Date:

09 Feb-23 14:50 09 Feb-23 14:49 Endpoint: 96h Survival Rate

Analysis: Nonparametric-Control vs Treatments MD5 Hash: 0B93DAF0E9372F4903BC9231321F5374 CETIS Version: Status Level:

002-883-387-8

CETISv2.1.3

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corrected)	C > T	100	>100		1	0.1335	13.81%

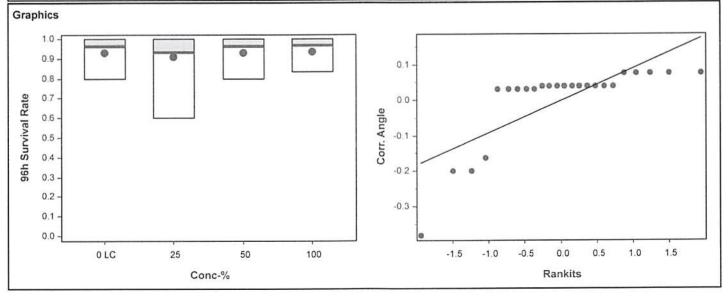
Steel Many-One Rank Sum Test											
Control	vs	Conc-%	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(a:5%)		
Lab Control		25	10	38.5	26	1	CDF	0.7200	Non-Significant Effect		
		50	10	39	26	2	CDF	0.7500	Non-Significant Effect		
		100	10	39.5	26	1	CDF	0.7782	Non-Significant Effect		

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0071357	0.0023786	3	0.1576	0.9236	Non-Significant Effect
Error	0.301932	0.0150966	20			
Total	0.309068		23			

ANOVA Assum	ANOVA Assumptions Tests									
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)					
Variance	Bartlett Equality of Variance Test	4.428	11.34	0.2188	Equal Variances					
Distribution	Shapiro-Wilk W Normality Test	0.5958	0.884	<1.0E-05	Non-Normal Distribution					

96h Survival Rate Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	0.00%
25		6	0.9333	0.7620	1.0000	1.0000	0.6000	1.0000	0.0667	17.50%	3.45%
50		6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	0.00%
100		6	0.9722	0.9008	1.0000	1.0000	0.8333	1.0000	0.0278	7.00%	-0.57%

Angular (Corrected) Transformed Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.3060	1.2040	1.4080	1.3450	1.1070	1.3450	0.0397	7.45%	0.00%
25		6	1.2690	1.0720	1.4650	1.3450	0.8861	1.3450	0.0765	14.78%	2.82%
50		6	1.3060	1.2040	1.4080	1.3450	1.1070	1.3450	0.0397	7.45%	0.00%
100		6	1.3130	1.2290	1.3960	1.3450	1.1500	1.3450	0.0325	6.06%	-0.55%



Report Date: Test Code/ID: 09 Feb-23 14:51 (p 2 of 2) 23-01-045 / 04-5968-6923

Inland Silverside 96-h Acute Survival Test

WSP Laboratory

Analysis ID: 07-9354-4980

354-4980 Endpoint: 96h Survival Rate

CETIS Version: CETISv2.1.3

Analyzed: 09 Feb-23 14:51

09 Feb-23 14:49

Analysis: Parametric Bioequivalence-Two Sample Status Let MD5 Hash: 0AB6CB18595DA930133FB2BF2BDBCF84 Editor ID:

Status Level:

002-883-387-8

Data Transform	ata Transform Alt Hyp		Comparison Result

Angular (Corrected) $C^*b < T$ 0.8 100% passed 96h survival rate endpoint

TST-Welch's t Test

Edit Date:

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(a:10%)
Lab Control		100*	9	5.905	1.383	CDF	0.0001	Non-Significant Effect

ANOVA Table

ALLO TA TUDIO							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.0001549	0.0001549	1	0.01962	0.8914	Non-Significant Effect	
Error	0.0789509	0.0078951	10				
Total	0.0791058		11				

ANOVA Assumptions Tests

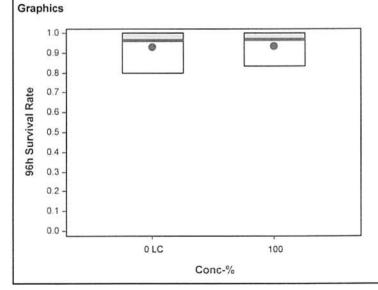
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variance	Variance Ratio F Test	1.491	14.94	0.6718	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.5122	0.8025	2.2E-05	Non-Normal Distribution

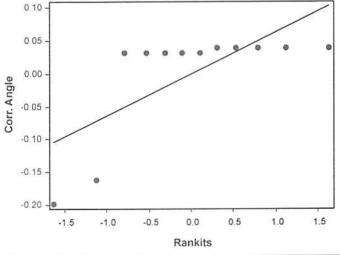
96h Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	0.00%
100		6	0.9722	0.9008	1.0000	1.0000	0.8333	1.0000	0.0278	7.00%	-0.57%

Angular (Corrected) Transformed Summary

rangular (Gori	ootou, manore										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.3060	1.2040	1.4080	1.3450	1.1070	1.3450	0.0397	7.45%	0.00%
100		6	1.3130	1.2290	1.3960	1.3450	1.1500	1.3450	0.0325	6.06%	-0.55%





96hr Marine Acute Test with 48hr Renewal

Test No. 23 - 0 Sample ID (%)	24 555555555555555555555555555555555555	48 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	555555555555555555555555555555555555555	96 S S S S S S S	Parameter Temp. (°C) Salinity (ppt) pH (units) DO (mg/L) Temp. (°C) Salinity (ppt) pH (units) DO (mg/L)	Water 0 24.2 8.02 33.7 7.2 24.1 33.4 7.97	24 24.4 33.4 35.63 6.78	48f 25.9 33.9 35.190 6.7	48i 25.3 7.98 7.98 7.3 24.4 33.3 7.97	7.93 6.9 24.1 34.1	345 180 25.7 34.3
(%) A 5 B 5 C 5 D 5 E 5 F 5 A 5 B 5 C 5 D 5 E 5 F 5 A 5 B 5 C 5 D 5 E 5 F 5 A 5 B 5 C 5 D 5 E 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 D 5 E 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 F 5 A 5 B 7 C 5 D 5 E 5 F 5 A 5 B 7 C 5 D 5 E 5 F 5 A 5 B 7 C 7 D 5 E 5 F 5 A 5 B 7 C 7 D 7 D 7 D 7 D 7 D 7 D 7 D 7 D 7 D 7 D	2222244222222	48 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	555555555555555555555555555555555555555	5 5 5 5 5 5 5 5 5 5 5 5 5	Temp. (°C) Salinity (ppt) pH (units) DO (mg/L) Temp. (°C) Salinity (ppt) pH (units) DO (mg/L)	0 24.2 8.02 33.7 7.2 24.1 33.4 7.97	24 24.4 33.9 33.5 24.3 33.5 7.81	25.9 33.9 3.90 25.7 25.7 33.8 79.4	25.3 7.98 7.98 7.3 24.4 33.3 7.97	24.2 , 34.3 7.93 6.9 24.1 34.1	25.4 343 4.2 25.2 34.3
(%) A 5 B 5 C 5 D 5 E 5 F 5 A 5 B 5 C 5 D 5 E 5 F 5 A 5 B 5 C 5 D 5 E 5 F 5 A 5 B 5 C 5 D 5 E 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 D 5 E 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 F 5 A 5 B 7 C 5 D 5 E 5 F 5 A 6 B 7 C 7 D 7 D 7 D 7 D 7 D 7 D 7 D 7 D 7 D 7 D	2222244222222	555555555555555555555555555555555555555	555555555555555555555555555555555555555	5 5 5 5 5 5 5 5 5 5 5 5 5	Temp. (°C) Salinity (ppt) pH (units) DO (mg/L) Temp. (°C) Salinity (ppt) pH (units) DO (mg/L)	24.2 8.02 33.7 7.2 24.1 33.4 7.97	24.4 33.9 35.63 6.7 24.3 33.7 7.81	25.9 33.9 3.90 25.7 25.7 33.8 79.4	25.3 7.98 7.98 7.3 24.4 33.3 7.97	24.2 , 34.3 7.93 6.9 24.1 34.1	25.4 343 4.2 25.7 34.3
LC#2 B	252245262020	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	555545555555	5 5 5 5 5 5 5 5	Salinity (ppt) pH (units) DO (mg/L) Temp. (*C) Salinity (ppt) pH (units) DO (mg/L)	8.02 33.7 7.2 24.1 33.4 7.97	33.9 35.62 24.3 33.5 7.81	33.9 3.9 33.9 6.7 25.7 33.8 794	7.98 7.98 7.3 24.4 33.3 7.97	343 7.93 6.9 24.1 34.1	343 4.2 25.2 34.3
LC#2	24 20 20 20 20 20 20 20 20 20 20 20 20 20	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	555545555555	\$ 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	pH (units) DO (mg/L) Temp. (°C) Salinity (ppt) pH (units) DO (mg/L)	33.7 7.2 24.1 33.4 7.97	24 · 3 33 · 5 7-81	25.7 33.8 794	7.98 7.3 24.4 33.3 7.97	7.93 6.9 24.1 34.1	25.2 34.3
LC#2 D 5 E 5 F 5 A 5 B 5 C 5 D 5 E 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 F 5 A 6 B 5 C 5 F 5 A 6 B 5 C 5 F 5 A 6 B 5 C 7 C 7 D 7 D 7 D 7 D 7 D 7 D 7 D 7 D 7 D 7 D	2577999564700	500000000000000000000000000000000000000	5554555555	5 5 5 5 5 5 5 5 5	Temp. (°C) Salinity (ppt) pH (units) DO (mg/L)	7.2 24.1 33.4 7.97	24 · 3 33 · 5 7-81	25.7 33.8 794	7.98 7.3 24.4 33.3 7.97	6.9 24.1 34.1	25.2 34.3
D 5 E 5 F 5 A 5 B 5 C 5 D 5 E 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 D 5 E 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C	29729999	5845555555	554555555	5 3 5 5 5 5 5 5	Temp. (°C) Salinity (ppt) pH (units) DO (mg/L)	33,4	24·3 33·5 7·81	25.7 33.8 794	24.4 33.3 7.97	24. <u> </u> 34.1	25.2 34.3
25 F 5 A 5 B 5 C 5 D 5 E 5 F 5 A 5 B 5 C 5 D 5 E 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 F 5 A 5 B 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 C 5 D 5 E 5 F 5 A 5 B 5 C 5 C 5 D 5 E 5 F 5 A 5 B 5 C 7 D 5 E 5 C 7 D 5 E 5 C 7 D 5 E 5 C 7 D 5 E 5 C 7 D 5 E 5 C 7 D 5 E 5 C 7 D 5 E 5 F 5 A B C 7 B 6 C 7 D 7 D 7 D 7 D 7 D 7 D 7 D 8 D 7 D 7	455666566	5 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	45555555	5 3 5 5 5 5 5 5	Salinity (ppt) pH (units) DO (mg/L)	33,4	33.5 7.81	33.8 794	33.3 7.97	34.1	34.3
25	455666566	4 6 6 6 6 5 6 5	45555555	\$ \$ \$ \$	Salinity (ppt) pH (units) DO (mg/L)	33,4	33.5 7.81	33.8 794	33.3 7.97	34.1	34.3
25 B 5 D 5 E 5 F 5 A 5 E 5 F 5 A 5 E 5 F 5 A 5 E 5 F 5 A 5 A 5 B 5 C 5 F 5 A 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C	5566555	5 5 5 5 5 5 5	555555	\$ \$ \$ \$	Salinity (ppt) pH (units) DO (mg/L)	33,4	33.5 7.81	33.8 794	33.3 7.97	34.1	34.3
25 C 5 D 5 E 5 F 5 A 5 B 5 C 5 D 5 E 5 F 5 A 5 B -5 C 5 F 5 A 5 B -5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C	300000000000000000000000000000000000000	555555	555555	5 5 5 5 5	pH (units) DO (mg/L)	7.97	7.81	794	7.97		
25 D S E S F S A S B S C S D S E S F S A S B S C S F S A S B S C S F S A S B S C S F S A S B S C S C S C S C S C S C S C S C S C S C	000000	555555	55555	2 2 2 3	DO (mg/L)			,		794	
D 5 E 5 F 5 A 5 B 5 C 5 D 5 E 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 F 5 A 6 B 5 C 5 C 5 D 5 E 5 F 5 A 6 C 5 D 5 E 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C	50 7 50	5 5 5 5 5	5 5 5 5	5 5		7.5	67.	6.6			7.8
F 5 A 5 B 5 C 5 D 5 E 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 F 5 A 5 B 5 C 5 C 5 D 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C	5	5 5 5	5	5	Temp (C)				7.3	6.8	6.1
A 5 B 5 C 5 D 5 E 5 F 5 A 5 B .5 C 5 A 5 B .5 C 5 A 5 B .5 C 5 A 6 C 5 A 6 C 7 C 7 C 7 C 7 C 7 C 7 C 7 C 7 C 7 C 7	5	5 5 5	5	5,	Temp (C)						
B 5 C 5 D 5 E 5 F 5 A 5 B .5 C 5 D 5 B .5 C 5 A 5 B .5 C 5 A 6 C 5 A 6 C 7	5	5	5		Temp (C)						
50 C 5 D 5 E 5 F 5 A 5 B 5 C 5 D 5 E 5 A 5 B 5 C 5 A 6 C 5 C 5 D 5 E 5 F 5 A B C 7	5	5	5	S	remp. (c)	24.1	24.3	253	24.4	24.2	24.3
50 D 5 E 5 F 5 A 5 B 5 C 5 D 5 E 5 F 5 A 6 B 6 C 7 C 7 D 7 D 7 D 7 D 7 D 7 D 7 D 7 D 7 D 7 D	-		-		Salinity (ppt)	33.2	-33.2	33.5	33.1	336	34.2
D 5 E 5 F 5 A 5 B 5 C 5 D 5 E 5 F 5 A 6 B 6 C 7	-	-	5	4	pH (units)	7.98	7.84	7.94	7.97	7.94	7.92
F 5 A 5 B .5 C 5 D 5 E 5 F 5 A B C	()	5	5	5	DO (mg/L)	7.0	6.6	6.6	7.6	6.8	6,2
A 5 B .5 (C 5 D 5 E 5 F 5 A B .5 (5	5	5	5							
B .5 (C 5 D 5 E 5 F 5 A B C	5	5	5	5							
100 C 5 D 5 E 5 F 5 A B C	5	5	5	5	Temp. (°C)	25.7	143	260	25.2	24.4	147
D 5 E 5 F 5 A B C	656		6	5	Salinity (ppt)	33,0	33.1	33.9	32.9	33.3	33,4
D 5 E 5 F 5 A B C	5	5	5	5	pH (units)	7.91	7-86			7.92	7.92
F 5 A B C	5	5	5	5	DO (mg/L)	9.0	6.9	6,6	8.2	6.7	4.5
A B C	5	5,	5	5				1			
В	5	5	5	5							
С					Temp. (°C)						
					Salinity (ppt)						
D					pH (units)						
					DO (mg/L)						
E						in Late	Have	W.			
F	Necoc)		38							
Tech Initials:	PHK	Tech Initials	s: RN	HK	Ac	Ab	A6	Ry			
Date Animals Received	. 11	141	23		Feedings	0	24	48	72	96	1
Age of Animals at Test Start		12/2	·		Initials (AM):	~	the	86	AG	RN	1
•		IVC			Initials (PM):	BN		00	,,0]
Comments:											

Site: SIYB-4

09 Feb-23 15:04 (p 1 of 1) 23-01-046 / 11-9291-6132

Inland Silverside 96-h Acute Survival Test

WSP Laboratory

Start Date: 26 Jan-23 12:45 Protocol: EPA/821/R-02-012 (2002) Brine: Natural Seawater Species: Menidia beryllina Source: Aquatic Biosystems, CO Age: 12d Sample plane: 30 Jan-23 11:30 Species: Menidia beryllina Source: Aquatic Biosystems, CO Age: 12d Sample plane: 25 Jan-23 11:00 Material: Ambient Sample Source: Shelter Island Yacht Basin Sample plane: 25 Jan-23 11:00 Material: Ambient Sample Source: Shelter Island Yacht Basin Size Sample Age: 25 Jan-23 11:00 Material: Ambient Sample Source: Shelter Island Yacht Basin Size Sample Age: 25 Jan-23 12:40 CAS (PC): Station: SIYB 4 Station: SIYB 4 Sample Age: 25 Jan-23 12:40 CAS (PC): Sample Age: 25 Jan-23 12:40 CAS (PC)	Inland Silvers	ide 96-h Acute S	urvival Test								WSPI	.abora	tory
Signate Sign	Batch ID:	17-2374-8940	Test Typ	e: Su	rvival (96h)			Anal	yst:				
Taxon: Taxon: Source: Aquatic Biosystems, CO Age: 12d	Start Date:	26 Jan-23 12:45	Protoco	Protocol: EPA/821/R-02-0				Dilue	nt: N	Natural Seawate	er		
Sample Di. 15-9510-5542 Code 23-W029 Project SIYB TMDL Monitoring Sample Date 25 Jan-23 11:00 Material: Ambient Sample Source: Shelter Island Yacht Basin Sample Ambient Sample Source: Shelter Island Yacht Basin Sample Sample Ambient Sample Source: Shelter Station: SIYB 4 Sta	Ending Date:	30 Jan-23 11:30	Species	: Me	nidia beryllin	а		Brine		1.5			
Sample Date: 25 Jan-23 11:00 Material: Ambient Sample Source: Shelter Island Yacht Basin Sample Age: 26 Jan-23 12:40 CAS (PC): Station: S1YB 4 Sta	Test Length:	95h	Taxon:					Sour	ce: A	Aquatic Biosyste	ems, CO	Age:	12d
Case Case	Sample ID:	15-9510-5542	Code:	23-	W029			Proje	ect: S	SIYB TMDL Mor	nitoring		
Sample Age: 26h (17.8 °C) Client: WSP P WSP	Sample Date:			: Am	Ambient Sample				ce: S	Shelter Island Yacht Basin			
Single Comparison Summary	Receipt Date:	25 Jan-23 12:40 CAS (PC)		C):	:			Stati	on: S	SIYB 4			
Analysis D Endpoint Comparison Method P-Value Comparison Result Sta-4954-8153 96h Survival Rate TST-Welch's t Test 0.0003 100% passed 96h survival rate 1	Sample Age: 26h (17.8 °C) Client:			WS	SP								
15-4954-8153 96h Survival Rate TST-Welch's t Test	Single Compa	arison Summary											
Multiple Comparison Summary	Analysis ID	Endpoint	Co	mparis	on Method			P-Value	Comp	arison Result			S
Analysis ID	15-4954-8153	96h Survival Rat	e TS	T-Welc	h's t Test			0.0003	100% passed 96h survival rate				1
Test Acceptability	Multiple Com	parison Summar	ry										
Test Acceptability	Analysis ID	Endpoint	on Method		✓	NOEL	LOEL	TOEL	PMSD	TU	S		
Analysis ID Endpoint Attribute Test Stat Lower Upper Overlap Decision 15-4954-8153 96h Survival Rate Control Resp 0.9667 0.9 <<	20-0193-9922	96h Survival Rat	e St	eel Man	y-One Rank	Sum Test	±1	100	>100		11.4%	1	1
Analysis ID Endpoint Attribute Test Stat Lower Upper Overlap Decision 15-4954-8153 96h Survival Rate Control Resp 0.9667 0.9 <	Test Acceptal	bility					TAC Li	mits					
20-0193-9922 96h Survival Rate Summary Conc-% Code Count Mean 95% LCL 95% UCL Min Max Std Err Std Dev CV% %Effect 0 LC 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 25 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 100 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 100 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 96h Survival Rate Detail MD5: 0C91FFCC0B976AE4940AF82D3100188C Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 Rep 6 0 LC 1.0000 1.0000 0.8000 1.0000 1.0000 1.0000 25 0.8000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	Analysis ID	Endpoint Attribute				Test Stat	Lower	Upper	Overla	p Decision			
96h Survival Rate Summary Conc-% Code Count Mean 95% LCL 95% UCL Min Max Std Err Std Dev CV% %Effect 0 LC 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 25 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 50 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 100 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 96h Survival Rate Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 Rep 6 0 LC 1.0000 1.0000 0.8000 1.0000 1.0000 1.0000 25 0.8000 1.0000 1.0000 1.0000 1.0000 1.0000 26 0.8000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 27 0.8000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	15-4954-8153	96h Survival Rate Contro			ol Resp 0.9667 0.9				Yes	es Passes Criteria			
Conc-% Code Count Mean 95% LCL 95% UCL Min Max Std Err Std Dev CV% %Effect 0 LC 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 50 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 50 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 100 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 96h Survival Rate Detail MD5: 0C91FFCC0B976AE4940AF82D3100188C Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 Rep 6 0 LC 1.0000 1.0000 1.0000 1.0000 1.0000 25 0.8000 1.0000 1.0000 1.0000	20-0193-9922	2 96h Survival Rate Contro			ol Resp 0.9667 0.9				Yes	Passes Criteria			
0 LC 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 50 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 1000 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 1000 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 1000 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 1000 1000 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 1000 1000 1.0000 1	96h Survival	Rate Summary											
25 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 50 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 100 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 100 96h Survival Rate Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 Rep 6	Conc-%	Code	Count Me	ean	95% LCL	95% UCL	Min	Max	Std Er	r Std Dev	CV%	%Ef	fect
50 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 100 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00%	0	LC	6 0.9	9667	0.8810	1.0520	0.8000	1.0000					
100 6 0.9667 0.8810 1.0520 0.8000 1.0000 0.0333 0.0817 8.45% 0.00% 96h Survival Rate Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 Rep 6 0 LC 1.0000 1.0000 0.8000 1.0000 1.0000 1.0000 25 0.8000 1.0000 1.0000 1.0000 1.0000 1.0000 50 1.0000 1.0000 0.8000 1.0000 1.0000 1.0000	25		6 0.9	9667	0.8810								
96h Survival Rate Detail MD5: 0C91FFCC0B976AE4940AF82D3100188C Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 Rep 6 0 LC 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 25 0.8000 1.0000 1.0000 1.0000 1.0000 1.0000 50 1.0000 1.0000 1.0000 1.0000 1.0000	50		6 0.9	9667	0.8810								
Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 Rep 6 0 LC 1.0000 1.0000 1.0000 1.0000 1.0000 25 0.8000 1.0000 1.0000 1.0000 1.0000 50 1.0000 1.0000 1.0000 1.0000	100		6 0.9	9667	0.8810	1.0520	0.8000	1.0000	0.0333	0.0817	8.45%	0.00	%
0 LC 1.0000 1.0000 0.8000 1.0000 1.0000 1.0000 25 0.8000 1.0000 1.0000 1.0000 1.0000 1.0000 50 1.0000 1.0000 0.8000 1.0000 1.0000	96h Survival	Rate Detail						MD	: 0C911	FFCC0B976AE	4940AF82E	31001	88C
0.8000 1.0000 1.0000 1.0000 1.0000 1.0000 50 1.0000 1.0000 0.8000 1.0000 1.0000 1.0000	Conc-%	Code	Rep 1 Re	p 2	Rep 3	Rep 4	Rep 5	Rep 6					
50 1.0000 1.0000 0.8000 1.0000 1.0000 1.0000	0	LC	1.0000 1.0	0000	0.8000	1.0000	1.0000	1.0000					
A STATE OF THE STA	25		0.8000 1.0	0000	1.0000	1.0000	1.0000	1.0000					*
100 1.0000 1.0000 1.0000 0.8000 1.0000	50		1.0000 1.0	0000	0.8000	1.0000	1.0000	1.0000					
	400		1 0000 1 (2000	1 0000	1 0000	0.8000	1 0000					

Report Date: Test Code/ID: 09 Feb-23 15:04 (p 1 of 2) 23-01-046 / 11-9291-6132

Inland Silverside 96-h Acute Survival Test WSP Laboratory

Analysis ID: 20-0193-9922 Endpoint: 96h Survival Rate CETIS Version: CETISv2.1.3

Analyzed: 09 Feb-23 15:01 Analysis: Nonparametric-Control vs Treatments Status Level: 1

Edit Date: 09 Feb-23 15:00 MD5 Hash: 0C91FFCC0B976AE4940AF82D3100188C Editor ID: 002-883-387-8

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corrected)	C > T	100	>100		1	0.11	11.38%

Steel Many-One Rank Sum Test

Control	VS	Conc-%	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(a:5%)
Lab Control		25	10	39	26	2	CDF	0.7500	Non-Significant Effect
		50	10	39	26	2	CDF	0.7500	Non-Significant Effect
		100	10	39	26	2	CDF	0.7500	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	3	0	1.0000	Non-Significant Effect
Error	0.189026	0.0094513	20			
Total	0.189026		23			

ANOVA Assumptions Tests

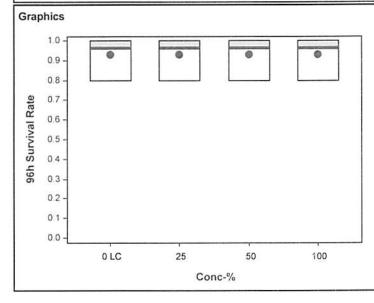
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variance	Bartlett Equality of Variance Test	0	11.34	1.0000	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.4538	0.884	<1.0E-05	Non-Normal Distribution

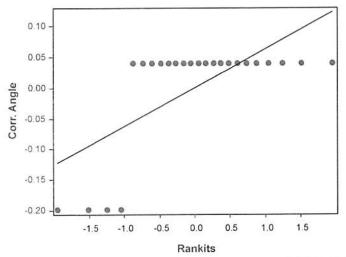
96h Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	0.00%
25		6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	0.00%
50		6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	0.00%
100		6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.3060	1.2040	1.4080	1.3450	1.1070	1.3450	0.0397	7.45%	0.00%
25		6	1.3060	1.2040	1.4080	1.3450	1.1070	1.3450	0.0397	7.45%	0.00%
50		6	1.3060	1.2040	1.4080	1.3450	1.1070	1.3450	0.0397	7.45%	0.00%
100		6	1.3060	1.2040	1.4080	1.3450	1.1070	1.3450	0.0397	7.45%	0.00%





Report Date:

09 Feb-23 15:04 (p 2 of 2) 23-01-046 / 11-9291-6132

Test Code/ID:

Inland Silverside 96-h Acute Survival Test								
Analysis ID:	15-4954-8153	Endpoint:	96h Survival Rate	CETIS Version:	CETISv2.1.3			
Analyzed:	09 Feb-23 15:01	Analysis:	Parametric Bioequivalence-Two Sample	Status Level:	1			
Edit Date:	09 Feb-23 15:00	MD5 Hash:	825986151986FC9535B196CA2FC15A6A	Editor ID:	002-883-387-8			

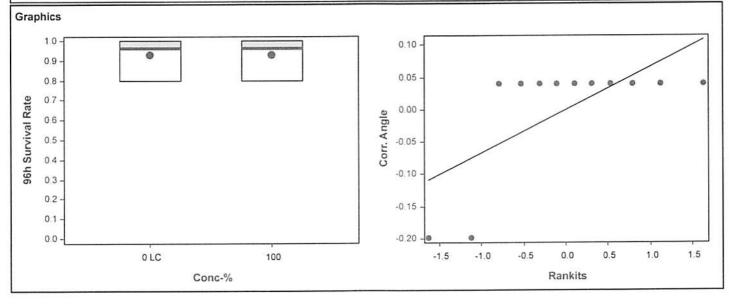
Data Transfo	rm		Alt Hyp			TST_b	Compari		
Angular (Corrected) C*b < T 0.8 100% passed 96h survival rate endpoint				vival rate endpoint					
TST-Welch's	t Tes	t							
Control	vs	Conc-%	df	Test Stat	Critical		P-Type	P-Value	Decision(a:10%)
Lab Control		100*	9	5.137	1.383		CDF	0.0003	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0	0	1	0	1.0000	Non-Significant Effect
Error	0.0945132	0.0094513	10			
Total	0.0945132		11			

ANOVA Assum	ANOVA Assumptions Tests									
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)					
Variance	Variance Ratio F Test	1	14.94	1.0000	Equal Variances					
Distribution	Shapiro-Wilk W Normality Test	0.4647	0.8025	<1.0E-05	Non-Normal Distribution					

96h Survival F	96h Survival Rate Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect	
0	LC	6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	0.00%	
100		6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	0.00%	

Angular (Corr	Angular (Corrected) Transformed Summary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.3060	1.2040	1.4080	1.3450	1.1070	1.3450	0.0397	7.45%	0.00%
100		6	1.3060	1.2040	1.4080	1.3450	1.1070	1.3450	0.0397	7.45%	0.00%



96hr Marine Acute Test with 48hr Renewal

Client: Wood: POSD - Shelter Island Yacht Basin						acht Ba		Test Species: Menidia beryllina							
Sample ID:	SIYB-4	1					Start Date/Time	e: 1/26/2	2023	245					
Test No.	2	3-01	1 -Dr	13 4	> - (49	End Date/Time	2: 1/30/2		130					
Sample ID	Rep			Count	s			Water (Quality	QCI					
(%)		0	24	48	72	96	Parameter	0	24	48f	48i	72	96		
	Α	5	5	5	5	5	Temp. (C)	24.2	24.4	25.9	25.3	24.2	254		
	В	5	2	5	5	5	Salinity (ppt)	78.02	33.4	33,9			34.5		
	С	5	5	5	5	4	pH (units)	1337	7.83				739		
LC #2	D	5	5		5	5	DO (mg/L)	17.2		6.1	7.3		10.2		
	E	5	2	5	5	5							1000		
	F	5	5	5	5	5									
	Α	5	5	5	5	4	Temp. ('C)	25.0	24.3	26.3	24.2	24.5	24.8		
	В	5	5	5	5	5	Salinity (ppt)	33.7	33.5	33.6	33.3	33.9	34.3		
	С	5	5	5		5	pH (units)	7.91	7.84	7.91	8.00	7.92	7.89		
25	D	5	5	5	5	5	DO (mg/L)	7.5		6.4	7.2	6.7	6.3		
	Е	5	2-	5	5555	5				-		X			
	F	5	5	5	5	5									
	А	5	5	5	5	5	Temp. (°C)	24.0	24.3	26.5	24.3	24.5	24.8		
	В	5	5		5	5	Salinity (ppt)	33.2	32.9	330	33.2	33.0	33.00		
	С	5	5	5	5	4	pH (units)	7.98	7.84	7.84	7.96	7.92	7.89		
50	D	5	5	5	5	5	DO (mg/L)		6.7	6.4	7.5	6.5	6.3		
	E	5	5	5	5	5				,					
	F	5	8	3	5	5									
	Α	5	5	5	5		Temp. (°C)	24.7	245	26.3	249	24.5	24.5		
	В	5	5	5	5	5	Salinity (ppt)	33.0	33.0	33.0	32.8	33. D	334		
100	С	5	5	5	6	5	pH (units)	7.92	1784	7.89	7.84	791	792		
100	D	5	3	5	5	5	DO (mg/L)	8-1	6.7	6.4	8.2	6.7	6.4		
	E	5	5	5	5	4									
	F	5	5	5	5	3									
	Α						Temp. (°C)								
	В						Salinity (ppt)								
	С						pH (units)								
	D						DO (mg/L)								
	E														
	F														
	Initials:		HK	AL	R	HK	Tech Initial	s: RN	HK	A6	AB	46	N		
	こる	7	. 11	2412	3		Feedings	0	24	48	72	96	ľ		
	nimals Re		-	1	λ		Initials (AM):	_	HK	Pb	16	RN			
Age of Anim	iais at Te	st Start:		\v	U		Initials (PM):	RV	10 P. J.	DE	(I)C	I V			
comments.						unississis s									
													A		
QC Check:	JF	- :	2/9	123				Fina	ıl Review:	RN	3/7	123			

Site: SIYB-5

CETIS Summary Report

Report Date: Test Code/ID: 09 Feb-23 15:58 (p 1 of 1) 23-01-047 / 10-5510-8182

	_			
WS	PI.	aho	rat	ON
VVO		abu	II di	LOIV

Inland Silvers	ide 96-h Acute S	urvival Test							WSP L	abora	tory
Batch ID: Start Date: Ending Date: Test Length:	06-8320-7024 26 Jan-23 13:00 30 Jan-23 11:30 94h	Protocol:	: Survival (96h) EPA/821/R-02 Menidia berylli			Anal Dilue Brine Sour	ent: Nat	Natural Seawater Not Applicable Aquatic Biosystems, CO			12d
Receipt Date:	03-0625-2648 25 Jan-23 10:00 25 Jan-23 12:40 27h (15.8 °C)		23-W030 Ambient Samp : :		Sour	Project: SIYB TMDL Monitoring Source: Shelter Island Yacht Basis Station: SIYB 5					
Analysis ID	arison Summary Endpoint 96h Survival Rat	Con	nparison Method -Welch's t Test	l		P-Value 0.0267		son Result	vival rate		S 1
Analysis ID	parison Summa Endpoint 96h Survival Rat	Con	nparison Method	- Carlott	√	NOEL 100	LOEL >100	TOEL	PMSD 11.4%	TU 1	s 1
	Endpoint 96h Survival Rat 96h Survival Rat	e Con	ibute trol Resp trol Resp	Test Stat	TAC L Lower 0.9 0.9	imits Upper <<	Overlap Yes Yes	Decision Passes C Passes C	\$3F344300		
96h Survival Conc-% 0 25 50 100	Rate Summary Code LC	Count Mea 6 1.00 6 1.00 6 1.00 6 0.93	1.0000 1.0000 1.0000 1.0000	95% UCL 1.0000 1.0000 1.0000 1.1050	Min 1.0000 1.0000 1.0000 0.6000	Max 1.0000 1.0000 1.0000 1.0000	Std Err 0.0000 0.0000 0.0000 0.0667	Std Dev 0.0000 0.0000 0.0000 0.1633	CV% 0.00% 0.00% 0.00% 17.50%	%Eff 0.00 0.00 0.00 6.67	% % %
96h Survival Conc-% 0	Rate Detail Code LC	Rep 1 Rep 1.0000 1.00	1.0000	Rep 4 1.0000	Rep 5	Rep 6	5: DFD390	CDAA7830DA	A19AF06134	1A94AI	E649
25 50 100		1.0000 1.00 1.0000 1.00 1.0000 1.00	1.0000	1.0000 1.0000 1.0000	1.0000 1.0000 1.0000	1.0000 1.0000 0.6000					

Report Date: Test Code/ID: 09 Feb-23 15:58 (p 1 of 2) 23-01-047 / 10-5510-8182

Inland Silverside 96-h Acute Survival Test WSP Laboratory

Analysis ID: 19-8586-8240 Endpoint: 96h Survival Rate CETIS Version: CETISv2.1.3

Analyzed: 09 Feb-23 15:58 Analysis: Nonparametric-Control vs Treatments Status Level:

Edit Date: 09 Feb-23 15:57 MD5 Hash: DFD39CDAA7830DA19AF06134A94AE649 Editor ID: 002-883-387-8

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corrected)	C > T	100	>100		1	0.1138	11.38%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(a:5%)
Lab Control		25	10	39	26	1	CDF	0.7500	Non-Significant Effect
		50	10	39	26	1	CDF	0.7500	Non-Significant Effect
		100	10	36	26	1	CDF	0.5503	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.0263588	0.0087863	3	1	0.4133	Non-Significant Effect
Error	0.175725	0.0087863	20			
Total	0.202084		23			

ANOVA Assumptions Tests

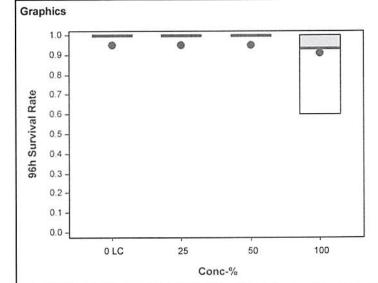
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variance	Bartlett Equality of Variance Test				Indeterminate
Distribution	Shapiro-Wilk W Normality Test	0.4436	0.884	<1.0E-05	Non-Normal Distribution

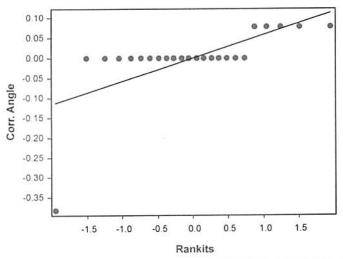
96h Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		6	0.9333	0.7620	1.0000	1.0000	0.6000	1.0000	0.0667	17.50%	6.67%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	100000	COUNT	Ten in the contract of	1.3450	1.3450	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
25	LC	6	1.3450 1.3450	1.3450	1.3450	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
50		6	1.3450	1.3450	1.3450	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
100		6	1.2690	1.0720	1.4650	1.3450	0.8861	1.3450	0.0765	14.78%	5.69%





Report Date: Test Code/ID: 09 Feb-23 15:58 (p 2 of 2) 23-01-047 / 10-5510-8182

Inland Silverside 96-h Acute Survival Test

WSP Laboratory

Analysis ID: 18-7271-6157

Endpoint: 96h Survival Rate

CETIS Version:

Analyzed:

09 Feb-23 15:58

Analysis: Parametric Bioequivalence-Two Sample

Edit Date: 09 Feb-23 15:57 MD5 Hash: 2AB7900AF817BB1C74CED6E6AED2F1D Editor ID:

Status Level:

002-883-387-8

CETISv2.1.3

Data Transform	Alt Hyp	TST_b	Comparison Result
		AND THE STATE OF T	1000/

100% passed 96h survival rate endpoint C*b < T 0.8 Angular (Corrected)

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:10%)	
Lab Control		100*	5	2.516	1.476	CDF	0.0267	Non-Significant Effect	

ANOVA Table

							- 1
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.0175725	0.0175725	1	1	0.3409	Non-Significant Effect	
Error	0.175725	0.0175725	10				
Total	0.193297		11				

ANOVA Assumptions Tests

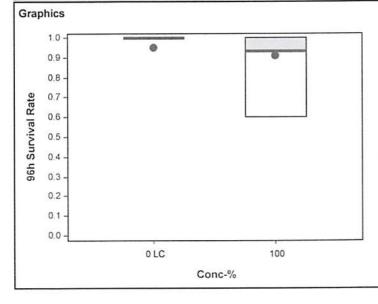
THE STREET STREET, STR	1. #1. 1 (1.1 the control of the con					
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)	
Variance	Variance Ratio F Test				Indeterminate	
Distribution	Shapiro-Wilk W Normality Test	0.5612	0.8025	5.2E-05	Non-Normal Distribution	

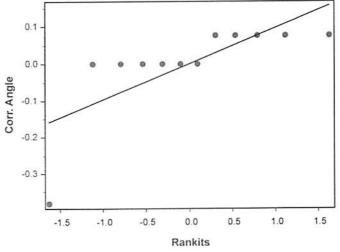
96h Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		6	0.9333	0.7620	1.0000	1.0000	0.6000	1.0000	0.0667	17.50%	6.67%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.3450	1.3450	1.3450	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
100		6	1.2690	1.0720	1.4650	1.3450	0.8861	1.3450	0.0765	14.78%	5.69%





96hr Marine Acute Test with 48hr Renewal

	Wood:) - She	eiter isi	and Ya	icht Bas			lia beryi				
Sample ID:	SIYB-5	i					Start Date/Time			1300	V.		
Test No.	23	-01-	-043	5 +0	-04	9	End Date/Time	: 1/30/	2023	1130			
Sample ID	Rep			Counts	•			Water	Quality	QL			
(%)		0	24	48	72	96	Parameter	0	24	48f	48i	72	96
	Α	5	5	5	5	5	Temp. (°C)	24.2	2308	25.8A	25.3	24.)	24.5
	В	5	5	5	5	S	Salinity (ppt)	333.	034.1	349	133.5	34.9	362
LC #3	С	5	5	5	5	S	pH (units)	8.02	7.76	1775	8198	7.92	7.88
LC #3	D	5	5	5	5	S	DO (mg/L)	7.2	6.8	7.0	73	6.8	10.0
	E	5	5.	5	5	S							
	F	5	3	5	5	5							
	А	5	<	5	5	5	Temp. (°C)	24.1		26.1			24.9
	В	5	5	5	5	5	Salinity (ppt)	33.3		33.5			
25	С	5	5	5	5	5	pH (units)	7.9				7.95	782
25	D	5	3	5	5 5	5	DO (mg/L)	7.6	7.0	67	7.3	6.8	6.0
	Е	5	5	5	5	5							
	F	5	5	5	5	S							
	А	5	5	5		5	Temp. (°C)	24.1	245	26.2	24.3	24.6	25.2
	В	5	5	5	5	5	Salinity (ppt)	33.7	33.5	339	33.1	33.8	34.7
	С	5	5	5	5	5	pH (units)	7.97	17.78	7.91	7,97	7.95	792
50	D	5	3	5	5	5	DO (mg/L)	7.7	6.0	6.7	7.4	6.7	6.4
	Ε	5	3	8	5	5							
	F	5	3	5	5	5							
	А	5	5	5	6	5	Temp. (°C)	24.7	24.8	25.9	25.0	24.4	25.7
	В	5	5	5	5	5	Salinity (ppt)	33.0	33.0	33.3	32.8	33.2	33.7
	С	5	1	5	5	5	pH (units)	791	7.79	7.91			7.92
100	D	5	<	5	5	5	DO (mg/L)	8.1	6.6	6.5	8.2	6.7	6.2
	E	5	5	5	5	5							
	F	5	5	5	4	3							DT.
	Α		Τ'				Temp. (°C)					5	
	В						Salinity (ppt)						
	С						pH (units)						
	D						DO (mg/L)						
	E							二十二					
	F												,
	h Initials:	75	OF	Do	ple	HX-	Tech Initia	s: RV	HK	-16	AC	86	121
	70, 6	V	. 112	4/2	7		Feedings	0	24	48	72	96	
	nimals R			10			Initials (AM):		HL	86	Ro	EN	4
Age of Anir				LVO	lane (J.)	n bassa s	Initials (PM):	RN		00	10		d
Comments: (r)kal	W2/CO	HED	KICI, 1	113013	LYOTE							
			2/10						nal Review	÷	3/7	ha	

Site: SIYB-6

Report Date: Test Code/ID: 10 Feb-23 11:57 (p 1 of 1) 23-01-048 / 11-4937-4598

Inland Silverside 96-h Acute Survival Test

WSP Laboratory

				and the system of			1900	er - aram				_
Batch ID:	05-8762-0672		기업으로 되었다.	urvival (96h)			Anal	-				
Start Date:	26 Jan-23 13:05			PA/821/R-02-0			Dilue		tural Seawate	er		
_	30 Jan-23 11:40			enidia beryllin	а		Brin		t Applicable	02920	20	
Test Length:	95h	Taxon:					Sour	rce: Aq	uatic Biosyst	ems, CO	Age:	12d
Sample ID:	05-7284-7177	Code:	23	3-W031			Proje	ect: SI	YB TMDL Mo	nitoring		
Sample Date:	25 Jan-23 09:00	Materia	al: Ar	mbient Sampl	е		Sour	rce: Sh	elter Island Y	acht Basin		
Receipt Date:	25 Jan-23 12:40	CAS (P	C):				Stati	on: SI	YB 6			
Sample Age:	28h (16.1 °C)	Client:	W	SP								
Single Compa	arison Summary						4					
Analysis ID	Endpoint	С	ompari	ison Method			P-Value	Compar	ison Result			S
08-9295-5429	96h Survival Rat	te T	ST-Wel	lch's t Test			<0.1	100% pa	issed 96h sur	vival rate		
Multiple Com	parison Summa	ry										
Analysis ID	Endpoint	С	ompari	ison Method		✓	NOEL	LOEL	TOEL	PMSD	TU	S
09-7991-1723	96h Survival Ra	te S	teel Ma	ny-One Rank	Sum Test		100	>100		8.02%	1	
Test Acceptal	bility					TAC L	imits					
Analysis ID	Endpoint	A	ttribute	•	Test Stat	Lower	Upper	Overlap	Decision			
08-9295-5429	96h Survival Ra	te C	ontrol F	Resp	1	0.9	<<	Yes	Passes C	riteria		
09-7991-1723	96h Survival Ra	te C	ontrol F	Resp	1	0.9	<<	Yes	Passes C	riteria		
96h Survival	Rate Summary				15.61		25					
Conc-%	Code	Count M	lean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Ef	fect
0	LC	6 1.	.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00	
25		6 1.	.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00	
50		6 0.	.9667	0.8810	1.0520	0.8000	1.0000	0.0333	0.0817	8.45%	3.33	
100		6 1.	.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00	%
96h Survival	Rate Detail						MD	5: 997932	C2C84733B5	EC9BB539	58B6B	DDE
Conc-%	Code	Rep 1 R	ep 2	Rep 3	Rep 4	Rep 5	Rep 6					
0	LC	1.0000 1.	.0000	1.0000	1.0000	1.0000	1.0000					
25		1.0000 1.	.0000	1.0000	1.0000	1.0000	1.0000					
50		1.0000 1.	.0000	1.0000	0.8000	1.0000	1.0000					
100		1.0000 1.	.0000	1.0000	1.0000	1.0000	1.0000					
96h Survival	Rate Binomials											
Conc-%	Code	Rep 1 R	lep 2	Rep 3	Rep 4	Rep 5	Rep 6					
0	LC	5/5 5/	/5	5/5	5/5	5/5	5/5					
25		5/5 5/	/5	5/5	5/5	5/5	5/5					
		F/F F	/5	5/5	4/5	5/5	5/5					
50		5/5 5/	13	3/3	415	3/3	0,0					

Report Date: Test Code/ID: 10 Feb-23 11:57 (p 3 of 3) 23-01-048 / 11-4937-4598

Inland Silverside 96-h Acute Survival Test

WSP Laboratory

Analysis ID: 08-9295-5429 Analyzed:

Edit Date:

10 Feb-23 11:57 10 Feb-23 11:56 Endpoint: 96h Survival Rate

Analysis: Parametric Bioequivalence-Two Sample

CETIS Version: Status Level:

MD5 Hash: CC57638EEF991FDA8F955B37EA1A6E86 Editor ID:

002-883-387-8

CETISv2.1.3

Data Transform	Alt Hyp	TST_b	Comparison Result
The first of the second section is a constant to the second	000000-0000000	2.49.769	Supplements of the control of the co

C*b < T 100% passed 96h survival rate endpoint Angular (Corrected) 0.8

TST-Welch's t Test

Control	vs	Conc-%	Test Stat	Critical	P-Type	P-Value	Decision(a:10%)
Lab Control		100*	0.2691			<0.1	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0	0	1			Indeterminate	
Error	0	0	10				
Total	0		11				

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)	
Variance	Variance Ratio F Test				Indeterminate	
Distribution	Shapiro-Wilk W Normality Test				Indeterminate	

96h Survival Rate Summary

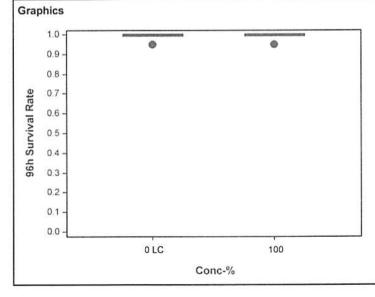
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

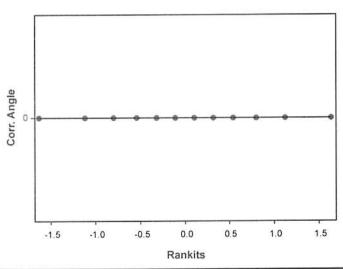
Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	6	1.3450	1.3450	1.3450	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
100		6	1.3450	1.3450	1.3450	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%

96h Survival Rate Binomials

Tour Gartina.		-					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6
0	LC	5/5	5/5	5/5	5/5	5/5	5/5
100		5/5	5/5	5/5	5/5	5/5	5/5





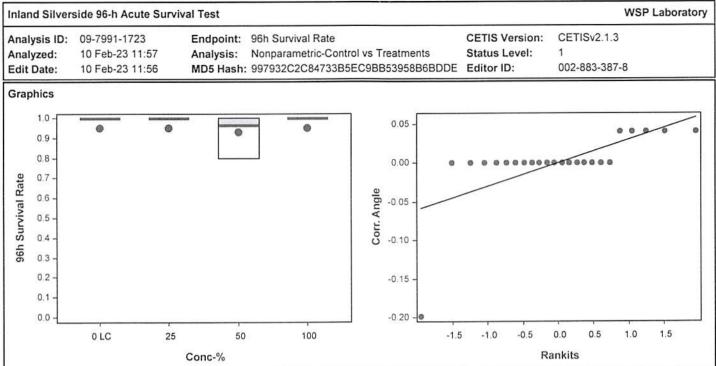
Report Date: Test Code/ID: 10 Feb-23 11:57 (p 1 of 3) 23-01-048 / 11-4937-4598

Inland Silver	side 9	6-h Acute S	Survival Tes	it							WSP I	Laboratory	
Analysis ID: Analyzed: Edit Date:	10 F	991-1723 eb-23 11:57 eb-23 11:56	Anal	ysis: Nor		rametric-Control vs Treatments 2C2C84733B5EC9BB53958B6BDDE CETIS Version Status Level: Editor ID:							
Data Transfo	rm		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD	
Angular (Corr	ected)		C > T				100	>100		1	0.08015	8.02%	
Steel Many-C	One Ra	ank Sum Te	st						2				
Control	vs	Conc-%	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision((α:5%)			
Lab Control						1	CDF	0.7500	Non-Signi	ficant Effect			
		50	10	36	26	1	CDF	0.5503	Non-Significant Effect				
		100	10	39	26	1	CDF	0.7500	Non-Signi	ficant Effect			
ANOVA Table	е												
Source		Sum Squa	ires	Mean Squ	are	DF	F Stat	P-Value	Decision	(a:5%)			
Between		0.0070885		0.0023628	1	3	1	0.4133	Non-Signi	ficant Effect			
Error		0.0472566		0.0023628	1	20							
Total		0.0543451				23							
ANOVA Assu	ımptic	ons Tests											
Attribute		Test				Test Stat	Critical	P-Value	Decision	(a:1%)			
Variance		Bartlett Eq	uality of Var	iance Test					Indetermi	nate			
Distribution			ilk W Norma			0.4436	0.884	<1.0E-05	Non-Norm	nal Distributio	on		
96h Survival	Rate	Summary											
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect	
0		LC	6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%	
25			6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%	
50			6	0.9667	0.8810	1.0000	1.0000	0.8000	1.0000	0.0333	8.45%	3.33%	
100			6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%	
Angular (Cor	rrecte	d) Transfor	med Summ	ary									
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect	
0		LC	6	1.3450	1.3450	1.3450	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%	
25			6	1.3450	1.3450	1.3450	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%	
50			6	1.3060	1.2040	1.4080	1.3450	1.1070	1.3450	0.0397	7.45%	2.95%	
100			6	1.3450	1.3450	1.3450	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%	
96h Survival	Rate	Binomials											
Conc-%		Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6					
0		LC	5/5	5/5	5/5	5/5	5/5	5/5					
25 5/5 5/5 5/5													
25			5/5	5/5	5/5	5/5	5/5	5/5					
25 50			5/5 5/5	5/5 5/5	5/5 5/5	5/5 4/5	5/5 5/5	5/5 5/5					

Report Date:

10 Feb-23 11:57 (p 2 of 3)

23-01-048 / 11-4937-4598 Test Code/ID:



96hr Marine Acute Test with 48hr Renewal

Client:) - She	lter Isl	and Ya	cht Bas	Test Specie						
Sample ID:	- 101	_					Start Date/Time			1305			
Test No.	23	-01-	-043) to	-040	1	End Date/Time	e: 1/30/2	2023	1140)		
Sample ID	Rep			Counts	5			Water	Quality	(QC)			
(%)		0	24	48	72	96	Parameter	0	24	48f	48i	72	96
	Α	5	5	5	5	5	Temp. (°C)	24.3	23.8				24.5
	В	5	5	5	5	5	Salinity (ppt)	33.4				34.9	36.3
1.0 #3	С	5	5	5	2	5	pH (units)	8,02	7.76	7.94	8.00	7.92	39.5
LC #3	D	5	5		5	5	DO (mg/L)	7.2	4.8	7.0	7.3	6.8	6.6
	E	5	5	5	5	5							
	F	5	5	5	5	5							
	Α	5	5	5	5	5	Temp. (°C)	24.3	24.6	263	24.1	24.2	25.2
İ	В	5	5	5	5	5	Salinity (ppt)	33.5	33.7	34.4	33,1	34.0	36.0
	С	5	Ć	5	5	5	pH (units)	7.99	7.86			7.95	7.91
25	D	5	5	5	5	5	DO (mg/L)	7.5				6.8	6.6
	Ε	5	5	5	5	5					W.		
	F	5	3	5	5	5							
	Α	5	5	5	5	5	Temp. (C)	24,1	24.7	26.4	24.2	25.0	25.2
	В	5	5	5	5	5	Salinity (ppt)	33.1	33.4				
	С	5	5	5	5	5	pH (units)	7.96	7.05	7.94	7.97	7.95	7,93
50	D	5	5	5	5	4	DO (mg/L)	_	6.9	6.6	7.3	6.8	10.5
	E	5	5	5	5	5		1 110				40.13	
	F	5	5	5	5	5							
	A	5	5	5	5	5	Temp. (°C)	24.1	25-0	26.4	24,0	25.2	25.7
	В	5	5	5	5	5	Salinity (ppt)	33.0				33.5	
	С	5	5	5	5	5	pH (units)	7.91				7.95	7.95
100	D	5	5	15	5	5	DO (mg/L)	7.9	6.9	6.6	7.2		4.5
	E	5	5	5	5	5							
	F	5	5	3	0	5							
	A		1		7	7	Temp. (C)	T					
	В		1				Salinity (ppt)				200		
	С						pH (units)						
	D		-				DO (mg/L)						
	E											31	
	F		1	1									
	n Initials:	TF	JF	P6	PG	HK	Tech Initia	Is: PN	HK	Po	As	86	RV
	ec. R	لد		1011	100		Foodings		24	48	72	96	1
	nimals Re			14	in		Feedings	0	110	- Saphilly	1000	The state of the s	-
Age of Anim	nals at Te	st Start		12	0		Initials (AM): Initials (PM):	RV	HX-	A6	Re	EN	
Comments:	B) Pd	WSte	0 12	M f	and								
QC Check:			10123						al Review	0.	131-	1172	

Site: SIYB-REF-1

Report Date: Test Code/ID: 10 Feb-23 12:08 (p 1 of 1) 23-01-049 / 20-2602-3384

Inland Silvers	ide 96-h Acute S	urvival Test								WSP L	aborato	эгу
Batch ID: Start Date: Ending Date: Test Length:	02-9323-2759 26 Jan-23 13:12 30 Jan-23 11:45 95h	Test Typ Protoco Species Taxon:			012 (2002) a		Analy Dilue Brine Sour	ent: Nat e: Not	ural Seawate Applicable uatic Biosyst		Age: 1	2d
80	11-6985-6707 25 Jan-23 08:00 25 Jan-23 12:40 29h (15.6 °C)	Code: Material CAS (PC Client:		ient Sampl	е		Proje Sour Statio	ce: She	B TMDL Mo elter Island Y B REF1			
Analysis ID	arison Summary Endpoint 96h Survival Rate		ompariso ST-Welch'	n Method s t Test			P-Value <0.1		son Result	Control of the Control		Ş
Analysis ID	parison Summar Endpoint 96h Survival Rate	Co		n Method One Rank	Sum Test	✓	NOEL 100	LOEL >100	TOEL	PMSD	TU 1	5
	Endpoint 96h Survival Rate 96h Survival Rate	e Co	tribute ontrol Res	7	Test Stat	TAC Li Lower 0.9 0.9	imits Upper <<	Overlap Yes Yes	Decision Passes C Passes C			
96h Survival I	Rate Summary Code	Count Me	ean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effe	ct
0 25 50 100	LC	6 1.0 6 1.0	0000 0000	1.0000 1.0000 1.0000 1.0000	1.0000 1.0000 1.0000 1.0000	1.0000 1.0000 1.0000 1.0000	1.0000 1.0000 1.0000 1.0000	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000 0.0000	0.00% 0.00% 0.00% 0.00%	0.00% 0.00% 0.00% 0.00%	,
96h Survival I		Pon 1 Po	an 2	Pan 3	Pan 4	Pen 5	MD5	5: 503BB7	BCB95B6F4	5DCAD06BE	BB154F	769
0 25 50 100	Code LC	1.0000 1.0 1.0000 1.0 1.0000 1.0	0000 0000	Rep 3 1.0000 1.0000 1.0000 1.0000	Rep 4 1.0000 1.0000 1.0000 1.0000	1.0000 1.0000 1.0000 1.0000	1.0000 1.0000 1.0000 1.0000					
96h Survival	Rate Binomials Code	Rep 1 Re	ep 2	Rep 3	Rep 4	Rep 5	Rep 6					
0 25	LC	5/5 5/5 5/5 5/5	5	5/5 5/5	5/5 5/5	5/5 5/5	5/5 5/5					

5/5

Pa -5/5-414 5/5

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50

100

Report Date: Test Code/ID: 10 Feb-23 12:08 (p 1 of 3) 23-01-049 / 20-2602-3384

Inland Silver	side 9	6-h Acute S	Survival Tes	st							WSP	Laboratory
Analysis ID: Analyzed: Edit Date:	10 F	378-0484 eb-23 12:08 eb-23 12:04	Anal	ysis: Nor	parametric-	Survival Rate parametric-Control vs Treatments B78CB95B6F45DCAD06BBB154F			TIS Version: atus Level: itor ID:	CETISv2 1 002-883-		
Data Transfo	rm		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	5	
Angular (Corr	rected)		C > T				100	>100		1		
Steel Many-C	One Ra	ınk Sum Te	st									
Control	vs	Conc-%	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(α:5%)		
Lab Control		25	10	39	26	1	CDF	0.7500	Non-Signit	ficant Effect	t	
		50 10 39 26 1 CDF 0							10000	ficant Effect		
		100	10	39	26	1	CDF	0.7500	Non-Signit	ficant Effect	t	
ANOVA Tabl	е											
Source		Sum Squa	ares	Mean Squ	iare	DF	F Stat	P-Value	Decision(α:5%)		
Between		0		0		3			Indetermin	nate		
Error		0		0		20	4 8					
Total		0				23						
ANOVA Assu	umptio	ns Tests										
Attribute		Test				Test Stat	Critical	P-Value	Decision(α:1%)		
Variance		Bartlett Eq	uality of Var	riance Test					Indetermin	nate		
Distribution		Shapiro-W	ilk W Norm	ality Test					Indetermir	nate		
96h Survival	Rate	Summary										
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25			6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50			6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100			6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
Angular (Co	rrected	d) Transfor	med Summ	ary								
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	6	1.3450	1.3450	1.3450	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
25			6	1.3450	1.3450	1.3450	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
50			6	1.3450	1.3450	1.3450	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
100			6	1.3450	1.3450	1.3450	1.3450	1.3450	1.3450	0.0000	0.00%	0.00%
96h Surviva	I Rate	Binomials										
Conc-%		Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6				
0		LC	5/5	5/5	5/5	5/5	5/5	5/5				
25 5/5 5/5 5/5					5/5	5/5	5/5					
50			5/5	5/5	5/5	5/5 5/5	5/5 5/5	5/5 5/5				
				100 5/5 5/5 5/6								

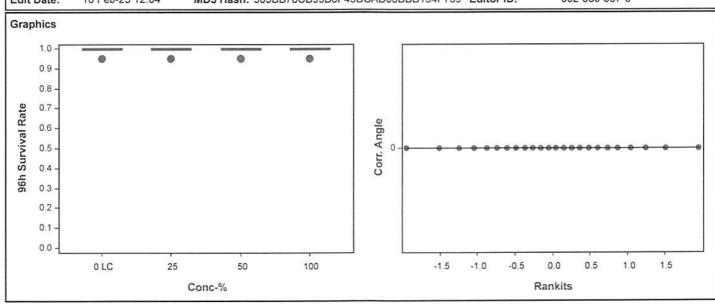
Report Date: Test Code/ID: 10 Feb-23 12:08 (p 2 of 3) 23-01-049 / 20-2602-3384

Inland Silverside 96-h Acute Survival Test WSP Laboratory

Analysis ID: 02-5378-0484 Endpoint: 96h Survival Rate CETIS Version: CETISv2.1.3

Analyzed: 10 Feb-23 12:08 Analysis: Nonparametric-Control vs Treatments Status Level: 1

Edit Date: 10 Feb-23 12:04 MD5 Hash: 503BB78CB95B6F45DCAD06BBB154F769 Editor ID: 002-883-387-8



Inland Silverside 96-h Acute Survival Test

Report Date: Test Code/ID: 10 Feb-23 12:08 (p 3 of 3) 23-01-049 / 20-2602-3384

WSP Laboratory

Analysis ID: 03-7250-0586 Endpoint: 96h Survival Rate CETIS Version: CETISv2.1.3

Analyzed: 10 Feb-23 12:08 Analysis: Parametric Bioequivalence-Two Sample Status Level: 1

Edit Date: 10 Feb-23 12:04 MD5 Hash: CC57638EEF991FDA8F955B37EA1A6E86 Editor ID: 002-883-387-8

 Data Transform
 Alt Hyp
 TST_b
 Comparison Result

 Angular (Corrected)
 C*b < T</td>
 0.8
 100% passed 96h survival rate endpoint

TST-Welch's t Test

 Control
 vs
 Conc-%
 Test Stat
 Critical
 P-Type
 P-Value
 Decision(α:10%)

 Lab Control
 100*
 0.2691
 -- <0.1</td>
 Non-Significant Effect

ANOVA Table F Stat DF P-Value Decision(a:5%) Source **Sum Squares** Mean Square Between 0 0 1 Indeterminate 0 0 10 Error 11 Total 0

ANOVA Assumptions Tests

Attribute Test Test Stat Critical P-Value Decision(a:1%)

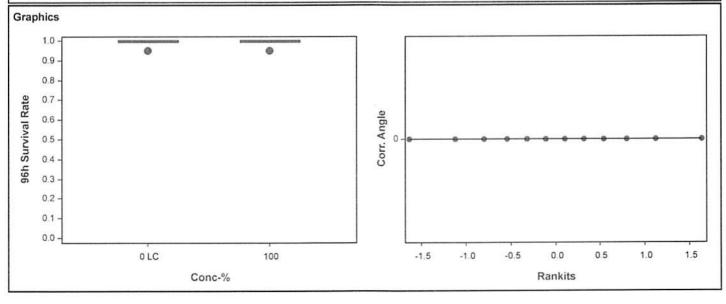
Variance Variance Ratio F Test Indeterminate

Distribution Shapiro-Wilk W Normality Test Indeterminate

96h Survival Rate Summary CV% %Effect Code Count 95% LCL 95% UCL Median Min Max Std Err Mean Conc-% 1.0000 0.0000 0.00% 0.00% 0 LC 6 1.0000 1.0000 1.0000 1.0000 1.0000 0.00% 1.0000 1.0000 0.0000 0.00% 100 6 1.0000 1.0000 1.0000 1.0000

Angular (Corrected) Transformed Summary CV% %Effect Std Err Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max 0.00% 0.0000 0.00% LC 6 1.3450 1.3450 1.3450 1.3450 1.3450 1.3450 0.00% 0.0000 0.00% 100 1.3450 1.3450 1.3450 1.3450 1.3450 1.3450

96h Survival Rate Binomials Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 Rep 6 LC 5/5 5/5 5/5 5/5 5/5 5/5 5/5 5/5 5/5 5/5 5/5 5/5 100



96hr Marine Acute Test with 48hr Renewal

	Mood	POSE) - She	lter Is	land Y	acht Ba	sin	Test Species:	: Menid	ia beryl	lina				
Sample ID:	SIYB-F	REF-1						Start Date/Time:	1/26/2	2023 /	312				
Test No.	23-	-01-	043	+D -	049			End Date/Time:	1/30/2			1K 11	5		
Sample ID	Rep			Count	s				Water Quality						
(%)		0	24	48	72	96		Parameter	0	124	48f	48i	72	96	
	А	5	5	5	5	5		Temp. (°C)	24.3	33.86	26.2	25.2	24.1	24.5	
	В	5	5	5		5		Salinity (ppt)	33,60	-		33.5	34.9	36.3	
	С	5	5	5	5	5		pH (units)		7.76			7.92	7.88	
LC #3	D	5	5	5	5	5		DO (mg/L)	7.2	6.00		7.3	6.8	6.6	
	E	5	3	5	5	5									
	F	5	(5	5	5									
	Α	5	3	5	5	5		Temp. (°C)	24.0	24.8	26.4	24.4	25.2	25.2	
	В	5	1	5	5	5		Salinity (ppt)		34.3	35.0	33.3	34.7	35.3	
Vice-ot	С	5	3	3	6	5		pH (units)	7,08	7.80	7.94	7.99	7.96	7.94	
25	D	5	5	5	5	5		DO (mg/L)	7.4	6.8	6.6	7.2	6.6	6,4	
	E	5	5	5	5	5				4					
	F	5	1	5	5	5									
	A	5	3	5	5			Temp. (°C)	24.1	24.13	265	24.7	25.0	25.8	
	В	5	5	5	2	5		Salinity (ppt)	33.3		35.1	33 7	350	34.0	
		5	5	5	5	S		pH (units)		7.84		797		7.94	
50	D	5	5	5	2	5		DO (mg/L)	7.6		6.5	7.4		6.4	
	E	5	5	5	5	5		E STEEL END	11.0	0.0	0.0		0,		
	F	5	5	3	5	5									
	Α	5	5	5	5	-		Temp. (C)	25.1	24.10	26.5	25.6	24.5	25.8	
	В	5	3	5	5	5		Salinity (ppt)	33.2		35.3			35,4	
	С	5	5	3	5	3		pH (units)	7.91		7.93	7.94		7.90	
100	D	5	5	5	5	40		DO (mg/L)	8.1	6.8	6.6	8.3		6.6	
	E	5	5	5	+	5		33 (116) 27	16.1	4.0	0.0	18.7	22.25		
	F	5	5	5	5	5									
	Α		1					Temp. ('C)							
	В							Salinity (ppt)							
	С							pH (units)							
	D				1			DO (mg/L)						100000000000000000000000000000000000000	
3	E		- 1117-	1					10 (V)					100	
	F														
	n Initials:	1	SP	86	AC	HK	L 1 80 L	Tech Initials	EN	HK	Po	AB	16	151	
	Dr. P			0,110	2			Feedings	0	24	48	72	96	7	
	nimals R			MY	VO			Initials (AM):	0		PG	AG	111111111111111111111111111111111111111	1	
Age of Anin	_		-	1179				Initials (PM):	RU	HY	7 10	10	K		
Comments:	BA(A)	MUT	ra b	W t	eme		-) LUST 1	n transfer							
	6-1	. 1 -				-					V .	13/71	22		
QC Check: J	1 11	015	5						Fina	al Review:	1/	1 7 11	05		

APPENDIX C List of Data Qualifier Codes



Test Qualifier Codes

- QC1: Temperatures out of recommended range; corrective action taken
- QC2: Temperatures out of recommended range; no action taken, test terminated
- QC3: Test initiated on aeration due to anticipated drop in dissolved oxygen
- QC4: Dissolved oxygen percent saturation <110
- QC5: Survival counts not recorded due to poor visibility
- QC6: Inadequate sample volume remaining; 50% renewal performed
- QC7: Inadequate sample volume remaining; no renewal performed
- QC8: Organisms received at a temperature outside of recommended range of test specifications. Temperature changed more than 3 degrees Celsius within a 24-hour period.
- QC9: Organisms received at a salinity outside of 3 ppt of recommended test specifications. Acclimated to appropriate salinity within a 24-hour period.

APPENDIX D Sample Receipt Information & Chain of Custody Form

Sample Check-In: Effluent/Water

WSP Environmental Laboratory

4905 Morena Blvd, Ste. 1304

San Diego, CA 92117

Client: POSD - SIYB

Project Name: 2023 SIYB TMDL WINTER

Test ID Numbers: 23-01-043 to -0560

			S14B-3	514B-4	S14B-5	S14B-6	SIMB-REF	-1
Sample Number:	23-W02LD	23-W027	23-W028	23-W029	13-W030	23-W031	23-NO32	
Collection Date/Time:								
Receipt Date/Time:	1/25/12/1700	1/15/23 1700	1/25/23 1700	1/25/23 1240	1/25/23 1240	1/25/231240	1/25/23 1240	
Total Sample Volume (L):		146	146	146	142	141	141	
Receipt Temp (°C):		15.7	14.9	17.8	15.8	16.1	15.6	
Appropriate Temp (Y/N) ¹ :	1	Y	7	7	7	Y	Y	
pH (units):	7.83	7.83	7.92	7.92	7.92	7.88	7.90	
DO (mg/L):	PY 9.1	8.5	8.8	8.4	8.2	8.1	7.8	
Conductivity (µS/cm) ² :	51	3N 51	5	W. 0	50	50	49	10
Salinity (ppt):	32.9	32.8	32.7	32.8	32.7	32.4	ev7-8-323	
Alkalinity (mg/L):	109	112	111	108	24HH 110	114	107	
Hardness (mg/L) ² :	_	-	-	-	-	1	-	
Total Chlorine (mg/L) ³ :	0.03	20.02	NZ	0.02	40.02	0.00	0.02	
Free Chlorine (mg/L) ³ :	_	_	_	, -	_	1		
Technician Initials:	PN	FU	RV	EN	RV	RN	RN	

Notes:	Sample Descriptions ⁴ :
¹ Temperature should be 0 - 6°C if received > 24 hours past collection	All samples: cleav & colorless
² Only measured on samples with less than 3 ppt salinity	
³ If total chlorine is above 0.10 mg/L, the free chlorine will be measured	
⁴ Debris, odor, and color is described only if observed in the sample	

Test Organism: M. Berry In Dilution Water: Nat-SW, Art-SW, RW, DMW, Other	Salinity
M. galloprovingialis Control: AST	Salinity
67	



WSP Aquatic Toxicology Lab 4905 Morena Blvd, Ste. 1304 San Diego, CA 92117 Phone: (858) 299-5368

Chain of Custody Form

Analysis Requested

Page ___1__ of ___1__

Client/Send I	Client/Send Report To:				Project Information (if needed): Project Name 2023 SIYB TMDL Winter Monitoring				(write out or use codes below)					
Company	WSP USA E & I, Inc.													
Address	9177 Sky Park Court					2015100118.0007				9				Receipt Temp (°C)
	San Diego, CA 92123				PO Number	N/A	-		_	H 유				ដ
Contact/PM	Marisa Swiderski							Mb-a	Mg-dv	tt ac				t
Phone Number	(808) 772-8740	-200			Personal Cooler Shipped: Return Requested: YES NO				Σ̈́	Mg-dv TIE				l ei
Email Address	marisa.swiderski@wsp.c	<u>om</u>			Keturn Kequ	estea: YES NO	J			Mg-dv TIE SOW attached)				Re
S	ample ID		ection ate	Collection Time	Sample Volume	Sample Type: Grab/Comp.	Sample Number (for lab use)							
SI	IYB-REF-1	01/2	5/2023	0800	14L	Grab		Х	Х					156
	SIYB-6			0900	14L	Grab		Х	Х					16.1
	SIYB-5			1000	14L	Grab		Х	Х					15%
	SIYB-4				14L	Grab		Х	Х					17.8
W8 -	SIYB-3				141	Grab		-X-	-X-	-				
W.	SIYB-2				14L	Grab		_X_	_X_	_				
W	SIYB-1				30L	Grab		-X-	-X-	-X-				
Samples Collect	ed By:					r all species (copper cond nd 40 μg/L for bivalve	oncentrations of 0, 25, 50, 100,	Samp	oles SI	hipped	via:			
MS/KB		0.50	-			ind a control; 6 reps/s		Cond	ition	Upon F	Receip	t:		
							ontrol; and a 100% filtered				•			
undiluted sample (Look			(Look for Noctile	ica sp.); 5 reps/s	- 11	$\overline{\Lambda}$	⊢							
Relinquished/Shipped By:			- ()~ ()		Relinquished By	V/ 4		ived		7	1.			
Signature: Mariro-Aurderuni Signature:			- 12m		Signature: (M	200	Signature:							
Print Name: Marisa Swiderski Print Name:		Mris 5	transky	Print Name: Ch	ris Stransy	Print Name: Tacob Fletcher								
and the contract of the contra			Time: 01	125/202	3 (135	Date/Time: 01,2512023 1240			/Time	: 01	1251	2023	124	U

Test Codes (marine):

Mp-c: Chronic Kelp
Hr-dv: Chronic Abalone
Aa-a: Acute Topsmelt

Aa-c: Chronic Topsmelt

Mb-a: Acute Menidia/Silverside Sp-c: Chronic Urchin Fertilization
Mb-c: Chronic Menidia/Silverside Sp-dv: Chronic Urchin Development

Ab-a: Acute Mysid Shrimp

Ab-c: Chronic Mysid Shrimp

Other: Write out the test organism

Test Codes (freshwater):

Cd-a: Acute Ceriodaphnia Sc-c: Chronic Green Algae
Cd-c: Chronic Ceriodaphnia Ha-a: Acute Hyalella amphipod
Pp-a: Acute Fathead Minnow Ha-c: Chronic Hyalella amphipod
Pp-c: Chronic Fathead Minno T-22: CA Title 22 Hazardous Waste



WSP Aquatic Toxicology Lab 4905 Morena Blvd, Ste. 1304 San Diego, CA 92117 Phone: (858) 299-5368

o	•	<u> </u>	•	_	
chain	OŤ	Custo	ay	Form	

Page ___1__ of ___1__

Client/Send F	Report To:				Project Inf	formation (if ne	eded):					quest odes be		
Company Address	WSP USA E & I, Inc. 9177 Sky Park Court San Diego, CA 92123					2023 SIYB TMDL W 2015100118.0007	finter Monitoring			(þa				p (°C)
Contact/PM Phone Number Email Address	Marisa Swiderski (808) 772-8740 marisa.swiderski@wsp.c	<u>om</u>			Personal Co	oler Shipped:)	Mb-a	Mg-dv	Mg-dv TIE SOW attached)				Receipt Temp (°C)
S	ample ID	The second second	ction ite	Collection Time						(5)				
MA si	YB-REF-1				14L	Grab		X	_X_	-				
M-	SIYB-6				141	Grab		Χ_	X	_				
mj -	SIYB-5				14L	Grab		-X-	-X-	,				
	SIYB-4				14L	Grab		X X						
	SIYB-3	01/25	Pors	1200	14L	Grab		Х	Х					14.9
	SIYB-2	. 1		\300	14L	Grab		Х	х					15.7
	SIYB-1	_	_	1400	30L	Grab		Х	х	Х				13.7
													+	+
Samples Collected By: 200, 400 ug/L for Menidia an Menidia tests at 3 concentrates				Menidia and 0, 2 3 concentrations concentrations (rent ref. tox. test for all species (copper concentrations of 0, 25, 50, 100, 0, 2.5, 5.0, 10, 20 and 40 µg/L for bivalve). ons (25, 50, 100%) and a control; 6 reps/sample. ns (6.25, 12.5, 25, 50, and 100%), and a control; and a 100% filtered			Samples Shipped via: Condition Upon Receipt:						
Relinquished/Shipped By: Received By:				111	0	Relinquished By:		Rece	ived	Ву:				
Signature: Moriso Suder Signature: Moriso			your	0	Signature:		Signature:						9	
	arisa Swiderski	ı		lexi baba		Print Name:		Print Name:						
Date/Time: 01/	25/2023 1700	Date/T	ime:	25/23 17	00	Date/Time:		Date	/Time	:				

Test Codes (marine):

Mp-c: Chronic Kelp Hr-dv: Chronic Abalone Aa-a: Acute Topsmelt Aa-c: Chronic Topsmelt Mb-a: Acute Menidia/Silverside Sp-c: Chronic Urchin Fertilization

Ab-a: Acute Mysid Shrimp Ab-c: Chronic Mysid Shrimp

Mb-c: Chronic Menidia/Silverside Sp-dv: Chronic Urchin Development Mg-dv: Chronic Mussel Development Other: Write out the test organism

Test Codes (freshwater):

Cd-a: Acute Ceriodaphnia Sc-c: Chronic Green Algae Cd-c: Chronic Ceriodaphnia Ha-a: Acute Hyalella amphipod Pp-a: Acute Fathead Minnow Ha-c: Chronic Hyalella amphipod Pp-c: Chronic Fathead Minno T-22: CA Title 22 Hazardous Waste

APPENDIX E

Reference Toxicant Test
Statistical Analysis, Control Chart, and Raw Data

Chronic Mussel
Reference Toxicant Test

Report Date: Test Code/ID:

Analyst:

09 Feb-23 15:38 (p 1 of 2) 230128mgrd / 03-3591-1122

Age:

KWSP -Wood E&IS

Bivalve	Larval	Survival	and	Development	Test

Test Type: Development-Survival Batch ID: 17-5344-3019 Protocol: EPA/600/R-95/136 (1995) Start Date: 26 Jan-23 1730

Diluent: Diluted Natural Seawater Mytilis galloprovincialis Brine:

Not Applicable

Test Length: 48h

Ending Date: 28 Jan-23 1000 Species: Taxon:

Field Collected Source: Project: SIYBTMAL Montoring

Sample ID: 01-3858-4478 Sample Date: 26 Jan-23 Receipt Date: 26 Jan-23

Code: Material: 230122 mgrd Total Copper Station:

Source: Reference Toxicant

CAS (PC):

Client: Internal Sample Age: ---

Multiple Com	parison Summary							
Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	S
05-5097-2236	Combined Proportion Norma	Dunnett Multiple Comparison Test	1	5	10	7.071	21.3%	1
05-1195-9949	Proportion Normal	Steel Many-One Rank Sum Test	1	5	10	7.071	16.8%	1
04-7549-6049	Survival Rate	Dunnett Multiple Comparison Test		20	40	28.28	8.37%	1

Point Estimat	e Summary							
Analysis ID	Endpoint	Point Estimate Method	✓	Level	μg/L	95% LCL	95% UCL	s
07-0010-2705	Combined Proportion Norma	Spearman-Kärber		EC50	7.734	7.577	7.893	1

Test Acceptat	pility			TAC			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
05-1195-9949	Proportion Normal	Control Resp	0.9051	0.9	<<	Yes	Passes Criteria
04-7549-6049	Survival Rate	Control Resp	0.9508	0.5	<<	Yes	Passes Criteria
05-5097-2236	Combined Proportion Norma	PMSD	0.2126	<<	0.25	No	Passes Criteria

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.8614	0.7879	0.9348	0.7760	0.9189	0.0265	0.0591	6.87%	0.00%
2.5		5	0.8671	0.7970	0.9372	0.7705	0.9130	0.0253	0.0565	6.51%	-0.66%
5		5	0.8155	0.7269	0.9042	0.7104	0.9043	0.0319	0.0714	8.75%	5.32%
10		5	0.1566	-0.0845	0.3977	0.0000	0.4550	0.0868	0.1942	124.01%	81.82%
20		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%
40		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%

Proportion Nor	rmai Summar	У									
Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9051	0.8713	0.9390	0.8659	0.9318	0.0122	0.0273	3.02%	0.00%
2.5		5	0.8829	0.8519	0.9138	0.8494	0.9130	0.0112	0.0249	2.82%	2.46%
5		5	0.8588	0.8100	0.9077	0.8075	0.9043	0.0176	0.0393	4.58%	5.12%
10		5	0.1575	-0.0827	0.3977	0.0000	0.4550	0.0865	0.1935	122.85%	82.60%
20		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%
40		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9508	0.9017	1.0000	0.8962	1.0000	0.0177	0.0396	4.16%	0.00%
2.5		5	0.9814	0.9298	1.0330	0.9071	1.0000	0.0186	0.0415	4.23%	-3.22%
5		5	0.9486	0.8812	1.0160	0.8798	1.0000	0.0243	0.0543	5.73%	0.23%
10		5	0.9607	0.9109	1.0100	0.9126	1.0000	0.0179	0.0400	4.17%	-1.03%
20		5	0.9421	0.9178	0.9664	0.9290	0.9727	0.0087	0.0196	2.08%	0.92%
40		5	0.1388	0.0758	0.2018	0.0820	0.1913	0.0227	0.0508	36.57%	85.40%

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Bivalve Larval Survival and Development Test

Wood E&IS

Bivalve Larval S	Survival and	Developmer	nt Test					Wood E&IS
Combined Prop	ortion Norm	al Detail					MD5:	0D7D7E46D0A7D6931FF9C7C14F7CBE32
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.8962	0.8251	0.7760	0.8907	0.9189		
2.5		0.9130	0.8913	0.8667	0.8939	0.7705		
5		0.8033	0.9043	0.8087	0.7104	0.8510		
10		0.4550	0.2513	0.0492	0.0273	0.0000		
20		0.0000	0.0000	0.0000	0.0000	0.0000		
40		0.0000	0.0000	0.0000	0.0000	0.0000		
Proportion Norr	mal Detail						MD5:	8833C98F08C9DE26800BA2DC6AB5FF0B
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.9318	0.8882	0.8659	0.9209	0.9189		
2.5		0.9130	0.8913	0.8667	0.8939	0.8494		
5		0.8400	0.9043	0.8916	0.8075	0.8510		
10		0.4550	0.2513	0.0511	0.0299	0.0000		
20		0.0000	0.0000	0.0000	0.0000	0.0000		
40		0.0000	0.0000	0.0000	0.0000	0.0000		
Survival Rate D	etail	Onglisher St. (St.)	WWW.WC.2000.0		V 2004-00-10-10-10-10-10-10-10-10-10-10-10-10-	42.25 March 14-24.25 March 14-24.	MD5:	50C087EE7F2484A9ED642935CB82431C
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.9617	0.9290	0.8962	0.9672	1.0000		
2.5	LO	1.0000	1.0000	1.0000	1.0000	0.9071		
5		0.9563	1.0000	0.9071	0.8798	1.0000		
		1.0000	1.0000	0.9617	0.9126	0.9290		
10						0.9290		
20 40		0.9508 0.1421	0.9290 0.0820	0.9290 0.1858	0.9290	0.1913		
	estion Norm			0.1000	0.0020	0.1010		
Combined Prop				Dan 2	Don 4	Dan F		
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3 142/183	Rep 4 163/183	Rep 5 170/185		
0	LC	164/183	151/183	169/195	177/198	141/183		
2.5		168/184 147/183	164/184		130/183	177/208		
5		86/189	170/188 48/191	148/183 9/183	5/183	0/183		
10				0/183	0/183	0/183		
20		0/183	0/183		0/183	0/183		
40		0/183	0/183	0/183	0/163	0/163		
Proportion Nor					-	D		
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	164/176	151/170	142/164	163/177	170/185		
2.5		168/184	164/184	169/195	177/198	141/166		
5		147/175	170/188	148/166	130/161	177/208		
10		86/189	48/191	9/176	5/167	0/170		
20		0/174	0/170	0/170	0/170	0/178		
40		0/26	0/15	0/34	0/17	0/35		
Survival Rate B			-			D 5		
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	176/183	170/183	164/183	177/183	183/183		
2.5		183/183	183/183	183/183	183/183	166/183		
5		175/183	183/183	166/183	161/183	183/183		
10		183/183	183/183	176/183	167/183	170/183		
20		174/183	170/183	170/183	170/183	178/183		
40		26/183	15/183	34/183	17/183	35/183		

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Bivalve Larva	al Sur	vival and D	evelopmen	t Test							٧	Vood E&IS
Analysis ID: Analyzed: Edit Date:	09 F	097-2236 eb-23 15:35 eb-23 15:31	Anal	ysis: Par	mbined Prop ametric-Con 7D7E46D0A	trol vs Treat	tments		TIS Version: CETISv2.1.3 ttus Level: 1 (tor ID: 002-883-387-8			
Data Transfo	orm		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corr	rected)		C > T				5	10	7.071		0.1831	21.26%
Dunnett Mult	tiple C	omparison	Test									
Control	vs	Conc-µg/L	_ df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(a:5%)		
Lab Control		2.5	8	-0.07405	2.227	0.2275	CDF	0.7758	Non-Signif	icant Effect		
		5	8	0.613	2.227	0.2275	CDF	0.4947	Non-Signif	icant Effect		
		10*	8	8.387	2.227	0.2275	CDF	<1.0E-05	Significant	Effect		
ANOVA Table	е											
Source		Sum Squa	ares	Mean Squ	iare	DF	F Stat	P-Value	Decision(α:5%)		
Between		2.65059		0.883529		3	33.87	<1.0E-05	Significant	Effect		
Error		0.417401		0.0260876	5	16	_					
Total		3.06799				19						
ANOVA Assu	umptio	ns Tests										
Attribute		Test				Test Stat	Critical	P-Value	Decision(a:1%)		
Variance		Bartlett Eq	uality of Var	riance Test		9.827	11.34	0.0201	Equal Vari	ances		
Distribution		Shapiro-W	ilk W Norm	ality Test		0.9475	0.866	0.3301	Normal Dis	stribution		
Combined P	roport	ion Normal	Summary									
Conc-µg/L		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	0.8614	0.7879	0.9348	0.8907	0.7760	0.9189	0.0265	6.87%	0.00%
2.5			5	0.8671	0.7970	0.9372	0.8913	0.7705	0.9130	0.0253	6.51%	-0.66%
5			5	0.8155	0.7269	0.9042	0.8087	0.7104	0.9043	0.0319	8.75%	5.32%
10			5	0.1566	0.0000	0.3977	0.0492	0.0000	0.4550	0.0868	124.01%	81.82%
20			5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%
40			5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%
Angular (Cor	rrected	d) Transfori	med Summ	ary								
Conc-µg/L		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	1.1950	1.0910	1.2990	1.2340	1.0780	1.2820	0.0376	7.03%	0.00%
2.5			5	1.2030	1.1060	1.3000	1.2350	1.0710	1.2710	0.0349	6.49%	-0.63%
5			5	1.1330	1.0170	1.2480	1.1180	1.0030	1.2560	0.0416	8.21%	5.24%
10			5	0.3384	-0.0183	0.6952	0.2236	0.0370	0.7404	0.1285	84.89%	71.68%
20			5	0.0370	0.0370	0.0370	0.0370	0.0370	0.0370	0.0000	0.00%	96.91%
40			5	0.0370	0.0370	0.0370	0.0370	0.0370	0.0370	0.0000	0.00%	96.91%
Combined P	roport	tion Normal	l Binomials									
Conc-µg/L		Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0		LC	164/183	151/183	142/183	163/183	170/185					
					4001405	477/400	141/183					
2.5			168/184	164/184	169/195	177/198	141/103					
2.5 5			168/184 147/183	164/184 170/188	169/195	130/183	177/208					
1					148/183 9/183							
5			147/183	170/188	148/183	130/183	177/208					

Bivalve Larval Survival and Development Test

Report Date: Test Code/ID:

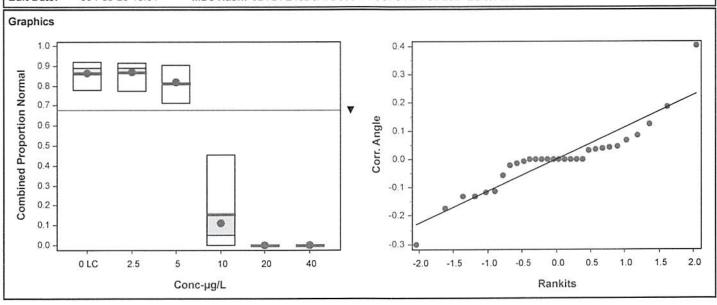
09 Feb-23 15:38 (p 2 of 6) 230123mgrd / 03-3591-1122

Wood E&IS

Analysis ID: 05-5097-2236 Endpoint: Combined Proportion Normal **CETIS Version:** CETISv2.1.3 1

Analyzed: 09 Feb-23 15:35 Analysis: Parametric-Control vs Treatments Status Level:

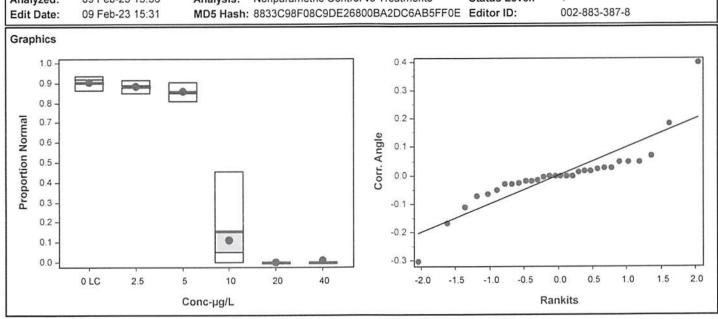
Edit Date: 09 Feb-23 15:31 MD5 Hash: 0D7D7E46D0A7D6931FF9C7C14F7CBE32 Editor ID: 002-883-387-8



Report Date: Test Code/ID: 09 Feb-23 15:38 (p 3 of 6) 230123mgrd / 03-3591-1122

Bivalve Larv	al Sur	vival and D	evelopmen	t Test								Wood E&IS
Analysis ID: Analyzed: Edit Date:	09 F	195-9949 eb-23 15:36 eb-23 15:31	Anal	lysis: Nor	portion Norr parametric- 3C98F08C9	Control vs T		Statu	S Version: as Level: or ID:	CETISv2. 1 002-883-3		
Data Transfo	orm		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corr	rected)		C > T				5	10	7.071		0.152	16.80%
Steel Many-C	One Ra	ank Sum Te	est									
Control	vs	Conc-µg/L	_ df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(α:5%)		
Lab Control		2.5	8	22	17	0	CDF	0.2647		ficant Effect		
		5	8	19	17	0	CDF	0.0921		ficant Effect		
		10*	8	15	17	0	CDF	0.0123	Significant	Effect		
ANOVA Tabl	е											
Source		Sum Squa	ares	Mean Squ	iare	DF	F Stat	P-Value	Decision(
Between		2.93399		0.977998		3	44.33	<1.0E-05	Significant	Effect		
Error		0.352988		0.0220617		16	_					
Total		3.28698				19						
ANOVA Assu	umptic	ns Tests										
Attribute		Test				Test Stat	Critical	P-Value	Decision(α:1%)		
Variance		Bartlett Eq	uality of Va	riance Test		20.49	11.34	0.0001	Unequal V	'ariances		
Distribution		Shapiro-W	ilk W Norm	ality Test		0.8878	0.866	0.0245	Normal Di	stribution		
Proportion N	Norma	Summary										
Conc-µg/L		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	0.9051	0.8713	0.9390	0.9189	0.8659	0.9318	0.0122	3.02%	0.00%
2.5			5	0.8829	0.8519	0.9138	0.8913	0.8494	0.9130	0.0112	2.82%	2.46%
5			5	0.8588	0.8100	0.9077	0.8510	0.8075	0.9043	0.0176	4.58%	5.12%
10			5	0.1575	0.0000	0.3977	0.0511	0.0000	0.4550	0.0865	122.85%	82.60%
20			5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%
40			5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%
Angular (Co	rrected	d) Transfor	med Summ	ary								
Conc-µg/L		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	1.2600	1.2030	1.3170	1.2820	1.1960	1.3070	0.0204	3.63%	0.00%
2.5		-179717	5	1.2230	1.1750	1.2710	1.2350	1.1720	1.2710	0.0173	3.17%	2.94%
5			5	1.1880	1.1180	1.2590	1.1740	1.1170	1.2560	0.0255	4.80%	5.69%
10			5	0.3412	-0.0131	0.6954	0.2281	0.0384	0.7404	0.1276	83.63%	72.92%
20			5	0.0381	0.0376	0.0386	0.0384	0.0375	0.0384	0.0002	1.03%	96.98%
40			5	0.1039	0.0784	0.1295	0.0982	0.0846	0.1295	0.0092	19.81%	91.75%
Proportion N	Norma	l Binomials										
Conc-µg/L		Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0		LC	164/176	151/170	142/164	163/177	170/185					
2.5			168/184	164/184	169/195	177/198	141/166					
5			147/175	170/188	148/166	130/161	177/208					
10			86/189	48/191	9/176	5/167	0/170					
20			0/174	0/170	0/170	0/170	0/178					

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Report Date: Test Code/ID: 09 Feb-23 15:38 (p 5 of 6) 230123mgrd / 03-3591-1122

Bivalve Larva	al Surv	ival and D	evelopmen	t Test							V	Vood E&IS
Analysis ID: Analyzed:	09 Fe	49-6049 b-23 15:36	Ana		ametric-Con	itrol vs Treat		Stat	IS Version: us Level:	CETISv2. 1 002-883-3		
Edit Date:	09 Fe	b-23 15:31	MDS	Hasn: 500	08/EE/F24	184A9ED642	293508824	31C Edit	or ID:	002-003-3	007-0	
Data Transfo	rm		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	ALCOHOLD DE COLO	PMSD
Angular (Corr	rected)		C > T				20	40	28.28	***	0.07956	8.37%
Dunnett Mult	tiple Co	omparison	Test									
Control	vs	Conc-µg/L	_ df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(
Lab Control		2.5	8	-1.6	2.362	0.1642	CDF	0.9973		ficant Effect		
		5	8	-0.1881	2.362	0.1642	CDF	0.8829		ficant Effect		
		10	8	-0.4976	2.362	0.1642	CDF	0.9397		ficant Effect		
		20	8	0.5329	2.362	0.1642	CDF	0.6325		ficant Effect		
		40*	8	14.25	2.362	0.1642	CDF	<1.0E-05	Significant	Effect		
ANOVA Table	е											
Source		Sum Squa	ares	Mean Squ	ıare	DF	F Stat	P-Value	Decision(
Between		4.35713		0.871427		5	72.09	<1.0E-05	Significant	Effect		
Error		0.290128		0.0120887		24	_					
Total		4.64726				29						
ANOVA Assu	umptio	ns Tests										
Attribute		Test				Test Stat	Critical	P-Value	Decision(α:1%)		
Variance		Bartlett Eq	uality of Va	riance Test		5.252	15.09	0.3859	Equal Var	iances		
Distribution		Shapiro-W	ilk W Norm	ality Test		0.9741	0.9031	0.6550	Normal Di	stribution		
Survival Rate	e Sumr	nary										
Conc-µg/L		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	0.9508	0.9017	1.0000	0.9617	0.8962	1.0000	0.0177	4.16%	0.00%
2.5			5	0.9814	0.9298	1.0000	1.0000	0.9071	1.0000	0.0186	4.23%	-3.22%
5			5	0.9486	0.8812	1.0000	0.9563	0.8798	1.0000	0.0243	5.73%	0.23%
10			5	0.9607	0.9109	1.0000	0.9617	0.9126	1.0000	0.0179	4.17%	-1.03%
20			5	0.9421	0.9178	0.9664	0.9290	0.9290	0.9727	0.0087	2.08%	0.92%
40			5	0.1388	0.0758	0.2018	0.1421	0.0820	0.1913	0.0227	36.57%	85.40%
Angular (Cor	rrected) Transfori	med Summ	arv								
Conc-µg/L		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	1.3680	1.2320	1.5040	1.3740	1.2430	1.5340	0.0491	8.02%	0.00%
2.5		.75.50	5	1.4790	1.3280	1.6310	1.5340	1.2610	1.5340	0.0546	8.25%	-8.13%
5			5	1.3810	1.1960	1.5660	1.3600	1.2170	1.5340	0.0665	10.77%	-0.96%
10			5	1.4030	1.2470	1.5580	1.3740	1.2710	1.5340	0.0561	8.95%	-2.53%
20			5	1.3310	1.2740	1.3880	1.3010	1.3010	1.4050	0.0205	3.44%	2.71%
			5	0.3770	0.2837	0.4702	0.3865	0.2904	0.4526	0.0336	19.92%	72.44%
40												
40 Survival Rat	e Bino	mials										
	e Bino	mials Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
Survival Rat	e Bino		Rep 1 176/183	Rep 2	Rep 3	Rep 4	Rep 5					-
Survival Rat Conc-µg/L	e Binor	Code	176/183	170/183	Principal Company of the Company							
Survival Rate Conc-µg/L 0 2.5	e Bino	Code	176/183 183/183	170/183 183/183	164/183 183/183	177/183 183/183	183/183 166/183			,		
Survival Rate Conc-µg/L 0 2.5 5	e Bino	Code	176/183 183/183 175/183	170/183 183/183 183/183	164/183 183/183 166/183	177/183 183/183 161/183	183/183 166/183 183/183					
Survival Rate Conc-µg/L 0 2.5	e Bino	Code	176/183 183/183	170/183 183/183	164/183 183/183	177/183 183/183	183/183 166/183			,		

Conc-µg/L

Report Date: Test Code/ID:

Rankits

09 Feb-23 15:38 (p 6 of 6) 230123mgrd / 03-3591-1122

Wood E&IS **Bivalve Larval Survival and Development Test** CETISv2.1.3 Analysis ID: 04-7549-6049 Endpoint: Survival Rate **CETIS Version:** Analyzed: 09 Feb-23 15:36 Analysis: Parametric-Control vs Treatments Status Level: MD5 Hash: 50C087EE7F2484A9ED642935CB82431C Edit Date: 09 Feb-23 15:31 Editor ID: 002-883-387-8 Graphics 0.20 0.15 0.8 0.10 0.7 Survival Rate 0.05 Corr. Angle 0.6 0.00 0.5 -0.05 0.4 0.3 -0.10 0.2 -0.15 0.1 -0.20 0.0 -0.5 0.0 0.5 1.0 1.5 2.0 -1.5 -1.0 0 LC 2.5 10 20 40 -2.0

Bivalve Larval Survival and Development Test

Report Date: Test Code/ID: 09 Feb-23 15:38 (p 1 of 1) 230123mgrd / 03-3591-1122

Wood E&IS

Analysis ID: 07-0010-2705 Endpoint: Combined Proportion Normal CETIS Version: CETISv2.1.3

Analyzed: 09 Feb-23 15:35 Analysis: Untrimmed Spearman-Kärber Status Level: 1

Edit Date: 09 Feb-23 15:31 MD5 Hash: 0D7D7E46D0A7D6931FF9C7C14F7CBE32 Editor ID: 002-883-387-8

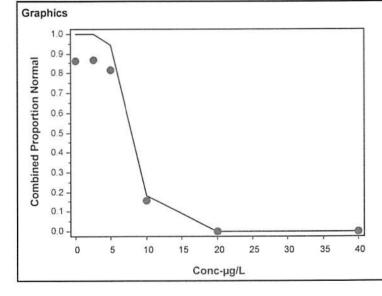
Spearman-Kärber Estimates

 Threshold Option
 Threshold
 Trim
 Mu
 Sigma
 EC50
 95% LCL
 95% UCL

 Control Threshold
 0.1385
 0.00%
 0.8884
 0.004433
 7.734
 7.577
 7.893

Combined Proportion Normal Summary				Calculated Variate(A/B)						Isotonic Variat	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	ΣΑ/ΣΒ	Mean	%Effect
0	LC	5	0.8614	0.8907	0.7760	0.9189	6.87%	0.00%	790/917	0.8645	0.00%
2.5		5	0.8671	0.8913	0.7705	0.9130	6.51%	-0.66%	819/944	0.8645	0.00%
5		5	0.8155	0.8087	0.7104	0.9043	8.75%	5.32%	772/945	0.8169	5.51%
10		5	0.1566	0.0492	0.0000	0.4550	124.01%	81.82%	148/929	0.1593	81.57%
20		5	0.0000	0.0000	0.0000	0.0000		100.00%	0/915	0.0000	100.00%
40		5	0.0000	0.0000	0.0000	0.0000		100.00%	0/915	0.0000	100.00%

Combined Prop	Combined Proportion Normal Binomials								
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5			
0	LC	164/183	151/183	142/183	163/183	170/185			
2.5		168/184	164/184	169/195	177/198	141/183			
5		147/183	170/188	148/183	130/183	177/208			
10		86/189	48/191	9/183	5/183	0/183			
20		0/183	0/183	0/183	0/183	0/183			
40		0/183	0/183	0/183	0/183	0/183			



Analyst: DQA: Ju

Bivalve Larval Survival and Development Test

All Matching Labs

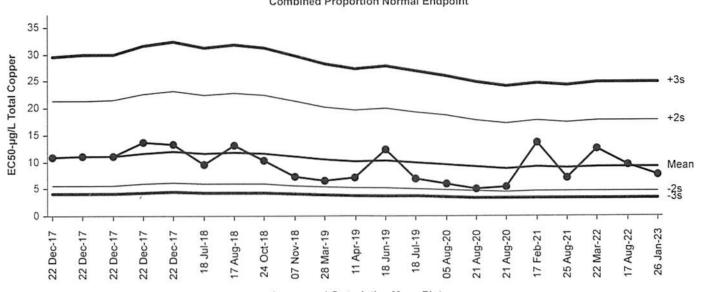
Test Type: Development-Survival Protocol: EPA/600/R-95/136 (1995) Organism: Mytilis galloprovincialis

Endpoint: Combined Proportion Normal

Total Copper Material: Source:

Reference Toxicant-REF

Bivalve Larval Survival and Development Test **Combined Proportion Normal Endpoint**



Lognormal Cumulative Mean Plot

Mean:

9.171

Count:

20

-2s Warning Limit: 4.72

-3s Action Limit: 3.38

+3s Action Limit: 24.9 Sigma: NA CV: 34.20% +2s Warning Limit: 17.8

Qualit	y Con	trol Data	3									
Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2017	Dec	22	15:00	10.95	1.776	0.5325			13-8076-0092	04-7666-8867	Wood E&IS
2			22	15:00	11.1	1.934	0.5757			18-9173-1279	00-8804-3805	Wood E&IS
3			22	15:00	11.13	1.958	0.5822			19-1537-3013	20-7428-0259	Wood E&IS
4			22	15:10	13.69	4.517	1.205			05-2148-4604	14-2190-9809	Wood E&IS
5			22	15:10	13.26	4.091	1.11			07-4924-1298	02-9536-6591	Wood E&IS
6	2018	Jul	18	12:30	9.593	0.4228	0.1356			17-4700-2672	19-1834-7581	Wood E&IS
7		Aug	17	18:15	13.11	3.937	1.074			06-6531-4070	03-3159-5721	Wood E&IS
8		Oct	24	14:25	10.37	1.203	0.3707			10-5049-1350	21-2167-7967	Wood E&IS
9		Nov	7	14:40	7.288	-1.882	-0.6911			21-2560-8966	08-1725-7308	Wood E&IS
10	2019	Mar	28	15:00	6.57	-2.6	-1.003			01-1205-3490	09-9916-0601	Wood E&IS
11		Apr	11	15:05	7.2	-1.97	-0.7276			09-5126-5022	11-0264-5925	Wood E&IS
12		Jun	18	15:35	12.33	3.159	0.8905			20-1050-4622	12-9168-6963	Wood E&IS
13		Jul	18	14:55	7	-2.171	-0.8125			14-0843-5203	16-2395-2147	Wood E&IS
14	2020	Aug	5	16:15	5.97	-3.2	-1.291			01-5363-1852	03-9719-1127	Wood E&IS
15			21	17:45	4.994	-4.176	-1.828			02-6167-5910	09-0147-8078	Wood E&IS
16			21	17:45	5.371	-3.799	-1.609			09-7758-0702	07-5383-0657	Wood E&IS
17	2021	Feb	17	16:05	13.75	4.58	1.219			02-0888-9810	19-5282-1839	Wood E&IS
18		Aug	25	16:50	7.088	-2.083	-0.775				09-6353-7527	
19	2022	Mar	22	16:15	12.55	3.376	0.943				17-5105-1124	
20		Aug	17	15:45	9.552	0.3814	0.1226			19-5652-2899	07-5236-6337	Wood E&IS
21	2023	Jan	26	0:00	7.734	-1.437	-0.5127			03-3591-1122	07-0010-2705	Wood E&IS

CETIS Test Data Worksheet

Report Date:

20 Jan-23 13:19 (p 1 of 1)

Wood E&IS

Test Code/ID:

230123mgrd / 03-3591-1122

Bivalve Larval Survival and Development Test

Start Date: End Date:

26 Jan-23 28 Jan-23

Species: Mytilis galloprovincialis

Protocol: EPA/600/R-95/136 (1995)

Sample Code: 23012 imgrd
Sample Source: Reference Toxicant

					_	# C	#	
onc-µg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
			1			170 35 191 34	0	A6 2/8/23
			2			35	0	75- 7-1
			3			191	48	
			4			34	0	
			5			167	5	
			6			164	0 48 0 5 142 170	
			7			185	170	
			8			164		
			9			26	151	
			10			171)	151	
			11			198	177	
			12			184	168	
			13			177	163	
			14			198	163 164 0	
			15			170	0	
			16			188	170	
			17			175	147	
			18			166	141	
			19			166	0	
			20			189	86	
			21			208	177	
			22			17	0	
			23			195	169	
			24			170	0	
			25			166	148	
			26			15	169 0 148	
			27			15	0	
			28			161	130	
			29			(84	0 130 164	
			30			170	0	

CETIS Test Data Worksheet

Report Date:

Test Code/ID:

20 Jan-23 13:19 (p 1 of 1) 230125mgrd / 03-3591-1122

Bivalve Larval Survival and Development Test

Wood E&IS

Start Date: End Date:

26 Jan-23 28 Jan-23 Species: Mytilis galloprovincialis

Protocol: EPA/600/R-95/136 (1995)

Sample Code:

230123mgrd

26

Sample Date: 26 Jan-23

Material: Total Copper

Sample Source: Reference Toxicant

Sample Station:

imple Date	. 2000	all-20		wateriai.	Total Copper			inple Station.
Conc-µg/L	Code	Ren	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	LC	1	14					
0	LC	2	10			143	130	+ recoort after settle
0	LC	3	6			. 1.2	,,,,	Lemon. Wild Size
0	LC	4	13					
0	LC	5	7					
2.5		1	12			100		
2.5		2	29					
2.5		3	23					
2.5		4	11					
2.5		5	18					
			17				-	
5		1						
5		2	16					
5		3	25					
5		4	28					
5		5	21					
10		1	20					
10		2	3					
10		3	8					
10		4	5					
10		5	15					
20		1	19					
20		2	24					
20		3	1					
20		4	30					
20		5	27					
40		1	9					
40		2	26					
40		3	4					
40		4	22					
40		5	2					

Qc: No

Analyst: Ab QA: SC

Water Quality for Bivalve Development

Client: Internal
Project ID: Cu Reftox
Test No. 230126mgrd

Test Species: M. galloprovincialis
Start Date/Time: 1/26/2023 | 1730

End Date/Time: 1/36/2023 \600

Test Conc.	Water Quality Measurements							
μg/L Cu)	Parameter	0hr	24hr	48hr				
	Temp. (°C)	15.5	15.5	15.4				
	Salinity (ppt)	33.4	33.3	33.5				
Lab Control	pH (units)	7.80	7.64	7.70				
	DO (mg/L)	9.1	8.4	8.4				
	Temp. (°C)	15.7	15.3	15.4				
2.5	Salinity (ppt)	33.4	33.4	33.6				
2.5	pH (units)	7.86	7.70	7.74				
	DO (mg/L)	Q.1	8.5	8.4				
	Temp. (°C)	15.6	15.3	15.3				
	Salinity (ppt)	33.6	33.5	33.6				
5	pH (units)	7.87	7.73	7.75				
	DO (mg/L)	8.2	8.5	8.5				
	Temp. (°C)	15.7	is.3	15.3				
10	Salinity (ppt)	33.4	33.5	33.6				
10	pH (units)	7-87	7.75	7.77				
	DO (mg/L)	8.2	8.5	8.5				
	Temp. (°C)	15-6	15.3	15.3				
20	Salinity (ppt)	33.4	33.3	33.5				
20	pH (units)	7.80	7.77	7.79				
	DO (mg/L)	8.2	8,5	8.4				
	Temp. (°C)	15-le	15.3	15.3				
40	Salinity (ppt)	33.5	32.4	33.6				
40	pH (units)	7-86	7.79	7.80				
	DO (mg/L)	8.2	8.6	8.5				
	Temp. (°C)							
	Salinity (ppt)							
	pH (units)							
	DO (mg/L)							
	Tech Initials:	HK-	RV	Ab				

	Tech Initials:	HY-	RV	A6
Source of Animals:	Mission Bay		Date Received: _	1/26/23
Comments:				
QC Check:	A6 21913		Final Review:	Sc 3/9/23

Embryo-Larval Development Test

Stock Preparation Worksheet

Test Species:

M. galloprovincialis

Test Date: 1/26/2023

Analyst:

Batch ID:

1/26/23 Mirson Bay Collection

Test Type:

48hr Bivalue Development

Task	
Spawning Induction	1430
Spawning Begins	1510
# Males/# Females	515
Spawn Condition	good
Fertilization Initiated	1600
Fertilzation End/Eggs Rinsed	1620/1640
Embryo Counts	1700
Test Initiation	1730

Embryo Density Counts

20 # per 100 μL

Stock #	Stock Volume (mL)	Rep 1	Rep 2	Rep 3	Rep 4	Mean #/100 μL	Mean #/mL (x10)
Stock 1						76	, , , ,
Stock 2	500						
Stock 3	500	21	19	11	13	1.6	800

Cell Division:

	% Divided
Stock 1	
Stock 2	90
Stock 3	98

Selected Stock:	3

Stock Density

Dil Factor

Adjust selected embryo stock to 500 embryos/mL.

Dilution Factor = Stock Density/mL/500

₹00 500

1,6

In 10 mL sample volume add 500 μ l of 500 embryo/ml stock to obtain 25 embryos/mL in test vials.

Notes:

TO,=195, TO2=+75, TO3=175, TO4=192, TOS=184

X= 183

QA Review:

AG 2/9/23

Final Review: 103/9/

Acute Menidia
Reference Toxicant Test

CETIS Summary Report

Report Date: Test Code/ID: 09 Feb-23 13:20 (p 1 of 1) 230127mbra / 17-6301-6665

100,000,000,000		
WSP	Labora	torv

RV

Inland Silvers	ide 96-h Acute	Survival Te	st									WSP L	aborato	ry
Batch ID: Start Date: Ending Date: Test Length:	08-1283-4876 27 Jan-23 11:30 31 Jan-23 10:50 95h	0 Pro	t Type: tocol: ecies: on:	Survival (96h) EPA/821/R-02-0 Menidia beryllin				Anal Dilue Brine Sour	ent: [e: [Not A	d Natural S pplicable ic Biosyste		I 3 Age: 4	3d
Sample ID: Sample Date: Receipt Date: Sample Age:	27 Jan-23		erial: S (PC):	230127mbra Total Copper Internal				Proje Sour Stati	ce:	Refere	ence Toxic	ant		
Multiple Com	parison Summa	ary												
Analysis ID 06-4106-3274	Endpoint 96h Survival Ra	ate		arison Method Many-One Rank	Sum Test		✓	NOEL 100	LOEL 200	_	TOEL 141.4	PMSD 26.1%		S
Point Estimat Analysis ID 20-8516-7388	e Summary Endpoint 96h Survival Ra	ate		Estimate Metho			✓	Level LC50	μ g/L 168.3		95% LCL 142.4	95% UCL 198.9		S
Test Accepta	bility					TAC	Lii	mits						_
Analysis ID	Endpoint		Attrib	ute	Test Stat			Upper	Overla	ар	Decision			
	96h Survival Ra 96h Survival Ra			ol Resp ol Resp	1	0.9 0.9		<< <<	Yes Yes		Passes Cri Passes Cri			
96h Survival	Rate Summary					- 2-1.								
Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min		Max	Std E	rr	Std Dev	CV%	%Effe	ct
0 25 50 100 200 400	LC	4 4 4 4 4	1.000 0.950 1.000 0.950 0.300 0.000	0.7909 0.1.0000 0.7909 0.2512	1.0000 1.1090 1.0000 1.1090 0.8512 0.0000	1.0000 0.8000 1.0000 0.8000 0.0000		1.0000 1.0000 1.0000 1.0000 0.6000 0.0000	0.0000 0.0500 0.0000 0.0500 0.1732 0.0000	0 0 0 2	0.0000 0.1000 0.0000 0.1000 0.3464 0.0000	0.00% 10.53% 0.00% 10.53% 115.47%	0.00% 5.00% 0.00% 5.00% 70.00% 100.00	%
96h Survival	Rate Detail						_	MD	5: B54F	7C8F	91CF838B	E7F4684E9	0F258C	24
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4									
0 25 50 100 200 400	LC	1.0000 0.8000 1.0000 1.0000 0.0000	1.000 1.000 1.000 0.800 0.000	1.0000 1.0000 1.0000 1.0000 0 1.0000 0 0.6000	1.0000 1.0000 1.0000 1.0000 0.6000 0.0000									

Report Date: Test Code/ID: 09 Feb-23 13:20 (p 1 of 2) 230127mbra / 17-6301-6665

WSP Laboratory Inland Silverside 96-h Acute Survival Test Analysis ID: 06-4106-3274 CETIS Version: CETISv2.1.3 Endpoint: 96h Survival Rate Analyzed: 09 Feb-23 13:18 Analysis: Nonparametric-Control vs Treatments Status Level: Edit Date: 09 Feb-23 13:14 MD5 Hash: B54F7C8F91CF838BE7F4684E90F258C4 Editor ID: 002-883-387-8 **Data Transform** LOEL Tox Units MSDu **PMSD** Alt Hyp NOEL TOEL 26.09% C>T 200 141.4 0.2609 Angular (Corrected) 100 Steel Many-One Rank Sum Test df Test Stat Critical P-Value Decision(a:5%) Control Conc-µg/L Ties P-Type Lab Control 25 6 16 10 1 CDF 0.5661 Non-Significant Effect Non-Significant Effect 50 6 18 1 CDF 0.8000 10 100 6 16 10 1 CDF 0.5661 Non-Significant Effect 0 0.0350 Significant Effect 200* 6 10 10 CDF **ANOVA Table** Source Sum Squares Mean Square DF F Stat P-Value Decision(a:5%) 4 7.7E-05 Significant Effect Between 1.86114 0.465285 13.39 Error 0.521406 0.0347604 15 19 Total 2.38255 **ANOVA Assumptions Tests** Attribute Test Stat Critical P-Value Decision(a:1%) Bartlett Equality of Variance Test Variance Indeterminate Shapiro-Wilk W Normality Test 0.8456 0.866 0.0045 Non-Normal Distribution Distribution 96h Survival Rate Summary Std Err CV% %Effect Conc-µg/L Code Count Mean 95% LCL 95% UCL Median Min Max LC 1.0000 1.0000 0.0000 0.00% 0.00% 0 4 1.0000 1.0000 1.0000 1.0000 0.8000 1.0000 0.0500 10.53% 5.00% 25 4 0.9500 0.7909 1.0000 1.0000 0.00% 1.0000 1.0000 0.0000 0.00% 50 4 1.0000 1.0000 1.0000 1.0000 5.00% 100 0.7909 1.0000 1.0000 0.8000 1.0000 0.0500 10.53% 4 0.9500 115.47% 70.00% 200 4 0.3000 0.0000 0.8512 0.3000 0.0000 0.6000 0.1732 100.00% 0.0000 0.0000 0.0000 400 4 0.0000 0.0000 0.0000 0.0000 Angular (Corrected) Transformed Summary %Effect Conc-µg/L Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% 0.0000 0.00% 0.00% LC 1.3450 1.3450 1.3460 1.3450 1.3450 1.3450 0 4 0.0595 9.26% 4.43% 25 1.2860 1.0960 1.4750 1.3450 1.1070 1.3450 4 0.00% 0.0000 0.00% 50 4 1.3450 1.3450 1.3460 1.3450 1.3450 1.3450 0.0595 9.26% 4.43% 100 4 1.2860 1.0960 1.4750 1.3450 1.1070 1.3450

58.69%

83.24%

68.62%

0.00%

0.5558

0.2255

0.5558

0.2255

4

4

-0.0511

0.2255

1.1630

0.2256

0.2255

0.2255

0.8861

0.2255

0.1907

0.0000

200

400

0.4

0.3 0.2

0.1

0.0

0 LC

25

50

100

Conc-µg/L

200

Report Date:

-0.5

0.0

Rankits

0.5

1.0

1.5

09 Feb-23 13:20 (p 2 of 2)

Test Code/ID: 230127mbra / 17-6301-6665 WSP Laboratory Inland Silverside 96-h Acute Survival Test CETISv2.1.3 **CETIS Version:** 06-4106-3274 Endpoint: 96h Survival Rate Analysis ID: Nonparametric-Control vs Treatments Status Level: Analyzed: 09 Feb-23 13:18 Analysis: Editor ID: 002-883-387-8 Edit Date: 09 Feb-23 13:14 MD5 Hash: B54F7C8F91CF838BE7F4684E90F258C4 Graphics 1.0 0.3 0.9 0.2 0.8 0.7 96h Survival Rate 0.1 Corr. Angle 0.6 0.5 0.0

-0.1

-0.2

-0.3

-1.5

-1.0

400

Report Date: Test Code/ID: 09 Feb-23 13:20 (p 1 of 1)

230127mbra / 17-6301-6665

Inland Silverside 96-h Acute Survival Test

WSP Laboratory

Analysis ID: 20-8516-7388 Analyzed:

09 Feb-23 13:18

Endpoint: 96h Survival Rate

CETIS Version:

Status Level:

CETISv2.1.3

Edit Date: 09 Feb-23 13:14 Analysis: Trimmed Spearman-Kärber MD5 Hash: B54F7C8F91CF838BE7F4684E90F258C4

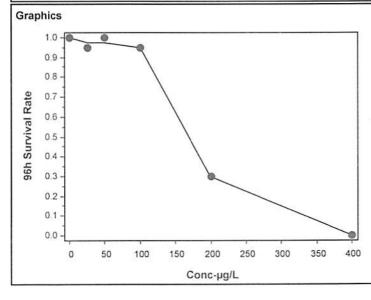
Editor ID:

002-883-387-8

Trimmed Spearman-Kärber Estimates	,
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Threshold Option	Threshold	Trim	Mu	Sigma	LC50	95% LCL	95% UCL	
Control Threshold	0	2.50%	2.226	0.03628	168.3	142.4	198.9	

96h Survival Rate Summary			Calculated Variate(A/B)							Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	ΣΑ/ΣΒ	Mean	%Effect
0	LC	4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	20/20	1.0000	0.00%
25		4	0.9500	1.0000	0.8000	1.0000	10.53%	5.00%	19/20	0.9750	2.50%
50		4	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	20/20	0.9750	2.50%
100		4	0.9500	1.0000	0.8000	1.0000	10.53%	5.00%	19/20	0.9500	5.00%
200		4	0.3000	0.3000	0.0000	0.6000	115.47%	70.00%	6/20	0.3000	70.00%
400		4	0.0000	0.0000	0.0000	0.0000		100.00%	0/20	0.0000	100.00%



Inland Silverside 96-h Acute Survival Test

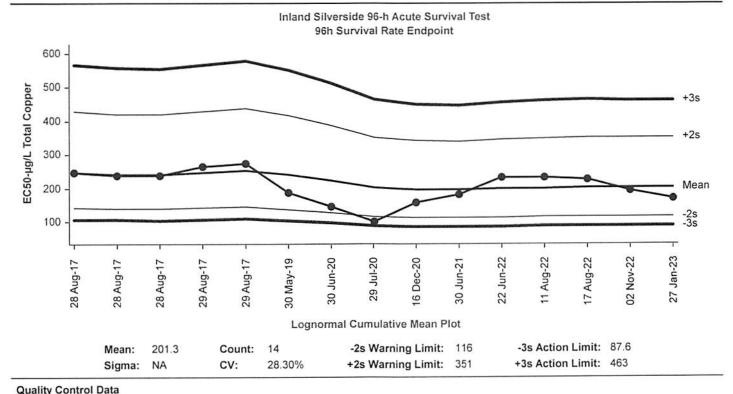
Test Type: Survival (96h)

Protocol: EPA/821/R-02-012 (2002)

Organism: Menidia beryllina

Material: Total Copper

Source: Reference Toxicant-REF



Quan	ty Con	troi Date	1									
Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2017	Aug	28	14:45	246.2	44.89	0.7253			05-6221-4414	04-6865-3585	Wood E&IS
2		15	28	15:00	237.8	36.5	0.6004			02-5647-9246	16-8444-3541	Wood E&IS
3			28	15:15	237.8	36.5	0.6004			16-2996-1022	08-5747-0065	Wood E&IS
4			29	14:30	265.3	63.92	0.9936			19-4407-9949	10-4418-8065	Wood E&IS
5			29	14:45	274.8	73.45	1.121			14-6406-6518	18-3021-9635	Wood E&IS
6	2019	May	30	17:05	186.6	-14.73	-0.2739			07-8855-3464	12-7825-1032	Wood E&IS
7	2020	Jun	30	11:45	144	-57.29	-1.207			02-0812-0179	20-8741-5473	Wood E&IS
8		Jul	29	11:10	100	-101.3	-2.522	(-)		19-6384-0247	04-6707-5997	Wood E&IS
9		Dec	16	15:00	156.9	-44.42	-0.8983			15-3442-5827	18-4429-0647	Wood E&IS
10	2021	Jun	30	12:00	182	-19.35	-0.3641			05-6222-4958	12-0440-3448	Wood E&IS
11	2022		22	15:35	232	30.68	0.5112			04-2944-1216	14-9568-5378	Wood E&IS
12		Aug	11	16:30	230.8	29.5	0.4927			10-3814-2317	20-1444-6265	Wood E&IS
13		•	17	16:05	224.5	23.15	0.3922			19-2363-4565	08-2602-5211	Wood E&IS
14		Nov	2	15:30	193.2	-8.154	-0.149			00-5801-8365	09-9579-7393	WSP Laboratory
15	2023	Jan	27	11:30	168.3	-33.03	-0.6458			17-6301-6665	20-8516-7388	WSP Laboratory

96hr Marine Acute Test with 48hr Renewal

Client:	Client: Internal roject ID: Cu Reference Toxicant						Test Species	: M. ber	yllina				
Project ID:	Cu Refe	erenc	e Tox	icant			Start Date/Time	: 1/27/2	023	1130			
Test No.	230127	mbr.	a				End Date/Time	: 1/31/20	023	HOGH	K- 17	020	
Cu	Rep			Count	s			Water 0	Quality				
(µg/L)		0	24	48	72	96	Parameter	0	24	48f	48i	72	96
	Α	5	5	5	5	5	Temp. (°C)	26.0		250	24.2	25.8	25.9
Lab Control	В	5	5	5	5	5	Salinity (ppt)	38.88		31.2	34.0	31.5	31.2
Lab Control	С	5	5	5	5	5	pH (units)	7.83	7.74	2.95	7.98	7.95	7.83
	D	5	5	5	5	5	DO (mg/L)	7.2	6.8	6.9	7,4	6.9	6.6
	Α	5	5	Ś	5	4	Temp. (°C)	24.0	26.5	24.9	3241	25.9	25.5
25	В	5	5	5	5	5	Salinity (ppt)	30.5	30.9	31.4	30,4	1931.4	
25	С	5	5	5	5	5	pH (units)	7.89	7.82	7.95	7.98	7.95	7.81
	D	5	5	5	5	2	DO (mg/L)	7.2	6.7	6.8	7.3	6.7	6.5
	А	5	5	5	5	5	Temp. (°C)	25.9	26.5	24.8	24.1	15.7	25.5
	В	5	5	5	5	5	Salinity (ppt)	30.4	30.8	31.5		31.7	31.9
50	С	5	5	5	5	8	pH (units)	7.88	7.86	7.95	7.96	7.95	6 HK
	D	5	5	5	5	5	DO (mg/L)	7.2	6.8	6-9	7.3	6.6	6.6
	А	5	5	5	5	5	Temp. (°C)	26.0	26.5		24.2	25.9	25.6
11222	В	5	5	4	4	4	Salinity (ppt)	30.3	30.5	309	29.8	21.0	31-1
100	С	5	5	5	5	5	pH (units)	7.90	7.86	7.93	7.96	7.95	7.88
	D	5	5	5	5	5	DO (mg/L)	7.2	6.7	6.8	7.3	6.7	6-6
	А	5	0	-		_	Temp. (°C)	74.0	26.5	24.7	24.2	25.9	25.7
10 MANAGES	В	5	0	_		-	Salinity (ppt)	36.2	30.4	3311	329.8	31.1	31-8
200	С	5	3	3	C.	3	pH (units)	7.88	7.85	7.93	7.93	7.93	7-88
	D	5	3	3	3	3.	DO (mg/L)	7.2	67	6.9	7.3	47	6.4
	A	5	0		1		Temp. (°C)	240	26.5				_
	В	5	0	1	get-		Salinity (ppt)	30.1	30.3		AV		
400	С	5	0	/	De	cer	pH (units)	7.83	7:85		7	rad	
	D	5	0.	/			DO (mg/L)	7.2	6.3	/	×		
Tec	th Initials:	TE	- AL	A	MK	HK	Tech Initial	s: T-	Des	A6	M	RU	HK
	QC				1111	11.1					1770		
Date Ar	nimals Red			26	12	5	Feedings	0	. 24	48	72	96	JHK
Age of Anim			1	13	9		Initials (AM):	/	A6	Ale	XC	BU	en.
you ₩ corTulUllillillilli		. comunit 1947					Initials (PM):	PN	A6	Ale	AX	/	
Comments:											HKE	Non Le	
												000	-21
										0		11	
QC Check:	JE	- 2	191	23				Fina	al Review:	KV	317	123	

Memo: Results from the 2022 and 2023 Winter Monitoring Events for the SIYB Dissolved Copper TMDL	April 2023
Appendix D	
2023 Winter Monitoring TIE Technical Memorandum	



WSP USA Environment & Infrastructure Inc. (formerly Wood Environment & Infrastructure Solutions, Inc.) 9177 Sky Park Court San Diego, CA 92123

April 18, 2023

Ms. Karen Holman Port of San Diego 3165 Pacific Highway San Diego, CA 92101

Subject: Mussel Embryo Toxicity Identification Evaluation (TIE) Results for 2023 Winter Monitoring for the SIYB Dissolved Copper TMDL – Site SIYB-1

Sampling and Analysis Methods

A winter monitoring event supporting the Shelter Island Yacht Basin (SIYB) Dissolved Copper Total Maximum Daily Load (TMDL) was conducted on January 25, 2023. Consistent with prior TMDL monitoring efforts, surface water samples (1-meter below the surface) were collected from six stations within SIYB (SIYB-1 at the head of the basin through SIYB-6 at the mouth of the basin) and two reference stations in the main channel of San Diego Bay (SIYB-REF-1 and SIYB-REF-2).

Samples of surface water from Sites SIYB-1 through SIYB-6 and SIYB-REF-1 were tested for toxicity using (1) a 48-hour chronic bioassay test using mussel larvae (Mytilus galloprovincialis) and (2) a 96-hour acute bioassay test using inland silverside minnow (Menidia beryllina). In addition to toxicity, water samples were also analyzed for total and dissolved copper and zinc. dissolved organic carbon (DOC), total organic carbon (TOC), and total suspended solids (TSS).

Statistically significant effects¹ were observed to mussel embryo development in site water from the inner portion of SIYB during the 2023 winter monitoring event. Toxicity was observed at Sites SIYB-1 and SIYB-2 with a 9.7 and 9.3% effect, respectively relative to that observed in the laboratory controls based on the combined normal/surviving embryo endpoint. Toxicity to mussel embryos or larval fish was not observed in undiluted, unfiltered samples collected from any of the other stations in SIYB or the reference station (SIYB-REF-1). Consistent with previous events, a gradient of dissolved copper was observed in SIYB with the highest concentration of 7.7 micrograms per liter (µg/L) corresponding with the highest percent effect observed for the mussel embryo test at Site SIYB-1.

In addition to routine standard toxicity testing, a Toxicity Identification Evaluation (TIE) was conducted during the winter 2023 monitoring event, following up on a prior TIE performed on water collected from the same location (SIYB-1) in August of 2022. The original TIE treatments were considered Phase I toxicant characterization methods to identify the general characteristics and class(es) of contaminants responsible for toxicity. Based on the specificity of the ethylenediaminetetraacetic acid (EDTA) treatment and supporting results from the other Phase I methods of the initial TIE, there was a high degree of confidence that the toxicant of interest in unmanipulated receiving water from SIYB-1 was a cationic trace metal. Additional evidence

¹ Note that effects were significant using the USEPA 1995 traditional flow-chart statistical methods (i.e., Dunnett multiple comparison test). However, these effects were not significant using the Test of Significant Toxicity (TST) approach (USEPA, 2010).

suggested copper was the primary toxicant of concern based on measured concentrations of dissolved copper in the unmanipulated sample relative to toxicity effects data reported in the literature for mussel embryos, along with concurrent reference toxicant results using copper chloride, both suggesting thresholds for toxicity due to copper were exceeded in the water from the inner portion of SIYB.

Based on the results of the Phase I testing performed in August 2022, a targeted Phase I characterization approach, along with Phase II/III identification/confirmation treatments were applied during the winter 2023 sampling event as summarized herein.

TIE Approach and Methods

Phase I Toxicity Identification Evaluation (Targeted TIE)

Evaluating the cause of toxicity in site water from SIYB was performed in accordance with a set of standardized TIE procedures following United States Environmental Protection Agency (USEPA) guidance (USEPA, 1996). The Phase I TIE treatments conducted in August 2022 consisted of seven different standard treatments, while a more targeted Phase I approach was performed in January 2023 based on results obtained from the initial TIE indicating copper as a primary toxicant of interest (Table 1). The targeted TIE in January 2023 included addition of EDTA due to the high specificity of this treatment for cationic trace metals. These procedures included re-running a 0.45- μ m filtered treatment as well as metal chelation treatments (10 and 25 milligrams per liter [mg/L] EDTA) on samples from SIYB-1 and testing concurrently with routine toxicity tests.

Table 1. Phase I Toxicant Characterization Treatments for SIYB

Phase I Procedure	Primary Compounds Addressed/Purpose	Summer 2022	Winter 2023
Baseline (unmanipulated sample)	None. Used for treatment effectiveness comparison. Two baseline samples were tested in different areas among all test chambers.	х	Х
Filtration (0.45 μm)	Pollutants associated with particles, and algae and/or microorganism effects	х	Х
Aeration	Volatile or oxidizable compounds; surfactants	Х	
C8 Column Solid-Phase Extraction	Non-polar organics and metal chelates. *These columns can remove some metals, so this step helps verify metals versus organics.	х	-
C8 Column Solvent Elution	Recovers toxicity due to non-polar organics	Х	
Cation Exchange Column	Removes cationic compounds including various trace metals	Х	
Oxidant Reduction (STS Addition) – 10 and 25 mg/L	Constituents reduced by sodium thiosulfate; also chelates some cationic trace metals	Х	
Metal Chelation (EDTA Addition) – 10 and 25 mg/L	Divalent cationic metals	Х	Х

Notes: μm = micrometer(s); EDTA = ethylenediaminetetraacetic acid; mg/L = milligram(s) per liter; -- not tested; SIYB = Shelter Island Yacht Basin; STS = sodium thiosulfate

Each of the Phase I treatments summarized in **Table 1** were performed on both the SIYB-1 sample and clean laboratory water as a method control to assess whether the treatments themselves may cause negative effects. The TIE tests were performed using 5 replicates for each treatment, consistent with that used for the TMDL compliance tests. Each replicate was also assigned a random number, and vials for the entire TIE placed in randomized numeric order in the environmental chamber throughout the test period. The vials remained in random order throughout the scoring process to endure a "blind" unbiased approach.

Phase II/III Toxicity Identification/Confirmation (Copper Spiking Study)

TIE Phases II and III were conducted to specifically define and confirm those constituents responsible for toxicity in a sample following characterization of the class of contaminant during Phase I (USEPA, 1993a,b). Based on the Phase I TIE results for SIYB-1 during the summer 2022 sampling event, a targeted combined Phase II/III approach was performed to specifically further identify and confirm the degree to which copper may or may not be contributing to mussel embryo toxicity in the receiving water collected in the winter of 2023. These steps focused on conducting a series of copper addition experiments to the ambient water of SIYB. A series of 5 concentrations of copper were incrementally added to three samples as follows:

- 1) Undiluted water from SIYB-1;
- 2) 50% diluted water from SIYB-1; and
- 3) Clean filtered laboratory seawater. This third sample is equivalent to a standard copper reference toxicant test used to evaluate the sensitivity of mussel embryos over time at the WSP laboratory as a standard quality assurance (QA) and quality control (QC) measure.

A summary of the Phase II/III Toxicant Identification/Confirmation Copper Spiking Study and associated concentrations is provided in **Table 2**.

Table 2. Phase II/III Toxicant Identification/Confirmation – Copper Spiking Study

Procedure	Concentrations
Cu Spike in 100% Undiluted Water from SIYB-1	0, 2.5, 5.0, 10.0, 20.0, and 40.0 μg/L Cu
Cu Spike in 50% Diluted Water from SIYB-1	0, 2.5, 5.0, 10.0, 20.0, and 40.0 μg/L Cu
Cu Spike in Filtered Laboratory Control Water (Standard Reference Toxicant Test)	0, 2.5, 5.0, 10.0, 20.0, and 40.0 μg/L Cu

Notes: μg/L = microgram(s) per liter; % = percent; Cu = copper

A comparison of the toxic dose responses between these three samples was used to assess the degree of toxicity related specifically to copper in the ambient undiluted seawater. For example, if the median effective concentrations ($EC_{50}s$) for copper are similar among all three samples, results would suggest that most or all of the observed toxicity in the SIYB-1 water may be attributable to copper. If adding copper to the ambient samples from SIYB results in a flatter curve (less toxic) than that observed in the clean laboratory seawater, then one would conclude that either the site water has a stronger binding capacity for copper, or that some other compound must be contributing to the observed effects. If addition of copper to the site water results in a greater effect than expected, then additive toxicity with other compounds would be suggested.

Measurements of DOC and pH were also measured in both the laboratory control water and all samples from SIYB to assess the potential for copper binding.

TIE Results

Phase I Toxicity Identification Evaluation (Targeted TIE)

A summary of toxicity results for the Phase I TIE conducted in January 2023 is shown in **Figure 1**. A summary of dissolved copper concentrations is provided in **Figure 2** (see **Appendix D**). Raw data and statistical analyses for the Phase I TIE are provided for reference in **Appendix A**. Results for all method controls and unmanipulated laboratory control water resulted in ≥ 90% mean proportion normal embryo development indicating no negative effects on the embryos due to any of the treatments applied. All controls also resulted in > 80% mean combined proportion normal development and survival rate, further demonstrating that treatments did not have detrimental effects to mussel embryos. TIE results presented in **Figure 1** summarize the mean % combined proportion normal development of surviving embryos. Error bars for each treatment represent the 95% confidence intervals.

A baseline test conducted on the unmanipulated SIYB-1 sample resulted in a toxic effect of 13.3% for the combined proportion normal and survival endpoint compared to the laboratory control. This was similar to the effects observed in the separate sample tested at the same time for the routine TMDL winter monitoring toxicity tests, which had an effect of 9.7%. Filtration of the sample to 0.45 micrometers to remove particulates and associated contaminants bound to the particles resulted in a comparable toxic effect of 10.3% for combined proportion normal survivors. This result reconfirms that the toxic compound of interest is in a dissolved water-soluble form. The measured dissolved copper in the filtered sample (7.0 μ g/L) was very similar to that measured in the same sample filtered in the field (7.7 μ g/L) for the routine TMDL monitoring indicating consistency in the methods.

The EDTA treatment is one of the most contaminant-specific Phase I TIE methods. EDTA is an organic chelating agent that preferentially binds with divalent cationic metals, such as copper, nickel, lead, zinc, cadmium, mercury, and other transition metals (Garvan, 1964). Studies have demonstrated that when a metal is bound to the EDTA molecule, the toxicity of the metal is greatly reduced (e.g., Sunda and Guilliard, 1976).

Consistent with results observed during the TIE conducted in the summer of 2022, toxicity in the winter 2023 sample from SIYB-1 was again removed following the addition of EDTA, as shown in **Figure 1**. The mean proportion of normal surviving embryos in the EDTA-treated samples was comparable to that in the laboratory method controls.

The concentrations of dissolved copper in the 10 and 25 mg/L EDTA treatments were 0.25 and 0.23 μ g/L respectively as shown in **Figure 2**, confirming that this treatment effectively bound the freely dissolved fraction of this trace metal. These concentrations of copper are well below that expected to cause toxicity to mussel embryos and corresponded with the reduced effects observed following addition of EDTA to the SIYB-1 sample.

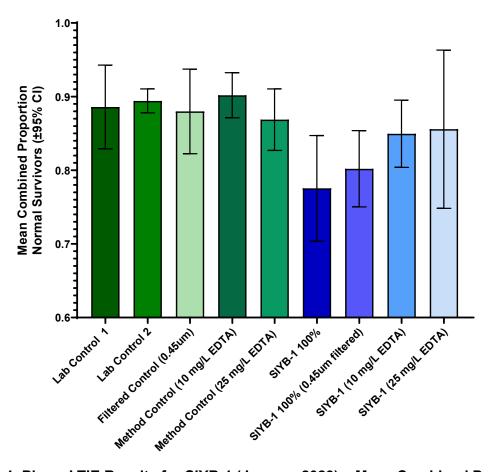


Figure 1. Phase I TIE Results for SIYB-1 (January 2023) – Mean Combined Proportion Normal Surviving Embryos ±95% Confidence Intervals

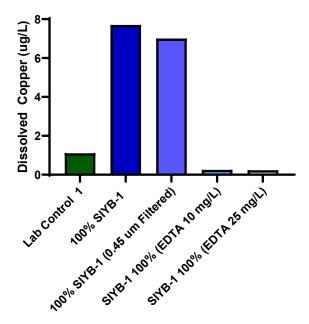


Figure 2. Phase I TIE Results for SIYB-1 (January 2023) – Dissolved Copper Concentrations

Phase II/III Toxicity Identification Evaluation (Copper Spiking Study)

A summary of toxicity results for the Phase II/III TIE copper spiking study is shown in **Figure 3**. Raw data and statistical analyses are provided for reference in **Appendix B**.

The copper toxicity dose response curves for all three treatments tested (laboratory control water, 50% diluted SIYB-1 sample, and undiluted SIYB-1 sample) are shown together on the same figure for comparison. The curves for all three treatments are similar, although a slightly steeper curve was observed for the laboratory control water spiked with copper indicating greater sensitivity. Resulting EC_{50} values for dissolved copper were 9.9 μ g/L in the laboratory control water and ranged from 11.3 to 11.9 μ g/L in the two copper-spiked SIYB-1 samples.

The sensitivity of mussels to copper was slightly greater in laboratory control water as would be expected given a lower concentration of natural organic material in filtered laboratory water compared to ambient waters thereby reducing the bioavailability and toxicity of copper and other trace metals. The measured concentration of DOC in the laboratory control water (1.1 mg/L) was slightly less than that in the SIYB-1 sample (1.3 mg/L) collected during the winter 2023 sampling event.

The close correspondence between the three different dose response curves and EC_{50} values provides strong evidence that dissolved copper alone is the primary toxicant of concern. If a different toxicant was present in the SIYB sample these curves and EC_{50} values would not be expected to be so similar.

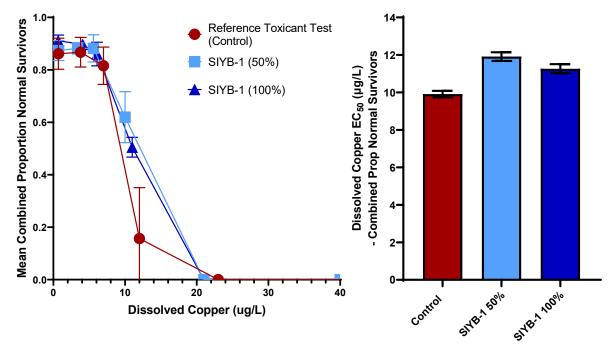


Figure 3. SIYB TIE Phase II\III Copper Spiking Study – Copper Dose Response for Proportion Normal Surviving Embryos (left) and Calculated Copper EC₅₀ Values ±95% CI (right)

Conclusions

Multiple lines of evidence indicate that dissolved copper is a principal cause of toxicity to mussel embryos exposed to samples from SIYB-1. Key observations supporting this conclusion are as follows:

- 1. The addition of EDTA during both the summer 2022 and winter 2023 monitoring events successfully removed toxicity in water from SIYB-1. This treatment is highly specific at chelating and thus reducing the toxicity of cationic trace metals, including copper.
- 2. Concentrations of dissolved copper are consistently elevated at SIYB-1 above values found to cause toxicity to mussel embryos as reported in the literature and based on results from the TMDL Monitoring Program (**Figure 4**).
- 3. Addition of copper to clean laboratory water and site water from SIYB-1 (Phase II/III TIE) resulted in comparable dose response curves and EC_{50} values. If another toxicant was present, these curves and EC_{50} values would be expected to diverge from each other.
- 4. Toxicity of water from SIYB is consistently observed above a threshold of approximately 8 μg/L as shown in **Figure 4**. The dissolved copper measurement of 7.7 μg/L at SIYB-1 during the winter 2023 sampling event is just below this threshold, thus likely explaining why there was only subtle chronic toxicity observed during this event.
- 5. The statistical correlation between dissolved copper and % effect on mussel embryo development over time is also strong and statistically significant as shown in **Figure 5**.

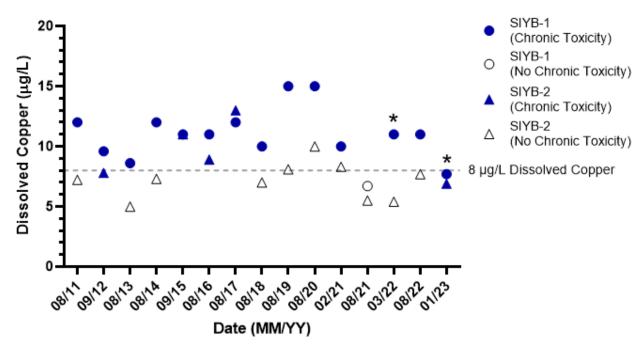


Figure 4. Dissolved Copper Levels and Chronic Toxicity Over Time at SIYB-1 and SIYB-2

^{*} Note that effects on mussel embryo development observed in March 2022 at Site SIYB-1 and at Sites SIYB-1 and SIYB-2 in January 2023 were statistically significant using the traditional USEPA flow-chart statistical methods (i.e., Dunnett multiple comparison test). However, effects were not significant using the TST approach.

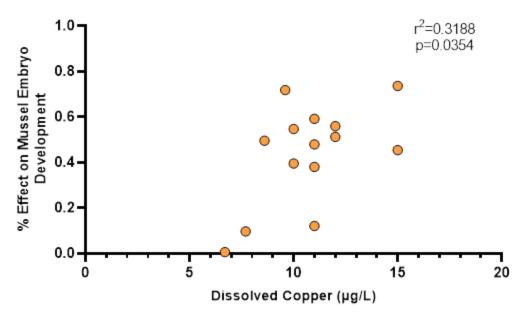


Figure 5. Correlation Between Dissolved Copper at SIYB-1 and % Effects Relative to the Control for Mussel Embryo Development (Combined Normal Survivors)

References Cited

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APPENDIX A Chronic Mussel Development Test Raw Data & Statistical Analyses Phase I TIE

Report Date: Test Code/ID:

22 Mar-23 16:15 (p 1 of 2) 23-01-071a / 13-7636-6657

WSP Laboratory

Batch ID:	11-0199-3420	Test Type:	Development-Survival	Analyst:		
Start Date:	26 Jan-23 17:30	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Natural Seawater	
Ending Date:	28 Jan-23 16:00	Species:	Mytilis galloprovincialis	Brine:	Not Applicable	
Test Length:	46h	Taxon:		Source:	Field Collected	Age:
Sample ID:	12-4759-1276	Code:	23-W026	Project:	SIYB TMDL Monitoring	
Sample Date:	25 Jan-23 14:00	Material:	Seawater	Source:	Shelter Island Yacht Basin	1
Receipt Date:	25 Jan-23 17:00	CAS (PC):		Station:	SIYB 1 (0.45um filt)	
Sample Age:	27h (15.7 °C)	Client:	WSP			

Single Compa	arison Summary				
Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	s
04-7418-5304	Combined Proportion Norma	Equal Variance t Two-Sample Test	0.0007	100% failed combined proportion normal	1
16-1178-1872	Combined Proportion Norma	Equal Variance t Two-Sample Test	0.0103	101% failed combined proportion normal	1
06-9551-1317	Proportion Normal	Equal Variance t Two-Sample Test	0.0005	100% failed proportion normal	1
06-0853-7827	Proportion Normal	Equal Variance t Two-Sample Test	3.7E-05	101% failed proportion normal	1

Test Acceptal	oility			TAC	_imits		
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
06-0853-7827	Proportion Normal	Control Resp	0.9193	0.9	<<	Yes	Passes Criteria
06-9551-1317	Proportion Normal	Control Resp	0.9095	0.9	<<	Yes	Passes Criteria
04-7418-5304	Combined Proportion Norma	PMSD	0.04579	<<	0.25	No	Passes Criteria
16-1178-1872	Combined Proportion Norma	PMSD	0.05306	<<	0.25	No	Passes Criteria

Combined Pre	oportion Norm	al Summar	4								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.8942	0.8779	0.9104	0.8743	0.9091	0.0058	0.0131	1.46%	0.00%
0	FC	5	0.8799	0.8224	0.9374	0.8033	0.9185	0.0207	0.0463	5.26%	1.60%
100		5	0.7755	0.7039	0.8471	0.7104	0.8632	0.0258	0.0577	7.44%	13.27%
101		5	0.8020	0.7502	0.8538	0.7486	0.8359	0.0187	0.0417	5.20%	10.31%
Proportion No	ormal Summar	у									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9095	0.8867	0.9323	0.8952	0.9412	0.0082	0.0184	2.02%	0.00%
0	FC	5	0.9193	0.9039	0.9347	0.9040	0.9368	0.0055	0.0124	1.35%	-1.07%
100		5	0.8016	0.7433	0.8598	0.7386	0.8632	0.0210	0.0469	5.86%	11.87%
101		5	0.8257	0.7908	0.8606	0.7784	0.8537	0.0126	0.0281	3.41%	9.22%

Combined Pro	oportion Norm	al Detail					MD5:	A43754632401CAED06BECB8B50922531
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.9015	0.8743	0.8907	0.8952	0.9091		
0	FC	0.8743	0.9126	0.9185	0.8033	0.8907		
100		0.7104	0.7957	0.7486	0.8632	0.7596		
101		0.8306	0.8299	0.8359	0.7486	0.7650		
Proportion No	ormal Detail						MD5:	0BAD970FBAD50A6920CFC5316A4977FA
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.9015	0.9412	0.9006	0.8952	0.9091		
0	FC	0.9040	0.9126	0.9185	0.9245	0.9368		
100		0.7386	0.7957	0.7829	0.8632	0.8274		
101		0.8306	0.8299	0.8359	0.7784	0.8537		

101

CETIS Summary Report

Report Date: Test Code/ID: 22 Mar-23 16:15 (p 2 of 2) 23-01-071a / 13-7636-6657

Bivalve Larval Survival and Development Test

WSP Laboratory

Combined Pro	oportion Norm	al Binomials	5			
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	LC	183/203	160/183	163/183	188/210	170/187
0	FC	160/183	167/183	169/184	147/183	163/183
100		130/183	148/186	137/183	183/212	139/183
101		152/183	161/194	163/195	137/183	140/183
Proportion No	ormal Binomia	ls				
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	LC	183/203	160/170	163/181	188/210	170/187
0	FC	160/177	167/183	169/184	147/159	163/174
100		130/176	148/186	137/175	183/212	139/168
101		152/183	161/194	163/195	137/176	140/164

FL vs 100% Filtered

Report Date: Test Code/ID: 22 Mar-23 16:15 (p 1 of 8) 23-01-071a / 13-7636-6657

Analyzed: 17 Mar-23 13:40 Analysis: Parametric-Two Sample Status Level: 1 MD5 Hash: P58 CDC54B67C5025FC2B14C8762ATE9 Editor ID: 002-883-387-8	Bivalve Larva	al Sur	vival and D	evelopmen	t Test	Compin	ed)					WSP	Laboratory
PMSD	Analysis ID: Analyzed: Edit Date:	17 M	lar-23 13:40	Anal	ysis: Par	ametric-Two	Sample		Statu	ıs Level:	1		
Angular (Corrected)	Comments:	FC =	0.45 um fil	tered seawa	ter, 100 = 1	00% SIYB-1	, 101 = SIY	B-1 (0.45ur	n filtered).				
Equal Variance Two-Sample Test Control vs Conc. df Test Stat Critical MSD P-Type P-Value Decision(α:5%) Filter Control 101	Data Transfo	rm		Alt Hyp				Comparis	on Result				PMSD
Control vs Cone-% df Test Stat Critical MSD P-Type P-Value Decision(α:5%) Filter Control 101* 8 2.875 1.86 0.07101 CDF 0.0103 Significant Effect ANOVA Tables Source Sum Squares Mean Square DF F Stat P-Value Decision(α:5%) Between 0.0301455 0.0301455 1 8.268 0.0207 Significant Effect Firor 0.0291684 0.0303455 1 8.268 0.0207 Significant Effect Total 0.0593139 Test Stat 8 0.0207 Significant Effect ANOVA assumption Test Stat Critical P-Value Decision(α:1%) Variance Variance Ratio F Test 1.724 23.15 0.6108 Equal Variances Distribution Shapiro-Villik W Normality Test 0.8915 0.7411 0.1762 Normal Distribution Comeconacida Facili F Test	Angular (Corre	ected)		C > T				101% faile	ed combined	proportion	normal end	point	5.31%
Filter Control 101* 8 2.875 1.86 0.07101 CDF 0.0103 Significant Effect ANOVA Table Source Sum Squares Mean Square DF F Stat P-Value Decision(α:5%) Between 0.0301455 0.0301455 1 8.268 0.0207 Significant Effect Fror 0.0291684 0.0036460 8 70 9	Equal Varian	ce t T	wo-Sample	Test									
NOVA Table Source Sum Squ=rest Mean Squ=rest Source Sum Squ=rest Mean Squ=rest Source Sum Squ=rest Source Sum Squ=rest Source Sum Squ=rest Source Sum Squ=rest Source Sum Squ=rest Source Sum Squ=rest Source Sum Squ=rest Source Sum Squ=rest Sum	Control	vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision	(a:5%)		
Source Sum Square DF F Stat P-Value Decision(::5%) Between 0.030145 0.030145 0.030145 0.003640 8 8 8.268 0.0207 Significant Effect Bror 0.0291684 0.003640 0.003640 8 9 9 ANOVA Assumptions rests Test State of Test In Test State of Test In Te	Filter Control		101*	8	2.875	1.86	0.07101	CDF	0.0103	Significar	nt Effect		
Between 0.0301455 0.0301455 1 8.268 0.0207 Significant Effect	ANOVA Table	•											
Error 0.0291684 0.0036460 8 Total 0.0593139 9 ANOVA Assumptions Tests Attribute Test Stat Critical P-Value Decision(α:1%) Variance Variance Ratio F Test Test Stat Critical P-Value Decision(α:1%) Variance Variance Ratio F Test 1.724 2.15 0.6108 Equal Variances Distribution Shapiro-Wilk W Normally Test 1.724 2.315 0.6108 Equal Variances Colomonal Variances Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% VEffec	Source		Sum Squa	ares	Mean Squ	iare	DF	F Stat	P-Value	Decision	(a:5%)		
Note Part	Between		0.0301455	;	0.0301455	5	1	8.268	0.0207	Significar	nt Effect		
ANOVA Assumptions Tests Attribute Test Test Stat Critical P-Value Decision(c::1%) Variance Variance Ratio F Test 1.724 23.15 0.6108 Equal Variances Normal Distribution Shapiro-Wilk W Normality Test 0.8915 0.7411 0.1762 Normal Distribution Combined Proportion Normal Summary Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect 0 FC 5 0.8799 0.8224 0.9374 0.8907 0.8033 0.9185 0.0207 5.26% 0.00% 101 FC 5 0.8020 0.7502 0.8538 0.8299 0.7486 0.8359 0.0187 5.20% 8.85% Angular (Corrected) Transformation Summary Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect 0 FC 5 1.2210 1.1370 1.3050 1.2340 1.1110 1.2810 0.0304 5.56% 0.00% 101 FC 5 1.2110 1.0470 1.1760 1.1460 1.0460 1.1540 0.0231 4.66% 8.99% Combined Proportion Normal Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 FC 0.8743 0.9126 0.9185 0.8033 0.8907 101 Corrected) Transformation Detail Angular (Corrected) Transformation Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 Rep 3 Rep 4 Rep 5 0 Rep 4 Rep 5 Rep 5 0 Rep 5 Rep 6 Rep 6 Rep 7 Rep 8 Rep 8 0 Rep 5 Rep 8 0 Rep 5 Rep 8 R	Error		0.0291684		0.0036460)	8	_					
Test Test State Test Test State Test Test State Test Test State Test Te	Total		0.0593139)			9						
Variance	ANOVA Assu	mptio	ns Tests										
Distribution Shapiro-Wilk W Normality Test 0.8915 0.7411 0.1762 Normal Distribution	Attribute		Test				Test Stat	Critical	P-Value	Decision	(a:1%)		
Combined Proportion Normal Summary Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% 8.85% Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect Conc-% Code Count Conc-% Code Conc-% Code Count	Variance		Variance F	Ratio F Test			1.724	23.15	0.6108	Equal Va	riances		
Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect 0 FC 5 0.8799 0.8224 0.9374 0.8907 0.8033 0.9185 0.0207 5.26% 0.00% 101 5 0.8020 0.7502 0.8538 0.8299 0.7486 0.8359 0.0187 5.20% 8.85% Angular (Corrected) Transformed Summary Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect 0 FC 5 1.2210 1.1370 1.3050 1.2340 1.1110 1.2810 0.0304 5.56% 0.00% 101 5 1.1110 1.0470 1.1760 1.1460 1.0460 1.1540 0.0231 4.66% 8.99% Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5													

Report Date: Test Code/ID:

22 Mar-23 16:15 (p 2 of 8) 23-01-071a / 13-7636-6657

WSP Laboratory

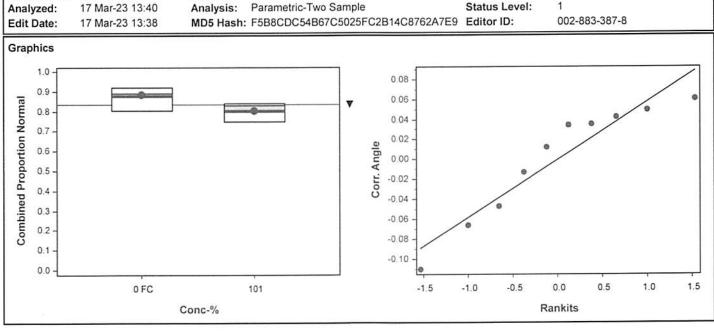
CETISv2.1.3

Analysis ID: 16-1178-1872

Bivalve Larval Survival and Development Test

Endpoint: Combined Proportion Normal **CETIS Version:**

Status Level:



LC vs. Baseline

Report Date: Test Code/ID: 22 Mar-23 16:15 (p 3 of 8) 23-01-071a / 13-7636-6657

Analyzed: 17 Mar-23 13:38	Bivalve Larval Su	ırvival and [Developmen	t Test	Combi	(be					WSP	Laboratory
Part Part	Analyzed: 17	Mar-23 13:4	0 Anal	ysis: Par	ametric-Two	Sample		Statu	ıs Level:	1		
Angular (Corrected)	Comments: FC	= 0.45 um f	iltered seawa	ter, 100 = 1	00% SIYB-1	I, 101 = SIY	B-1 (0.45ur	m filtered).				
Equal Variance Two-Sample Test Control vs Conc-% of Test Stat Critical MSD P-Type P-Value Decision(α:5%) ANOVA Table Source Sum Square Mean Square DF Stat P-Value Decision(α:5%) Between 0.0638847 1 22.79 0.0014 Significant Effect For 0.0224298 0.0028037 8 9 ANOVA Assumptions Tests Attribute Test Total 0.0868145	Data Transform		Alt Hyp									
Control vs Conc-% df Test Stat Critical MSD P-Type P-Value Decision(□:5%) ANOVA Table Source Sum Square Mean Square DF F Stat P-Value Decision(□:5%) Percentage Decision(□:5%) Decision(□:5%) Decision(□:5%) Decision(□:5%) Percentage Decision(□:5%) Percentage Decision(□:5%) Decision(□:5%) Percentage Decision(□:5%) Decision(□:5%) Decision(□:5%) Decision(□:5%) Decision(□:5%) D	Angular (Corrected	d)	C > T				100% faile	ed combined	proportion	normal end	point	4.58%
Lab Control 100° 8 4 .773 1.86 0.06227 CDF 0.0007 Significant Effect ANOVA Table Source Sum Squares Mean Square DF F Stat P-Value Decision(α:5%) Between 0.0638847 0.0638847 1 22.79 0.0014 Significant Effect Fror 0.0224298 0.0028037 8 Total 0.0683145 9 ANOVA Assumptions Tests Attribute Test Test Critical P-Value Decision(α:1%) Variance Variance Ratio F Test 11.66 23.15 0.0355 Equal Variances Distribution Shapiro-Wilk W Normality Test 0.9231 0.7411 0.3831 Normal Distribution Combined Proportion Normal Summary Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect 0.06-% 0.055 0.7755 0.7039 0.8471 0.7596 0.7104 0.8632 0.0258 7.44% 13.27% Angular (Corrected) Transformed Summary Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect 0.06-% 0.06 Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect 0.06-% 0.06 Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect 0.06-% 0.06 Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect 0.06-% 0.06 Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect 0.06-% 0.06 Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect 0.06-% 0.06 Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect 0.06-% 0.06 Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect 0.06-% 0.06 Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect 0.06-% 0.06 Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 Combined Proportion Normal Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 O LC 0.9015 0.8743 0.8907 0.8952 0.9091 100	Equal Variance t	Two-Sampl	e Test									
No No No No No No No No No No No No No	Control vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision	(a:5%)		
Source Sum Square Mean Square DF F Stat P-Value Decision (ci:5%)	Lab Control	100*	8	4.773	1.86	0.06227	CDF	0.0007	Significar	t Effect		
Setween 0.0638847 0.0638847 1 2.79 0.0014 Significant Effect	ANOVA Table											
Between 0.0638847 0.0638847 1 22.79 0.0014 Significant Effect	Source	Sum Squ	ares	Mean Squ	ıare	DF	F Stat	P-Value	Decision	(a:5%)		
ANOVA Assumptions Tests Test State S	Between		CONTRACTOR CONTRACTOR			1	22.79	0.0014	Significar	t Effect		
ANOVA Assumptions Tests Attribute Test Test Stat Critical P-Value Decision(α:1%) Variance Variance Ratio F Test 11.66 23.15 0.0355 Equal Variances Normal Distribution Shapiro-Wilk W Normality Test 0.9231 0.7411 0.3831 Normal Distribution Combined Proportion Normal Summary Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% Meffect 0	Error	0.022429	8	0.0028037	7	8						
Attribute Test Test Stat Critical P-Value Decision(α:1%) Variance Variance Shapiro-Wilk W Normality Test 11.66 23.15 0.0355 Equal Variances Normal Distribution Combined Proportion Normal Summary 0.9231 0.7411 0.3831 Normal Distribution Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect 0 LC 5 0.8942 0.8779 0.9104 0.8952 0.8743 0.9091 0.0058 1.46% 0.00% 100 LC 5 0.8942 0.8779 0.9104 0.8952 0.8743 0.9091 0.0058 1.46% 0.00% 100 LC 5 0.7755 0.7039 0.8471 0.7596 0.7104 0.8632 0.0258 7.44% 13.27% Angular (Corrected) Transformer Discource Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 Rep 5 Rep 4 <	Total	0.086314	5			9	-					
Variance	ANOVA Assumpt	ions Tests										
Distribution Shapiro-Wilk W Normality Test 0.9231 0.7411 0.3831 Normal Distribution	Attribute	Test				Test Stat	Critical	P-Value	Decision	(a:1%)		
Combined Proportion Normal Summary Conc-%	Variance	Variance	Ratio F Test			11.66	23.15	0.0355	Equal Va	riances		
Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect 0 LC 5 0.8942 0.8779 0.9104 0.8952 0.8743 0.9091 0.0058 1.46% 0.00% 100 5 0.7755 0.7039 0.8471 0.7596 0.7104 0.8632 0.0258 7.44% 13.27% Angular (Corrected) Transformed Summary Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect 0 LC 5 1.2400 1.2460 1.2410 1.2660 1.2410 1.2680 0.0094 1.70% 0.00% 100 5 1.0800 0.9908 1.1690 1.0580 1.0030 1.1920 0.0321 6.65% 12.89% Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0	Distribution	Shapiro-V	Vilk W Norm	ality Test		0.9231	0.7411	0.3831	Normal D	istribution		
Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5	Combined Propo	rtion Norma	al Summary	·								
100 5 0.7755 0.7039 0.8471 0.7596 0.7104 0.8632 0.0258 7.44% 13.27%	Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
Angular (Corrected) Transformed Summary Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect 0 LC 5 1.2400 1.2140 1.2660 1.2410 1.2080 1.2650 0.0094 1.70% 0.00% 100 5 1.0800 0.9908 1.1690 1.0580 1.0030 1.1920 0.0321 6.65% 12.89% Combined Proportion Normal Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 LC 0.9015 0.8743 0.8907 0.8952 0.9091 100 0.7104 0.7957 0.7486 0.8632 0.7596 Angular (Corrected) Transformed Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 LC 1.2520 1.2080 1.2340 1.2410 1.2650	0	LC	5	0.8942	0.8779	0.9104	0.8952	0.8743	0.9091	0.0058	1.46%	0.00%
Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% %Effect 0 LC 5 1.2400 1.2140 1.2660 1.2410 1.2080 1.2650 0.0094 1.70% 0.00% 100 5 1.0800 0.9908 1.1690 1.0580 1.0030 1.1920 0.0321 6.65% 12.89% Combined Proportion Normal Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5	100		5	0.7755	0.7039	0.8471	0.7596	0.7104	0.8632	0.0258	7.44%	13.27%
Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 Conc-% Code Rep 1 0.7104 0.7957 0.7486 0.8632 0.7596 Angular (Corrected) Transformed Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 LC 0.9015 0.8743 0.8907 0.8952 0.9091 100 0.7104 0.7957 0.7486 0.8632 0.7596	Angular (Correct	ed) Transfo	rmed Summ	ary								
100 5 1.0800 0.9908 1.1690 1.0580 1.0030 1.1920 0.0321 6.65% 12.89% Combined Proportion Normal Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 LC 0.9015 0.8743 0.8907 0.8952 0.9091 100 0.7104 0.7957 0.7486 0.8632 0.7596 Angular (Corrected) Transformed Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 LC 1.2520 1.2080 1.2340 1.2410 1.2650	Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
Combined Proportion Normal Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 LC 0.9015 0.8743 0.8907 0.8952 0.9091 100 0.7104 0.7957 0.7486 0.8632 0.7596 Angular (Corrected) Transformed Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 LC 1.2520 1.2080 1.2340 1.2410 1.2650	0	LC	5	1.2400	1.2140	1.2660	1.2410	1.2080	1.2650	0.0094	1.70%	0.00%
Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 LC 0.9015 0.8743 0.8907 0.8952 0.9091 100 0.7104 0.7957 0.7486 0.8632 0.7596 Angular (Corrected) Transformed Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 LC 1.2520 1.2080 1.2340 1.2410 1.2650	100		5	1.0800	0.9908	1.1690	1.0580	1.0030	1.1920	0.0321	6.65%	12.89%
0 LC 0.9015 0.8743 0.8907 0.8952 0.9091 100 0.7104 0.7957 0.7486 0.8632 0.7596 Angular (Corrected) Transformed Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 LC 1.2520 1.2080 1.2340 1.2410 1.2650	Combined Propo	ortion Norma	al Detail									
100 0.7104 0.7957 0.7486 0.8632 0.7596 Angular (Corrected) Transformed Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 LC 1.2520 1.2080 1.2340 1.2410 1.2650	Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
Angular (Corrected) Transformed Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 LC 1.2520 1.2080 1.2340 1.2410 1.2650	0	LC	0.9015	0.8743	0.8907	0.8952	0.9091					
Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0 LC 1.2520 1.2080 1.2340 1.2410 1.2650	100		0.7104	0.7957	0.7486	0.8632	0.7596					
0 LC 1.2520 1.2080 1.2340 1.2410 1.2650	Angular (Correct	ed) Transfo	rmed Detail									
	Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
100 1.0030 1.1020 1.0460 1.1920 1.0580	0	LC	1.2520	1.2080	1.2340	1.2410	1.2650			· · · · · · · · · · · · · · · · · · ·		
	100		1.0030	1.1020	1.0460	1.1920	1.0580					



Report Date: Test Code/ID: 22 Mar-23 16:15 (p 4 of 8) 23-01-071a / 13-7636-6657

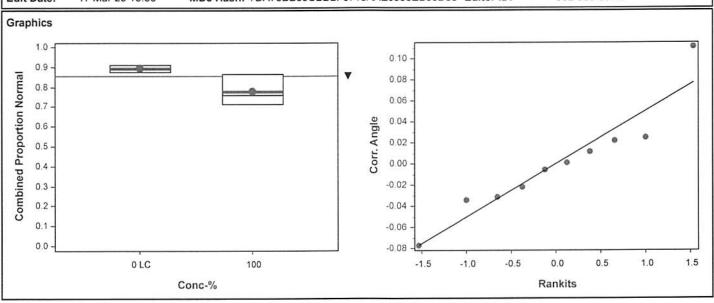
Bivalve Larval Survival and Development Test

WSP Laboratory

Analysis ID: 04-7418-5304 Endpoint: Combined Proportion Normal CETIS Version: CETISv2.1.3

Analyzed: 17 Mar-23 13:40 Analysis: Parametric-Two Sample Status Level: 1

Edit Date: 17 Mar-23 13:38 MD5 Hash: 7DA75BB99CBD2F6715AAE9930EB93D68 Editor ID: 002-883-387-8



FC vs 100% Filtered

Report Date: Test Code/ID: 22 Mar-23 16:15 (p 5 of 8) 23-01-071a / 13-7636-6657

Bivalve Larval S	Survival and	Developmen	t Test	Chabe	iction no	mel)				WSP	Laboratory
Analyzed: 17	3-0853-7827 7 Mar-23 13: 7 Mar-23 13:	40 Anal	l ysis: Par	portion Norr ametric-Two 88D85F6830		BB1286B3	Statu	S Version: us Level: or ID:	CETISv2 1 002-883-		
Comments: Fo	C = 0.45 um	filtered seawa	iter, 100 = 1	00% SIYB-1	I, 101 = SIY	B-1 (0.45ur	n filtered).				
Data Transform		Alt Hyp				Comparis	son Result				PMSD
Angular (Correcte	ed)	C > T				101% faile	ed proportion	n normal en	dpoint		2.19%
Equal Variance	t Two-Samp	ole Test									
Control vs	s Conc-%	df df	Test Stat	Critical	MSD	P-Type	P-Value	Decision	(a:5%)		
Filter Control	101*	8	7.419	1.86	0.03568	CDF	3.7E-05	Significan	t Effect		
ANOVA Table											
Source	Sum So	uares	Mean Squ	iare	DF	F Stat	P-Value	Decision	(a:5%)		
Between	0.05066		0.0506639		1	55.04	7.5E-05	Significar	t Effect		
Error	0.00736	43	0.0009205	5	8						
Total	0.05802	182			9	_					
ANOVA Assump	tions Tests										
Attribute	Test				Test Stat	Critical	P-Value	Decision	(a:1%)		
Variance	Variance	e Ratio F Test	V.		2.469	23.15	0.4028	Equal Va	riances		
Distribution	Shapiro	-Wilk W Norm	ality Test		0.9332	0.7411	0.4803	Normal D	istribution		
Proportion Norr	nal Summa	ry									
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	0.9193	0.9039	0.9347	0.9185	0.9040	0.9368	0.0055	1.35%	0.00%
101		5	0.8257	0.7908	0.8606	0.8306	0.7784	0.8537	0.0126	3.41%	10.18%
Angular (Correc	ted) Transf	ormed Summ	ary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	FC	5	1.2830	1.2550	1.3120	1.2810	1.2560	1.3170	0.0103	1.80%	0.00%
101		5	1.1410	1.0960	1.1860	1.1470	1.0810	1.1780	0.0162	3.17%	11.09%
Proportion Norr	nal Detail										
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	FC	0.9040	0.9126	0.9185	0.9245	0.9368					
101		0.8306	0.8299	0.8359	0.7784	0.8537					
Angular (Correc	ted) Transf	ormed Detail									
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	FC	1.2560	1.2710	1.2810	1.2920	1.3170					
101		1.1470	1.1460	1.1540	1.0810	1.1780					

Report Date: Test Code/ID:

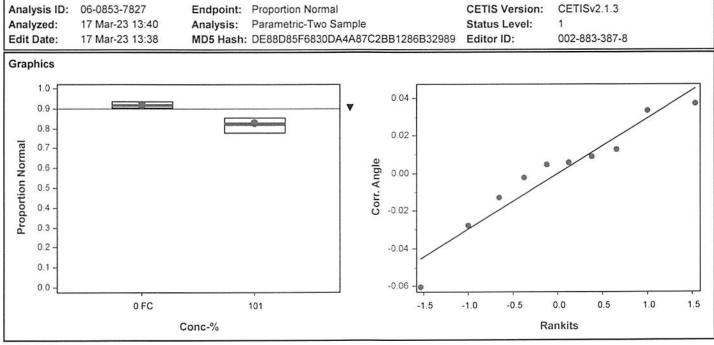
22 Mar-23 16:15 (p 6 of 8) 23-01-071a / 13-7636-6657

WSP Laboratory

Bivalve Larval Survival and Development Test

Analysis ID: 06-0853-7827

CETIS Version:



LL vs Baseline

Report Date: Test Code/ID: 22 Mar-23 16:15 (p 7 of 8) 23-01-071a / 13-7636-6657

WSP Laboratory **Bivalve Larval Survival and Development Test** CETISv2.1.3 Analysis ID: 06-9551-1317 Endpoint: Proportion Normal **CETIS Version:** Analyzed: 17 Mar-23 13:40 Analysis: Parametric-Two Sample Status Level: 002-883-387-8 **Edit Date:** 17 Mar-23 13:38 MD5 Hash: B89743E3AB3FDE937456F5FD71B5E9B5 Editor ID: FC = 0.45 um filtered seawater, 100 = 100% SIYB-1, 101 = SIYB-1 (0.45 um filtered). Comments: **PMSD** Comparison Result **Data Transform** Alt Hyp 3.78% C > T 100% failed proportion normal endpoint Angular (Corrected) **Equal Variance t Two-Sample Test** Decision(a:5%) df Test Stat Critical MSD P-Type P-Value Control Conc-% Lab Control 100* 5.066 1.86 0.05702 CDF 0.0005 Significant Effect **ANOVA Table** Source **Sum Squares** Mean Square DF F Stat P-Value Decision(a:5%) 1 0.0010 Significant Effect 0.0603298 25.67 Between 0.0603298 0.0188039 0.0023505 8 Error 9 Total 0.0791337 **ANOVA Assumptions Tests** Test Stat Critical P-Value Decision(a:1%) Attribute 0.3077 **Equal Variances** 3.034 23.15 Variance Variance Ratio F Test Shapiro-Wilk W Normality Test 0.9327 0.7411 0.4749 Normal Distribution Distribution **Proportion Normal Summary** CV% %Effect Std Err Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max 0.9412 0.0082 2.02% 0.00% 0 LC 5 0.9095 0.8867 0.9323 0.9015 0.8952 0.8598 0.7386 0.8632 0.0210 5.86% 11.87% 100 5 0.8016 0.7433 0.7957 Angular (Corrected) Transformed Summary CV% %Effect 95% UCL Median Min Max Std Err Conc-% Code Count Mean 95% LCL 0.00% 0.0153 2.70% 0 LC 5 1.2670 1.2240 1.3090 1.2520 1.2410 1.3260 0.0266 5.35% 12.26% 100 5 1.1110 1.0370 1.1850 1.1020 1.0340 1.1920 **Proportion Normal Detail** Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 0.8952 0.9091 0 LC 0.9015 0.9412 0.9006 100 0.7386 0.7957 0.7829 0.8632 0.8274 Angular (Corrected) Transformed Detail Rep 5 Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4

LC

1.2520

1.0340

1.3260

1.1020

1.2500

1.0860

1.2410

1.1920

1.2650

1.1420

0

100

Report Date: Test Code/ID: 22 Mar-23 16:15 (p 8 of 8) 23-01-071a / 13-7636-6657

WSP Laboratory

Bivalve Larval Survival and Development Test

Analysis ID: 06-9551-1317

Endpoint: Proportion Normal

CETIS Version: Status Level:

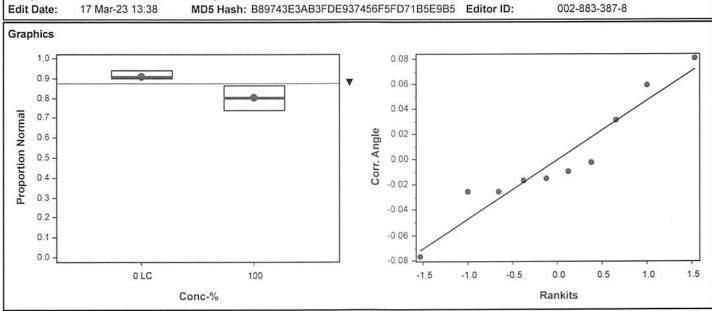
CETISv2.1.3

Analyzed:

17 Mar-23 13:40

Analysis: Parametric-Two Sample

002-883-387-8



Report Date:

25 Jan-23 18:04 (p 1 of 1)

5209B041 / 13-7636-6657 Test Code/ID:

Bivalve Larval Survival and Development Test

Wood E&IS

Start Date:

26 Jan-23

Species: Mytilis galloprovincialis

4A5CBB6C Sample Code:

End Date:

28 Jan-23

Protocol: EPA/600/R-95/136 (1995)

Sample Source: Shelter Island Yacht Basin

Sample Date: 25 Jan-23

Material: Seawater

Sample Station: SIYB 1 (0.45um filt)

Comments: FC = 0.45 um filtered seawater, 100 = 100% SIYB-1, 101 = SIYB-1 (0.45um filtered)

Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
			410			203	183	
			411			195	163	11 curved stells
			412			184	169	
			413			175	137	16 curved stells
			414			168		9 curved stells
			415			176	139	12 curred stells
			416			177	160	
			417			183	167	
			418			164	140	7 curved skills
			419			183		15 world shells
			420			181	163	Sie Sie Sie Sie Sie Sie Sie Sie Sie Sie
			421			181	163	
			422			170	160	
			423			212	183	9 curved shells
			424			176	130	20 corredshells
			425			194	161	20 curved shells
			426			194	170	,-
			427			210	188	
			428			159	147	
			429			186	148	13 curred Stells

Analyst: QA: R

CETIS™ v2.1.3.5

Report Date:

25 Jan-23 18:04 (p 1 of 1)

Test Code/ID: 5209B041 / 13-7636-6657

Bivalve Larval Survival and Development Test

Wood E&IS

Start Date: 26 Jan-23

Species: Mytilis galloprovincialis

Sample Code: 4A5CBB6C

End Date: 28 Jan-23 Sample Date: 25 Jan-23 Protocol: EPA/600/R-95/136 (1995)
Material: Seawater

Sample Source: Shelter Island Yacht Basin

Sample Station: SIYB 1 (0.45um filt)

Comments: FC = 0.45 um filtered seawater, 100 = 100% SIYB-1, 101 = SIYB-1 (0.45 um filtered)

Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	FC	1	416			177	160	No.
0	FC	2	417					
0	FC	3	412					
0	FC	4	428					
0	FC	5	421					
0	LC	1	410			203	183	
0	LC	2	422					
0	LC	3	420					
0	LC	4	427					
0	LC	5	426					
100		1	424			176	130	20 woved stells
100	-	2	429			, , ~	150	
100		3	413					
100		4	423					
100		5	414					
101		1	419			183	152	15 coved shells
101		2	425				1500	is Editor Stells
101		3	411		-			
101		4	415					
101		5	418					

QC = TO

Analyst: QA: L

CETIS™ v2.1.3.5

Water Quality for Bivalve Development

Project ID: SIYB (TIE) Treatment Controls

Test Species: M. galloprovincialis
Start Date/Time: 1/26/2023 [730

End Date/Time: 1/28/2023 600

Test Conc.,		Water Qualit	ty Measurements	
(µg/t-cu)	Parameter	0hr	24hr	48hr
Sample	Temp. (°C)	15.8	15.3	15.4
	Salinity (ppt)	33.6	33.6	33.7
Lab Control —	pH (units)	7-93	7.61	7.70
	DO (mg/L)	8-2	8.4	8.3
	Temp. (°C)	15.8	15.1	15.3
Filter Control	Salinity (ppt)	33.3	RN35 34.0	34.1
(0.45um)	pH (units)	7.89	7.71	7.74
	DO (mg/L)	7-7	8.6	8.5
	Temp. (°C)	15.8	15.2	15.3
"	Salinity (ppt)	34.1	34.1	34.2
10 mg/L EDTA Control	pH (units)	7.89	7.74	7.17
	DO (mg/L)	8.0	8.3	8.4
	Temp. (°C)	15.8	15.3	15.3
25 mg/L EDTA	Salinity (ppt)	34.0	33.8	34.D
Control	pH (units)	7.74	7,69	A7.67.71
	DO (mg/L)	7-8	8.2	8.3
	Temp. (°C)			
	Salinity (ppt)			
	pH (units)			
	DO (mg/L)		19	
	Temp. (°C)			
	Salinity (ppt)			
	pH (units)			
	DO (mg/L)			
	Temp. (°C)			
	Salinity (ppt)			
	pH (units)			
	DO (mg/L)			
	Tech Initials:	WV_	RY	26

	0 0 (1.1.8) =/		
	Tech Initials:	RY	26
Source of Animals:	MissionPay	Date Receiv	ed: 1/26/23
Comments:			W/
QC Check:	A6 3/12/13	Final Revie	ew: SC 3/31/23

Water Quality for Bivalve Development

Client: POSD
Project ID: SIYB (TIE) SIYB-1 Treated
Test No. 23-01-07-04-6

Test Species: M. galloprovincialis
Start Date/Time: 1/26/2023 1730
End Date/Time: 1/28/2023 1600

Test Conc.		Water Quality	y Measurements	
(Sample ID)	Parameter	0hr	24hr	48hr
	Temp. (°C)	15.8	15.2	15.3
100% SIYB-1	Salinity (ppt)	32.8	32.9	33.0
(Baseline)	pH (units)	7.88	7.73	7.77
	DO (mg/L)	8.6	8.4	8.3
	Temp. (°C)	15.8	15.4	15.3
100% SIYB 1	Salinity (ppt)	33.1	33.3	33.4
(10 mg/L EDTA)	pH (units)	7.85	7.71	7.75
	DO (mg/L)	8.1	9.7	8.6
	Temp. (°C)	15.8	15.5	15.4
100% SIYB 1	Salinity (ppt)	33.9	33. le	33.8
(25 mg/L EDTA)	pH (units)	2.72	7.71	7.75
	DO (mg/L)	7.9	8.7	8.6
	Temp. (°C)	15.40	15.5	15.4
100% SIYB-1 (0.45um	Salinity (ppt)	32-4	32.8	33.0
filt)	pH (units)	7.82	7.71	7.75
	DO (mg/L)	7.9	8.5	8.6
	Temp. (°C)			
	Salinity (ppt)			
	pH (units)			
	DO (mg/L)			
	Temp. (°C)			
	Salinity (ppt)			
	pH (units)			
	DO (mg/L)			
	Temp. (°C)			
	Salinity (ppt)			
	pH (units)			
	DO (mg/L)			
	Tech Initials:	HK	RN	As

	Tech Initials:	HK	RN	No
Source of Animals: Missi	on Bay		Date Receive	d: 1/26/23
Comments:	,			
QC Check: Als 3/2	12/23		Final Revie	w: PL 3/21/23

WSP Environmental Laboratory, 4905 Morena Blvd, Ste. 1304, San Diego, CA 92117

Embryo-Larval Development Test Stock Preparation Worksheet

Test Species:

M. galloprovincialis

Test Date: 1/26/2023

Batch ID:

Analyst:

Test Type:

Task	
Spawning Induction	1430
Spawning Begins	1510
# Males/# Females	515
Spawn Condition	good
Fertilization Initiated	1600
Fertilzation End/Eggs Rinsed	1620/1640
Embryo Counts	1700
Test Initiation	1730

Embryo Density Counts

			1 PC1 200 P	L-			
Stock #	Stock Volume (mL)	Rep 1	Rep 2	Rep 3	Rep 4	Mean #/100 μL	Mean #/mL (x10)
Stock 1						16	1776
Stock 2	500						
Stock 3	500	21	19	11	13	1.60	200

Cell Division:

	% Divided
Stock 1	
Stock 2	90
Stock 3	98

Selected Stock:	3

Stock Density

Dil Factor

Adjust selected embryo stock to 500 embryos/mL. Dilution Factor = Stock Density/mL/500

600 500

In 10 mL sample volume add 500 μ l of 500 embryo/ml stock to obtain 25 embryos/mL in test vials.

Notes:

QA Review:

Final Review: 8 3/9/23

Report Date: Test Code/ID: 22 Mar-23 15:54 (p 1 of 2) 23-01-071b / 08-4412-3788

res

Bivalve Larval Survival and Development Test

WSP Laboratory

Batch ID:	11-7305-7447	Test Type:	Development-Survival	Analyst:		
Start Date:	26 Jan-23 17:30	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Natural Seawater	
Ending Date:	28 Jan-23 16:00	Species:	Mytilis galloprovincialis	Brine:	Not Applicable	
Test Length:	46h	Taxon:		Source:	Field Collected	Age:
Sample ID:	11-3912-9510	Code:	23-W026	Project:	SIYB TMDL Monitoring	
Sample Date:	25 Jan-23 14:00	Material:	Seawater	Source:	Shelter Island Yacht Basin	
	25 Jan-23 17:00	CAS (PC):		Station:	SIYB 1 (Treatments)	
Receipt Date:	LO 0011 LO 17.00					

Comments: M1 = 10 mg/L EDTA method control, M2 = 25 mg/L EDTA method control. 10 = 10 mg/L treatment (0.25 ug/L dissolved Cu), 25 = 25 mg/L EDTA treatment (0.23 ug/L dissolved Cu)

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
05-2974-8877	Combined Proportion Norma	Equal Variance t Two-Sample Test	0.0143	10% failed combined proportion normal
14-7196-2390	Combined Proportion Norma	Equal Variance t Two-Sample Test	0.4424	25% passed combined proportion normal
05-3309-7051	Proportion Normal	Equal Variance t Two-Sample Test	0.1040	10% passed proportion normal
15-6792-6178	Proportion Normal	Equal Variance t Two-Sample Test	0.7797	25% passed proportion normal

Multiple Com	parison Summary								- 1
Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	TU	s
05-4713-6136	Combined Proportion Norma	Dunnett Multiple Comparison Test		0	>0		5.41%		1
19-9555-3475	Proportion Normal	Dunnett Multiple Comparison Test		0	>0		3.22%		1

Test Acceptat	oility		TAC				
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
05-3309-7051	Proportion Normal	Control Resp	0.9028	0.9	<<	Yes	Passes Criteria
15-6792-6178	Proportion Normal	Control Resp	0.8952	0.9	<<	Yes	Below Criteria
19-9555-3475	Proportion Normal	Control Resp	0.8952	0.9	<<	Yes	Below Criteria
	Proportion Normal	Control Resp	0.9028	0.9	<<	Yes	Passes Criteria
	Proportion Normal	Control Resp	0.9139	0.9	<<	Yes	Passes Criteria
05-2974-8877	Combined Proportion Norma	PMSD	0.03784	<<	0.25	No	Passes Criteria
05-4713-6136	Combined Proportion Norma	PMSD	0.05407	<<	0.25	No	Passes Criteria
14-7196-2390	Combined Proportion Norma	PMSD	0.09295	<<	0.25	No	Passes Criteria

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.8859	0.8291	0.9428	0.8306	0.9231	0.0205	0.0458	5.17%	0.00%
0	M1	5	0.9019	0.8713	0.9325	0.8743	0.9368	0.0110	0.0246	2.73%	-1.80%
0	M2	5	0.8687	0.8269	0.9104	0.8251	0.9081	0.0150	0.0336	3.87%	1.95%
10		5	0.8495	0.8039	0.8952	0.8033	0.8907	0.0165	0.0368	4.33%	4.11%
25		5	0.8557	0.7484	0.9631	0.7377	0.9358	0.0387	0.0865	10.10%	3.41%

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.9139	0.8879	0.9398	0.8786	0.9333	0.0094	0.0209	2.29%	0.00%
0	M1	5	0.9028	0.8738	0.9318	0.8791	0.9368	0.0105	0.0234	2.59%	1.21%
0	M2	5	0.8952	0.8672	0.9232	0.8615	0.9213	0.0101	0.0226	2.52%	2.05%
10		5	0.8837	0.8586	0.9088	0.8610	0.9091	0.0090	0.0202	2.29%	3.30%
25		5	0.9075	0.8721	0.9429	0.8654	0.9358	0.0128	0.0285	3.14%	0.70%

Report Date: Test Code/ID: 22 Mar-23 15:54 (p 2 of 2) 23-01-071b / 08-4412-3788

			The state of the state of		
Rivalve I	arval S	urvival	and	Develon	ment Test

WSP Laboratory

Combined Pro	portion Norm	al Detail					MD5:	73D2375E67266FBD2732AC7BBF64D16F
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.9231	0.8415	0.9140	0.8306	0.9204		
0	M1	0.8900	0.9368	0.9162	0.8919	0.8743		
0	M2	0.8251	0.9081	0.8962	0.8525	0.8615		
10		0.8610	0.8730	0.8033	0.8907	0.8197		
25		0.7377	0.9208	0.7923	0.8919	0.9358		
Proportion No	rmal Detail						MD5:	78CF6E935332C606546E2E372D85711A
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.9231	0.9333	0.9140	0.8786	0.9204		
0	M1	0.8900	0.9368	0.9162	0.8919	0.8791		
0	M2	0.8882	0.9081	0.9213	0.8966	0.8615		
10		0.8610	0.8730	0.8750	0.9006	0.9091		
25		0.8654	0.9208	0.9236	0.8919	0.9358		
Combined Pro	portion Norm	al Binomials	;					
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	180/195	154/183	170/186	152/183	185/201		
0	M1	178/200	178/190	175/191	165/185	160/183		
0	M2	151/183	168/185	164/183	156/183	168/195		
10		161/187	165/189	147/183	163/183	150/183		
25		135/183	186/202	145/183	165/185	175/187		
Proportion No	rmal Binomia	ls						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	180/195	154/165	170/186	152/173	185/201		
0	M1	178/200	178/190	175/191	165/185	160/182		
0	M2	151/170	168/185	164/178	156/174	168/195		
10		161/187	165/189	147/168	163/181	150/165		
25		135/156	186/202	145/157	165/185	175/187		

Bivalve Larval Survival and Development Test

MU vs 10mg/L EDTA

Report Date: Test Code/ID: 22 Mar-23 15:54 (p 1 of 12) 23-01-071b / 08-4412-3788

WSP Laboratory

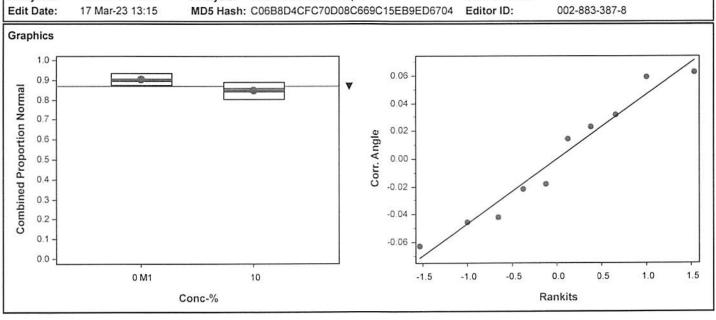
			отогоро			/						
Analysis ID: Analyzed: Edit Date:	17 M	974-8877 ar-23 13:18 ar-23 13:15	Anal	ysis: Par	ametric-Two	oortion Norm Sample OD08C6690		Statu	S Version: us Level: or ID:	CETISv2 1 002-883-		
Comments:			DTA method reatment (0.			EDTA meth	od control.	10 = 10 mg/	L treatmen	t (0.25 ug/L	dissolved	Cu), 25 =
Data Transfo	rm		Alt Hyp				Comparis	son Result				PMSD
Angular (Corre	ected)		C > T				10% failed	d combined	proportion r	ormal endp	oint	3.78%
Equal Varian	ce t Tv	vo-Sample	Test									
Control	vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision	a:5%)		
Method Contro	ol 1	10* 8 2.665 1.86				0.05559	CDF	0.0143	Significan	t Effect		
ANOVA Table	,											
Source		Sum Squa	ares	Mean Squ	are	DF	F Stat	P-Value	Decision	a:5%)		
Between		0.0158678	3	0.0158678		1	7.103	0.0286	Significan	t Effect		
Error		0.0178726	3	0.0022341		8	_					
Total		0.0337404	1			9						
ANOVA Assu	mptio	ns Tests										
Attribute	ttribute Test						Critical	P-Value	Decision	(a:1%)		
Variance	Variance Variance Ratio F Test					1.435	23.15	0.7349	Equal Var	iances		
Distribution		Shapiro-W	/ilk W Norma	ality Test		0.9376	0.7411	0.5267	Normal D	stribution		
Combined Pr	oporti	on Normal	I Summary									
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		M1	5	0.9019	0.8713	0.9325	0.8919	0.8743	0.9368	0.0110	2.73%	0.00%
10			5	0.8495	0.8039	0.8952	0.8610	0.8033	0.8907	0.0165	4.33%	5.80%
Angular (Cor	rected) Transform	med Summ	ary								
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		M1	5	1.2540	1.2010	1.3070	1.2360	1.2080	1.3170	0.0192	3.42%	0.00%
10			5	1.1740	1.1110	1.2380	1.1890	1.1110	1.2340	0.0230	4.37%	6.35%
Combined Pr	oporti	on Norma	l Detail									
Conc-%		Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0		M1	0.8900	0.9368	0.9162	0.8919	0.8743					
10			0.8610	0.8730	0.8033	0.8907	0.8197					
NEW 76 7624												
Angular (Cor	rected) Transfori	med Detail									
Angular (Cor Conc-%	rected) Transfori Code	med Detail Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
	rected		32.200 (10.00 (1	Rep 2	Rep 3	Rep 4 1.2360	Rep 5					

Report Date: Test Code/ID: 22 Mar-23 15:54 (p 2 of 12) 23-01-071b / 08-4412-3788

Bivalve Larval Survival and Development Test WSP Laboratory

Analysis ID: 05-2974-8877 Endpoint: Combined Proportion Normal CETIS Version: CETISv2.1.3

Analyzed: 17 Mar-23 13:18 Analysis: Parametric-Two Sample Status Level: 1



MCz vs 25 mg/2 EDTA
est (combined)

Report Date: Test Code/ID: 22 Mar-23 15:54 (p 3 of 12) 23-01-071b / 08-4412-3788

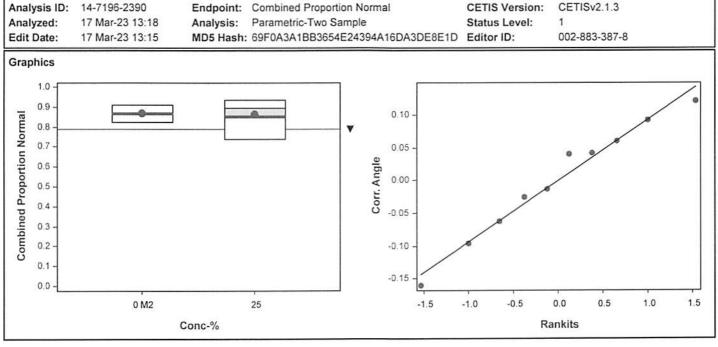
				1.01	. , ,	010						
Bivalve Larva	al Sur	vival and [Developmen	t Test	600	mbined					WSP	Laborator
Analysis ID:	14-7	196-2390	End	point: Cor	nbined Prop	ortion Norm	al	CET	S Version:	: CETISv2	1.1.3	
Analyzed:	17 N	Mar-23 13:18			ametric-Two			Statu	ıs Level:	1		
Edit Date:	17 N	Mar-23 13:1	5 MD 5	Hash: 69F	0A3A1BB3	654E24394A	16DA3DE	8E1D Edite	or ID:	002-883-	387-8	
Comments:			DTA method treatment (0.			EDTA meth	od control.	10 = 10 mg/	/L treatmer	nt (0.25 ug/L	dissolved (Cu), 25 =
Data Transfo	rm		Alt Hyp				Comparis	son Result				PMSD
Angular (Corr	ected))	C > T				25% pass	ed combine	d proportio	n normal end	dpoint	9.29%
Equal Varian	ce t T	wo-Sample	e Test									
Control	vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision	(a:5%)		
Method Contr	ol 2	25	8	0.1497	1.86	0.11	CDF	0.4424	Non-Sign	ificant Effec	t	
ANOVA Table	9											
Source		Sum Squ	ares	Mean Squ	iare	DF	F Stat	P-Value	Decision	(a:5%)		
Between		0.0001959	9	0.0001959)	1	0.02241	0.8847	Non-Sign	ificant Effec	t	
Error		0.069929	7	0.0087412	?	8	_					
Total		0.070125	6			9						
ANOVA Assu	mptic	ons Tests										
Attribute		Test				Test Stat	Critical	P-Value	Decision	(a:1%)		
Variance		Variance	Ratio F Test			5.936	23.15	0.1127	Equal Va	riances		
Distribution		Shapiro-V	Vilk W Norm	ality Test		0.9688	0.7411	0.8799	Normal D	istribution		
Combined Pr	roport	tion Norma	I Summary									
Conc-%	51.74 . 71.67.610	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		M2	5	0.8687	0.8269	0.9104	0.8615	0.8251	0.9081	0.0150	3.87%	0.00%
25			5	0.8557	0.7484	0.9631	0.8919	0.7377	0.9358	0.0387	10.10%	1.49%
Angular (Cor	recte	d) Transfor	med Summ	arv								
Conc-%		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		M2	5	1.2020	1.1400	1.2650	1.1900	1.1390	1.2630	0.0225	4.18%	0.00%
25			5	1.1930	1.0410	1.3450	1.2360	1.0330	1.3150	0.0547	10.25%	0.74%
Combined P	ropor	tion Norma	I Detail									
Conc-%		Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0		M2	0.8251	0.9081	0.8962	0.8525	0.8615					
25			0.7377	0.9208	0.7923	0.8919	0.9358					
Angular (Cor	recte	d) Transfor	med Detail									
Conc-%		Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0		M2	1.1390	1.2630	1.2430	1.1770	1.1900					
25		Period Accel	1.0330	1.2860	1.0980	1.2360	1.3150					
					126(27/2/2/2000)		1077251T/T/6					

Report Date: Test Code/ID: 22 Mar-23 15:54 (p 4 of 12) 23-01-071b / 08-4412-3788

Bivalve Larval Survival and Development Test WSP Laboratory

Endpoint: Combined Proportion Normal

CETIS Version:



LC VS MC'S

Report Date: Test Code/ID: 22 Mar-23 15:54 (p 5 of 12) 23-01-071b / 08-4412-3788

WSP Laboratory Bivalve Larval Survival and Development Test Analysis ID: 05-4713-6136 Endpoint: Combined Proportion Normal **CETIS Version:** CETISv2.1.3 Analyzed: 17 Mar-23 13:19 Analysis: Parametric-Control vs Treatments Status Level: Edit Date: MD5 Hash: 095EABD9F95D69EF8915D9001AC90162 Editor ID: 17 Mar-23 13:15 002-883-387-8 M1 = 10 mg/L EDTA method control, M2 = 25 mg/L EDTA method control. 10 = 10 mg/L treatment (0.25 ug/L dissolved Cu), 25 = Comments: 25 mg/L EDTA treatment (0.23 ug/L dissolved Cu) Alt Hyp NOEL TOEL Tox Units MSDu **PMSD Data Transform** LOEL Angular (Corrected) C > T 0 >0 0.0479 5.41% **Dunnett Multiple Comparison Test** Decision(a:5%) Control I Control II df Test Stat Critical MSD P-Type P-Value 0.07454 CDF 0.3312 Non-Significant Effect 2.108 Lab Control Method Control 2 8 0.8182 0.07454 CDF 0.8690 Non-Significant Effect 2.108 Method Control 1 8 -0.6515 **ANOVA Table** Mean Square DF P-Value Decision(a:5%) F Stat Source Sum Squares 0.0067806 2 0.3690 Non-Significant Effect 0.0033903 1.085 Between Error 0.0375114 0.003126 12 14 Total 0.0442921 **ANOVA Assumptions Tests** P-Value Decision(a:1%) **Test Stat** Critical Attribute Variance Bartlett Equality of Variance Test 0.9857 9.21 0.6109 **Equal Variances** 0.8328 Shapiro-Wilk W Normality Test 0.905 0.1134 Normal Distribution Distribution Combined Proportion Normal Summary %Effect Conc-% Code Count Mean 95% LCL 95% UCL Median Min Max Std Err CV% 0.0205 5.17% 0.00% 0.9428 0.9140 0.8306 0.9231 LC 5 0.8859 0.8291 0 0.0110 2.73% -1.80% 0.9368 0.9325 0.8919 0.8743 0 M1 5 0.9019 0.8713 1.95% 0.8251 0.9081 0.0150 3.87% 0 M2 5 0.8687 0.8269 0.9104 0.8615 Angular (Corrected) Transformed Summary CV% %Effect 95% LCL 95% UCL Median Min Max Std Err Conc-% Code Count Mean 0.00% 5 1.1430 1.3190 1.2730 1.1470 1.2900 0.0317 5.76% 0 LC 1.2310 1.2010 1.3070 1.2360 1.2080 1.3170 0.0192 3.42% -1.87% 0 M1 5 1.2540 2.35% 1.2650 1.1390 1.2630 0.0225 4.18% 5 1.2020 1.1400 1.1900 0 M2 Combined Proportion Normal Detail Rep 5 Code Rep 3 Rep 4 Conc-% Rep 1 Rep 2 0.9140 0.8306 0.9204 0 LC 0.9231 0.8415 0.8919 0.8743 0 M1 0.8900 0.9368 0.9162 0.8525 0.8615 M2 0.8251 0.9081 0.8962 0 Angular (Corrected) Transformed Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 LC 1.2900 1.1610 1.2730 1.1470 1.2850 0 M1 1.2360 1.2080 0 1.2330 1.3170 1.2770 0 M2 1.1390 1.2630 1.2430 1.1770 1.1900

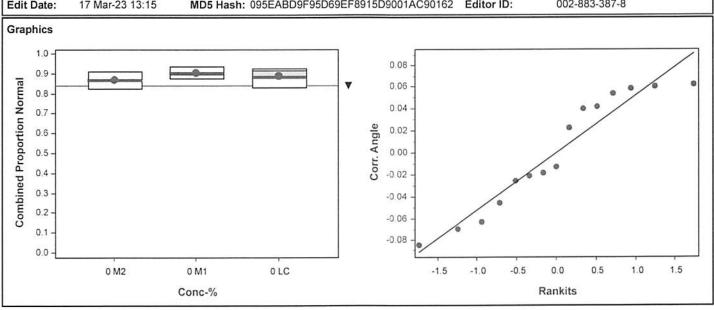
Report Date: Test Code/ID: 22 Mar-23 15:54 (p 6 of 12) 23-01-071b / 08-4412-3788

WSP Laboratory Bivalve Larval Survival and Development Test

CETISv2.1.3 Analysis ID: 05-4713-6136 Endpoint: Combined Proportion Normal **CETIS Version:**

Analyzed: 17 Mar-23 13:19 Analysis: Parametric-Control vs Treatments Status Level:

Edit Date: 17 Mar-23 13:15 MD5 Hash: 095EABD9F95D69EF8915D9001AC90162 Editor ID: 002-883-387-8



Report Date: Test Code/ID: 22 Mar-23 15:54 (p 7 of 12) 23-01-071b / 08-4412-3788

WSP Laboratory Bivalve Larval Survival and Development Test

Analysis ID: 05-3309-7051

Endpoint: Proportion Normal

CETIS Version:

Analyzed: 17 Mar-23 13:18

17 Mar-23 13:15

Edit Date:

Analysis: Parametric-Two Sample

Status Level:

CETISv2.1.3 002-883-387-8

MD5 Hash: E514D0657C7FC9D6524E341DB0940ED0 Editor ID:

Data Transfo	rm		Alt Hyp	0				Comparis	son Result				PMSD
Angular (Corr	ected)		C > T					10% pass	ed proportio	n normal e	ndpoint		2.86%
Equal Varian	ice t T	wo-Sampl	e Test										
Control	vs	Conc-%		df	Test Stat	Critical	MSD	P-Type	P-Value	Decision	ı(a:5%)		
Method Contr	rol 1	10		8	1.369	1.86	0.04321	CDF	0.1040	Non-Sign	ificant Effect		
ANOVA Tabl	e												
Source	ource Sum Squares Mean Square				are	DF	F Stat	P-Value	Decision	Decision(a:5%) Non-Significant Effect			
Between		0.002530			0.0025307	E-SLAND	1	1.875	0.2081				
Error		0.010797	2		0.0013497		8						
Total		0.013328	3				9	-					
ANOVA Assı	ımptic	ns Tests											
Attribute		Test					Test Stat	Critical	P-Value	e Decision(α:1%)			
Variance		Variance	Ratio F Te	est			1.644	23.15	0.6418	Equal Va	riances		
Distribution		Shapiro-\	Wilk W No	rma	lity Test		0.9012	0.7411	0.2256	Normal Distribution			
Proportion N	lorma	l Summar	у										
Conc-%		Code	Count		Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		M1	5		0.9028	0.8738	0.9318	0.8919	0.8791	0.9368	0.0105	2.59%	0.00%
10			5		0.8837	0.8586	0.9088	0.8750	0.8610	0.9091	0.0090	2.29%	2.11%
Angular (Co	rrecte	d) Transfo	rmed Sun	nma	ary								
Conc-%		Code	Count		Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		M1	5		1.2560	1.2050	1.3060	1.2360	1.2160	1.3170	0.0183	3.26%	0.00%
10		4626106	5		1.2240	1.1840	1.2630	1.2090	1.1890	1.2650	0.0143	2.61%	2.53%
Proportion N	Vorma	l Detail											
Conc-%		Code	Rep 1		Rep 2	Rep 3	Rep 4	Rep 5					
0	17-1	M1	0.8900		0.9368	0.9162	0.8919	0.8791					
10			0.8610		0.8730	0.8750	0.9006	0.9091					
Angular (Co	rrecte	d) Transfo	rmed Deta	ail									
Conc-%		Code	Rep 1		Rep 2	Rep 3	Rep 4	Rep 5					
0		M1	1.2330		1.3170	1.2770	1.2360	1.2160					
			1.1890		1.2060	1.2090	1.2500	1.2650					

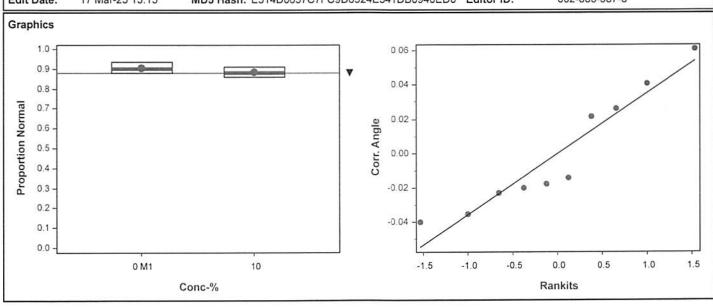
Report Date: Test Code/ID: 22 Mar-23 15:54 (p 8 of 12) 23-01-071b / 08-4412-3788

Bivalve Larval Survival and Development Test WSP Laboratory

Analysis ID: 05-3309-7051 Endpoint: Proportion Normal CETIS Version: CETISv2.1.3

Analyzed: 17 Mar-23 13:18 Analysis: Parametric-Two Sample Status Level: 1

Edit Date: 17 Mar-23 13:15 MD5 Hash: E514D0657C7FC9D6524E341DB0940ED0 Editor ID: 002-883-387-8



MC2 VS 25 mg/L EDTA

Report Date: Test Code/ID: 22 Mar-23 15:54 (p 9 of 12) 23-01-071b / 08-4412-3788

Bivalve Larval Survival and Development Test WSP Laboratory Analysis ID: 15-6792-6178 Proportion Normal **CETIS Version:** CETISv2.1.3 Endpoint: Analyzed: 17 Mar-23 13:18 Analysis: Parametric-Two Sample Status Level: Edit Date: MD5 Hash: 6599975B68F7E70DC86BF1F9832279C8 Editor ID: 002-883-387-8 17 Mar-23 13:15 M1 = 10 mg/L EDTA method control, M2 = 25 mg/L EDTA method control. 10 = 10 mg/L treatment (0.25 ug/L dissolved Cu), 25 = Comments: 25 mg/L EDTA treatment (0.23 ug/L dissolved Cu) **Data Transform PMSD** Alt Hyp Comparison Result Angular (Corrected) C>T 25% passed proportion normal endpoint 3.55% **Equal Variance t Two-Sample Test** df Test Stat Critical MSD P-Type P-Value Decision(a:5%) Control VS Conc-% Method Control 2 25 8 -0.8115 1.86 0.05024 CDF 0.7797 Non-Significant Effect **ANOVA Table** DF F Stat P-Value Decision(a:5%) Source Sum Squares Mean Square 1 0.6585 0.4406 Non-Significant Effect Between 0.0012018 0.0012018 Error 0.0146014 0.0018252 8 0.0158031 9 Total **ANOVA Assumptions Tests** Test Stat Critical P-Value Decision(a:1%) Attribute Test Equal Variances Variance Ratio F Test 1.746 23.15 0.6025 Variance 0.5600 Normal Distribution Distribution Shapiro-Wilk W Normality Test 0.9406 0.7411 **Proportion Normal Summary** CV% %Effect 95% UCL Median Min Max Std Err Conc-% Code Count 95% LCL Mean 0.00% 2.52% 0.9213 0.0101 0 M2 5 0.8952 0.8672 0.9232 0.8966 0.8615 -1.38% 5 0.9075 0.8721 0.9429 0.9208 0.8654 0.9358 0.0128 3.14% 25 Angular (Corrected) Transformed Summary Min Max Std Err CV% %Effect 95% LCL 95% UCL Median Conc-% Code Count Mean 2.93% 0.00% 1.2870 0.0163 0 M2 5 1.2420 1.1970 1.2880 1.2430 1.1900 -1.76% 1.3150 0.0216 3.81% 5 1.2640 1.2050 1.3240 1.2860 1.1950 25 **Proportion Normal Detail** Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 M2 0.8882 0.9081 0.9213 0.8966 0.8615 0 0.8654 0.9236 0.8919 0.9358 25 0.9208 Angular (Corrected) Transformed Detail Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5

M2

1.2300

1.1950

1.2630

1.2860

1.2870

1.2910

1.2430

1.2360

1.1900

1.3150

0

25

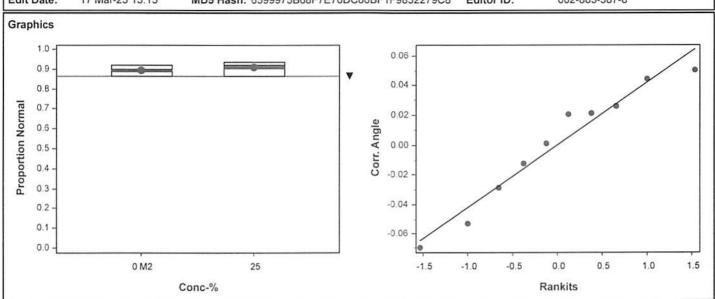
Report Date: Test Code/ID: 22 Mar-23 15:54 (p 10 of 12) 23-01-071b / 08-4412-3788

Bivalve Larval Survival and Development Test

Analysis ID: 15-6792-6178 Endpoint: Proportion Normal CETIS Version: CETISv2.1.3

 Analyzed:
 17 Mar-23 13:18
 Analysis:
 Parametric-Two Sample
 Status Level:
 1

 Edit Date:
 17 Mar-23 13:15
 MD5 Hash:
 6599975B68F7E70DC86BF1F9832279C8
 Editor ID:
 002-883-387-8



LC NS MCS (proportion round) Report Date: Test Code/ID:

22 Mar-23 15:54 (p 11 of 12) 23-01-071b / 08-4412-3788

Bivalve Larva	al Survival a	nd Developr	nent Tes	t							WSP	Laboratory
Analysis ID: Analyzed: Edit Date:	19-9555-34 17 Mar-23 17 Mar-23	13:19	Analysis:	Par	portion Norr ametric-Cor 4D169E6953	trol vs Treat		Statu	S Version: us Level: or ID:	1 002-883-		
Comments:		g/L EDTA me DTA treatmen				EDTA meth	od control.	10 = 10 mg/	L treatmer	nt (0.25 ug/L	dissolved (Cu), 25 =
Data Transfor	rm	Alt Hy	p				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corre	ected)	C > T					0	>0			0.02938	3.22%
Dunnett Mult	iple Compa	rison Test										
Control I	vs Cont	rol II	df Tes	t Stat	Critical	MSD	P-Type	P-Value	Decision	(a:5%)		
Lab Control	ntrol Method Control 2 8 Method Control 1 8			9 7	2.108 2.108	0.05041 0.05041	CDF CDF	0.1697 0.3429		ificant Effect ificant Effect		
ANOVA Table)											
Source	n Squ	iare	DF	F Stat	P-Value	Decision	(a:5%)					
Between	Sum Squares 0.0025893			12947	,	2	0.9056	0.4302	Non-Sign	ificant Effect		
Error	0.0171552 0.0014296				5	12	_					
Total	otal 0.0197446											
ANOVA Assu	mptions Te	sts										
Attribute Test						Test Stat	Critical	P-Value	Decision	(a:1%)		
Variance	Bartlett Equality of Variance Test					0.07912	9.21	0.9612	Equal Va	riances		
Distribution Shapiro-Wilk W Normality Test						0.9806	0.8328	0.9731	Normal D	istribution		
Proportion N	ormal Sumr	mary										
Conc-%	Code	Count	Mea	ın	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	0.91	39	0.8879	0.9398	0.9204	0.8786	0.9333	0.0094	2.29%	0.00%
0	M1	5	0.90	28	0.8738	0.9318	0.8919	0.8791	0.9368	0.0105	2.59%	1.21%
0	M2	5	0.89	52	0.8672	0.9232	0.8966	0.8615	0.9213	0.0101	2.52%	2.05%
Angular (Cor	rected) Tran	sformed Su	mmary									
Conc-%	Code	Count	Mea	ın	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LC	5	1.27	40	1.2300	1.3190	1.2850	1.2150	1.3100	0.0160	2.81%	0.00%
0	M1	5	1.25	60	1.2050	1.3060	1.2360	1.2160	1.3170	0.0183	3.26%	1.48%
0	M2	5	1.24	20	1.1970	1.2880	1.2430	1.1900	1.2870	0.0163	2.93%	2.51%
Proportion N	ormal Detai	I										
Conc-%	Code	Rep 1	Rep	2	Rep 3	Rep 4	Rep 5					
0	LC	0.9231			0.9140	0.8786	0.9204					
0	M1 M2	0.8900			0.9162	0.8919	0.8791					
0	0.9213	0.8966	0.8615									
Angular (Cor	rected) Tran	sformed De	tail					1				
Conc-%	Code	Rep 1	Rep	2	Rep 3	Rep 4	Rep 5					
0	LC	1.2900	1.31	00	1.2730	1.2150	1.2850				-	
0	M1	1.2330			1.2770	1.2360	1.2160					
0	M2	1.2300	1.26	30	1.2870	1.2430	1.1900					

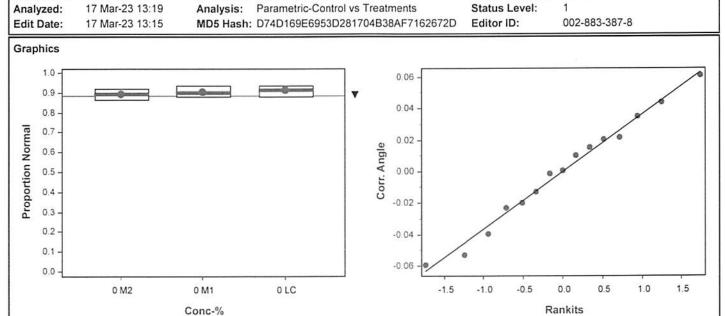
Report Date: Test Code/ID: 22 Mar-23 15:54 (p 12 of 12) 23-01-071b / 08-4412-3788

CETISv2.1.3

Bivalve Larval Survival and Development Test

WSP Laboratory

Analysis ID: 19-9555-3475 Endpoint: Proportion Normal CETIS Version:



CETIS Test Data Worksheet

Report Date: Test Code/ID: 25 Jan-23 18:05 (p 1 of 1) 32504E8C / 08-4412-3788

Wood E&IS

Bivalve Larval Survival and Development Test

Start Date: 26 Jan-23 End Date: 28 Jan-23 Species: Mytilis galloprovincialis

Protocol: EPA/600/R-95/136 (1995)

Sample Date: 25 Jan-23 Material: Seawater

Sample Code: 43E5BCA6

Sample Source: Shelter Island Yacht Basin

Sample Station: SIYB 1 (Treatments)

Comments: M1 = 10 mg/L EDTA method control, M2 = 25 mg/L EDTA method control. 10 = 10 mg/L treatment, 25 = 25 mg/L EDTA treatment

Conc-%	Code	Rep	Pos	Initial Density	Final Density	#Counted &	# Normal	Notes
			430			181	163	
			431			182	160	
			432			201	185	
			433			165	154	
			434			189	165	
			435			157	145	
			436			201 165 189 157 202 195	160 185 154 165 146 186 168	
			437			195	168	
			438			187	175	
			439			187	161	1 curred shell
			440			174	156	
			441			174	180	
			442			190 185 186 173	178	
			443			185	165	
			444			186	170	
			445			173	152	
			446			125	165	1 corred stell
			447			185	180 178 165 170 152 165	
			448			170	151	
			449			156	151	1 word siell
			450			185	at68 168	
	- 1		451			156 185 178	A 168 168	
			452			200	178 175 147	
			453			191	175	
			454			168	147	

Analyst: Analyst: QA: A

CETIS™ v2.1.3.5

CETIS Test Data Worksheet

Report Date: Test Code/ID: 25 Jan-23 18:05 (p 1 of 1)

32504E8C / 08-4412-3788

Bivalve Larval Survival and Development Test

Wood E&IS

Start Date: End Date:

26 Jan-23 28 Jan-23

Species: Mytilis galloprovincialis Protocol: EPA/600/R-95/136 (1995)

Sample Code: Sample Source: Shelter Island Yacht Basin

43E5BCA6

Sample Date: 25 Jan-23

Material: Seawater

Sample Station: SIYB 1 (Treatments)

Comments: M1 = 10 mg/L EDTA method control, M2 = 25 mg/L EDTA method control. 10 = 10 mg/L treatment, 25 = 25 mg/L EDTA treatment

Conc-%	Code	Rep	Pos	Initial Density	Final Density	#Counted 195	#Normal	Notes
0	LC	1	441			195	180	
0	LC	2	433					
0	LC	3	444					
0	LC	4	445					
0	LC	5	432					
0	M1	1	452			200	178	
0	M1	2	442					
0	M1	3	453					
0	M1	4	446					
0	M1	5	431					
0	M2	1	448			170	151	
0	M2	2	450				1	
0	M2	3	451					
0	M2	4	440					
0	M2	5	437					
10		1	439			187	161	I conved stell, plankton observe
10		2	434					
10		3	454			7		
10		4	430	2760				
10		5	447					
25		1	449			156	135	I conved stell physica copepads observed
25		2	436					,
25		3	435					
25		4	443					
25		5	438					

QC=TP

Analyst: A QA: 1c

CETIS™ v2.1.3.5

Water Quality for Bivalve Development

Project ID: SIYB (TIE) Treatment Controls

Test No. 23-01-017 sharb

Test Species: M. galloprovincialis
Start Date/Time: 1/26/2023 1730
End Date/Time: 1/28/2023

Test Conc.,		Water Quali	ty Measurements	
(mg/t-cu)	Parameter	0hr	24hr	48hr
Sample 10	Temp. (°C)	15.8	15.3	15.4
	Salinity (ppt)	33.6	33.6	33.7
Lab Control	pH (units)	7.93	7.61	7.70
	DO (mg/L)	8.2.	8.4	8.3
	Temp. (°C)	15.8	15.1	15.3
Filter Control	Salinity (ppt)	33 3	EN38 34.0	34.1
(0.45um)	pH (units)	7.89	7.71	7.74
	DO (mg/L)	7-7	8.6	8.5
	Temp. (°C)	15.8	15.2	15.3
40 // 5074.0	Salinity (ppt)	34.1	34.1	34.2
10 mg/L EDTA Control	pH (units)	7.89	7.74	7.17
	DO (mg/L)	8.0	8.3	8.4
	Temp. (°C)	15.8	15.3	15.3
25 mg/L EDTA	Salinity (ppt)	34.0	33.8	34.0
Control	pH (units)	7.74	7,69	A7.67.71
	DO (mg/L)	7-8	8.2	8.3
	Temp. (°C)			
	Salinity (ppt)			
	pH (units)			
	DO (mg/L)			
	Temp. (°C)			
	Salinity (ppt)			
	pH (units)			
	DO (mg/L)			
	Temp. (°C)			
	Salinity (ppt)			
	pH (units)			
	DO (mg/L)			
	Tech Initials:	MY	24	26

	PIV	1-	
Source of Animals:	MissionPay	Date Received:	1/26/23
Comments:			
OC Chacks	A 3/m/m	Final Review:	Sc. 3/31/13

Water Quality for Bivalve Development

Project ID: SIYB (TIE) SIYB-1 Treated

Test Species: M. galloprovincialis
Start Date/Time: 1/26/2023 1730
End Date/Time: 1/28/2023 16 © O

Test Conc.		Water Quality	/ Measurements	
(Sample ID)	Parameter	0hr	24hr	48hr
S. S. S. S. S. S. S. S. S. S. S. S. S. S	Temp. (°C)	15.8	15.2	15.3
100% SIYB-1	Salinity (ppt)	32.8	32.9	33.0
(Baseline)	pH (units)	7.88	7.73	7.77
	DO (mg/L)	0.6	8.4	8.3
	Temp. (°C)	15.8	15.4	15.3
100% SIYB 1	Salinity (ppt)	33.1	33.3	33.4
(10 mg/L EDTA)	pH (units)	7.85	7.71	7.75
	DO (mg/L)	8.1	2.7	8.6
	Temp. (°C)	15.8	15.5	15.4
100% SIYB 1	Salinity (ppt)	33.9	33.6	33.8
(25 mg/L EDTA)	pH (units)	2.72	7.71	7.75
	DO (mg/L)	7.9	8:7	8.6
	Temp. (°C)	15.40	15.5	15.4
100% SIYB-1 (0.45um	Salinity (ppt)	32-4	32.8	33.0
filt)	pH (units)	7.82	7.71	7.75
	DO (mg/L)	2.9	8.5	8.6
	Temp. (°C)			
	Salinity (ppt)			
	pH (units)			
	DO (mg/L)			
	Temp. (°C)			
	Salinity (ppt)			
	pH (units)			
	DO (mg/L)			
	Temp. (°C)			
	Salinity (ppt)			
	pH (units)			
	DO (mg/L)			
	Tech Initials:	HK	PEN	As .

Tech Initials:	RN A6
Source of Animals: Missian Bay	Date Received: 1/26/23
Comments:	
QC Check: A6 3/22/23	Final Review: 12 3/3/23

WSP Environmental Laboratory, 4905 Morena Blvd, Ste. 1304, San Diego, CA 92117

Embryo-Larval Development Test Stock Preparation Worksheet

Test Species:

M. galloprovincialis

Test Date: 1/26/2023

Batch ID:

Analyst:

Test Type:

Task	Description of the second
Spawning Induction	1430
Spawning Begins	1510
# Males/# Females	515
Spawn Condition	good
Fertilization Initiated	1600
Fertilzation End/Eggs Rinsed	1620/1640
Embryo Counts	1700
Test Initiation	1730

Embryo Density Counts

Stock #	Stock Volume (mL)	Rep 1	Rep 2	Rep 3	Rep 4	Mean #/100 μL	Mean #/mL (x10)
Stock 1						16	1776
Stock 2	500						
Stock 3	500	21	19	11	1.3	1.6	800

Cell Division:

	% Divided
Stock 1	
Stock 2	90
Stock 3	98

Selected Stock:	3
-----------------	---

Stock Density

Dil Factor

Adjust selected embryo stock to 500 embryos/mL.

Dilution Factor = Stock Density/mL/500

600 500

In 10 mL sample volume add 500 μ l of 500 embryo/ml stock to obtain 25 embryos/mL in test vials.

Notes:

QA Review:

Final Review: 103/9/23

APPENDIX B Chronic Mussel Development Test Raw Data & Statistical Analyses Phase II TIE

Report Date: Test Code/ID: 30 Mar-23 19:08 (p 1 of 2) 23-01-072a / 08-8498-1995

Bivalve Larval Survival and Development Test

WSP Laboratory

Batch ID:	03-3101-3021	Test Type:	Development-Survival	Analyst:		
Start Date:	26 Jan-23 17:30	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Diluted Natural Seawater	
Ending Date:	28 Jan-23 16:00	Species:	Mytilis galloprovincialis	Brine:	Not Applicable	
Test Length:	46h	Taxon:	1109991 20000 1 100	Source:	Field Collected	Age:
Sample ID:	03-1218-4809	Code:	23-W026	Project:	Toxicity Identification Evalu	ation
Sample Date:	25 Jan-23 14:00	Material:	Total Copper	Source:	Shelter Island Yacht Basin	
Receipt Date:	25 Jan-23 17:00	CAS (PC):		Station:	SIYB-1	
Sample Age:	27h (15.7 °C)	Client:	SIYB			

Comments: Reference toxicant test made with undiluted SIYB water from SIYB-1. For analysis, nominal copper concentrations were replaced with actual concentrations measured by Weck Laboratories.

Multiple Com	parison Summary							
Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	s
19-4753-7454	Combined Proportion Norma	Dunnett Multiple Comparison Test	√	4.1	6.1	5.001	4.08%	1
09-4361-6980	Proportion Normal	Dunnett Multiple Comparison Test		6.1	11	8.191	2.71%	1
10-0501-9283	Survival Rate	Dunnett Multiple Comparison Test		11	21	15.2	3.41%	1
Point Estimat	e Summary							
Analysis ID	Endpoint	Point Estimate Method	1	Level	μg/L	95% LCL	95% UCL	S
02-0518-2934	Combined Proportion Norma	Trimmed Spearman-Kärber	✓	EC50	11.26	11.02	11.51	1
12-6759-8198	Proportion Normal	Trimmed Spearman-Kärber		EC50	11.48	11.24	11.72	1

Test Acceptat	pility			TAC			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
09-4361-6980	Proportion Normal	Control Resp	0.9131	0.9	<<	Yes	Passes Criteria
12-6759-8198	Proportion Normal	Control Resp	0.9131	0.9	<<	Yes	Passes Criteria
10-0501-9283	Survival Rate	Control Resp	0.9978	0.5	<<	Yes	Passes Criteria
19-4753-7454	Combined Proportion No	rma PMSD	0.0408	<<	0.25	No	Passes Criteria

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0.68	LC	5	0.9111	0.8842	0.9380	0.8907	0.9466	0.0097	0.0217	2.38%	0.00%
4.1		5	0.8967	0.8758	0.9176	0.8689	0.9105	0.0075	0.0168	1.87%	1.58%
6.1		5	0.8602	0.8044	0.9161	0.7869	0.9086	0.0201	0.0450	5.23%	5.58%
11		5	0.5048	0.4576	0.5520	0.4645	0.5519	0.0170	0.0380	7.53%	44.59%
21		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%
44		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0.68	LC	5	0.9131	0.8886	0.9376	0.8971	0.9466	0.0088	0.0197	2.16%	0.00%
4.1		5	0.9036	0.8957	0.9115	0.8955	0.9105	0.0028	0.0063	0.70%	1.04%
6.1		5	0.8916	0.8750	0.9082	0.8778	0.9086	0.0060	0.0134	1.50%	2.35%
11		5	0.5124	0.4603	0.5644	0.4677	0.5739	0.0187	0.0419	8.18%	43.89%
21		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%
44		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%

Survival Rate S	Summary										
Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0.68	LC	5	0.9978	0.9917	1.0040	0.9891	1.0000	0.0022	0.0049	0.49%	0.00%
4.1		5	0.9923	0.9711	1.0140	0.9617	1.0000	0.0077	0.0171	1.72%	0.55%
6.1		5	0.9650	0.8998	1.0300	0.8743	1.0000	0.0235	0.0525	5.44%	3.29%
11		5	0.9858	0.9615	1.0100	0.9617	1.0000	0.0087	0.0196	1.98%	1.20%
21		5	0.9388	0.8905	0.9871	0.9016	1.0000	0.0174	0.0389	4.14%	5.91%
44		5	0.4721	0.3524	0.5918	0.3607	0.5902	0.0431	0.0964	20.42%	52.68%

Report Date:

30 Mar-23 19:08 (p 2 of 2) 23-01-072a / 08-8498-1995

Test Code/ID:

WSP Laboratory

Bivalve Larval S	Survival and I	Developmen	t Test				WSP Laboratory
Combined Prop	ortion Norma	al Detail					MD5: 6B206F5477C174024A135BE39D7147E3
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0.68	LC	0.9126	0.9466	0.9086	0.8971	0.8907	
4.1		0.8995	0.9091	0.9105	0.8955	0.8689	
6.1		0.7869	0.8634	0.8789	0.9086	0.8634	
11		0.4677	0.5130	0.4645	0.5271	0.5519	
21		0.0000	0.0000	0.0000	0.0000	0.0000	
44		0.0000	0.0000	0.0000	0.0000	0.0000	
Proportion Nor	mal Detail						MD5: C75B9081063F4C8B0C0F0C5557F8E1C9
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0.68	LC	0.9126	0.9466	0.9086	0.8971	0.9006	
4.1	07.5	0.8995	0.9091	0.9105	0.8955	0.9034	
6.1		0.9000	0.8927	0.8789	0.9086	0.8778	
11		0.4677	0.5130	0.4802	0.5271	0.5739	
32.000					0.0000	0.0000	
21		0.0000	0.0000	0.0000			
44		0.0000	0.0000	0.0000	0.0000	0.0000	
Survival Rate D	etail						MD5: D86DD0318C36882C0D04AE3961D6F659
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0.68	LC	1.0000	1.0000	1.0000	1.0000	0.9891	
4.1		1.0000	1.0000	1.0000	1.0000	0.9617	
6.1		0.8743	0.9672	1.0000	1.0000	0.9836	
11		1.0000	1.0000	0.9672	1.0000	0.9617	
21		0.9508	0.9016	1.0000	0.9126	0.9290	
44		0.4918	0.3880	0.5301	0.3607	0.5902	
Combined Prop	ortion Norm	al Binomials	0				
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0.68	LC	167/183	195/206	179/197	183/204	163/183	
4.1		170/189	170/187	173/190	180/201	159/183	
6.1		144/183	158/183	167/190	179/197	158/183	
11		87/186	99/193	85/183	107/203	101/183	
21		0/183	0/183	0/184	0/183	0/183	
44		0/183	0/183	0/183	0/183	0/183	
Proportion Nor	mal Binomia	ls					
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0.68	LC	167/183	195/206	179/197	183/204	163/181	
4.1		170/189	170/187	173/190	180/201	159/176	
6.1		144/160	158/177	167/190	179/197	158/180	
11		87/186	99/193	85/177	107/203	101/176	
21		0/174	0/165	0/184	0/167	0/170	
44		0/90	0/71	0/97	0/66	0/108	
Survival Rate B	Binomials	A CS					
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0.68	LC	183/183	183/183	183/183	183/183	181/183	
4.1		183/183	183/183	183/183	183/183	176/183	
6.1		160/183	177/183	183/183	183/183	180/183	
11		183/183	183/183	177/183	183/183	176/183	
21		174/183	165/183	183/183	167/183	170/183	
44		90/183	71/183	97/183	66/183	108/183	

Report Date: Test Code/ID: 22 Mar-23 15:42 (p 1 of 6) 23-01-072a / 08-8498-1995

Bivalve Larval Survival and Development Test WSP Laboratory

Analysis ID: 19-4753-7454

17 Mar 22 12:20

Endpoint: Combined Proportion Normal

CETIS Version:

: CETISv2.1.3

Analyzed:

17 Mar-23 12:36

Analysis: Parametric-Control vs Treatments

Status Level:

1

Edit Date: 10 Mar-23 12:49

MD5 Hash: 6B206F5477C174024A135BE39D7147E3

Editor ID:

002-883-387-8

Comments: Reference toxicant test made with undiluted SIYB water from SIYB-1. For analysis, nominal copper concentrations were replaced with actual concentrations measured by Weck Laboratories.

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD	
Angular (Corrected)	C > T	4.1	6.1	5.001		0.03717	4.08%	

Dunnett Mult	Dunnett Multiple Comparison Test											
Control	vs	Conc-µg/L	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(a:5%)			
Lab Control		4.1	8	0.92	2.227	0.06217	CDF	0.3635	Non-Significant Effect			
		6.1*	8	2.834	2.227	0.06217	CDF	0.0155	Significant Effect			
		11*	8	17 19	2 227	0.06217	CDF	<1.0F-05	Significant Effect			

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)
Between	0.758299	0.252766	3	129.8	<1.0E-05	Significant Effect
Error	0.031166	0.0019479	16			
Total	0.789465		19	=======================================		

ANOVA Assum	ANOVA Assumptions Tests										
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)						
Variance	Bartlett Equality of Variance Test	2.693	11.34	0.4414	Equal Variances						
Distribution	Shapiro-Wilk W Normality Test	0.9591	0.866	0.5251	Normal Distribution						

Combined Pro	portion Norm	al Summar	4								
Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0.68	LC	5	0.9111	0.8842	0.9380	0.9086	0.8907	0.9466	0.0097	2.38%	0.00%
4.1		5	0.8967	0.8758	0.9176	0.8995	0.8689	0.9105	0.0075	1.87%	1.58%
6.1		5	0.8602	0.8044	0.9161	0.8634	0.7869	0.9086	0.0201	5.23%	5.58%
11		5	0.5048	0.4576	0.5520	0.5130	0.4645	0.5519	0.0170	7.53%	44.59%
21		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%
44		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%

Angular (Corre	cted) Transfo	rmed Sumr									
Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0.68	LC	5	1.2700	1.2200	1.3200	1.2640	1.2340	1.3380	0.0181	3.19%	0.00%
4.1		5	1.2440	1.2110	1.2780	1.2480	1.2000	1.2670	0.0120	2.16%	2.02%
6.1		5	1.1910	1.1130	1.2690	1.1920	1.0910	1.2640	0.0282	5.29%	6.23%
11		5	0.7902	0.7430	0.8375	0.7984	0.7498	0.8374	0.0170	4.82%	37.78%
21		5	0.0370	0.0369	0.0370	0.0370	0.0369	0.0370	0.0000	0.12%	97.09%
44		5	0.0370	0.0370	0.0370	0.0370	0.0370	0.0370	0.0000	0.00%	97.09%

Combined Pro	Combined Proportion Normal Detail									
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5				
0.68	LC	0.9126	0.9466	0.9086	0.8971	0.8907				
4.1		0.8995	0.9091	0.9105	0.8955	0.8689				
6.1		0.7869	0.8634	0.8789	0.9086	0.8634				
11		0.4677	0.5130	0.4645	0.5271	0.5519				
21		0.0000	0.0000	0.0000	0.0000	0.0000				
44		0.0000	0.0000	0.0000	0.0000	0.0000				

Report Date: Test Code/ID: 22 Mar-23 15:42 (p 2 of 6) 23-01-072a / 08-8498-1995

WSP Laboratory

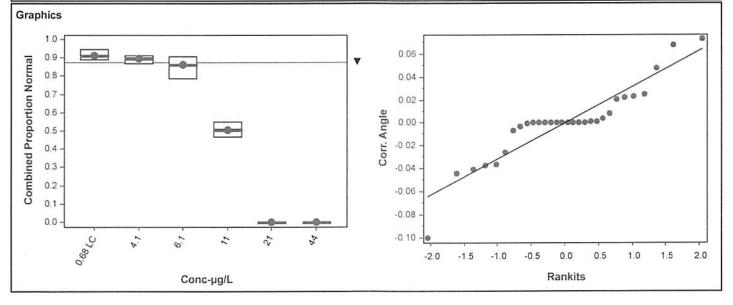
Bivalve Larval Survival and Development Test WSP Labo

Analysis ID: 19-4753-7454 Endpoint: Combined Proportion Normal CETIS Version: CETISv2.1.3

Analyzed: 17 Mar-23 12:36 Analysis: Parametric-Control vs Treatments Status Level: 1

Edit Date: 10 Mar-23 12:49 MD5 Hash: 6B206F5477C174024A135BE39D7147E3 Editor ID: 002-883-387-8

Angular (Corre	cted) Transfo						
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0.68	LC	1.2710	1.3380	1.2640	1.2440	1.2340	
4.1		1.2480	1.2650	1.2670	1.2420	1.2000	
6.1		1.0910	1.1920	1.2150	1.2640	1.1920	
11		0.7531	0.7984	0.7498	0.8125	0.8374	
21		0.0370	0.0370	0.0369	0.0370	0.0370	
44		0.0370	0.0370	0.0370	0.0370	0.0370	



Report Date:

22 Mar-23 15:42 (p 3 of 6) 23-01-072a / 08-8498-1995

Test Code/ID:

Bivalve Larval Survival and Development Test WSP Laboratory

Analysis ID: 09-4361-6980

Endpoint: Proportion Normal

CETIS Version:

CETISv2.1.3

Analyzed:

Edit Date:

17 Mar-23 12:36 10 Mar-23 12:49 Analysis: Parametric-Control vs Treatments

Status Level:

002-883-387-8

Reference toxicant test made with undiluted SIYB water from SIYB-1. For analysis, nominal copper concentrations were replaced Comments: with actual concentrations measured by Weck Laboratories.

MD5 Hash: C75B9081063F4C8B0C0F0C5557F8E1C9 Editor ID:

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corrected)	C>T	6.1	11	8 191		0.02475	2 71%

Data HallSlottii	Ан пур	NOEL	LOLL	TOLL	TOX UTILIS	MODU	I MIOD	_
Angular (Corrected)	C > T	6.1	11	8.191		0.02475	2.71%	
Dunnett Multiple Compa	ricon Tost							_

Dunnett Multiple Comparison Test											
Control	vs	Conc-µg/L	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(a:5%)		
Lab Control		4.1	8	0.9288	2.227	0.04314	CDF	0.3599	Non-Significant Effect		
		6.1	8	1.933	2.227	0.04314	CDF	0.0844	Non-Significant Effect		
		11*	8	24.54	2.227	0.04314	CDF	<1.0E-05	Significant Effect		

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.786392	0.262131	3	279.5	<1.0E-05	Significant Effect	
Error	0.0150082	0.0009380	16				
Total	0.8014		19				

ANOVA Assum	ANOVA Assumptions Tests									
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)					
Variance	Bartlett Equality of Variance Test	6.386	11.34	0.0943	Equal Variances					
Distribution	Shapiro-Wilk W Normality Test	0.9282	0.866	0.1426	Normal Distribution					

Proportion Nor	rmal Summar	у									
Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0.68	LC	5	0.9131	0.8886	0.9376	0.9086	0.8971	0.9466	0.0088	2.16%	0.00%
4.1		5	0.9036	0.8957	0.9115	0.9034	0.8955	0.9105	0.0028	0.70%	1.04%
6.1		5	0.8916	0.8750	0.9082	0.8927	0.8778	0.9086	0.0060	1.50%	2.35%
11		5	0.5124	0.4603	0.5644	0.5130	0.4677	0.5739	0.0187	8.18%	43.89%
21		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%
44		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%

Angular (Corrected) Transformed Summary												
Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect	
0.68	LC	5	1.2730	1.2270	1.3200	1.2640	1.2440	1.3380	0.0168	2.95%	0.00%	
4.1		5	1.2550	1.2420	1.2690	1.2550	1.2420	1.2670	0.0048	0.85%	1.41%	
6.1		5	1.2360	1.2090	1.2630	1.2370	1.2140	1.2640	0.0096	1.75%	2.94%	
11		5	0.7978	0.7457	0.8500	0.7984	0.7531	0.8595	0.0188	5.27%	37.34%	
21		5	0.0382	0.0371	0.0392	0.0384	0.0369	0.0389	0.0004	2.14%	97.00%	
44		5	0.0545	0.0474	0.0616	0.0527	0.0481	0.0616	0.0026	10.51%	95.72%	

Proportion No	roportion Normal Detail												
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5							
0.68	LC	0.9126	0.9466	0.9086	0.8971	0.9006							
4.1		0.8995	0.9091	0.9105	0.8955	0.9034							
6.1		0.9000	0.8927	0.8789	0.9086	0.8778							
11		0.4677	0.5130	0.4802	0.5271	0.5739							
21		0.0000	0.0000	0.0000	0.0000	0.0000							
44		0.0000	0.0000	0.0000	0.0000	0.0000							

Report Date: Test Code/ID: 22 Mar-23 15:42 (p 4 of 6) 23-01-072a / 08-8498-1995

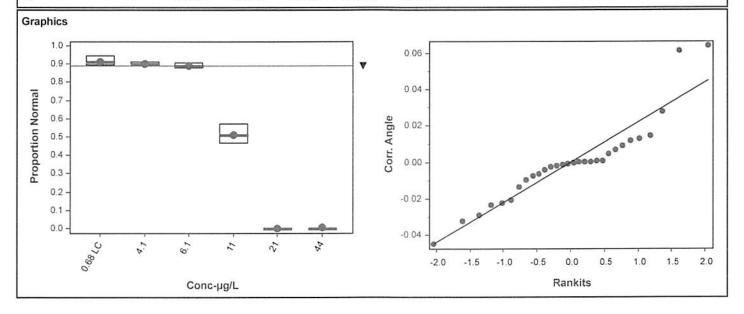
Bivalve Larval Survival and Development Test WSP Laboratory

Analysis ID: 09-4361-6980 Endpoint: Proportion Normal CETIS Version: CETISv2.1.3

Analyzed: 17 Mar-23 12:36 Analysis: Parametric-Control vs Treatments Status Level: 1

Edit Date: 10 Mar-23 12:49 MD5 Hash: C75B9081063F4C8B0C0F0C5557F8E1C9 Editor ID: 002-883-387-8

Angular (Corre	ected) Transfo	ormed Detai	I.			
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0.68	LC	1.2710	1.3380	1.2640	1.2440	1.2500
4.1		1.2480	1.2650	1.2670	1.2420	1.2550
6.1		1.2490	1.2370	1.2150	1.2640	1.2140
11		0.7531	0.7984	0.7656	0.8125	0.8595
21		0.0379	0.0389	0.0369	0.0387	0.0384
44		0.0527	0.0594	0.0508	0.0616	0.0481



Report Date:

22 Mar-23 15:42 (p 5 of 6) 23-01-072a / 08-8498-1995

Test Code/ID:

Bivalve Larva	al Sur	vival and D	evelopmen	t Test							WSP	aboratory
Analysis ID: Analyzed:	17 M	501-9283 ar-23 12:36	Anal	•	ametric-Con			Statu	S Version: is Level:	CETISv2.		
Edit Date:	10 M	ar-23 12:49	MD5	Hash: D86	DD0318C36	5882C0D04	AE3961D6F	659 Edito	or ID:	002-883-3	87-8	
Comments:					uted SIYB w Weck Labo		YB-1. For a	analysis, no	minal coppe	r concentrati	ons were r	eplaced
Data Transfo	rm		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corre	ected)		C > T				11	21	15.2	242	0.03406	3.41%
Dunnett Mult	iple C	omparison	Test									
Control	vs	Conc-µg/L		Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)		
Lab Control		4.1	8	0.3085	2.362	0.141	CDF	0.7266		ficant Effect		
		6.1	8	1.655	2.362	0.141	CDF	0.1772		ficant Effect		
		11	8	0.7946	2.362	0.141	CDF	0.5134	Non-Signif	ficant Effect		
		21*	8	3.004	2.362	0.141	CDF	0.0126	Significant	Effect		
		44*	8	12.78	2.362	0.141	CDF	<1.0E-05	Significant	Effect		
ANOVA Table	Э											
Source		Sum Squa	ires	Mean Squ	iare	DF	F Stat	P-Value	Decision(
Between		2.11336		0.422673		5	47.42	<1.0E-05	Significant	Effect		
Error		0.21391		0.0089129)	24						
Total		2.32727				29						
ANOVA Assu	mptio	ns Tests										
Attribute		Test				Test Stat	Critical	P-Value	Decision(α:1%)		
Variance		Bartlett Eq	uality of Var	riance Test		7.042	15.09	0.2176	Equal Vari	iances		
Distribution		Shapiro-W	ilk W Norm	ality Test		0.9718	0.9031	0.5881	Normal Di	stribution		
Survival Rate	Sum	mary										
Conc-µg/L		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0.68		LC	5	0.9978	0.9917	1.0000	1.0000	0.9891	1.0000	0.0022	0.49%	0.00%
4.1			5	0.9923	0.9711	1.0000	1.0000	0.9617	1.0000	0.0077	1.72%	0.55%
6.1			5	0.9650	0.8998	1.0000	0.9836	0.8743	1.0000	0.0235	5.44%	3.29%
11			5	0.9858	0.9615	1.0000	1.0000	0.9617	1.0000	0.0087	1.98%	1.20%
21			5	0.9388	0.8905	0.9871	0.9290	0.9016	1.0000	0.0174	4.14%	5.91%
44			5	0.4721	0.3524	0.5918	0.4918	0.3607	0.5902	0.0431	20.42%	52.68%
Angular (Cor	rected	l) Transforr	ned Summ	ary								
Conc-µg/L		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0.68		LC	5	1.5200	1.4830	1.5580	1.5340	1.4660	1.5340	0.0136	1.99%	0.00%
4.1			5	1.5020	1.4130	1.5910	1.5340	1.3740	1.5340	0.0320	4.76%	1.21%
6.1			5	1.4210	1.2550	1.5880	1.4420	1.2080	1.5340	0.0601	9.45%	6.50%
11			5	1.4730	1.3690	1.5770	1.5340	1.3740	1.5340	0.0374	5.68%	3.12%
21			5	1.3410	1.2000	1.4820	1.3010	1.2520	1.5340	0.0509	8.48%	11.80%
44			5	0.7571	0.6362	0.8779	0.7772	0.6442	0.8761	0.0435	12.85%	50.20%
Survival Rate	e Deta	il										
Conc-µg/L		Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0.68		LC	1.0000	1.0000	1.0000	1.0000	0.9891					
4.1			1.0000	1.0000	1.0000	1.0000	0.9617					
6.1			0.8743	0.9672	1.0000	1.0000	0.9836					
11			1.0000	1.0000	0.9672	1.0000	0.9617					
21			0.9508	0.9016	1.0000	0.9126	0.9290					
44			0.4918	0.3880	0.5301	0.3607	0.5902					

Report Date: Test Code/ID:

22 Mar-23 15:42 (p 6 of 6) 23-01-072a / 08-8498-1995

Bivalve Larval Survival and Development Test

WSP Laboratory

Analysis ID:

10-0501-9283

Endpoint: Survival Rate

alysis: Parametric-Control vs Treatments **CETIS Version:**

Status Level:

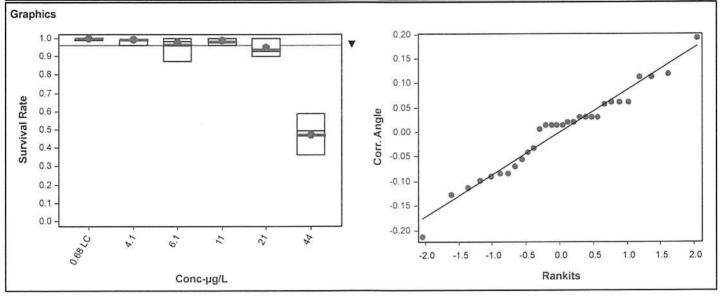
002-883-387-8

CETISv2.1.3

Analyzed:	17 Mar-23 12:36	Ana
Edit Date:	10 14 22 12:10	MID

Edit Date: 10 Mar-23 12:49

Angular (Corre	Angular (Corrected) Transformed Detail												
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5							
0.68	LC	1.5340	1.5340	1.5340	1.5340	1.4660							
4.1		1.5340	1.5340	1.5340	1.5340	1.3740							
6.1		1.2080	1.3890	1.5340	1.5340	1.4420							
11		1.5340	1.5340	1.3890	1.5340	1.3740							
21		1.3470	1.2520	1.5340	1.2710	1.3010							
44		0.7772	0.6724	0.8155	0.6442	0.8761							



Report Date: Test Code/ID:

22 Mar-23 15:42 (p 1 of 1) 23-01-072a / 08-8498-1995

Bivalve Larval Survival and Development Test

WSP Laboratory

Analysis ID: 02-0518-2934 Analyzed:

17 Mar-23 12:36

Endpoint: Combined Proportion Normal

CETIS Version:

Analysis: Trimmed Spearman-Kärber

Status Level:

002-883-387-8

Edit Date: 10 Mar-23 12:49 MD5 Hash: 6B206F5477C174024A135BE39D7147E3

Editor ID:

CETISv2.1.3

Comments:

Reference toxicant test made with undiluted SIYB water from SIYB-1. For analysis, nominal copper concentrations were replaced

with actual concentrations measured by Weck Laboratories.

	Trimmed	Spearman-Kärber Estimates
ı		

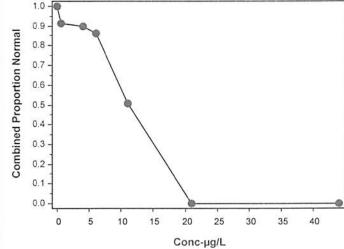
Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0.08839	1.62%	1.052	0.004787	11.26	11.02	11.51

Combined Pro	Combined Proportion Normal Summary					Isotonic Variate					
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	ΣΑ/ΣΒ	Mean	%Effect
0.68	LC	5	0.9111	0.9086	0.8907	0.9466	2.38%	0.00%	887/973	0.9116	0.00%
4.1		5	0.8967	0.8995	0.8689	0.9105	1.87%	1.58%	852/950	0.8968	1.62%
6.1		5	0.8602	0.8634	0.7869	0.9086	5.23%	5.58%	806/936	0.8611	5.54%
11		5	0.5048	0.5130	0.4645	0.5519	7.53%	44.59%	479/948	0.5053	44.57%
21		5	0.0000	0.0000	0.0000	0.0000		100.00%	0/916	0.0000	100.00%
44		5	0.0000	0.0000	0.0000	0.0000		100.00%	0/915	0.0000	100.00%

Combined Proportion Normal Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0.68	LC	0.9126	0.9466	0.9086	0.8971	0.8907
4.1		0.8995	0.9091	0.9105	0.8955	0.8689
6.1		0.7869	0.8634	0.8789	0.9086	0.8634
11		0.4677	0.5130	0.4645	0.5271	0.5519
21		0.0000	0.0000	0.0000	0.0000	0.0000
44		0.0000	0.0000	0.0000	0.0000	0.0000

Graphics



CETIS Test Data Worksheet

Report Date: Test Code/ID: 25 Jan-23 10:36 (p 1 of 1)

34BFC0EB / 08-8498-1995

Bivalve Larval Survival and Development Test

Wood E&IS

Start Date:

26 Jan-23 28 Jan-23 Species: Mytilis galloprovincialis

Sample Code: 129B8FE9

End Date:

Protocol: EPA/600/R-95/136 (1995)

Sample Source: Shelter Island Yacht Basin

Sample Date: 25 Jan-23

Material: Total Copper

Sample Station: SIYB-1

Comments: Reference toxicant test made With undiluted SIYB water from SIYB-1

Conc-µg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
			350			66	0	
			351			160	144	3 curved stells
			352			206	195	3 curved stells
			353			203	107	55 curved stells
			354			187	170	
			355			190	173	
			356			190	167	i curved stell
			357			193	99	36 curred skills
			358			71	0	
			359			201	180	
			360			197	179	
			361			97	0	
			362			197	179	2 corred stells
			363			176	159	
			364			108	0	
			365			174	0	
			366			90	0	
			367			176	101	36 coved stells
			368			181	163	
			369			204	183	
			370			186	87	56 curved stells
			371			165	0	
			372			183	167	
			373			167	0	
			374			177	85	44 comed stells
			375			189	170	
			376			184	0	
			377			170	0	
			378			180	158	
			379			177	158	2 corredstells

CETIS Test Data Worksheet

Report Date: Test Code/ID: 25 Jan-23 10:37 (p 1 of 1)

34BFC0EB / 08-8498-1995

Bivalve Larval Survival and Development Test

Wood E&IS

Start Date: 26 Jan-23

Species: Mytilis galloprovincialis

Material: Total Copper

Sample Code: 129B8FE9

End Date: 28 Jan-23 Sample Date: 25 Jan-23 Protocol: EPA/600/R-95/136 (1995)

Sample Source: Shelter Island Yacht Basin

Sample Station: SIYB-1

Comments: Reference toxicant test made With undiluted SIYB water from SIYB-1

Conc	-µg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted \3	#Normal 7	Notes
0.68	0	LC	1	372			183	167	
Ì	0	LC	2	352					
	0	LC	3	360					
	0	LC	4	369					
1	0	LC	5	368					
4.1	2.5		1	375			189	170	
ï	2.5		2	354			101		
	2.5		3	355					
1	2.5		4	359					
V	2.5		5	363					
6.1	5		1	351			160	144	3 corred stells
1	5		2	379			.00		3 66,10 66 3 61.3
1	5		3	356					
1	5		4	362					
	5		5	378					
11	10		1	370			186	87	56 curved stells
ï	10		2	357			1 80	- 0 1	3 0 00.
1	10		3	374					
+	10		4	353					
1	10		5	367					
21	20		1	365			174	0	
1	20		2	371					
1	20		3	376					
1	20		4	373					
1	20		5	377					
44	40		1	366			90	0	
1	40		2	358			10		
1	40		3	361					
1	40		4	350					
1	40		5	364					

QC=TD

Analyst: As QA: Juc

Water Quality for Bivalve Development

Client: POSD

Project ID: SIYB (TIE) 100% SIYB-1 RT
Test No. 23-01-072~

Test Species: M. galloprovincialis

Start Date/Time: 1/26/2023 1730

End Date/Time: 1/28/2023 \ ₺ ७ ℃

Test Conc.	Water Quality Measurements									
(µg/L C u)	Parameter	Ohr	24hr	48hr						
	Temp. (°C)	15.8	15:52	15.3						
	Salinity (ppt)	33-3	33.05	33.7						
Lab Control	pH (units)	7.93	7.57	7.65						
	DO (mg/L)	0,3	8.54	8.3						
	Temp. (°C)	15.8	15.20	15.3						
2 5 (4000) SIVID 4)	Salinity (ppt)	33:5	33,00	33.7						
2.5 (100% SIYB 1)	pH (units)	7.90	7.695	7.68						
	DO (mg/L)	8.3	8.75	15.3 33.7 7.65 8.3 15.3 33.7 7.68 8.4 15.3 33.7 7.70 8.5 15.3 33.7 7.73 8.5						
	Temp. (°C)	15.8	15.2	15.3						
F (1000) SIND 1)	Salinity (ppt)	33.5	33.6	33.7						
5 (100% SIYB 1)	pH (units)	7.90	77369	7.70						
	DO (mg/L)	8.4	8:47	8.5						
	Temp. (°C)	15.0	15.31							
10 (100% SIVE 1)	Salinity (ppt)	33.4	33.25 P	33.7						
10 (100% SIYB 1)	pH (units)	7.89	7,741 00	7.73						
	DO (mg/L)	8. ₹	8.75 W							
	Temp. (°C)	15.8	15.42 PN	15.2						
20 (100% SIYB 1)	Salinity (ppt)	33.4	33.0	33.5						
20 (100% 3118 1)	pH (units)	7.89	7.732en	7.74						
	DO (mg/L)	8.3	8.5	8.5						
	Temp. (°C)	NR	15,42	15.2						
40 (100% SIYB 1)	Salinity (ppt)	NR	32.9	33.3						
40 (100% 3118 1)	pH (units)	NR	7.73	7.75						
	DO (mg/L)	NR	8.75	8.5						
	Temp. (°C)									
	Salinity (ppt)									
	pH (units)									
	DO (mg/L)									
·	Tech Initials	HK	RN	Mo						

	11.		110
Source of Animals:	Missian Bay	Date Received:	1/26/23
Comments:	NR: Not Recorded	. 10	,
OC Check:	No 3/24/23	Final Review:	Sc 3/31/23

Embryo-Larval Development Test Stock Preparation Worksheet

Test Species:

M. galloprovincialis

Test Date: 1/26/2023

Batch ID:

Analyst:

Test Type:

1430
1510
515
good
1600
1620/1640
1700
1730

Embryo Density Counts

2Q # per 100 μL

Stock #	Stock Volume (mL)	Rep 1	Rep 2	Rep 3	Rep 4	Mean #/100 μL	Mean #/ml (x10)	
Stock 1						76	1776	
Stock 2	500							
Stock 3	500	21	19	11	13	1.6	800	

Cell Division:

	% Divided
Stock 1	
Stock 2	90
Stock 3	98

3	Selected Stock:
3	Selected Stock:

Stock Density

Dil Factor

Adjust selected embryo stock to 500 embryos/mL.

Dilution Factor = Stock Density/mL/500

600 500

In 10 mL sample volume add 500 μ l of 500 embryo/ml stock to obtain 25 embryos/mL in test vials.

Notes:

QA Review:

Final Review: 8 3/9/23

CETIS Summary Report

Report Date: Test Code/ID: 30 Mar-23 19:04 (p 1 of 2) 23-01-072b / 10-5664-1449

Bivalve Larval Survival and Development Test

WSP Laboratory

Bivalve Larval Survival and Development Test WSP Laboratory													
Batch ID:	19-8763-2112	Test	Type:	Development-	Survival			Analy	/st:				
Start Date:	26 Jan-23 17:30		ocol:	EPA/600/R-95				Dilue		ited Natural S	Seawater		
26-26-26-20-20-20-20-20-20-20-20-20-20-20-20-20-			cies: Mytilis galloprovinciali					Brine		Not Applicable			
550				wythis ganopic	WillClaiis			Sour		ld Collected		Age:	
Test Length:	4011	Taxo	т.					3001	ce. Tie	iu Collecteu		Age.	
Sample ID:	07-9263-5687	Cod	e:	23-W026				Proje	ct: Tox	cicity Identific	ation Evalua	ition	
Sample Date:	25 Jan-23 14:00	Mate	erial:	Total Copper				Sour	ce: She	elter Island Y	acht Basin		
Receipt Date:	25 Jan-23 17:00	CAS	(PC):					Station: SIYB-1 (50%)					
Sample Age:	27h (15.7 °C)	Clie	nt:	SIYB									
Comments: Reference toxicant test made with 50% diluted SIYB water from SIYB-1. For analysis, nominal copper concentrations were replaced with actual concentrations measured by Weck Laboratories.												e replaced	
Multiple Com	parison Summa	ry											
Analysis ID	Endpoint		Comp	arison Method	ı		1	NOEL	LOEL	TOEL	PMSD	s	
	Combined Propo	ortion Norma	Dunne	ett Multiple Com	parison Test		1	5.6	10	7.483	8.32%	1	
Commence and the second	Proportion Norm			ett Multiple Com			1		10	7.483	5.55%	1	
	Survival Rate			ett Multiple Com				21	40	28.98	7.49%	1	
Point Estimat													
1/01% 162 600 p.//gm			Deint	Catimata Math	od		,	Lovel	uall	95% LCL	95% UCL	s	
Analysis ID	Endpoint	- 4° 51		Estimate Meth	lou		V	Level	μ g/L 11.91	11.68	12.14	1	
	Combined Propo						,	EC50				1	
05-6296-9304	Proportion Norm	ıal	Trimm	ed Spearman-l	Carber		√	EC50	11.77	11.52	12.02		
Test Acceptal	bility					TAC	Li	imits					
Analysis ID	Endpoint		Attribute Test Stat L			Lower		Upper Overlag		Decision			
05-6296-9304	Proportion Norm	nal	Control Resp 0.9164 0.9			0.9		<<	Yes	Passes Cr	iteria		
17-5076-2065	Proportion Norm	nal	Control Resp 0.9164 0.9			0.9		<<			Passes Criteria		
09-8693-5722	Survival Rate		Control Resp 0.9541 0.5			0.5		<<					
11-2777-5035	Combined Propo	ortion Norma	PMSD	PMSD 0.0832 << 0.3			0.25	No	Passes Cr	riteria			
Combined Pr	oportion Norma	Summary											
Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min		Max	Std Err	Std Dev	CV%	%Effect	
0.74	LC	5	0.873		0.9210	0.8142		0.9048	0.0170	0.0381	4.35%	0.00%	
3.4	20	5	0.8820		0.9091	0.8634		0.9183	0.0098	0.0218	2.47%	-0.95%	
5.6		5	0.8819		0.9464	0.7923		0.9179	0.0232	0.0519	5.89%	-0.94%	
10		5	0.619		0.7403	0.5359		0.7817	0.0435	0.0973	15.70%	29.10%	
21		5	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		100.00%	
40		5	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		100.00%	
****	ormal Summary		100000000000000000000000000000000000000				_						
Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min		Max	Std Err	Std Dev	CV%	%Effect	
0.74	LC	5	0.9164		0.9342	0.9010		0.9371	0.0064	0.0144	1.57%	0.00%	
3.4		5	0.8999		0.9243	0.8833		0.9240	0.0088	0.0196	2.18%	1.80%	
5.6		5	0.894		0.9273	0.8529		0.9179	0.0120	0.0268	3.00%	2.44%	
10		5	0.6363		0.7535	0.5359		0.7817	0.0422	0.0943	14.83%	30.56%	
21		5	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		100.00%	
40		5	0.000		0.0000	0.0000		0.0000	0.0000	0.0000		100.00%	
Survival Rate	Summary												
Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min		Max	Std Err	Std Dev	CV%	%Effect	
0.74	LC	5	0.954	or a superior superio	1.0220	0.8689		1.0000	0.0245	0.0549	5.75%	0.00%	
3.4	55 T	5	0.980		1.0130	0.9344		1.0000	0.0118	0.0264	2.69%	-2.75%	
5.6		5	0.985		1.0250	0.9290		1.0000	0.0142	0.0318	3.22%	-3.32%	
10		5	0.973		1.0300	0.8962		1.0000	0.0201	0.0450	4.62%	-2.06%	
21		5	0.954		1.0100	0.8962		1.0000	0.0202	0.0452	4.73%	0.00%	
40		5	0.596		0.6921	0.5191		0.6995	0.0344	0.0768	12.88%	37.46%	

Analyst: JF QA: le \$3/13

12.88%

37.46%

0.6921

0.5191

0.6995

0.0344

0.0768

5

0.5967

0.5013

40

Report Date: Test Code/ID:

30 Mar-23 19:04 (p 2 of 2) 23-01-072b / 10-5664-1449

Bivalve Larval	Survival and	Developmer	nt Test					WSP Laboratory
Combined Prop	portion Norm	al Detail					MD5:	F6B65DF2931440263535768A06C16D80
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0.74	LC	0.9048	0.8907	0.8579	0.9010	0.8142		
3.4		0.8852	0.8634	0.9183	0.8743	0.8689		
5.6		0.7923	0.9179	0.9016	0.8830	0.9149		
10		0.5359	0.5738	0.5721	0.6339	0.7817		
21		0.0000	0.0000	0.0000	0.0000	0.0000		
40		0.0000	0.0000	0.0000	0.0000	0.0000		
Proportion Nor	mal Detail						MD5:	8B1DDE97B7FE4C81088A7FCC01C5AC35
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0.74	LC	0.9048	0.9209	0.9181	0.9010	0.9371		
3.4		0.8901	0.9240	0.9183	0.8840	0.8833		
5.6		0.8529	0.9179	0.9016	0.8830	0.9149		
10		0.5359	0.6402	0.5721	0.6517	0.7817		
21		0.0000	0.0000	0.0000	0.0000	0.0000		
40			0.0000	0.0000	0.0000	0.0000		
40		0.0000	0.0000	0.0000	0.0000	0.0000		
Survival Rate D	Detail						MD5:	A7E19B4CDB687D3AA35422D5FAEF7BE4
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0.74	LC	1.0000	0.9672	0.9344	1.0000	0.8689		
3.4		0.9945	0.9344	1.0000	0.9891	0.9836		
5.6		0.9290	1.0000	1.0000	1.0000	1.0000		
10		1.0000	0.8962	1.0000	0.9727	1.0000		
21		0.8962	1.0000	0.9344	0.9399	1.0000		
40		0.5246	0.6393	0.6995	0.6011	0.5191		
Combined Pro	portion Norm	al Binomials	3					
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0.74	LC	171/189	163/183	157/183	173/192	149/183		
3.4		162/183	158/183	191/208	160/183	159/183		
5.6		145/183	190/207	165/183	166/188	172/188		
10		112/209	105/183	119/208	116/183	154/197		
21		0/183	0/192	0/183	0/183	0/191		
40		0/183	0/183	0/183	0/183	0/183		
Proportion Nor	rmal Binomia	Is						
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0.74	LC	171/189	163/177	157/171	173/192	149/159		
3.4	ADVE:	162/182	158/171	191/208	160/181	159/180		
5.6		145/170	190/207	165/183	166/188	172/188		
10		112/209	105/164	119/208	116/178	154/197		
21		0/164	0/192	0/171	0/172	0/191		
40		0/96	0/117	0/128	0/110	0/95		
Survival Rate B	Binomials							
Survival Rate E Conc-µg/L	Binomials Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
		Rep 1 183/183	Rep 2 177/183	Rep 3 171/183	Rep 4 183/183	159/183		
Conc-µg/L	Code							
Conc-µg/L 0.74	Code	183/183	177/183	171/183	183/183	159/183		
Conc-µg/L 0.74 3.4	Code	183/183 182/183	177/183 171/183	171/183 183/183	183/183 181/183	159/183 180/183		
Conc-μg/L 0.74 3.4 5.6	Code	183/183 182/183 170/183	177/183 171/183 183/183	171/183 183/183 183/183	183/183 181/183 183/183	159/183 180/183 183/183		

Report Date: Test Code/ID:

22 Mar-23 16:05 (p 1 of 6) 23-01-072b / 10-5664-1449

Bivalve Larval Survival and Development Test

WSP Laboratory

Analysis ID: 11-2777-5035

Endpoint: Combined Proportion Normal Analysis: Parametric-Control vs Treatments

CETISv2.1.3 **CETIS Version:**

Analyzed: 17 Mar-23 12:49 Edit Date: 10 Mar-23 13:02

MD5 Hash: F6B65DF2931440263535768A06C16D80

Status Level: Editor ID:

002-883-387-8

Reference toxicant test made with 50% diluted SIYB water from SIYB-1. For analysis, nominal copper concentrations were replaced Comments: with actual concentrations measured by Weck Laboratories.

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corrected)	C>T	5.6	10	7.483		0.07269	8.32%

Dunnett Mult	iple (Comparison Test	t						
Control	vs	Conc-µg/L	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(a:5%)
Lab Control		3.4	8	-0.2438	2.227	0.1018	CDF	0.8286	Non-Significant Effect
		5.6	8	-0.3274	2.227	0.1018	CDF	0.8513	Non-Significant Effect
		10*	8	6 594	2 227	0.1018	CDF	<1.0E-05	Significant Effect

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.361247	0.120416	3	23.06	<1.0E-05	Significant Effect	
Error	0.0835644	0.0052228	16				
Total	0.444811		19				

ANOVA Assum	ptions Tests					
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)	
Variance	Bartlett Equality of Variance Test	4.14	11.34	0.2467	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.9577	0.866	0.4995	Normal Distribution	

Combined Pro	portion Norm	al Summar	y								
Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0.74	LC	5	0.8737	0.8265	0.9210	0.8907	0.8142	0.9048	0.0170	4.35%	0.00%
3.4		5	0.8820	0.8549	0.9091	0.8743	0.8634	0.9183	0.0098	2.47%	-0.95%
5.6		5	0.8819	0.8174	0.9464	0.9016	0.7923	0.9179	0.0232	5.89%	-0.94%
10		5	0.6195	0.4987	0.7403	0.5738	0.5359	0.7817	0.0435	15.70%	29.10%
21		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%
40		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%

Angular (Corre	cted) Transfo	rmed Sumr	mary								
Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0.74	LC	5	1.2100	1.1410	1.2790	1.2340	1.1250	1.2570	0.0248	4.58%	0.00%
3.4		5	1.2210	1.1770	1.2650	1.2080	1.1920	1.2810	0.0158	2.90%	-0.92%
5.6		5	1.2250	1.1320	1.3180	1.2520	1.0980	1.2800	0.0335	6.12%	-1.24%
10		5	0.9088	0.7789	1.0390	0.8594	0.8213	1.0850	0.0468	11.51%	24.91%
21		5	0.0366	0.0361	0.0372	0.0370	0.0361	0.0370	0.0002	1.24%	96.97%
40		5	0.0370	0.0370	0.0370	0.0370	0.0370	0.0370	0.0000	0.00%	96.95%

Combined Pro	ombined Proportion Normal Detail										
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0.74	LC	0.9048	0.8907	0.8579	0.9010	0.8142					
3.4		0.8852	0.8634	0.9183	0.8743	0.8689					
5.6		0.7923	0.9179	0.9016	0.8830	0.9149					
10		0.5359	0.5738	0.5721	0.6339	0.7817					
21		0.0000	0.0000	0.0000	0.0000	0.0000					
40		0.0000	0.0000	0.0000	0.0000	0.0000					

Report Date: Test Code/ID: 22 Mar-23 16:05 (p 2 of 6) 23-01-072b / 10-5664-1449

WSP Laboratory

Bivalve Larval Survival and Development Test

Analysis ID: 11-2777-5035 Analyzed: 17 Mar-23 12:49

Endpoint: Combined Proportion Normal Analysis:

Parametric-Control vs Treatments

CETIS Version:

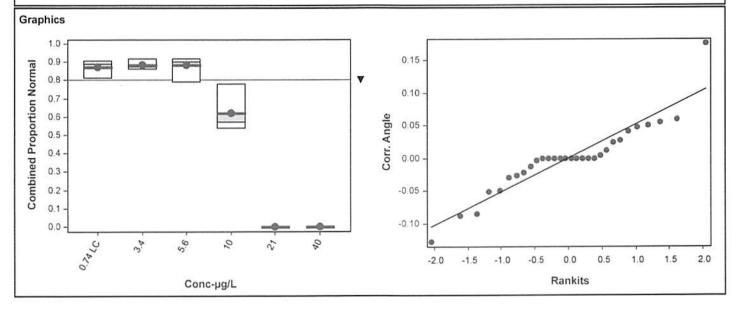
CETISv2.1.3

Edit Date: 10 Mar-23 13:02 MD5 Hash: F6B65DF2931440263535768A06C16D80

Status Level: Editor ID:

002-883-387-8

Angular (Corre	ngular (Corrected) Transformed Detail											
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5						
0.74	LC	1.2570	1.2340	1.1840	1.2510	1.1250						
3.4		1.2250	1.1920	1.2810	1.2080	1.2000						
5.6		1.0980	1.2800	1.2520	1.2220	1.2750						
10		0.8213	0.8594	0.8578	0.9209	1.0850						
21		0.0370	0.0361	0.0370	0.0370	0.0362						
40		0.0370	0.0370	0.0370	0.0370	0.0370						



Report Date:

22 Mar-23 16:05 (p 3 of 6) 23-01-072b / 10-5664-1449

Test Code/ID:

WSP Laboratory Bivalve Larval Survival and Development Test

Analysis ID: 17-5076-2065

Endpoint: Proportion Normal 17 Mar-23 12:49

Analysis: Parametric-Control vs Treatments

CETIS Version:

Status Level:

Analyzed: Edit Date:

10 Mar-23 13:02

MD5 Hash: 8B1DDE97B7FE4C81088A7FCC01C5AC3 Editor ID:

002-883-387-8

CETISv2.1.3

Comments: Reference toxicant test made with 50% diluted SIYB water from SIYB-1. For analysis, nominal copper concentrations were replaced

with actual concentrations measured by Weck Laboratories.

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corrected)	C > T	5.6	10	7.483		0.05083	5.55%

Dunnett Multiple Comparison Test											
Control	vs	Conc-µg/L	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(a:5%)		
Lab Control		3.4	8	0.7564	2.227	0.08292	CDF	0.4320	Non-Significant Effect		
		5.6	8	0.9985	2.227	0.08292	CDF	0.3323	Non-Significant Effect		
		10*	8	9.458	2.227	0.08292	CDF	<1.0E-05	Significant Effect		

ANOVA Table							
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(a:5%)	
Between	0.413007	0.137669	3	39.72	<1.0E-05	Significant Effect	
Error	0.055449	0.0034656	16				
Total	0.468456		19				

ANOVA Assum	ptions Tests				
Attribute	Test	Test Stat	Critical	P-Value	Decision(a:1%)
Variance	Bartlett Equality of Variance Test	8.355	11.34	0.0392	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9126	0.866	0.0714	Normal Distribution

Proportion Nor	rmal Summar	у									
Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0.74	LC	5	0.9164	0.8986	0.9342	0.9181	0.9010	0.9371	0.0064	1.57%	0.00%
3.4		5	0.8999	0.8756	0.9243	0.8901	0.8833	0.9240	0.0088	2.18%	1.80%
5.6		5	0.8941	0.8608	0.9273	0.9016	0.8529	0.9179	0.0120	3.00%	2.44%
10		5	0.6363	0.5192	0.7535	0.6402	0.5359	0.7817	0.0422	14.83%	30.56%
21		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%
40		5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%

Angular (Corre	cted) Transfo	ormed Sumr	mary								
Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0.74	LC	5	1.2780	1.2460	1.3110	1.2810	1.2510	1.3170	0.0118	2.07%	0.00%
3.4		5	1.2500	1.2090	1.2920	1.2330	1.2220	1.2910	0.0149	2.67%	2.20%
5.6		5	1.2410	1.1880	1.2940	1.2520	1.1770	1.2800	0.0190	3.43%	2.91%
10		5	0.9262	0.8005	1.0520	0.9275	0.8213	1.0850	0.0453	10.93%	27.55%
21		5	0.0375	0.0359	0.0392	0.0381	0.0361	0.0391	0.0006	3.54%	97.06%
40		5	0.0481	0.0443	0.0519	0.0477	0.0442	0.0513	0.0014	6.40%	96.24%

Proportion Nor	Proportion Normal Detail										
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0.74	LC	0.9048	0.9209	0.9181	0.9010	0.9371					
3.4		0.8901	0.9240	0.9183	0.8840	0.8833					
5.6		0.8529	0.9179	0.9016	0.8830	0.9149					
10		0.5359	0.6402	0.5721	0.6517	0.7817					
21		0.0000	0.0000	0.0000	0.0000	0.0000					
40		0.0000	0.0000	0.0000	0.0000	0.0000					

Report Date: Test Code/ID: 22 Mar-23 16:05 (p 4 of 6) 23-01-072b / 10-5664-1449

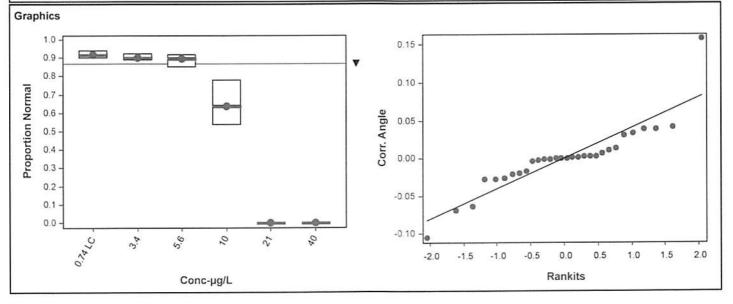
Bivalve Larval Survival and Development Test WSP Laboratory

Analysis ID: 17-5076-2065 Endpoint: Proportion Normal CETIS Version: CETIS V2.1.3

Analyzed: 17 Mar-23 12:49 Analysis: Parametric-Control vs Treatments Status Level:

Edit Date: 10 Mar-23 13:02 MD5 Hash: 8B1DDE97B7FE4C81088A7FCC01C5AC3 Editor ID: 002-883-387-8

Angular (Corrected) Transformed Detail											
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0.74	LC	1.2570	1.2860	1.2810	1.2510	1.3170					
3.4		1.2330	1.2910	1.2810	1.2230	1.2220					
5.6		1.1770	1.2800	1.2520	1.2220	1.2750					
10		0.8213	0.9275	0.8578	0.9395	1.0850					
21		0.0391	0.0361	0.0383	0.0381	0.0362					
40		0.0511	0.0462	0.0442	0.0477	0.0513					



Report Date: Test Code/ID: 22 Mar-23 16:05 (p 5 of 6) 23-01-072b / 10-5664-1449

		Develonmen	t Test							WSP I	Laborator
Bivalve Larva	al Survival and	Developmen									
Analysis ID:	09-8693-5722 Endpoint: Survival Rate CETIS Versio 17 Mar-23 12:49 Analysis: Parametric-Control vs Treatments Status Level:							S Version:	CETISv2	1.3	
Analyzed:					trol vs Trea	tments			1		
Edit Date:	10 Mar-23 13						7BE Edito		002-883-	387-8	
		kicant test mad							ner concent	trations wer	re renlace
Comments:		ncentrations n				311 D- 1. F	or analysis,	попппа сор	per concem	irations wer	e replace
Data Transfo	rm	Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corre	ected)	C > T				21	40	28.98		0.07143	7.49%
Dunnett Mult	iple Comparis	on Test									
Control	vs Conc-µ	ıg/L df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)		
Lab Control	3.4	8	-0.7735	2.362	0.1725	CDF	0.9693	Non-Signif	ficant Effect		
	5.6	8	-1.281	2.362	0.1725	CDF	0.9926	Non-Signif	ficant Effect		
	10	8	-0.768	2.362	0.1725	CDF	0.9689	Non-Signif	ficant Effect		
	21	8	0.06333	2.362	0.1725	CDF	0.8139	Non-Signif	ficant Effect		
	40*	8	6.981	2.362	0.1725	CDF	<1.0E-05	Significant	Effect		
ANOVA Table)										
Source	Sum S	•	Mean Squ	ıare	DF	F Stat	P-Value	Decision(
Between	1.2963	9	0.259277		5	19.44	<1.0E-05	Significant	Effect		
Error	0.32012	23	0.0133385	5	24	_					
Total	1.6165	1			29						
ANOVA Assu	mptions Test	3									
							D Malue	D ! - ! /	40/1		
Attribute	Test				Test Stat	Critical	P-Value	Decision(α:1%)		
Attribute Variance		Equality of Va	riance Test				0.8196	Equal Vari		7	
	Bartlett	Equality of Va -Wilk W Norm		-	2.208 0.9362	15.09 0.9031			iances		
Variance	Bartlett Shapiro				2.208	15.09	0.8196	Equal Vari	iances		
Variance Distribution Survival Rate	Bartlett Shapiro			95% LCL	2.208	15.09 0.9031	0.8196	Equal Vari	iances	CV%	%Effec
Variance Distribution	Bartlett Shapiro Summary	-Wilk W Norm	ality Test	95% LCL 0.8860	2.208 0.9362	15.09 0.9031	0.8196 0.0717	Equal Vari Normal Di	iances stribution	CV% 5.75%	%Effec 0.00%
Variance Distribution Survival Rate Conc-µg/L	Bartlett Shapiro Summary Code	-Wilk W Norm	ality Test Mean		2.208 0.9362 95% UCL	15.09 0.9031 Median	0.8196 0.0717 Min	Equal Vari	stribution Std Err		
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4	Bartlett Shapiro Summary Code	Count 5	Mean 0.9541	0.8860	2.208 0.9362 95% UCL 1.0000	15.09 0.9031 Median 0.9672	0.8196 0.0717 Min 0.8689	Equal Vari Normal Dis	stribution Std Err 0.0245	5.75%	0.00%
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4 5.6	Bartlett Shapiro Summary Code	Count 5 5 5	Mean 0.9541 0.9803 0.9858	0.8860 0.9476 0.9463	2.208 0.9362 95% UCL 1.0000 1.0000	15.09 0.9031 Median 0.9672 0.9891	0.8196 0.0717 Min 0.8689 0.9344	Max 1.0000 1.0000	stribution Std Err 0.0245 0.0118	5.75% 2.69%	0.00% -2.75%
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4 5.6 10	Bartlett Shapiro Summary Code	Count 5 5 5 5	Mean 0.9541 0.9803 0.9858 0.9738	0.8860 0.9476 0.9463 0.9179	2.208 0.9362 95% UCL 1.0000 1.0000 1.0000	15.09 0.9031 Median 0.9672 0.9891 1.0000 1.0000	0.8196 0.0717 Min 0.8689 0.9344 0.9290 0.8962	Max 1.0000 1.0000 1.0000	Std Err 0.0245 0.0118 0.0142 0.0201	5.75% 2.69% 3.22% 4.62%	0.00% -2.75% -3.32%
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4 5.6	Bartlett Shapiro Summary Code	Count 5 5 5	Mean 0.9541 0.9803 0.9858	0.8860 0.9476 0.9463	2.208 0.9362 95% UCL 1.0000 1.0000	15.09 0.9031 Median 0.9672 0.9891 1.0000	0.8196 0.0717 Min 0.8689 0.9344 0.9290	Equal Vari Normal Dis Max 1.0000 1.0000	Std Err 0.0245 0.0118 0.0142	5.75% 2.69% 3.22%	0.00% -2.75% -3.32% -2.06%
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4 5.6 10 21	Bartlett Shapiro Summary Code LC	Count 5 5 5 5 5 5 5 5 5	Mean 0.9541 0.9803 0.9858 0.9738 0.9541 0.5967	0.8860 0.9476 0.9463 0.9179 0.8980	2.208 0.9362 95% UCL 1.0000 1.0000 1.0000 1.0000	15.09 0.9031 Median 0.9672 0.9891 1.0000 1.0000 0.9399	0.8196 0.0717 Min 0.8689 0.9344 0.9290 0.8962 0.8962	Max 1.0000 1.0000 1.0000 1.0000 1.0000	Std Err 0.0245 0.0118 0.0142 0.0201 0.0202	5.75% 2.69% 3.22% 4.62% 4.73%	0.00% -2.75% -3.32% -2.06% 0.00%
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4 5.6 10 21 40 Angular (Cont	Bartlett Shapiro Summary Code LC	Count 5 5 5 5 5 5 7 5 7 5 5 5 5 5 5 5 5 5 5	Mean 0.9541 0.9803 0.9858 0.9738 0.9541 0.5967	0.8860 0.9476 0.9463 0.9179 0.8980 0.5013	2.208 0.9362 95% UCL 1.0000 1.0000 1.0000 1.0000 0.6921	15.09 0.9031 Median 0.9672 0.9891 1.0000 1.0000 0.9399 0.6011	0.8196 0.0717 Min 0.8689 0.9344 0.9290 0.8962 0.8962 0.5191	Max 1.0000 1.0000 1.0000 1.0000 0.6995	Std Err 0.0245 0.0118 0.0142 0.0201 0.0202 0.0344	5.75% 2.69% 3.22% 4.62% 4.73% 12.88%	0.00% -2.75% -3.32% -2.06% 0.00% 37.46%
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4 5.6 10 21 40 Angular (Corc Conc-µg/L	Bartlett Shapiro Summary Code LC	Count 5 5 5 5 5 7 5 Cormed Summ	Mean 0.9541 0.9803 0.9858 0.9738 0.9541 0.5967 ary Mean	0.8860 0.9476 0.9463 0.9179 0.8980 0.5013	2.208 0.9362 95% UCL 1.0000 1.0000 1.0000 1.0000 0.6921	15.09 0.9031 Median 0.9672 0.9891 1.0000 1.0000 0.9399 0.6011	0.8196 0.0717 Min 0.8689 0.9344 0.9290 0.8962 0.8962 0.5191	Max 1.0000 1.0000 1.0000 1.0000 0.6995	Std Err 0.0245 0.0118 0.0142 0.0201 0.0202 0.0344 Std Err	5.75% 2.69% 3.22% 4.62% 4.73% 12.88%	0.00% -2.75% -3.32% -2.06% 0.00% 37.46%
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4 5.6 10 21 40 Angular (Corc Conc-µg/L 0.74	Bartlett Shapiro Summary Code LC	Count 5 5 5 5 5 6 formed Summ Count 5	Mean 0.9541 0.9803 0.9858 0.9738 0.9541 0.5967 ary Mean 1.3940	0.8860 0.9476 0.9463 0.9179 0.8980 0.5013 95% LCL 1.2140	2.208 0.9362 95% UCL 1.0000 1.0000 1.0000 1.0000 0.6921 95% UCL 1.5730	15.09 0.9031 Median 0.9672 0.9891 1.0000 1.0000 0.9399 0.6011 Median 1.3890	0.8196 0.0717 Min 0.8689 0.9344 0.9290 0.8962 0.5191 Min 1.2000	Max 1.0000 1.0000 1.0000 1.0000 0.6995 Max 1.5340	Std Err 0.0245 0.0118 0.0142 0.0201 0.0202 0.0344 Std Err 0.0646	5.75% 2.69% 3.22% 4.62% 4.73% 12.88% CV%	0.00% -2.75% -3.32% -2.06% 0.00% 37.46% %Effec 0.00%
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4 5.6 10 21 40 Angular (Conc-µg/L 0.74 3.4	Bartlett Shapiro Summary Code LC	Count 5 5 5 5 5 6 formed Summ Count 5 5 5	Mean 0.9541 0.9803 0.9858 0.9738 0.9541 0.5967 ary Mean 1.3940 1.4500	0.8860 0.9476 0.9463 0.9179 0.8980 0.5013 95% LCL 1.2140 1.3450	2.208 0.9362 95% UCL 1.0000 1.0000 1.0000 1.0000 0.6921 95% UCL 1.5730 1.5550	Median 0.9672 0.9891 1.0000 1.0000 0.9399 0.6011 Median 1.3890 1.4660	0.8196 0.0717 Min 0.8689 0.9344 0.9290 0.8962 0.5191 Min 1.2000 1.3120	Max 1.0000 1.0000 1.0000 1.0000 0.6995 Max 1.5340 1.5340	Std Err 0.0245 0.0118 0.0142 0.0201 0.0202 0.0344 Std Err 0.0646 0.0378	5.75% 2.69% 3.22% 4.62% 4.73% 12.88% CV% 10.36% 5.83%	0.00% -2.75% -3.32% -2.06% 0.00% 37.46% %Effec 0.00% -4.05%
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4 5.6 10 21 40 Angular (Conc-µg/L 0.74 3.4 5.6	Bartlett Shapiro Summary Code LC	Count 5 5 5 5 5 cormed Summ Count 5 5 5 5 5 5 5 5 6 6 6 6 6 6 7 7 8 7 8 8 8 8 8 8 8 8 8 8	Mean 0.9541 0.9803 0.9858 0.9738 0.9541 0.5967 ary Mean 1.3940 1.4500 1.4870	0.8860 0.9476 0.9463 0.9179 0.8980 0.5013 95% LCL 1.2140 1.3450 1.3580	2.208 0.9362 95% UCL 1.0000 1.0000 1.0000 1.0000 0.6921 95% UCL 1.5730 1.5550 1.6170	Median 0.9672 0.9891 1.0000 1.0000 0.9399 0.6011 Median 1.3890 1.4660 1.5340	0.8196 0.0717 Min 0.8689 0.9344 0.9290 0.8962 0.5191 Min 1.2000 1.3120 1.3010	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	Std Err 0.0245 0.0118 0.0142 0.0201 0.0202 0.0344 Std Err 0.0646 0.0378 0.0466	5.75% 2.69% 3.22% 4.62% 4.73% 12.88% CV% 10.36% 5.83% 7.00%	0.00% -2.75% -3.32% -2.06% 0.00% 37.46% %Effec 0.00% -4.05% -6.71%
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4 5.6 10 21 40 Angular (Conc-µg/L 0.74 3.4 5.6 10 10 10 10 10 10 10 10 10 1	Bartlett Shapiro Summary Code LC	Count 5 5 5 5 5 formed Summ Count 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Mean 0.9541 0.9803 0.9858 0.9738 0.9541 0.5967 ary Mean 1.3940 1.4500 1.4870 1.4500	0.8860 0.9476 0.9463 0.9179 0.8980 0.5013 95% LCL 1.2140 1.3450 1.3580 1.2900	2.208 0.9362 95% UCL 1.0000 1.0000 1.0000 1.0000 0.6921 95% UCL 1.5730 1.5550 1.6170 1.6090	15.09 0.9031 Median 0.9672 0.9891 1.0000 1.0000 0.9399 0.6011 Median 1.3890 1.4660 1.5340 1.5340	0.8196 0.0717 Min 0.8689 0.9344 0.9290 0.8962 0.5191 Min 1.2000 1.3120 1.3010 1.2430	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.05340 1.5340 1.5340 1.5340	Std Err 0.0245 0.0118 0.0142 0.0201 0.0202 0.0344 Std Err 0.0646 0.0378 0.0466 0.0575	5.75% 2.69% 3.22% 4.62% 4.73% 12.88% CV% 10.36% 5.83% 7.00% 8.87%	0.00% -2.75% -3.32% -2.06% 0.00% 37.46% %Effec 0.00% -4.05% -6.71% -4.03%
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4 5.6 10 21 40 Angular (Conc-µg/L 0.74 3.4 5.6 10 2.1 1.0 1.0 1.0 1.0 1.0 1.0	Bartlett Shapiro Summary Code LC	Count 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Mean 0.9541 0.9803 0.9858 0.9738 0.9541 0.5967 ary Mean 1.3940 1.4500 1.4500 1.3890	0.8860 0.9476 0.9463 0.9179 0.8980 0.5013 95% LCL 1.2140 1.3450 1.3580 1.2900 1.2210	2.208 0.9362 95% UCL 1.0000 1.0000 1.0000 0.6921 95% UCL 1.5730 1.5550 1.6170 1.6090 1.5580	15.09 0.9031 Median 0.9672 0.9891 1.0000 1.0000 0.9399 0.6011 Median 1.3890 1.4660 1.5340 1.5340 1.3230	0.8196 0.0717 Min 0.8689 0.9344 0.9290 0.8962 0.5191 Min 1.2000 1.3120 1.3010 1.2430 1.2430	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.05340 1.5340 1.5340 1.5340 1.5340	Std Err 0.0245 0.0118 0.0142 0.0201 0.0202 0.0344 Std Err 0.0646 0.0378 0.0466 0.0575 0.0607	5.75% 2.69% 3.22% 4.62% 4.73% 12.88% CV% 10.36% 5.83% 7.00% 8.87% 9.77%	0.00% -2.75% -3.32% -2.06% 0.00% 37.46% %Effec 0.00% -4.05% -6.71% -4.03% 0.33%
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4 5.6 10 21 40 Angular (Conc-µg/L 0.74 3.4 5.6 10 21 40 21 40 40 40	Bartlett Shapiro Summary Code LC	Count 5 5 5 5 5 formed Summ Count 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Mean 0.9541 0.9803 0.9858 0.9738 0.9541 0.5967 ary Mean 1.3940 1.4500 1.4870 1.4500	0.8860 0.9476 0.9463 0.9179 0.8980 0.5013 95% LCL 1.2140 1.3450 1.3580 1.2900	2.208 0.9362 95% UCL 1.0000 1.0000 1.0000 1.0000 0.6921 95% UCL 1.5730 1.5550 1.6170 1.6090	15.09 0.9031 Median 0.9672 0.9891 1.0000 1.0000 0.9399 0.6011 Median 1.3890 1.4660 1.5340 1.5340	0.8196 0.0717 Min 0.8689 0.9344 0.9290 0.8962 0.5191 Min 1.2000 1.3120 1.3010 1.2430	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.05340 1.5340 1.5340 1.5340	Std Err 0.0245 0.0118 0.0142 0.0201 0.0202 0.0344 Std Err 0.0646 0.0378 0.0466 0.0575	5.75% 2.69% 3.22% 4.62% 4.73% 12.88% CV% 10.36% 5.83% 7.00% 8.87%	0.00% -2.75% -3.32% -2.06% 0.00% 37.46% %Effect 0.00% -4.05% -6.71% -4.03% 0.33%
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4 5.6 10 21 40 Angular (Corr. Conc-µg/L 0.74 3.4 5.6 10 21 40 Survival Rate	Bartlett Shapiro Summary Code LC rected) Transt Code LC	Count 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Mean 0.9541 0.9803 0.9858 0.9738 0.9541 0.5967 ary Mean 1.3940 1.4500 1.4870 1.4500 1.3890 0.8838	0.8860 0.9476 0.9463 0.9179 0.8980 0.5013 95% LCL 1.2140 1.3450 1.3580 1.2900 1.2210 0.7857	2.208 0.9362 95% UCL 1.0000 1.0000 1.0000 0.6921 95% UCL 1.5730 1.5550 1.6170 1.6090 1.5580 0.9819	15.09 0.9031 Median 0.9672 0.9891 1.0000 1.0000 0.9399 0.6011 Median 1.3890 1.4660 1.5340 1.5340 1.3230 0.8872	0.8196 0.0717 Min 0.8689 0.9344 0.9290 0.8962 0.5191 Min 1.2000 1.3120 1.3010 1.2430 1.2430	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.05340 1.5340 1.5340 1.5340 1.5340	Std Err 0.0245 0.0118 0.0142 0.0201 0.0202 0.0344 Std Err 0.0646 0.0378 0.0466 0.0575 0.0607	5.75% 2.69% 3.22% 4.62% 4.73% 12.88% CV% 10.36% 5.83% 7.00% 8.87% 9.77%	0.00% -2.75% -3.32% -2.06% 0.00% 37.46% %Effect 0.00% -4.05% -6.71% -4.03% 0.33%
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4 5.6 10 21 40 Angular (Conc-µg/L 0.74 3.4 5.6 10 21 40 Survival Rate Conc-µg/L	Bartlett Shapiro Summary Code LC rected) Transi Code LC	Count 5 5 5 5 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Mean 0.9541 0.9803 0.9858 0.9738 0.9541 0.5967 ary Mean 1.3940 1.4500 1.4870 1.4500 1.3890 0.8838	0.8860 0.9476 0.9463 0.9179 0.8980 0.5013 95% LCL 1.2140 1.3450 1.3580 1.2900 1.2210 0.7857	2.208 0.9362 95% UCL 1.0000 1.0000 1.0000 1.0000 0.6921 95% UCL 1.5730 1.5550 1.6170 1.6090 1.5580 0.9819	15.09 0.9031 Median 0.9672 0.9891 1.0000 1.0000 0.9399 0.6011 Median 1.3890 1.4660 1.5340 1.5340 1.3230 0.8872	0.8196 0.0717 Min 0.8689 0.9344 0.9290 0.8962 0.5191 Min 1.2000 1.3120 1.3010 1.2430 1.2430	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.05340 1.5340 1.5340 1.5340 1.5340	Std Err 0.0245 0.0118 0.0142 0.0201 0.0202 0.0344 Std Err 0.0646 0.0378 0.0466 0.0575 0.0607	5.75% 2.69% 3.22% 4.62% 4.73% 12.88% CV% 10.36% 5.83% 7.00% 8.87% 9.77%	0.00% -2.75% -3.32% -2.06% 0.00% 37.46% %Effec 0.00% -4.05% -6.71% -4.03%
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4 5.6 10 21 40 Angular (Conc-µg/L 0.74 3.4 5.6 10 21 40 Survival Rate Conc-µg/L 0.74	Bartlett Shapiro Summary Code LC rected) Transt Code LC	Count 5 5 5 5 5 5 5 7 5 7 7 7 8 8 7 8 7 8 7 8	Mean 0.9541 0.9803 0.9858 0.9738 0.9541 0.5967 ary Mean 1.3940 1.4500 1.4870 1.4500 1.3890 0.8838 Rep 2 0.9672	0.8860 0.9476 0.9463 0.9179 0.8980 0.5013 95% LCL 1.2140 1.3450 1.3580 1.2900 1.2210 0.7857 Rep 3 0.9344	2.208 0.9362 95% UCL 1.0000 1.0000 1.0000 0.6921 95% UCL 1.5730 1.5550 1.6170 1.6090 1.5580 0.9819 Rep 4 1.0000	Median 0.9672 0.9891 1.0000 1.0000 0.9399 0.6011 Median 1.3890 1.4660 1.5340 1.5340 1.3230 0.8872 Rep 5 0.8689	0.8196 0.0717 Min 0.8689 0.9344 0.9290 0.8962 0.5191 Min 1.2000 1.3120 1.3010 1.2430 1.2430	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.05340 1.5340 1.5340 1.5340 1.5340	Std Err 0.0245 0.0118 0.0142 0.0201 0.0202 0.0344 Std Err 0.0646 0.0378 0.0466 0.0575 0.0607	5.75% 2.69% 3.22% 4.62% 4.73% 12.88% CV% 10.36% 5.83% 7.00% 8.87% 9.77%	0.00% -2.75% -3.32% -2.06% 0.00% 37.46% %Effect 0.00% -4.05% -6.71% -4.03% 0.33%
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4 5.6 10 21 40 Angular (Conc-µg/L 0.74 3.4 5.6 10 21 40 Survival Rate Conc-µg/L 0.74 3.4 5.6	Bartlett Shapiro Summary Code LC rected) Transi Code LC	Count 5 5 5 5 5 5 5 7 5 7 7 8 8 7 8 7 8 7 8 7	Mean 0.9541 0.9803 0.9858 0.9738 0.9541 0.5967 ary Mean 1.3940 1.4500 1.4870 1.4500 1.3890 0.8838 Rep 2 0.9672 0.9344	0.8860 0.9476 0.9463 0.9179 0.8980 0.5013 95% LCL 1.2140 1.3450 1.3580 1.2900 1.2210 0.7857 Rep 3 0.9344 1.0000	2.208 0.9362 95% UCL 1.0000 1.0000 1.0000 0.6921 95% UCL 1.5730 1.5550 1.6170 1.6090 1.5580 0.9819 Rep 4 1.0000 0.9891	Median 0.9672 0.9891 1.0000 1.0000 0.9399 0.6011 Median 1.3890 1.4660 1.5340 1.5340 1.3230 0.8872 Rep 5 0.8689 0.9836	0.8196 0.0717 Min 0.8689 0.9344 0.9290 0.8962 0.5191 Min 1.2000 1.3120 1.3010 1.2430 1.2430	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.05340 1.5340 1.5340 1.5340 1.5340	Std Err 0.0245 0.0118 0.0142 0.0201 0.0202 0.0344 Std Err 0.0646 0.0378 0.0466 0.0575 0.0607	5.75% 2.69% 3.22% 4.62% 4.73% 12.88% CV% 10.36% 5.83% 7.00% 8.87% 9.77%	0.00% -2.75% -3.32% -2.06% 0.00% 37.46% %Effec 0.00% -4.05% -6.71% -4.03% 0.33%
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4 5.6 10 21 40 Angular (Conc-µg/L 0.74 3.4 5.6 10 21 40 Survival Rate Conc-µg/L 0.74	Bartlett Shapiro Summary Code LC rected) Transi Code LC	Count 5 5 5 5 5 5 6 formed Summ Count 5 5 5 5 6 7 7 8ep 1 1.0000 0.9945 0.9290	Mean 0.9541 0.9803 0.9858 0.9738 0.9541 0.5967 ary Mean 1.3940 1.4500 1.4870 1.4500 1.3890 0.8838 Rep 2 0.9672	0.8860 0.9476 0.9463 0.9179 0.8980 0.5013 95% LCL 1.2140 1.3450 1.3580 1.2900 1.2210 0.7857 Rep 3 0.9344 1.0000 1.0000	2.208 0.9362 95% UCL 1.0000 1.0000 1.0000 0.6921 95% UCL 1.5730 1.5550 1.6170 1.6090 1.5580 0.9819 Rep 4 1.0000 0.9891 1.0000	15.09 0.9031 Median 0.9672 0.9891 1.0000 1.0000 0.9399 0.6011 Median 1.3890 1.4660 1.5340 1.5340 1.3230 0.8872 Rep 5 0.8689 0.9836 1.0000	0.8196 0.0717 Min 0.8689 0.9344 0.9290 0.8962 0.5191 Min 1.2000 1.3120 1.3010 1.2430 1.2430	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.05340 1.5340 1.5340 1.5340 1.5340	Std Err 0.0245 0.0118 0.0142 0.0201 0.0202 0.0344 Std Err 0.0646 0.0378 0.0466 0.0575 0.0607	5.75% 2.69% 3.22% 4.62% 4.73% 12.88% CV% 10.36% 5.83% 7.00% 8.87% 9.77%	0.00% -2.75% -3.32% -2.06% 0.00% 37.46% %Effec 0.00% -4.05% -6.71% -4.03% 0.33%
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4 5.6 10 21 40 Angular (Conc-µg/L 0.74 3.4 5.6 10 21 40 Survival Rate Conc-µg/L 0.74 3.4 5.6	Bartlett Shapiro Summary Code LC rected) Transi Code LC	Count 5 5 5 5 5 5 5 7 5 7 7 8 8 7 8 7 8 7 8 7	Mean 0.9541 0.9803 0.9858 0.9738 0.9541 0.5967 ary Mean 1.3940 1.4500 1.4870 1.4500 1.3890 0.8838 Rep 2 0.9672 0.9344	0.8860 0.9476 0.9463 0.9179 0.8980 0.5013 95% LCL 1.2140 1.3450 1.3580 1.2900 1.2210 0.7857 Rep 3 0.9344 1.0000	2.208 0.9362 95% UCL 1.0000 1.0000 1.0000 0.6921 95% UCL 1.5730 1.5550 1.6170 1.6090 1.5580 0.9819 Rep 4 1.0000 0.9891	Median 0.9672 0.9891 1.0000 1.0000 0.9399 0.6011 Median 1.3890 1.4660 1.5340 1.5340 1.3230 0.8872 Rep 5 0.8689 0.9836	0.8196 0.0717 Min 0.8689 0.9344 0.9290 0.8962 0.5191 Min 1.2000 1.3120 1.3010 1.2430 1.2430	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.05340 1.5340 1.5340 1.5340 1.5340	Std Err 0.0245 0.0118 0.0142 0.0201 0.0202 0.0344 Std Err 0.0646 0.0378 0.0466 0.0575 0.0607	5.75% 2.69% 3.22% 4.62% 4.73% 12.88% CV% 10.36% 5.83% 7.00% 8.87% 9.77%	0.00% -2.75% -3.32% -2.06% 0.00% 37.46% %Effect 0.00% -4.05% -6.71% -4.03% 0.33%
Variance Distribution Survival Rate Conc-µg/L 0.74 3.4 5.6 10 21 40 Angular (Conc-µg/L 0.74 3.4 5.6 10 21 40 Survival Rate Conc-µg/L 0.74 3.4 5.6	Bartlett Shapiro Summary Code LC rected) Transi Code LC	Count 5 5 5 5 5 5 6 formed Summ Count 5 5 5 5 6 7 7 8ep 1 1.0000 0.9945 0.9290	Mean 0.9541 0.9803 0.9858 0.9738 0.9541 0.5967 ary Mean 1.3940 1.4500 1.4870 1.4500 1.3890 0.8838 Rep 2 0.9672 0.9344 1.0000	0.8860 0.9476 0.9463 0.9179 0.8980 0.5013 95% LCL 1.2140 1.3450 1.3580 1.2900 1.2210 0.7857 Rep 3 0.9344 1.0000 1.0000	2.208 0.9362 95% UCL 1.0000 1.0000 1.0000 0.6921 95% UCL 1.5730 1.5550 1.6170 1.6090 1.5580 0.9819 Rep 4 1.0000 0.9891 1.0000	15.09 0.9031 Median 0.9672 0.9891 1.0000 1.0000 0.9399 0.6011 Median 1.3890 1.4660 1.5340 1.5340 1.3230 0.8872 Rep 5 0.8689 0.9836 1.0000	0.8196 0.0717 Min 0.8689 0.9344 0.9290 0.8962 0.5191 Min 1.2000 1.3120 1.3010 1.2430 1.2430	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.05340 1.5340 1.5340 1.5340 1.5340	Std Err 0.0245 0.0118 0.0142 0.0201 0.0202 0.0344 Std Err 0.0646 0.0378 0.0466 0.0575 0.0607	5.75% 2.69% 3.22% 4.62% 4.73% 12.88% CV% 10.36% 5.83% 7.00% 8.87% 9.77%	0.00% -2.75% -3.32% -2.06% 0.00% 37.46% %Effect 0.00% -4.05% -6.71% -4.03% 0.33%

Report Date: Test Code/ID:

Editor ID:

22 Mar-23 16:05 (p 6 of 6) 23-01-072b / 10-5664-1449

Bivalve Larval Survival and Development Test

WSP Laboratory

Analysis ID: 09-8693-5722

Endpoint: Survival Rate

CETIS Version:

Analyzed: Edit Date:

17 Mar-23 12:49 10 Mar-23 13:02 Analysis: Parametric-Control vs Treatments MD5 Hash: A7E19B4CDB687D3AA35422D5FAEF7BE

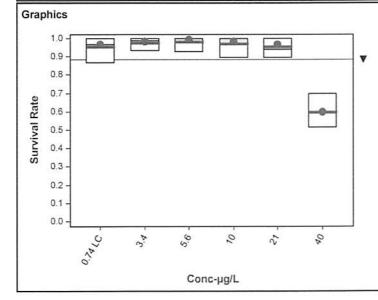
Status Level:

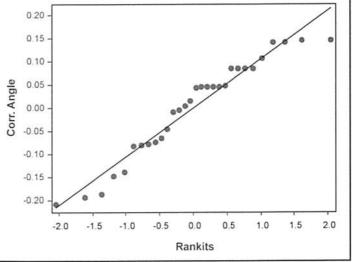
002-883-387-8

CETISv2.1.3

Angular (Corrected)	Transformed Detail
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Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0.74	LC	1.5340	1.3890	1.3120	1.5340	1.2000
3.4		1.4970	1.3120	1.5340	1.4660	1.4420
5.6		1.3010	1.5340	1.5340	1.5340	1.5340
10		1.5340	1.2430	1.5340	1.4050	1.5340
21		1.2430	1.5340	1.3120	1.3230	1.5340
40		0.8100	0.9266	0.9906	0.8872	0.8045





Bivalve Larval Survival and Development Test

Report Date: Test Code/ID: 22 Mar-23 16:05 (p 1 of 1) 23-01-072b / 10-5664-1449

WSP Laboratory

Analysis ID: 02-2014-4036 Endpoint: Combined Proportion Normal CETIS Version: CETISv2.1.3

Analyzed: 17 Mar-23 12:49 Analysis: Untrimmed Spearman-Kärber Status Level: 1

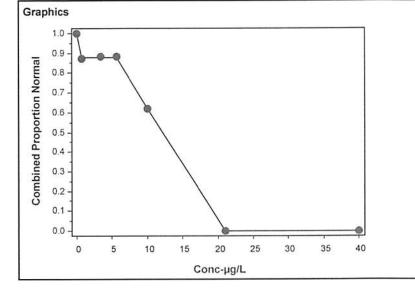
Edit Date: 10 Mar-23 13:02 MD5 Hash: F6B65DF2931440263535768A06C16D80 Editor ID: 002-883-387-8

Comments: Reference toxicant test made with 50% diluted SIYB water from SIYB-1. For analysis, nominal copper concentrations were replaced with actual concentrations measured by Weck Laboratories.

Spearman-Kärber Estir	mates						
Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL
Control Threshold	0.1258	0.00%	1.076	0.004191	11.91	11.68	12.14

Combined Pro	portion Norm	al Summary			Calculate	d Variate(A	/B)			Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	ΣΑ/ΣΒ	Mean	%Effect
0.74	LC	5	0.8737	0.8907	0.8142	0.9048	4.35%	0.00%	813/930	0.8801	0.00%
3.4		5	0.8820	0.8743	0.8634	0.9183	2.47%	-0.95%	830/940	0.8801	0.00%
5.6		5	0.8819	0.9016	0.7923	0.9179	5.89%	-0.94%	838/949	0.8801	0.00%
10		5	0.6195	0.5738	0.5359	0.7817	15.70%	29.10%	606/980	0.6184	29.74%
21		5	0.0000	0.0000	0.0000	0.0000		100.00%	0/932	0.0000	100.00%
40		5	0.0000	0.0000	0.0000	0.0000		100.00%	0/915	0.0000	100.00%

Combined Pro	portion Norm	al Detail				
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0.74	LC	0.9048	0.8907	0.8579	0.9010	0.8142
3.4		0.8852	0.8634	0.9183	0.8743	0.8689
5.6		0.7923	0.9179	0.9016	0.8830	0.9149
10		0.5359	0.5738	0.5721	0.6339	0.7817
21		0.0000	0.0000	0.0000	0.0000	0.0000
40		0.0000	0.0000	0.0000	0.0000	0.0000



CETIS Test Data Worksheet

Report Date: Test Code/ID: 25 Jan-23 10:39 (p 1 of 1)

3EFB11A9 / 10-5664-1449

Bivalve Larval Survival and Development Test

Wood E&IS

Start Date: End Date:

Sample Date: 25 Jan-23

26 Jan-23 28 Jan-23 Species: Mytilis galloprovincialis

Material: Total Copper

Protocol: EPA/600/R-95/136 (1995)

Sample Code: 2F3EA927

Sample Source: Shelter Island Yacht Basin

Sample Station: SIYB-1 (50%)

Comments: Reference toxicant test made with 50% diluted SIYB water from SIYB-1

Conc-µg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
			380			128	0	
			381			191	0	
			382			164	0	
			383			170	145	2 corred stells
			384			182	162	
			385			95	0	
			386			181	160	
			387			171	0	
			388			192	173	
			389			192	0	
			390			171	158	
			391			188	172	1 curved strell
			392			207	190	1 curved stell
			393			208	119	46 curved stells
			394			117	0	
			395			208	191	
			396			183	165	
			397			171	157 149 159	
			398			159	149	
			399			180	159	
			400			189	171	
			401			164	105	27 curved stells,
			402			178	116	28 curved skells
			403			188	166	
			404			110	0	
			405			177	163	
			406			192	0	
			407			209	112	55 coned stells
			408			197	154	19 curved shalls
			409			96	0	

Analyst: A QA: LC

CETIS Test Data Worksheet

Report Date: Test Code/ID: 25 Jan-23 10:39 (p 1 of 1)

3EFB11A9 / 10-5664-1449

Bivalve Larval Survival and Development Test

Wood E&IS

Start Date:

26 Jan-23

Species: Mytilis galloprovincialis

Sample Code:

2F3EA927

End Date:

28 Jan-23

Protocol: EPA/600/R-95/136 (1995)

Sample Source: Shelter Island Yacht Basin

Sample Date: 25 Jan-23

Material: Total Copper

Sample Station: SIYB-1 (50%)

Comments: Reference toxicant test made with 50% diluted SIYB water from SIYB-1

Conc	-µg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0.74	0	LC	1	400			189	171	
1	0	LC	2	405					
1	0	LC	3	397					
	0	LC	4	388					
1	0	LC	5	398					
3.4	2.5		1	384			182	162	
1	2.5		2	390					
	2.5		3	395					
1	2.5		4	386					
1	2.5		5	399					
5.6	5		1	383			170	145	2 curved stells
1	5		2	392			110		2 20,104,00
1	5		3	396					
-	5		4	403					
1,	5		5	391					
10	10		1	407			209	112	55 curved stells
1	10		2	401			20 1	112	3000
-	10		3	393					
+	10		4	402					
1	10		5	408					
21	20		1	382			164	0	
1	20		2	406					
-	20		3	387					
+	20		4	389					
1	20		5	381					
40	40		1	409			96	0	
ĺ	40		2	394			,0		
+	40		3	380					
-	40		4	404					
	40		5	385					
V		_		7.55					

Analyst: Analyst: QA:

CETIS™ v2.1.3.5

Water Quality for Bivalve Development

Client: POSD

Project ID: SIYB (TIE) 50% SIYB-1 RT
Test No. 23-01-0720

Test Species: M. galloprovincialis

Start Date/Time: 1/26/2023 1730

End Date/Time: 1/28/2023 (600

Test Conc.		Water Quality Me	asurements	
(μg/L Cu)	Parameter	0hr	24hr	48hr
	Temp. (°C)	15.8	15.5	15.3
	Salinity (ppt)	33.4	33.0	33.2
Lab Control	pH (units)	7.86	7.57	7.66
	DO (mg/L)	8.0	8.5	8.4
	Temp. (°C)	15.8	15.2	15.3
2.5 (500) (500) (1)	Salinity (ppt)	33.5	33.0	33.2
2.5 (50% SIYB 1)	pH (units)	7.91	7.69	7.71
	DO (mg/L)	6.1	87	8.5
	Temp. (°C)	15.8	15.2	15.3
5 (500) 5100 1)	Salinity (ppt)	33.6	33.1	333
5 (50% SIYB 1)	pH (units)	7.91	7:73	7.75
	DO (mg/L)	8.1	8.6	8.5
	Temp. (°C)	15,8	15.3	15.4
10 (50% SIVE 1)	Salinity (ppt)	33.5	33.2	33.3
10 (50% SIYB 1)	pH (units)	7.90	7.74	7:75
	DO (mg/L)	8.2	8.7	8.6
	Temp. (°C)	15.8	15.4	15.4
20 (FOR SIVE 1)	Salinity (ppt)	33-4	33.1	33.4
20 (50% SIYB 1)	pH (units)	7-89	7.73	7.74
	DO (mg/L)	8.2	8.5	8.5
	Temp. (°C)	15.8	15.4	15.4
40 (50% SIYB 1)	Salinity (ppt)	33.3	32.7	33.2
40 (50% 5118 1)	pH (units)	7.88	7.73	7.74
	DO (mg/L)	33.3 HK B.Z	8.7	8.5
	Temp. (°C)			
	Salinity (ppt)			
	pH (units)			
	DO (mg/L)			
	Tech Initials:	HK	RV	R

	Tech Initials:	F-4	RO
Source of Animals:	nissian Bay	Date Received:	1/26/23
Comments:	*		
QC Check:	63/22/13	Final Review:	Je 3/31/23

Embryo-Larval Development Test Stock Preparation Worksheet

Test Species:

M. galloprovincialis

Test Date: 1/26/2023

Batch ID:

1/26/23 MITSION BOY CO

Analyst:

Test Type:

Task	PARTIES OF A
Spawning Induction	1430
Spawning Begins	1510
# Males/# Females	515
Spawn Condition	good
Fertilization Initiated	1600
Fertilzation End/Eggs Rinsed	1620/1640
Embryo Counts	1700
Test Initiation	1730

Embryo Density Counts

20 # per 100 μL

				-			
Stock #	Stock Volume (mL)	Rep 1	Rep 2	Rep 3	Rep 4	Mean #/100 μL	Mean #/mL (x10)
Stock 1						76	1776
Stock 2	500						
Stock 3	500	21	19	11	13	1.6	800

Cell Division:

	% Divided
Stock 1	
Stock 2	90
Stock 3	98

Selected Stock:	1
Selected Stock:	フ

Stock Density

Dil Factor

Adjust selected embryo stock to 500 embryos/mL. Dilution Factor = Stock Density/mL/500

600 500

1,6

In 10 mL sample volume add 500 μ l of 500 embryo/ml stock to obtain 25 embryos/mL in test vials.

Notes:

QA Review:

Final Review: 103/9/23

Report Date: Test Code/ID:

09 Feb-23 15:38 (p 1 of 2) 230123mgrd / 03-3591-1122

KWSP Wood E&IS

Bivalve Larval Survival and Development Test

									7		
Batch ID:	17-5344-3019	Test	Type:	Development-S	urvival			Analyst:			
Start Date:	26 Jan-23 17 3	SO Prot	ocol:	EPA/600/R-95/1	36 (1995)			Diluent: Dilut	ed Natural S	Seawater	
Ending Date:	28 Jan-23 160	O Spec	cies:	Mytilis galloprov	incialis			Brine: Not	Applicable		
Test Length:	48h	Taxo	n:					Source: Field	Collected		Age:
Sample ID:	01-3858-4478	Code	9:	230122mgrd				Project: SIYB	THALF	non Horne	ì
Sample Date		Mate		Total Copper				15 FURTHERN HOUSE HOUSE HOUSE	rence Toxic)
Receipt Date			(PC):					Station:			
Sample Age:		Clier		Internal							
1570	parison Summa	iry	C			,	NOE	L LOEL	TOEL	PMSD	s
Analysis ID	Endpoint	artian Nama		arison Method	orioon Tool		5	10	7.071	21.3%	1
	Combined Prop										1
	Proportion Norm	nal		Many-One Rank		✓		10	7.071	16.8%	
04-7549-6049	Survival Rate		Dunne	tt Multiple Comp	arison Test		20	40	28.28	8.37%	
Point Estima	te Summary										
Analysis ID	Endpoint		Point	Estimate Metho	od	✓	Leve	l μg/L	95% LCL	95% UCL	S
07-0010-2705	Combined Prop	ortion Norma	Speam	man-Kärber			EC50	7.734	7.577	7.893	1
Test Accepta	bility					TAC L	imits				
Analysis ID	Endpoint		Attrib	ute	Test Stat		Uppe	er Overlap	Decision		
-	Proportion Norm	nal	Contro	l Resp	0.9051	0.9	<<	Yes	Passes Cr	riteria	
	Survival Rate			l Resp	0.9508	0.5	<<	Yes	Passes Cr	riteria	
	Combined Prop	ortion Norma			0.2126	<<	0.25	No	Passes Cr	riteria	
	roportion Norma		- 2000-200-200-200-200-200-200-200-200-2						W. 1000000000000000000000000000000000000		
Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LC	5	0.8614		0.9348	0.7760	0.918		0.0591	6.87%	0.00%
2.5	LO	5	0.8671		0.9372	0.7705	0.913		0.0565	6.51%	-0.66%
5		5	0.8155		0.9042	0.7104	0.904		0.0714	8.75%	5.32%
10		5	0.1566		0.3977	0.0000	0.45		0.1942	124.01%	81.82%
20		5	0.0000		0.0000	0.0000	0.000		0.0000		100.00%
40		5	0.0000		0.0000	0.0000	0.000		0.0000	1. 555 1	100.00%
100	ormal Summary		Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
Conc-µg/L	LC LC	Count 5	0.905		0.9390	0.8659	0.93		0.0273	3.02%	0.00%
0	LC	040	1211-21212		0.9390	0.8494	0.93		0.0273	2.82%	2.46%
2.5		5	0.8829						0.0249	4.58%	5.12%
5		5	0.8588		0.9077 0.3977	0.8075 0.0000	0.904		0.0393	122.85%	82.60%
10		5	0.1575						0.0000	122.0370	100.00%
20		5	0.0000		0.0000	0.0000	0.000		0.0000		100.00%
40		5	0.0000	0.0000	0.0000	0.0000	0.000	0.0000	0.0000		100.0070
Survival Rate	5045 10m	•		050/10:	050/ 1101			C+4 F	Ctd Dav	CV%	%Effect
Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL		Max	Std Err	Std Dev	4.16%	0.00%
0	LC	5	0.9508		1.0000	0.8962	1.000		0.0396 0.0415	4.16%	-3.22%
2.5		5	0.9814		1.0330	0.9071	1.00		0.0415	5.73%	0.23%
5		5	0.9486		1.0160	0.8798	1.00				-1.03%
10		5	0.960		1.0100	0.9126	1.00		0.0400	4.17% 2.08%	0.92%
20		5	0.942		0.9664	0.9290	0.97		0.0196 0.0508	36.57%	85.40%
40		5	0.1388	8 0.0758	0.2018	0.0820	0.19	13 0.0227	0.0000	30.37 70	00.4070

Report Date: Test Code/ID:

09 Feb-23 15:38 (p 2 of 2) 230128mgrd / 03-3591-1122

Bivalve Larval	Survival and	Developmen	t Test					Wood E&IS
Combined Prop	portion Norm	al Detail					MD5:	0D7D7E46D0A7D6931FF9C7C14F7CBE3
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.8962	0.8251	0.7760	0.8907	0.9189		
2.5		0.9130	0.8913	0.8667	0.8939	0.7705		
5		0.8033	0.9043	0.8087	0.7104	0.8510		
10		0.4550	0.2513	0.0492	0.0273	0.0000		
20		0.0000	0.0000	0.0000	0.0000	0.0000		
40		0.0000	0.0000	0.0000	0.0000	0.0000		
Proportion Nor	mal Detail						MD5:	8833C98F08C9DE26800BA2DC6AB5FF0
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	0.9318	0.8882	0.8659	0.9209	0.9189		
2.5		0.9130	0.8913	0.8667	0.8939	0.8494		
5		0.8400	0.9043	0.8916	0.8075	0.8510		
10		0.4550	0.2513	0.0511	0.0299	0.0000		
20		0.0000	0.0000	0.0000	0.0000	0.0000		
40		0.0000	0.0000	0.0000	0.0000	0.0000		
	N. A. 11	0.0000	0.0000	0.0000	0.0000	0.0000	MD6:	50C087EE7F2484A9ED642935CB82431C
Survival Rate D		Dan 1	Don 2	Bon 2	Pop 4	Rep 5	MD5.	50C067EE7F2464A9ED642953CB6243TC
Conc-µg/L	Code	Rep 1	Rep 2 0.9290	Rep 3	Rep 4 0.9672	1.0000		
0	LC	0.9617		0.8962				
2.5		1.0000	1.0000	1.0000	1.0000	0.9071		
5		0.9563	1.0000	0.9071	0.8798	1.0000		
10		1.0000	1.0000	0.9617	0.9126	0.9290		
20		0.9508	0.9290	0.9290	0.9290	0.9727		
40		0.1421	0.0820	0.1858	0.0929	0.1913		
Combined Prop	portion Norm	al Binomials						
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	164/183	151/183	142/183	163/183	170/185		
2.5		168/184	164/184	169/195	177/198	141/183		
5		147/183	170/188	148/183	130/183	177/208		
10		86/189	48/191	9/183	5/183	0/183		
20		0/183	0/183	0/183	0/183	0/183		
40		0/183	0/183	0/183	0/183	0/183		
Proportion Nor	mal Binomia	ls						
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	164/176	151/170	142/164	163/177	170/185		
2.5		168/184	164/184	169/195	177/198	141/166		
5		147/175	170/188	148/166	130/161	177/208		
10		86/189	48/191	9/176	5/167	0/170		
20		0/174	0/170	0/170	0/170	0/178		
40		0/26	0/15	0/34	0/17	0/35		
Survival Rate E	Binomials		-					
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	176/183	170/183	164/183	177/183	183/183		
2.5		183/183	183/183	183/183	183/183	166/183		
5		175/183	183/183	166/183	161/183	183/183		
10		183/183	183/183	176/183	167/183	170/183		
20		174/183	170/183	170/183	170/183	178/183		
40		26/183	15/183	34/183	17/183	35/183		



Report Date: Test Code/ID: 09 Feb-23 15:38 (p 1 of 6) 23012 mgrd / 03-3591-1122

								Test Co			No	-0001-1122
Bivalve Larva	al Surv	ival and D	evelopmen	t Test								Vood E&IS
Analysis ID:	05-50	97-2236	End	point: Cor	mbined Prop	ortion Norm	al	CETI	S Version:	CETISv2.	1.3	
Analyzed:		b-23 15:35	Anal	ysis: Par	ametric-Cor	trol vs Trea	tments	Statu	s Level:	1		
Edit Date:		b-23 15:31		MD5 Hash: 0D7D7E46D0A7D6931FF9C7C14F7C					or ID:	002-883-3	87-8	
Data Transfo	rm		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corr	5.5 (167)		C > T				5	10	7.071		0.1831	21.26%
Dunnett Mult	tiple Co	mparison	Test									
Control		Conc-µg/L		Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)		
Lab Control		2.5	8	-0.07405	2.227	0.2275	CDF	0.7758	Non-Signif	icant Effect		
200 00111101		5	8	0.613	2.227	0.2275	CDF	0.4947		icant Effect		
		10*	8	8.387	2.227	0.2275	CDF	<1.0E-05	Significant			
ANOVA Table	е											
Source		Sum Squa	ires	Mean Squ	ıare	DF	F Stat	P-Value	Decision(α:5%)		
Between		2.65059		0.883529		3	33.87	<1.0E-05	Significant	Effect		
Error		0.417401		0.0260876	i	16			157-157-1570 N			
Total		3.06799				19	_					
ANOVA Assu	umption	ns Tests							-			
Attribute		Test				Test Stat	Critical	P-Value	Decision(a:1%)		
Variance		Bartlett Eq	uality of Var	iance Test		9.827	11.34	0.0201	Equal Vari	ances		
Distribution			ilk W Norma			0.9475	0.866	0.3301	Normal Di	stribution		
Combined Pr	roportio	on Normal	Summary									
Conc-µg/L	гороги	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	0.8614	0.7879	0.9348	0.8907	0.7760	0.9189	0.0265	6.87%	0.00%
2.5			5	0.8671	0.7970	0.9372	0.8913	0.7705	0.9130	0.0253	6.51%	-0.66%
5			5	0.8155	0.7269	0.9042	0.8087	0.7104	0.9043	0.0319	8.75%	5.32%
10			5	0.1566	0.0000	0.3977	0.0492	0.0000	0.4550	0.0868	124.01%	81.82%
20			5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%
40			5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%
											- COC. 61	110000000000000000000000000000000000000
Angular (Cor	rrected				05% 01	05% 1101	Madian	Min	Max	Std Err	CV%	%Effect
Conc-µg/L		Code	Count	Mean		95% UCL		Min	Max	Apple to the control of the control	7.03%	0.00%
0		LC	5	1.1950	1.0910	1.2990 1.3000	1.2340	1.0780 1.0710	1.2820	0.0376 0.0349	6.49%	-0.63%
2.5			5	1.2030	1.1060		1.2350		1.2710 1.2560	0.0349	8.21%	5.24%
5			5	1.1330	1.0170	1.2480	1.1180	1.0030		0.0416	84.89%	71.68%
10			5	0.3384	-0.0183	0.6952	0.2236	0.0370	0.7404 0.0370	0.0000	0.00%	96.91%
20 40			5 5	0.0370 0.0370	0.0370 0.0370	0.0370 0.0370	0.0370 0.0370	0.0370	0.0370	0.0000	0.00%	96.91%
_ V/2-					0.0070	0.0070	3.0070	0.0070	0.0010	2.000	3.4070	
Combined P						D	D 5					
Conc-µg/L		Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0		LC	164/183	151/183	142/183	163/183	170/185					
2.5			168/184	164/184	169/195	177/198	141/183					
5			147/183	170/188	148/183	130/183	177/208					
10			86/189	48/191	9/183	5/183	0/183					
20			0/183	0/183	0/183	0/183	0/183					
40			0/183	0/183	0/183	0/183	0/183					

Report Date: Test Code/ID: 09 Fqb-23 15:38 (p 2 of 6)

230122mgrd / 03-3591-1122

Bivalve Larval Survival and Development Test

Wood E&IS

Analysis ID: Analyzed:

05-5097-2236 09 Feb-23 15:35 Endpoint: Combined Proportion Normal

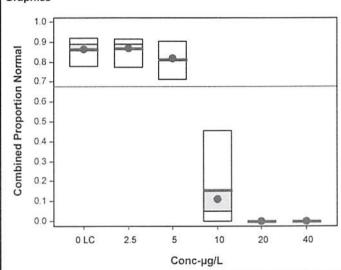
CETIS Version:

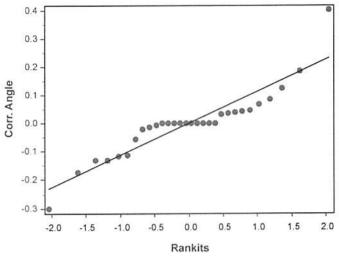
Analysis: Parametric-Control vs Treatments

Status Level:

CETISv2.1.3







Report Date: Test Code/ID: 09 Feb-23 15:38 (p 3 of 6) 23012amgrd / 03-3591-1122

								,		330,0010,000	A .	3-31-30-7-7-32-11
Bivalve Larva	al Sur	vival and D	evelopmen	t Test							١,	Vood E&I
Analysis ID:	05-1	195-9949	End	point: Pro	portion Norr	mal		CETI	S Version:	CETISv2.1.3		
Analyzed:	09 F	eb-23 15:36	Ana	lysis: Nor					s Level:	1		
Edit Date:	09 F	eb-23 15:31	MDS	Hash: 883	3C98F08C9	DE26800B	A2DC6AB5F	FF0E Edito	or ID:	002-883-3	87-8	
Data Transfo	rm		Alt Hyp				NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Angular (Corre	ected)		C>T				5	10	7.071		0.152	16.80%
Steel Many-O	ne Ra	ank Sum Te	est									
Control	vs	Conc-µg/l	_ df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(α:5%)		
Lab Control		2.5	8	22	17	0	CDF	0.2647	0.000	icant Effect		
		5	8	19	17	0	CDF	0.0921	Non-Signif	icant Effect		
		10*	8	15	17	0	CDF	0.0123	Significant	Effect		
ANOVA Table	е											
Source		Sum Squa	ares	Mean Squ	are	DF	F Stat	P-Value	Decision(
Between		2.93399		0.977998		3	44.33	<1.0E-05	Significant	Effect		
Error		0.352988		0.0220617		16	_					
Total		3.28698				19						
ANOVA Assu	imptic	ns Tests										
Attribute		Test				Test Stat		P-Value	Decision(
Variance			uality of Va			20.49	11.34	0.0001	Unequal V			
Distribution		Shapiro-W	/ilk W Norm	ality Test		0.8878	0.866	0.0245	Normal Di	stribution		
Proportion N	lorma	80.										
Conc-µg/L		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	0.9051	0.8713	0.9390	0.9189	0.8659	0.9318	0.0122	3.02%	0.00%
2.5			5	0.8829	0.8519	0.9138	0.8913	0.8494	0.9130	0.0112	2.82%	2.46%
5			5	0.8588	0.8100	0.9077	0.8510	0.8075	0.9043	0.0176	4.58%	5.12%
10			5	0.1575	0.0000	0.3977	0.0511	0.0000	0.4550	0.0865	122.85%	
20			5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%
40			5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100.00%
Angular (Cor	rected	d) Transfor	med Summ	ary								
Conc-µg/L		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	1.2600	1.2030	1.3170	1.2820	1.1960	1.3070	0.0204	3.63%	0.00%
2.5			5	1.2230	1.1750	1.2710	1.2350	1.1720	1.2710	0.0173	3.17%	2.94%
5			5	1.1880	1.1180	1.2590	1.1740	1.1170	1.2560	0.0255	4.80%	5.69%
10			5	0.3412	-0.0131	0.6954	0.2281	0.0384	0.7404	0.1276	83.63%	72.92%
20			5	0.0381	0.0376	0.0386	0.0384	0.0375	0.0384	0.0002	1.03%	96.98%
40			5	0.1039	0.0784	0.1295	0.0982	0.0846	0.1295	0.0092	19.81%	91.75%
Proportion N	lorma	l Binomials										
Conc-µg/L		Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0		LC	164/176	151/170	142/164	163/177	170/185					
2.5			168/184	164/184	169/195	177/198	141/166					
5			147/175	170/188	148/166	130/161	177/208					
10			86/189	48/191	9/176	5/167	0/170					
20			0/174	0/170	0/170	0/170	0/178					
100				(2002001201								

0/17

0/34

0/35

0/26

0/15

40

Bivalve Larval Survival and Development Test

Report Date: Test Code/ID: 09 Feb-23 15:38 (p 4 of 6) 230123mgrd / 03-3591-1122

CETISv2.1.3

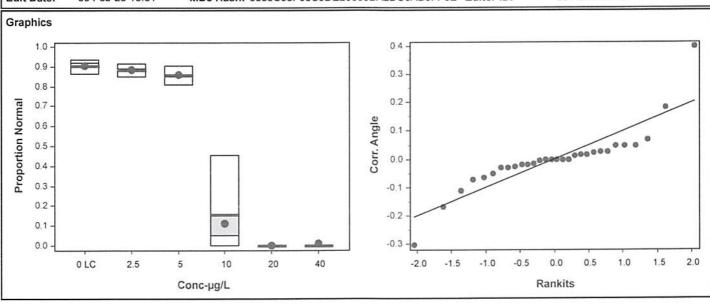
Wood E&IS

· M

Analysis ID: 05-1195-9949 Endpoint: Proportion Normal CETIS Version:

Analyzed: 09 Feb-23 15:36 Analysis: Nonparametric-Control vs Treatments Status Level:

Edit Date: 09 Feb-23 15:31 MD5 Hash: 8833C98F08C9DE26800BA2DC6AB5FF0E Editor ID: 002-883-387-8



Report Date: Test Code/ID: 09 Feb-23 15:38 (p 5 of 6) 23012 mgrd / 03-3591-1122

Bivalve Larva	al Su	rvival and D	evelopmen	t Test							10	Wood E&IS
Analysis ID: Analyzed: Edit Date:	09 F	7549-6049 Feb-23 15:36 Feb-23 15:3	Ana		vival Rate ametric-Con 0087EE7F24			Statu	S Version: us Level: or ID:	CETISv2. 1 002-883-3		
	_	00 20 10.0					NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Data Transfo Angular (Corr		`	Alt Hyp C > T				20	40	28.28		0.07956	8.37%
							20	40	20.20		0.07330	0.0770
Dunnett Mult										. =0()		
Control	vs	Conc-µg/		Test Stat		MSD	P-Type	P-Value	Decision	(α:5%) ificant Effect		
Lab Control		2.5	8	-1.6	2.362	0.1642 0.1642	CDF	0.9973 0.8829	-	ificant Effect		
		5	8	-0.1881 -0.4976	2.362 2.362	0.1642	CDF	0.8829		ificant Effect		
		10 20	8	0.5329	2.362	0.1642	CDF	0.6325	100	ificant Effect		
		40*	8	14.25	2.362	0.1642	CDF	<1.0E-05	Significar			
ANOVA Table	Р.											
Source	•	Sum Squ	ares	Mean Squ	ıare	DF	F Stat	P-Value	Decision	(a:5%)		
Between		4.35713		0.871427		5	72.09	<1.0E-05	Significar			
Error 0.290128			0.0120887	,	24	. 2.00		- 3				
Total		4.64726				29	-					
ANOVA Assu	ımpti	ons Tests										
Attribute	O.S.	Test				Test Stat	Critical	P-Value	Decision	(a:1%)		
Variance		Bartlett Ed	quality of Va	riance Test		5.252	15.09	0.3859	Equal Va	riances		
Distribution			vilk W Norm			0.9741	0.9031	0.6550	Normal D	istribution		
Survival Rate	e Sun	nmary										
Conc-µg/L		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	0.9508	0.9017	1.0000	0.9617	0.8962	1.0000	0.0177	4.16%	0.00%
2.5			5	0.9814	0.9298	1.0000	1.0000	0.9071	1.0000	0.0186	4.23%	-3.22%
5			5	0.9486	0.8812	1.0000	0.9563	0.8798	1.0000	0.0243	5.73%	0.23%
10			5	0.9607	0.9109	1.0000	0.9617	0.9126	1.0000	0.0179	4.17%	-1.03%
20			5	0.9421	0.9178	0.9664	0.9290	0.9290	0.9727	0.0087	2.08%	0.92%
40			5	0.1388	0.0758	0.2018	0.1421	0.0820	0.1913	0.0227	36.57%	85.40%
Angular (Cor	recte	d) Transfor	med Summ	ary								
Conc-µg/L		Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0		LC	5	1.3680	1.2320	1.5040	1.3740	1.2430	1.5340	0.0491	8.02%	0.00%
2.5			5	1.4790	1.3280	1.6310	1.5340	1.2610	1.5340	0.0546	8.25%	-8.13%
5			5	1.3810	1.1960	1.5660	1.3600	1.2170	1.5340	0.0665	10.77%	-0.96%
10			5	1.4030	1.2470	1.5580	1.3740	1.2710	1.5340	0.0561	8.95%	-2.53%
20			5	1.3310	1.2740	1.3880	1.3010	1.3010	1.4050	0.0205	3.44%	2.71%
40			5	0.3770	0.2837	0.4702	0.3865	0.2904	0.4526	0.0336	19.92%	72.44%
Survival Rate	e Bin	omials										
Conc-µg/L		Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0		LC	176/183	170/183	164/183	177/183	183/183					
2.5			183/183	183/183	183/183	183/183	166/183					
5			175/183	183/183	166/183	161/183	183/183					
10			183/183	183/183	176/183	167/183	170/183					
20			174/183	170/183	170/183	170/183	178/183					
40			26/183	15/183	34/183	17/183	35/183					

Report Date: Test Code/ID:

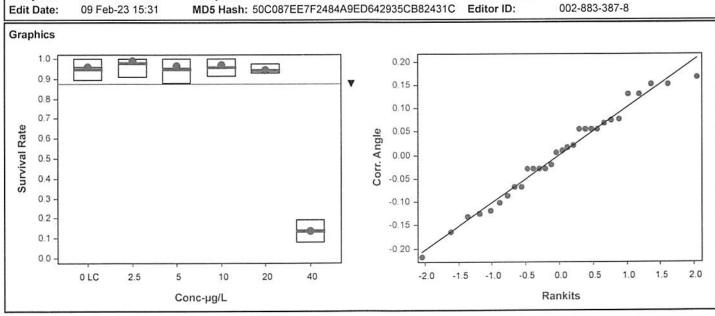
09 Feb-23 15:38 (p 6 of 6) 230128 mgrd / 03-3591-1122

Wood E&IS

Bivalve Larval Survival and Development Test CETISv2.1.3 Analysis ID: 04-7549-6049 Endpoint: Survival Rate **CETIS Version:**

Analyzed: 09 Feb-23 15:36 Analysis: Parametric-Control vs Treatments Status Level: 1

002-883-387-8 Editor ID:



Report Date: Test Code/ID:

09 Feb-23 15:38 (p 1 of 1) 230128mgrd / 03-3591-1122

Bivalve Larval Survival and Development Test

Wood E&IS

Analysis ID: 07-0010-2705

Endpoint: Combined Proportion Normal

CETIS Version:

Analyzed:

09 Feb-23 15:35

Status Level:

Edit Date:

09 Feb-23 15:31

Analysis: Untrimmed Spearman-Kärber

002-883-387-8

CETISv2.1.3

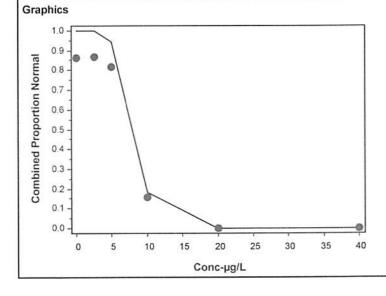
Spearman-Kärber Estimates

Threshold Option	Threshold	Trim	Mu	Sigma	EC50	95% LCL	95% UCL	
Control Threshold	0.1385	0.00%	0.8884	0.004433	7.734	7.577	7.893	

Combined Proportion Normal Summary			Calculated Variate(A/B)						Isotonic Variate		
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	ΣΑ/ΣΒ	Mean	%Effect
0	LC	5	0.8614	0.8907	0.7760	0.9189	6.87%	0.00%	790/917	0.8645	0.00%
2.5		5	0.8671	0.8913	0.7705	0.9130	6.51%	-0.66%	819/944	0.8645	0.00%
5		5	0.8155	0.8087	0.7104	0.9043	8.75%	5.32%	772/945	0.8169	5.51%
10		5	0.1566	0.0492	0.0000	0.4550	124.01%	81.82%	148/929	0.1593	81.57%
20		5	0.0000	0.0000	0.0000	0.0000		100.00%	0/915	0.0000	100.00%
40		5	0.0000	0.0000	0.0000	0.0000		100.00%	0/915	0.0000	100.00%

MD5 Hash: 0D7D7E46D0A7D6931FF9C7C14F7CBE32 Editor ID:

Combined Proportion Normal Binomials								
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	LC	164/183	151/183	142/183	163/183	170/185		
2.5		168/184	164/184	169/195	177/198	141/183		
5		147/183	170/188	148/183	130/183	177/208		
10		86/189	48/191	9/183	5/183	0/183		
20		0/183	0/183	0/183	0/183	0/183		
40		0/183	0/183	0/183	0/183	0/183		



09 Feb-23 15:44 (1 of 1)

Bivalve Larval Survival and Development Test

All Matching Labs

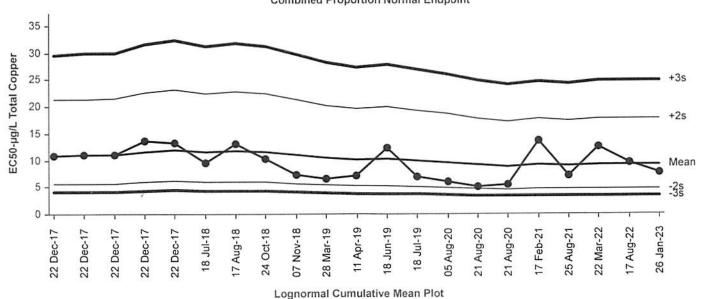
Test Type: Development-Survival Protocol: EPA/600/R-95/136 (1995) Organism: Mytilis galloprovincialis
Endpoint: Combined Proportion Normal

Material: Source:

Reference Toxicant-REF

Total Copper

Bivalve Larval Survival and Development Test Combined Proportion Normal Endpoint



Mean:	9.171	Count:	20	-2s Warning Limit:	4.72	-3s Action Limit:	3.38
Sigma:	NA	CV:	34.20%	+2s Warning Limit:	17.8	+3s Action Limit:	24.9

Qualit	ty Con	trol Data	a									
Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2017	Dec	22	15:00	10.95	1.776	0.5325			13-8076-0092	04-7666-8867	Wood E&IS
2			22	15:00	11.1	1.934	0.5757			18-9173-1279	00-8804-3805	Wood E&IS
3			22	15:00	11.13	1.958	0.5822			19-1537-3013	20-7428-0259	Wood E&IS
4			22	15:10	13.69	4.517	1.205			05-2148-4604	14-2190-9809	Wood E&IS
5			22	15:10	13.26	4.091	1.11			07-4924-1298	02-9536-6591	Wood E&IS
6	2018	Jul	18	12:30	9.593	0.4228	0.1356			17-4700-2672	19-1834-7581	Wood E&IS
7		Aug	17	18:15	13.11	3.937	1.074			06-6531-4070	03-3159-5721	Wood E&IS
8		Oct	24	14:25	10.37	1.203	0.3707			10-5049-1350	21-2167-7967	Wood E&IS
9		Nov	7	14:40	7.288	-1.882	-0.6911			21-2560-8966	08-1725-7308	Wood E&IS
10	2019	Mar	28	15:00	6.57	-2.6	-1.003			01-1205-3490	09-9916-0601	Wood E&IS
11		Apr	11	15:05	7.2	-1.97	-0.7276			09-5126-5022	11-0264-5925	Wood E&IS
12		Jun	18	15:35	12.33	3.159	0.8905			20-1050-4622	12-9168-6963	Wood E&IS
13		Jul	18	14:55	7	-2.171	-0.8125			14-0843-5203	16-2395-2147	Wood E&IS
14	2020	Aug	5	16:15	5.97	-3.2	-1.291			01-5363-1852	03-9719-1127	Wood E&IS
15			21	17:45	4.994	-4.176	-1.828			02-6167-5910	09-0147-8078	Wood E&IS
16			21	17:45	5.371	-3.799	-1.609				07-5383-0657	
17	2021	Feb	17	16:05	13.75	4.58	1.219			02-0888-9810	19-5282-1839	Wood E&IS
18		Aug	25	16:50	7.088	-2.083	-0.775			01-4286-8892	09-6353-7527	Wood E&IS
19	2022	Mar	22	16:15	12.55	3.376	0.943			07-3402-8050	17-5105-1124	Wood E&IS
20		Aug	17	15:45	9.552	0.3814	0.1226			19-5652-2899	07-5236-6337	Wood E&IS
21	2023		26	0:00	7.734	-1.437	-0.5127			03-3591-1122	07-0010-2705	Wood E&IS

Report Date:

20 Jan-23 13:19 (p 1 of 1)

Test Code/ID:

230123mgrd / 03-3591-1122 Wood E&IS

Bivalve Larval Survival and Development Test

Species: Mytilis galloprovincialis Protocol: EPA/600/R-95/136 (1995) Sample Code: Sample Source: Reference Toxicant

230123mgrd

Sample Date: 26 Jan-23

Start Date:

End Date:

26 Jan-23 28 Jan-23

Material: Total Copper

Sample Station:

ample Date: 26 Jan-23				Material:	Total Copper	Sample Station:				
Conc-µg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes		
			1			170 35 191 34 167	0	A6 2/8/23		
			2			35	0			
			3			191	48			
			4			34	0			
			5			167	5			
			6			164	142			
			7			185	170			
			8			164	0 0 48 0 5 142 170 9			
			9			26	151			
			10			170	151			
			11			198 194 177 176 170 188	168			
			12			184	168			
			13			177	163 164 0 170			
			14			176	164			
			15			170	0			
			16			188	170			
			17			175	147			
			18			166	141			
			19			174	0			
			20			189	86			
			21			208	177			
			22			208	177			
			23			195	169 0 148 0			
			24			170	0			
			25			166	148			
			26			15	0			
			27			178	0			
			28			161	130			
			29			184	130			
			30			170	0			

CETIS Test Data Worksheet

26 Jan-23

Start Date:

Bivalve Larval Survival and Development Test

Report Date: Test Code/ID:

20 Jan-23 13:19 (p 1 of 1) 230125mgrd / 03-3591-1122

Wood E&IS

Sample Code: 230123mgrd Species: Mytilis galloprovincialis

End Date: 28 Jan-23 Protocol: EPA/600/R-95/136 (1995) Sample Source: Reference Toxicant

Sample Station: Sample Date: 26 Jan-23 Material: Total Copper

ample Date: 26 Jan-23				material.	Total Copper	Sample Station:					
Conc-µg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes			
0	LC	1	14								
0	LC	2	10			143	130	+ recontaguer settle			
0	LC	3	6								
0	LC	4	13								
0	LC	5	7								
2.5		1	12								
2.5		2	29								
2.5		3	23								
2.5		4	11								
2.5		5	18								
5		1	17								
5		2	16								
5		3	25								
5		4	28								
5		5	21								
10		1	20								
10		2	3								
10		3	8								
10		4	5								
10		5	15								
20		1	19								
20		2	24								
20		3	1								
20		4	30								
20		5	27								
40		1	9								
40		2	26								
40		3	4								
40		4	22								
40		5	2								

Qc:No

Analyst: Ab QA: SC

Water Quality for Bivalve Development

Client: Internal
Project ID: Cu Reftox
Test No. 230126mgrd

Test Species: M. galloprovincialis
Start Date/Time: $\frac{1/26/2023}{1/36/2023}$ $\frac{1730}{1/36/2023}$

Test Conc.		Water Quality	y Measurements	
(µg/L Cu)	Parameter	0hr	24hr	48hr
	Temp. (°C)	15.5	15.5	15.4
	Salinity (ppt)	33.4	33.3	33.5
Lab Control	pH (units)	7.80	7.64	7.70
	DO (mg/L)	9.1	8.4	8.4
	Temp. (°C)	15.7	15.3	15.4
3.5	Salinity (ppt)	33.4	33.4	33.6
2.5	pH (units)	7.86	7.70	7.74
	DO (mg/L)	Q.\	8.5	8.4
	Temp. (°C)	15-6	15.3	15.3
	Salinity (ppt)	33.6	33.5	33.6
5	pH (units)	7.87	7.73	7.75
	DO (mg/L)	8.2	8.5	8.5
	Temp. (°C)	15-7	is.3	15.3
10	Salinity (ppt)	33.4	33.5	33.6
10	pH (units)	7-87	7.75	7.77
	DO (mg/L)	8.2	8.5	8.5
	Temp. (°C)	15-6	15.3	15.3
20	Salinity (ppt)	33.4	33.3	33.5
20	pH (units)	7.80	7.77	7.79
	DO (mg/L)	8.2	0,5	8.4
	Temp. (°C)	15-le	15.3	(5.3
40	Salinity (ppt)	33.5	33.4	33.6
40	pH (units)	7-80	7.79	7.80
	DO (mg/L)	8.2	8.4	8.5
	Temp. (°C)			
	Salinity (ppt)			
	pH (units)			
	DO (mg/L)			
	Tech Initials	: HY_	RV	Ab

	Tech initials.	PV AO
Source of Animals:	Mission Bay	Date Received: 1/26/23
Comments:		
QC Check:	A6 21913	Final Review: SC 3/9/23

Embryo-Larval Development Test

Stock Preparation Worksheet

Test Species:

M. galloprovincialis

Test Date: 1/26/2023

Analyst:

Batch ID:

1/26/23 Mirson Bay Collection

Test Type:

48hr Bivalue Development

Task	
Spawning Induction	1430
Spawning Begins	1510
# Males/# Females	515
Spawn Condition	good
Fertilization Initiated	1600
Fertilzation End/Eggs Rinsed	1620/1640
Embryo Counts	1700
Test Initiation	1730

Embryo Density Counts

per 100 μL

yo bensity			. P 7 - P	900			
Stock #	Stock Volume (mL)	Rep 1	Rep 2	Rep 3	Rep 4	Mean #/100 μL	Mean #/mL (x10)
Stock 1						76	7 72
Stock 2	500						
Stock 3	500	21	19	11	13	1.6	800

Cell Division:

	% Divided
Stock 1	
Stock 2	90
Stock 3	98

Selected Stock:	3	

Stock Density

Dil Factor

Adjust selected embryo stock to 500 embryos/mL.

Dilution Factor = Stock Density/mL/500

500

1,6

In 10 mL sample volume add 500 μ l of 500 embryo/ml stock to obtain 25 embryos/mL in test vials.

Notes:

TO,=195, TO2=+75, TO3=175, TO4=192, TOS=184

X= 183

QA Review:

AG 2/9/23

Final Review: 103/9/

APPENDIX C Sample Receipt Information & Chain of Custody Form

Sample Check-In: Effluent/Water

WSP Environmental Laboratory

4905 Morena Blvd, Ste. 1304

San Diego, CA 92117

Client: POSD - SIYB

Project Name: 2023 SIYB TMDL WINTER

Test ID Numbers: 23-01-043 to -0560

Sample ID:	S14B-1	15148-2	SI4B-3	S14B-4	S14B-5	S14B-6	SIMB-REA-1
Sample Number:	13-MOZLO	23-W027	23-W028	23-W029	23-W030	23-W031	23-NO32
Collection Date/Time:	1/25/23 1400	1/25/23 1300	1/25/23/200	1/25/23/100	1/25/23 1000	1/25/23 0900	1/25/23 0800
Receipt Date/Time:	1/25/125 1700	1/15/23 1700	1/25/23 1700	1/25/23 1240	1/25/23 1240	1/25/231240	1/25/23 1240
Total Sample Volume (L):	3074 LEN	142	146	146	146	142	14L
Receipt Temp (°C):	15.7	15.7	14.9	17.8	15.8	16.7	15.0
Appropriate Temp (Y/N) ¹ :	1	Υ	7	7	Y	Y	Y
pH (units):	7.83	7.83	7.92	7.92	7.92	7.88	7.90
DO (mg/L):	P13 9.1	8.5	8.8	8.4	8.2	8.1	7.8
Conductivity (μS/cm) ² :	51	考以51	51	50	50	50	49
Salinity (ppt):	32.9	32.8	32.7	32.8	32.7	32.6	ev7.8-32.3
Alkalinity (mg/L):	109	112	111	108	2444 110	114	107
Hardness (mg/L) ² :	-	_	******	-	_		_
Total Chlorine (mg/L) ³ :	0.03	20.02	NR	0.02	40.02	0.06	0.02
Free Chlorine (mg/L) ³ :	_	_	-	1 -	-	_	_
Technician Initials:	PV	FU	RV	EN	EN	RN	RN

Notes:	Sample Descriptions ⁴ :
¹ Temperature should be 0 - 6°C if received > 24 hours past collection	All samples: cleav & colorless
² Only measured on samples with less than 3 ppt salinity	
³ If total chlorine is above 0.10 mg/L, the free chlorine will be measured	
⁴ Debris, odor, and color is described only if observed in the sample	

Test Organism: M. Berry IIM Dilution Water: Nat-SW, Art-SW, RW, DMW, Other_	Salinity
M. gallopavin Additional Control: AST	Saimity
Til. Julia Karra Additional Control:	Salinity



WSP Aquatic Toxicology Lab 4905 Morena Blvd, Ste. 1304 San Diego, CA 92117 Phone: (858) 299-5368

Chain	of	Custody	/ Form

Page ___1__ of ___1

Client/Send Report To:					Dunais at Ind	of a war at any life was also all.			Analysis Requested (write out or use codes below)					H
	Report To: WSP USA E & I, Inc.				Project Information (if needed): Project Name 2023 SIYB TMDL Winter Monitoring				(write	Out or	use co	odes be	low)	-
Company Address	9177 Sky Park Court				Project No. 2015100118.0007			1						छ
San Diego, CA 92123			PO Number					ed) dı		
Contact/PM	Marisa Swiderski							φ.	≥	ach ach				Tem
Phone Number	Parameter and the second secon		Personal Cod	oler Shipped:		Mb-a	Mg-dv	Mg-dv TIE W attache				ğ		
Email Address	marisa.swiderski@wsp.c	viderski@wsp.com			Return Requested: YES NO			-	_	Mg-dv TIE SOW attached				Receipt Temp (°C)
Sample ID Collection Date			Collection Time			Sample Number (for lab use)			33					
Md -sı	YB-REF-1				14L	Grab		X	_x_	_				\Box
W-	SIYB-6				14L	Grab		Х_	Χ_	_				
my-	SIYB-5				14L	Grab		-X-	-X-	-				
my-	SIYB-4				14L	Grab		X	-X-	-			1	
SIYB-3 01/25/2023		lzozs	1200	14L	Grab		Х	Х					14.9	
	SIYB-2	1		\300	14L	Grab		Х	х					15.7
	SIYB-1	_	_	1400	30L	Grab		Х	х	Х				13.7
														\sqcup
							10.05.50.100							Щ
Samples Collector MS/KB	ed By:	200, 400 ug/L for Menidia and 0, 2 Menidia tests at 3 concentrations			at ref. tox. test for all species (copper concentrations of 0, 25, 50, 100, 2.5, 5.0, 10, 20 and 40 μg/L for bivalve). (25, 5.0, 100%) and a control; 6 reps/sample. (6.25, 12.5, 25, 50, and 100%), and a control; and a 100% filtered luca sp.): 5 reps/sample.			Samples Shipped via: Condition Upon Receipt:						
Relinquished/Sh Signature: Mor	nipped By:	Receive Signatu	.1	yesa	2	Relinquished By: Signature:		Rece Signa	ived ture:					
	risa Swiderski	Print Na	ame: 🔎	Lexi babo			Print Name:							
Date/Time: 01/25/2023 1700 Date/Time: 125/23 170			Date/Time:		Date/Time:									

Test Codes (marine):

Mp-c: Chronic Kelp Hr-dv: Chronic Abalone Mb-a: Acute Menidia/Silverside Sp-c: Chronic Urchin Fertilization

Mb-c: Chronic Menidia/Silverside Sp-dv: Chronic Urchin Development

Aa-a: Acute Topsmelt Aa-c: Chronic Topsmelt

Ab-a: Acute Mysid Shrimp Ab-c: Chronic Mysid Shrimp Mg-dv: Chronic Mussel Development

Other: Write out the test organism

Test Codes (freshwater):

Cd-a: Acute Ceriodaphnia Sc-c: Chronic Green Algae Cd-c: Chronic Ceriodaphnia Ha-a: Acute Hyalella amphipod Pp-a: Acute Fathead Minnow Ha-c: Chronic Hyalella amphipod Pp-c: Chronic Fathead Minno T-22: CA Title 22 Hazardous Waste

APPENDIX D TIE Chemistry Results



FINAL REPORT

Work Orders: 3A27061 Report Date: 3/13/2023

Received Date: 1/27/2023

Project: Shelter Island Yacht Basin TIE (Port of San Diego)

Turnaround Time: Normal

Phones: (858) 278-3600

Fax: (858) 278-5300

P.O. #:

Billing Code:

Attn: Chris Stransky

Client: WSP USA E&I Inc. - San Diego

9177 Sky Park Court, Ste A San Diego, CA 92123

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Chris Stransky,

Enclosed are the results of analyses for samples received 1/27/23 with the Chain-of-Custody document. The samples were received in good condition, at 3.3 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Chris Samatmanakit Project Manager

1: State











FINAL REPORT

WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123 Project Number: Shelter Island Yacht Basin TIE (Port of San

Diego)

03/13/2023 16:26

Reported:

Project Manager: Chris Stransky



Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
SIYB-TIE-LC	Chris Stransky	3A27061-01	Water	01/26/23 14:55	
SIYB-TIE-Filt-001	Chris Stransky	3A27061-02	Water	01/26/23 15:10	
SIYB-TIE-EDTA10-001	Chris Stransky	3A27061-03	Water	01/26/23 14:30	
SIYB-TIE-EDTA25-001	Chris Stransky	3A27061-04	Water	01/26/23 14:35	
SIYB-TIE-RW-100-A	Chris Stransky	3A27061-05	Water	01/26/23 15:40	
SIYB-TIE-RW-100-B	Chris Stransky	3A27061-06	Water	01/26/23 15:45	
SIYB-TIE-RW-100-C	Chris Stransky	3A27061-07	Water	01/26/23 15:50	
SIYB-TIE-RW-100-D	Chris Stransky	3A27061-08	Water	01/26/23 15:55	
SIYB-TIE-RW-100-E	Chris Stransky	3A27061-09	Water	01/26/23 16:00	
SIYB-TIE-RW-100-F	Chris Stransky	3A27061-10	Water	01/26/23 16:05	
SIYB-TIE-RW-50-A	Chris Stransky	3A27061-11	Water	01/26/23 14:00	
SIYB-TIE-RW-50-B	Chris Stransky	3A27061-12	Water	01/26/23 14:05	
SIYB-TIE-RW-50-C	Chris Stransky	3A27061-13	Water	01/26/23 14:10	
SIYB-TIE-RW-50-D	Chris Stransky	3A27061-14	Water	01/26/23 14:15	
SIYB-TIE-RW-50-E	Chris Stransky	3A27061-15	Water	01/26/23 14:20	
SIYB-TIE-RW-50-F	Chris Stransky	3A27061-16	Water	01/26/23 14:25	
SIYB-RT-A	Chris Stransky	3A27061-17	Water	01/26/23 11:05	
SIYB-RT-B	Chris Stransky	3A27061-18	Water	01/26/23 11:10	
SIYB-RT-C	Chris Stransky	3A27061-19	Water	01/26/23 11:15	
SIYB-RT-D	Chris Stransky	3A27061-20	Water	01/26/23 11:20	
SIYB-RT-E	Chris Stransky	3A27061-21	Water	01/26/23 11:25	
SIYB-RT-F	Chris Stransky	3A27061-22	Water	01/26/23 11:30	



02/17/23

FINAL REPORT

WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123

Copper, Dissolved

Project Number: Shelter Island Yacht Basin TIE (Port of San

Diego)

Project Manager: Chris Stransky

Reported:

03/13/2023 16:26

Sample:	SIYB-TIE-LC					Sampled: ()1/26/23 14:55 k	v Chric Strand
Sample.						Sampled. () 1/20/25 14.55 L	by Chins Strainsi
Amalusta	3A27061-01 (Water)	Result	MDL	MRL	Units	Dil	Analyzad	Qualifi
Analyte onventional (Chemistry/Physical Parameters I		MDL	WIKL	Onits	Dii	Analyzed	Qualiii
Method: SM		, , , , , , , , , , , , , , , , , , ,		Instr: TOC02				
Batch ID: V		Preparation: _NONE (TOC/TOX)		Prepared: 02/0	6/23 13:21			Analyst: a
	Organic Carbon	1.1	0.15	0.30	mg/l	1	02/07/23	,
/letals - Low L	evel by 1600 Series Methods							
Method: EPA	•			Instr: ICPMS03				
Batch ID: V		Preparation: EPA 1640#Preconcentration		Prepared: 02/1	6/23 12:26			Analyst: AL
Copper, Di	ssolved		0.0038	0.010	ug/l	1	02/16/23	•
Sa	mple Results							
Sample:	SIYB-TIE-Filt-001					Sampled: (01/26/23 15:10 k	y Chris Strans
	3A27061-02 (Water)							
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualif
letals - Low L	evel by 1600 Series Methods							
Method: EPA	1640			Instr: ICPMS03				
Batch ID: V	V3B1447	Preparation: EPA 1640#Preconcentration		Prepared: 02/1	6/23 12:26			Analyst: AL
Copper, Di	ssolved	7.0	0.0038	0.010	ug/l	1	02/16/23	
Sa	mple Results							
Sample:	SIYB-TIE-EDTA10-001					Sampled: ()1/26/23 14:30 k	y Chris Strans
	3A27061-03 (Water)							
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifi
/letals - Low L	evel by 1600 Series Methods							
Method: EPA	1640			Instr: ICPMS03				
Batch ID: V	V3B1447	Preparation: EPA 1640#Preconcentration		Prepared: 02/1	6/23 12:26			Analyst: ALI
Copper, Di	issolved	0.25	0.0038	0.010	ug/l	1	02/16/23	
Sa	mple Results							
Sample:	SIYB-TIE-EDTA25-001					Sampled: ()1/26/23 14:35 k	y Chris Stransl
	3A27061-04 (Water)							
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifi
/letals - Low L	evel by 1600 Series Methods							
Method: EPA	1640			Instr: ICPMS03				
	V3B1447	Preparation: EPA 1640#Preconcentration		Prepared: 02/1	6 (00 40 06			Analyst: AL

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0.0038

0.010



FINAL REPORT

WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123

Copper, Dissolved

Project Number: Shelter Island Yacht Basin TIE (Port of San

Diego)

03/13/2023 16:26

Reported:

Project Manager: Chris Stransky

San Diego, CA 92123	Project Manager:	Chris Str	ansky				
Sample Results							(Continued)
Sample: SIYB-TIE-RW-100-A					Sampled: (01/26/23 15:40	by Chris Stransky
3A27061-05 (Water)							
Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
letals - Low Level by 1600 Series Methods							
Method: EPA 1640			Instr: ICPMS03				
Batch ID: W3B1447	Preparation: EPA 1640#Preconcentration		Prepared: 02/1	6/23 12:26			Analyst: ALN
Copper, Dissolved	0.68	0.0038	0.010	ug/l	1	02/17/23	•
Sample Results							(Continued
Sample: SIYB-TIE-RW-100-B					Sampled: (01/26/23 15:45	by Chris Stransky
3A27061-06 (Water)							
Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
Metals - Low Level by 1600 Series Methods							
Method: EPA 1640			Instr: ICPMS03				
Batch ID: W3B1447	Preparation: EPA 1640#Preconcentration		Prepared: 02/1	6/23 12:26			Analyst: ALN
Copper, Dissolved	4.1	0.0038	0.010	ug/l	1	02/17/23	•
Sample Results							(Continued
Sample: SIYB-TIE-RW-100-C					Sampled: (01/26/23 15:50	by Chris Stransk
3A27061-07 (Water)							
Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
letals - Low Level by 1600 Series Methods							
Method: EPA 1640			Instr: ICPMS03				
Batch ID: W3B1447	Preparation: EPA 1640#Preconcentration		Prepared: 02/1	6/23 12:26			Analyst: ALN
Copper, Dissolved	6.1	0.0038	0.010	ug/l	1	02/17/23	
Sample Results							(Continued
Sample: SIYB-TIE-RW-100-D					Sampled: (01/26/23 15:55	by Chris Stransk
3A27061-08 (Water)							
Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
letals - Low Level by 1600 Series Methods							
Method: EPA 1640			Instr: ICPMS03				
Batch ID: W3B1447	Preparation: EPA 1640#Preconcentration		Prepared: 02/1	6/23 12:26			Analyst: ALN
Copper, Dissolved	11	0.0038	0.010	ug/l	1	02/17/23	
Sample Results							(Continued
Sample: SIYB-TIE-RW-100-E					Sampled: (01/26/23 16:00	by Chris Stransk
3A27061-09 (Water)							
Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
letals - Low Level by 1600 Series Methods							
Method: EPA 1640			Instr: ICPMS03				
Batch ID: W3B1447	Preparation: EPA 1640#Preconcentration		Prepared: 02/1	6/23 12:26			Analyst: ALN
	•						,

0.0038

0.010

ug/l

02/17/23



FINAL REPORT

WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123 Project Number: Shelter Island Yacht Basin TIE (Port of San

Diego)

Project Manager: Chris Stransky

Reported:

03/13/2023 16:26

San Diego, C	CA 92123	Project Manager:	Chris Str	ansky				
Sa	imple Results							(Continued)
Sample:	SIYB-TIE-RW-100-F 3A27061-10 (Water)					Sampled: 0	01/26/23 16:05	by Chris Stransky
Analyte	SALTOOT TO (Water)	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
-	evel by 1600 Series Methods							-
Method: EPA	x 1640			Instr: ICPMS03				
Batch ID: V	W3B1447	Preparation: EPA 1640#Preconcentration		Prepared: 02/1	6/23 12:26			Analyst: ALN
Copper, D	issolved	44	0.019	0.050	ug/l	5	02/17/23	•
Sa	imple Results							(Continued)
Sample:	SIYB-TIE-RW-50-A 3A27061-11 (Water)					Sampled: 0	01/26/23 14:00	by Chris Stransky
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals - Low L	Level by 1600 Series Methods							
Method: EPA	x 1640			Instr: ICPMS03				
Batch ID: V	W3B1448	Preparation: EPA 1640#Preconcentration		Prepared: 02/1	6/23 12:28			Analyst: ALN
Copper, D	issolved	0.74	0.0038	0.010	ug/l	1	02/17/23	
Sa	imple Results							(Continued)
Sample:	SIYB-TIE-RW-50-B					Sampled: 0	01/26/23 14:05	by Chris Stransky
	3A27061-12 (Water)							
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
Metals - Low L	evel by 1600 Series Methods							
Method: EPA	x 1640			Instr: ICPMS03				
Batch ID: V	W3B1448	Preparation: EPA 1640#Preconcentration		Prepared: 02/1	6/23 12:28			Analyst: ALN
Copper, D	issolved	3.4	0.0038	0.010	ug/l	1	02/17/23	
Sa	imple Results							(Continued)
Sample:	SIYB-TIE-RW-50-C					Sampled: 0	01/26/23 14:10	by Chris Stransky
	3A27061-13 (Water)							
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
Metals - Low L	evel by 1600 Series Methods							
Method: EPA	x 1640			Instr: ICPMS03				
Batch ID: V	W3B1448	Preparation: EPA 1640#Preconcentration		Prepared: 02/1	6/23 12:28			Analyst: ALN
Copper, D	issolved	5.6	0.0038	0.010	ug/l	1	02/17/23	-
Sa	imple Results							(Continued)
Sample:	SIYB-TIE-RW-50-D					Sampled: 0	01/26/23 14:15	by Chris Stransky
	3A27061-14 (Water)							
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
Metals - Low L	evel by 1600 Series Methods							
Method: EPA	x 1640			Instr: ICPMS03				
Batch ID: V	N3B1448	Preparation: EPA 1640#Preconcentration		Prepared: 02/1	6/23 12:28			Analyst: ALN
	issolved		0.0038	0.010	ug/l	1	02/17/23	



FINAL REPORT

WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123

Batch ID: W3B1448

Copper, Dissolved

Project Number: Shelter Island Yacht Basin TIE (Port of San

Diego)

03/13/2023 16:26

Analyst: ALN

02/17/23

Reported:

Project Manager: Chris Stransky

Project Manager:	Chris Stra	ansky				
						(Continued)
				Sampled: (01/26/23 14:20	by Chris Stransk
Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
		Instr: ICPMS03				
Preparation: EPA 1640#Preconcentration		Prepared: 02/1	16/23 12:28			Analyst: ALN
21	0.0038	0.010	ug/l	1	02/17/23	
						(Continued
				Sampled: ()1/26/23 14:25	by Chris Stransk
Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
					•	
		Instr: ICPMS03				
Preparation: FPA 1640#Preconcentration						Analyst: ALN
40	0.019	0.050	ug/l	5	02/17/23	7
						(Continued
				Sampled: (01/26/23 11:05	by Chris Stransk
Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
						-
		Instr- ICPMS03				
Preparation: FPA 1640#Preconcentration						Analyst: ALN
0.71	0.0038	0.010	ug/l	1	02/17/23	7
						(Continued
				Sampled: (01/26/23 11:10	by Chris Stransk
Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
					•	
		Instr- ICPMS03				
Preparation: FPA 1640#Preconcentration						Analyst: ALN
			0,25 .2.20			7 tillaly 5 til 7 til.
3.8	0.0038	0.010	ug/l	1	02/17/23	
•	0.0038	0.010	ug/l	1	02/17/23	(Continued
•	0.0038	0.010	ug/l			
•	0.0038	0.010	ug/l			(Continued
3.8				Sampled: (01/26/23 11:15	by Chris Stransk
•	0.0038	0.010 MRL	ug/l Units			
	Preparation: EPA 1640#Preconcentration 21 Result Preparation: EPA 1640#Preconcentration 40 Result Preparation: EPA 1640#Preconcentration 0.71 Result	Result MDL Preparation: EPA 1640#Preconcentration 21 0.0038 Result MDL Preparation: EPA 1640#Preconcentration 40 0.019 Preparation: EPA 1640#Preconcentration 0.71 0.0038	Instr: ICPMS03	Result MDL Instr: ICPMS03 Prepared: 02/16/23 12:28 0.0038 0.010 ug/l	Result MDL MRL Units Dil	Sampled: 01/26/23 14:20 Instr: ICPMS03 Preparation: EPA 1640#Preconcentration Analyzed

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7.0

0.0038

Prepared: 02/16/23 12:28

ug/l

0.010

Preparation: EPA 1640#Preconcentration



Analyzed

FINAL REPORT

WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123 Project Number: Shelter Island Yacht Basin TIE (Port of San

Diego)

03/13/2023 16:26

Reported:

Qualifier

(Continued)

Project Manager: Chris Stransky

Sa	ample Results							(Continued)
Sample:	SIYB-RT-D					Sampled: 0	01/26/23 11:20	by Chris Stransky
	3A27061-20 (Water)							
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals - Low	Level by 1600 Series Methods							
Method: EPA	A 1640			Instr: ICPMS03				
Batch ID:	W3B1448	Preparation: EPA 1640#Preconcentration		Prepared: 02/16	/23 12:28			Analyst: ALN
Copper, D	Dissolved		0.0038	0.010	ug/l	1	02/17/23	
Sa	ample Results							(Continued)
Sample:	SIYB-RT-E					Sampled: 0	01/26/23 11:25	by Chris Stransky
	3A27061-21 (Water)							

Metals - Low Leve	l by 1600 Series Methods	

Analyte

Sample:

Method: EPA 1640

Method: EPA 1640 Instr: ICPMS03

Batch ID: W3B1448 Preparation: EPA 1640#Preconcentration Prepared: 02/16/23 12:28 Analyst: ALN

Result

Copper, Dissolved 23 0.019 0.050 ug/l 5 02/17/23

Sample Results

SIYB-RT-F Sampled: 01/26/23 11:30 by Chris Stransky

MDL

MRL

Instr: ICPMS03

Units

3A27061-22 (Water)

Analyte Result MDL MRL Units Dil Analyzed Qualifier

Metals - Low Level by 1600 Series Methods

ivietais - Low Level by 1600 Series iviethous

 Batch ID: W3B1448
 Preparation: EPA 1640#Preconcentration
 Prepared: 02/16/23 12:28
 Analyst: ALN

 Copper, Dissolved
 47
 0.019
 0.050
 ug/l
 5
 02/17/23

3A27061 Page 7 of 10



FINAL REPORT

Reported:

WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123

Project Number: Shelter Island Yacht Basin TIE (Port of San

Diego)

03/13/2023 16:26

Project Manager: Chris Stransky

					(
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Quality Control Results

Conventional Chemistry/Physical Parameters by	/ APHA/EPA/AST	M Methods	5								
	, , , , , , , , , , , , , ,				Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifie
Batch: W3B0440 - SM 5310B											
Blank (W3B0440-BLK1)				Pre	pared: 02/06/2	3 Analyzed:	02/07/23				
Dissolved Organic Carbon	ND	0.15	0.30	mg/l		,					
Blank (W3B0440-BLK2)				Pre	pared: 02/06/2	3 Analyzed:	02/07/23				
Dissolved Organic Carbon	ND	0.15	0.30	mg/l	,,.,.		,,				A-0
LCS (W3B0440-BS1)				Pre	pared: 02/06/2	3 Analyzed:	02/07/23				
Dissolved Organic Carbon	2.01	0.15	0.30	mg/l	2.00		100	74-120		20	
Matrix Spike (W3B0440-MS1)	Source: 3/	A26102-09		Pre	pared: 02/06/2	3 Analyzed:	02/07/23				
Dissolved Organic Carbon	3.39	0.15	0.30	mg/l	2.00	1.26	107	74-120		20	
Matrix Spike Dup (W3B0440-MSD1)	Source: 3	A26102-09		Droi	pared: 02/06/2	2 Analyzadi	02/07/22				
Dissolved Organic Carbon	3.43	0.15	0.30	mg/l	2.00	1.26	109	74-120	1	20	
Quality Control Resul	lts										
Metals - Low Level by 1600 Series Methods											
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifie
Batch: W3B1447 - EPA 1640											
Blank (W3B1447-BLK1)				_	Prepared & A	nalyzed: 02/	16/23				
Copper, Dissolved	0.00480	0.0038	0.010	ug/l							•
LCS (W3B1447-BS1)					Prepared & A	nalyzed: 02/					
Copper, Dissolved	4.09	0.0038	0.010	ug/l	4.00		102	70-130		30	
Matrix Spike (W3B1447-MS1)		A27061-01			Prepared & A	-					
Copper, Dissolved	4.97	0.0038	0.010	ug/l	4.00	1.13	96	70-130		30	
Matrix Spike Dup (W3B1447-MSD1)	Source: 3	A27061-01			Prepared & A	nalyzed: 02/	16/23				
Copper, Dissolved	5.15	0.0038	0.010	ug/l	4.00	1.13	101	70-130	4	30	
Batch: W3B1448 - EPA 1640											
Blank (W3B1448-BLK1)				Pre	pared: 02/16/2	3 Analyzed:	02/17/23				
Copper, Dissolved	0.00856	0.0038	0.010	ug/l		•					
LCS (W3B1448-BS1)				Pre	pared: 02/16/2	3 Analyzed:	02/17/23				
Copper, Dissolved	3.82	0.0038	0.010	ug/l	4.00		96	70-130		30	
Matrix Spike (W3B1448-MS1)	Source: 3/	A27061-11		Pre	pared: 02/16/2	3 Analyzed:	02/17/23				
Copper, Dissolved		0.0038	0.010	ug/l	4.00	0.744	98	70-130		30	
Matrix Spike (W3B1448-MS2)	Source: 3	A27061-22		Pro	pared: 02/16/2	3 Analyzed	02/17/23				
Copper, Dissolved		0.0038	0.010	ug/l	4.00	46.7	93	70-130		30	
Matrix Spike Dup (W3B1448-MSD1)	Source: 2	A27061-11		Dec	pared: 02/16/2	3 Analyzad	02/17/22				
Copper, Dissolved		0.0038	0.010	ug/l	4.00	0.744	96	70-130	2	30	
Matrix Spike Dup (W3B1448-MSD2)	C 3:	A27061-22		D	pared: 02/16/2	2 Amel	02/17/22				

3A27061 Page 8 of 10



FINAL REPORT

WSP USA E&I Inc. - San Diego 9177 Sky Park Court, Ste A San Diego, CA 92123 Project Number: Shelter Island Yacht Basin TIE (Port of San

Diego)

03/13/2023 16:26

Reported:

Project Manager: Chris Stransky



Item

Source

Notes and Definitions

A-01	filtered and acidified 01/25/2023
J	Estimated conc. detected <mrl and="">MDL.</mrl>
MS-02	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

Sample that was matrix spiked or duplicated.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

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Weck Laboratories, Inc.

nalytical Laboratory Services - Since 1964

Standard	CHAIN	OF	CHST	MODY	RF	CORI
Stanuaru	CHAIN	U F	CUOI	UU I		CUNI

******	**********				Analytical Laboratory Services	Since 1964									"ストフ	$\gamma \alpha_{\rm al}$	
14859 Clarl Tel 626-33	〈Avenue:Ind 6-2139 ♦ Fax	lustry: CA 9 626-336-263	1745 34 ♦ \	ww.	wecklabs.com									WECK '	wko#_ <i>JF</i> 1C	7461	
CLIENT NAME		020 000 200			PROJECT:					ANAL	YSES R	EQUEST	ED		SPECIAL	HANDLING	
	nvironment & In	frastructure Inc	·		Shelter Island Yacht Basir (Port of San Diego)		****		on ³						24 Hou	Day Rush 150% or Rush 100%	
ADDRESS:				•	PHONE:	858-775-5547	•		arb						1 - 40-721	Hour Rush 75%	
9177 Sky Pa					FAX: IEMAIL:	chris.stransky@wsp.com		Copper ^{1,2})	ji O							ay Rush 30% Extractions 50%	
San Diego, (JA 92123				EMAIL.	marisa,swiderski@wsp.com			rgan						I	Business Days	
PROJECT MA	NAGER				SAMPLER				d OB)							Data Package	
Chris Strans			, ,		Chris Stransky (CS); Mari	sa Swiderski (MS)		Dissolved C (EPA1640)	olve 531(i l			or weekends/holidays	
ID# Lab Use Only)	DATE SAMPLED	TIME. SAMPLED	SMPL TYPE		SAMPLE	IDENTIFICATION/SITE LOCATION	DENTIFICATION/SITE LOCATION #0F CONT.		Dissolved Organic Carbon ³ (SM5310B)						Method of Shipmen		
	01/26/2023	1455	SW	N		SIYB-TIE-LC	3	Х	Х								
		1510	sw	N		SIYB-TIE-Filt-001	1	Х						<u> </u>			
		1430	sw	Ν	S	IYB-TIE-EDTA10-001	1	Х									
		1435	sw	2	S	IYB-TIE-EDTA25-001	1	Х									
		1540	sw	Z	SIYB-TIE-RW-100-A 1			Х									
		1545	sw	Ν	SIYB-TIE-RW-100-B			Х									
		1220	sw	N	,	SIYB-TIE-RW-100-C											
		1555	sw	7	;	SIYB-TIE-RW-100-D 1										***	
		1600	sw	N		SIYB-TIE-RW-100-E	1	Х									
		1605	sw	N		SIYB-TIE-RW-100-F	1	Х									
		1400	sw	N		SIYB-TIE-RW-50-A	1	Х									
,	<u> </u>	1405	sw	N		SIYB-TIE-RW-50 ₁ B	1	Х							<u> </u>		
RELINQUI		10. 1 11	,			RECEIVED BY	Α.			DATE	: / TIME	239	s	AMPLE C	CONDITION:	SAMPLE TYPE C	ODE:
Hanna	in kranz ·	farh be	fa		1127/130839	Hoer in	Me			1-2	7	231	Actual	Temperatur		DW = Drinking Water WW = Waste Water	
RELINQUI		<u>, , , , , , , , , , , , , , , , , , , </u>			DATE / TIME (120	RECEIVED BY				DATE	/ TIME		_	red On Ice	Toller)	GW = Ground Water	
	//<<	ah			1-22,23	Toughner				oils	1131	120		es Preserv	()0	SW = Sea Water	
RELINQUISHED BY DATE / TIME						RECEIVED BY					/ TIME		-	vidence Seals Present			
														ner Attack	7	OL = Oil OT = Other Matrix	
PRESCHEDULED RUSH ANALYSES WILL TAKE PRIORITY OVER UNSCHEDULED					OVER UNSCHEDULED	SPECIAL REQUIREMENTS / BILLING INFOR			4	•					APInvoice.US@we		
RUSH REQUESTS						1) LAB ACTION: PRESERVE Cu SAMPI	LES IMME	DIATE	LY. HC	PE Me	tals (Co	: chris.s	transky	@wsp.c	com, marisa.swide	ski@wsp.com, &	ion:
						bottles have NO acid (HNO3) in bottle. 2) Diss, metals were field filtered using 0	.45 um bot	tletop 1	filt. svst	tem.		marissa.cuevas@wsp.com) and include the following information: 1) Project #: 2015100118.0002B.WECK					
						3) DOC samples were field filtered through	gh 0.45 um	Nylon	filters.		(2)	(2) PO #: C015102550					
						4) Please contact WSP PM within 24 hou	urs if any sa	ample	anoma	lies are	(3)	(3) Org: 3151					
Client agrees to Terms & Conditions at: www.wecklabs.com						found. (4) GL: 573000											

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Weck Laboratories, Inc.

Standard CHAIN OF CUSTODY RECORD

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14859 Clar	k Aveni	ue: Ind	lustry : CA 9 626-336-263	11745 34 • •	www.	Analytical Laboratory Services Wecklabs.com	~ Since 1964								WE	ECK W	ко#_ 3/	12-1	0(e)	
CLIENT NAME						PROJECT:			ANALYSES REQUEST				TEC)		SPECIA	L HAN	IDLING		
WSP USA Environment & Infrastructure Inc. ADDRESS: 9177 Sky Park Court San Diego, CA 92123 Shelter Island Yacht (Port of San Diego) PHONE: FAX: EMAIL:							esin TIE 858-775-5547 chris.stransky@wsp.com marisa.swiderski@wsp.com										24 48 4- Ru	Hour Rus 72 Hour F 5 Day Ru sh Extrac	Rush 75%	
PROJECT MA	NAGER					SAMPLER	manda.ovidorosiste vop.com												Package	
Chris Strans						Chris Stransky (CS); Mari	sa Swiderski (MS)		lvec 164								Charges will app	_	ekends/holida	ys
ID# (Lab Use Only)	DA SAMI	TE PLED	TIME SAMPLED	SMPL TYPE	Cl ₂ Y/N	SAMPLE	IDENTIFICATION/SITE LOCATION	# OF CONT.	Dissolved ((EPA1640)								Method of Shipn COMMENTS	nent:		
	01/26	12023	1410	sw	N		SIYB-TIE-RW-50-C	1	Х						:					
	1		1415	sw	N		SIYB-TIE-RW-50-D	1	Х											
			1420	sw	N		SIYB-TIE-RW-50-E	1	Х											
			1425	sw	N		SIYB-TIE-RW-50-F	1	Х										•	
			1105	sw	N		SIYB-RT-A	1	Х											
			1110	sw	Ν		SIYB-RT-B	1	Х											
			1115	sw	N		SIYB-RT-C	1	Х											
			1/50	sw	N		SIYB-RT-D	1	Х											
			1125	sw	N		SIYB-RT-E	1	Х											
	J	_	1130	sw	N		SIYB-RT-F	1	Х											
								1												
RELINQUISHED BY HUMAN KYMM? HUMAN RELINQUISHED BY RELINQUISHED BY DATE / TIME DATE / TIME DATE / TIME					RECEIVED BY RECEIVED BY RECEIVED BY	ul			DATE	7-7 E/TIM 27 23 E/TIM	1170 E	-	Actual Tem 3.3 Received Samples F Evidence Container	On Ice Preserved Seals Pres	Y	W GV GV SF SV SSL OO	SAMPLE TYP V = Drinking Wa W = Waste Wate V = Ground Wat F = Surface Wate V = Sea Water D = Solid/Soll = Sludge = Oil F = Other Matrix	ter er er		
PRESCHEDULED RUSH ANALYSES WILL TAKE PRIORITY OVER UNSCHEDULED RUSH REQUESTS Client agrees to Terms & Conditions at: www.wecklabs.com					SPECIAL REQUIREMENTS / BILLING INFORMATION 1) LAB ACTION: PRESERVE Cu SAMPLES IMMEDIATELY. HDPE Metals bottles have NO acid (HNO3) in bottle. 2) Diss. metals were field filtered using 0.45 um bottletop filt. system. 3) DOC samples were field filtered through 0.45 um Nylon filters. 4) Please contact WSP PM within 24 hours if any sample anomalies are found. Please submit invoices to APInvoice.US@woodplc.com (cc: chris.stransky@wsp.com, marisa.s.widerski@wsp.com, marissa.cuevas@wsp.com) and include the following inform 1) Project #: 2015100118.0002B.WECK (2) PO #: C015102550 (3) Org: 3151 (4) GL: 573000						& aation:									



Sample Receipt Checklist

	Weck WKO: _3	3A27061	FIA	Date	Time Received:	01/27/23 @ 11:20
V	VKO Logged by: _J	aime Gomez			# of Samples:	22
Samp	les Checked by:J	aime Gomez			Delivered by:	Hector Sanchez
	Task		Yes	No	N/A	Comments
	COC present at rec	eipt?	\boxtimes		-	
	COC properly comp	-	\boxtimes		_	
ي	COC matches samp		\boxtimes		_	
202			\boxtimes			
					_	· · · · · · · · · · · · · · · · · · ·
	Project Manager n	otified?			\boxtimes	
,	•				_	<u> </u>
	Sample Temperatu	re	3.3 °C			
	Samples received o		\boxtimes			
Receipt Information	Ice Type (Blue/Wet	:)				
nat	All samples intact?		\boxtimes			
orr	Samples in proper		\boxtimes		_	
Inf	Sufficient sample v		\boxtimes		_	
ipt	Samples intact?		\boxtimes			
ace ace	Received within ho	lding time?	\boxtimes		_	
ž	Necessed Within no	iding cirrie.			_	
	Project Manager n	otified?			<u> </u>	,
	Troject Manager II	olinea.	_	_	_	
	Sample labels chec	ked for correct preservation?	\bowtie			
					_	
ر ا	VOC Headspace: (N	lo) none, If Yes (See comment)			\boxtimes	☐ <6mm/Pea size?
ţį	524.2, 524.3, 624.1	., 8260, 1666 P/T, LUFT	Ш		<u> </u>	Commy ea size:
fica						
eri	pH verified upon re					pH paper Lot# 2071882
2	•	pres tests <2; 522<4; TOC <2; 508.1,			\boxtimes	
atio	525.2<2; 6710B<2;	608.3 5-9			_	
Sample Preservation Verification?	Free Chlorine Teste	od <0.1		\boxtimes		Cl Test Strip Lot# 061221E
res	Tree Chomie rest	5u <0.1	hand			er rest strip tota outzzit
e P	O&G pH <2 verified	1?				pH paper Lot#
ldu			100			pH Reading:
Sar	pH adjusted for O8	iG Parks				Acid Lot#
			100		-	Amt added:
	Project Manager n	otified?				
	, ,				_	
PM Co	mments		·			
				•		and the second s
Sample	e Receipt Checklis	t Prenared hy:				
	cure: Jaime Gome				Date:	01/27/23
Jigilat	are. Jamie Gome				Date.	