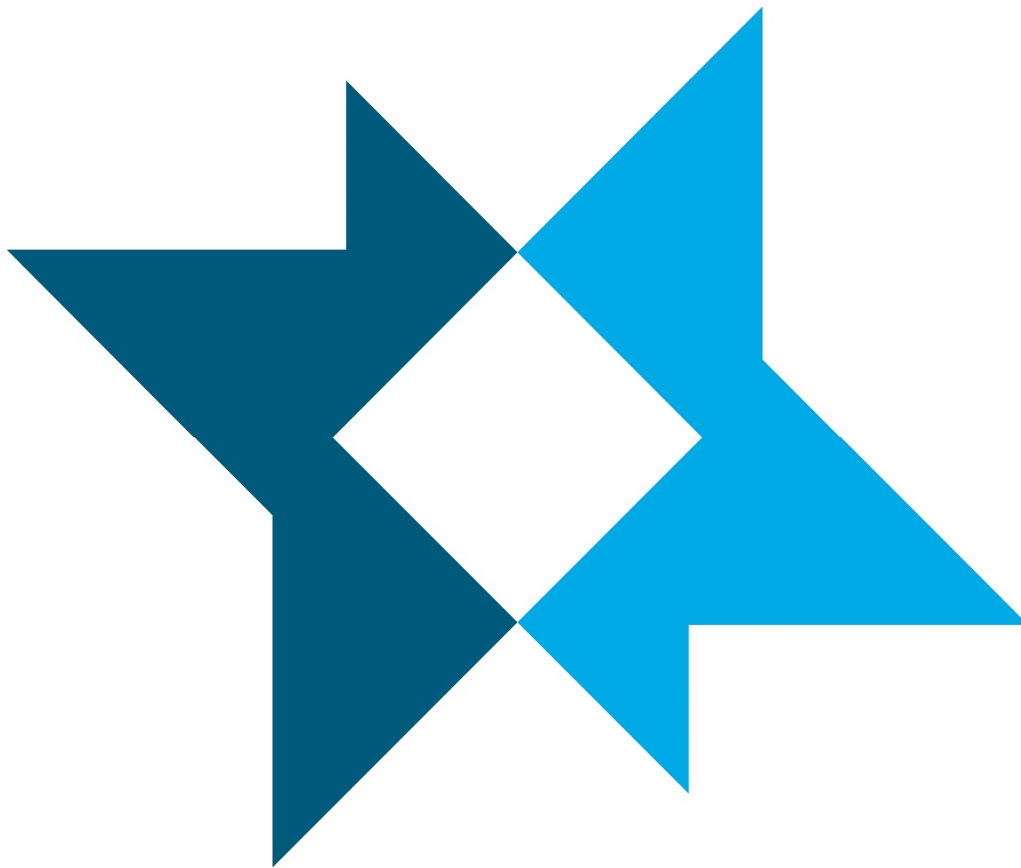




Data Report

Sediment Characterization Sampling and Analysis Results

Bel Marin Keys



Bel Marin Keys Community Services District

Novato, CA

November 2022

Revised: January 2023

Project I.D.: 21B038.00



755 Baywood Drive, Suite 228
Petaluma, CA 94954
(415) 884-8011
foth.com

January 11, 2023

Ms. Jessica Vargas
U.S. Army Corps of Engineers
San Francisco District
450 Golden Gate Avenue, 4th Floor
San Francisco CA 94102

Re: Sediment Characterization Sampling and Analysis Results
Bel Marin Keys Maintenance Dredging

Dear Ms. Vargas:

With reference to the above captioned project, Foth & Van Dyke and Associates, Inc. (Foth), on behalf of its client, Bel Marin Keys Community Services District (BMK), please find below the revised *Sediment Characterization Sampling and Analysis Results (SAR)* of the sediment from the BMK Maintenance Dredging in support of the creek and lagoon's maintenance dredging activities. This revision is intended to modify the November 9, 2022 submission and provide additional information requested within the November 16, 2022 Dredge Material Management Office (DMMO) meeting. Revised information presented within the SAR includes:

- Foth has provided the Total TEQ results for the sediment from within the BMK Novato Creek, North Lagoon, and North Lock.

Analyte	Method Reference	Beneficial Reuse Criteria	DU-1	DU-2	DU-3
Total TEQ	EPA 1613	0.02 ug/kg	0.0038	0.0018	0.0032

- Foth has provided clarification on the SFRWQCB Basin Water Quality Objectives Concentration for Mercury as part of the MET analysis presented in Table 14 of the SAR.
 - In accordance with U.S. EPA Ambient Water Quality Criteria for Mercury (1984) and the Basin Plan the 4-day average value for mercury does not apply to San Francisco Bay.
- Foth has provided clarification on the use of Total Mercury or Dissolved Mercury for the MET analysis within Table 14.
 - Total Mercury was run within this analysis in accordance with the approved Sampling and Analysis Plan (SAP) dated March 29, 2022. Foth coordinated with Eurofins - Calscience and they indicated that the significant difference between Total Metals analysis and Dissolved / Filtered Metals analysis is the filtering step. For the Dissolved Metals analysis, the sample(s) is/are filtered and then preserved

Error! Reference source not found.

U.S. Army Corps of Engineers

January 11, 2023

Page 2

prior to the analysis. For the Total Metals analysis, the sample(s) is/are preserved (only) prior to the analysis. It was also noted that the dissolved results are generally lower than the total.

This data has been uploaded to the Dredged Material Management Office (DMMO) website for each participating agency to review. In addition, hard copies of this data are available upon request by participating agency representatives. If you have any questions, concerns, or need any further information, please contact Wendy Rocha at (415) 763-4274 or via email at Wendy.Rocha@foth.com.

Sincerely,

Foth & Van Dyke and Associates, Inc.



Wendy P. Rocha

Senior Project Manager



Kaitlyn Cross

Project Engineer

cc: Craig, Weightman, CDFW
Jennifer Siu, U.S. EPA
Selina Louie, SFRWQCB
Sara Azat, NOAA
Arn Aareberg, CDFW
Michael Gadoua BMKCSD

Amanda Culpepper, CDFW
Amy Jo Hill, N BRAC PMO
Al Franzoia, SLC
Ryan Olah, USFWS
Gary Stern, NMFS

Sediment Characterization Sampling and Analysis Results

Distribution

<u>No. of Copies</u>	<u>Sent To</u>
EC	Vargas, Jessica U.S. Army Corps of Engineers 1455 Market Street San Francisco, CA 94103-1398 Phone: (415) 254-3328 Email: Jessica.M.Vargas@usace.army.mil
EC	Jennifer Siu (electronic copy) U.S. Environmental Protection Agency 75 Hawthorne Street San Francisco, CA 94105-3919 Phone: (415) 972-3983 Email: siu.jennifer@epamail.epa.gov
EC	Selina Louie San Francisco Regional Water Quality Control Board 1515 Clay St., Suite 1400 Oakland, CA 94612-1413 Phone: (510) 622-2335 Email: Selina.Louie@waterboards.ca.gov
EC	Al Franzoia California State Lands Commission Division of Land Management 100 Howe Ave., Suite 100-South Sacramento, CA 95825-8202 Phone: (916) 574-0992 Email: al-franzoia@slc.ca.gov
EC	Gary Stern National Marine Fisheries Service, Southwest Region 777 Sonoma Ave. #325 Santa Rosa, CA 95404 Phone: (707) 575-6060 Email: Gary.Stern@noaa.gov
EC	Sara Azat NOAA Fisheries – West Coast Region U.S. Department of Commerce 777 Sonoma Ave. Room 325 Santa Rosa, CA 95404 Phone: (707) 575-6067 Email: sara.azat@noaa.gov

Sediment Characterization Sampling and Analysis Results

Distribution (continued)

EC	Ryan Olah U.S. Fish and Wildlife Service Sacramento Fish and Wildlife Office 2800 Cottage Way Room W-2605 Sacramento, CA 95825-1846 Phone: (916) 414-6623 Email: ryan_olah@fws.gov
EC	Arn Aarreberg California Department of Fish & Wildlife Marin Region 5355 Skylane Blvd. Suite B Santa Rosa, CA 95403 Phone: (707) 576-2889 Email: Arn.Aarreberg@wildlife.ca.gov
EC	Amanda Culpepper California Department of Fish & Wildlife Bay Delta Region 2825 Cordelia Road, Suite 100 Fairfield, CA 94534 Email: Melanie.Day@wildlife.ca.gov
EC	Craig Weightman California Department of Fish & Wildlife 7329 Silverado Trail Napa, CA 94558 Phone: (707) 944-5577 Email: Craig.Weightman@wildlife.ca.gov
EC	Amy Jo Hill Navy BRAC PMO West 33000 Nixie Way Bldg 50, 2nd Floor, Room 201 San Diego, CA 92147 Email: amy.hill@navy.mil
EC	Michael Gadoua Bel Marin Keys Community Services District 4 Montego Key, Novato, CA 94949 Phone: (415) 883-4222 Email: ncamargo@bmkcsd.us

Note: Electronic copies provided at: www.dmmosfbay.org: DMMO-Meeting Area

EC = electronic copy

Sediment Characterization Sampling and Analysis Results

Distribution (continued)

Sediment Characterization Sampling and Analysis Results

Project ID: 21B038.00

Prepared for
Bel Marin Keys Community Services District
4 Montego Key,
Novato, CA 94949

Prepared by
Foth & Van Dyke and Associates, Inc.

November 2022

Revised: January 2023

Sediment Characterization Sampling and Analysis Results

Table of Contents

	Page
List of Abbreviations, Acronyms, and Symbols	iv
Case Narrative.....	i
1. Introduction	1
1.2 Objectives of the Sediment Investigation	4
2. Sampling Program Sediment Collection and Handling	11
2.1 Sample Designation.....	11
2.2 Overview of Field Activities and Lab Analysis	11
2.3 Test Sediment Collection and Handling.....	11
2.3.1 Project Site Sample Collection.....	11
2.3.2 Sampling Processing and Handling.....	12
3. Results	14
3.1 Physical and Chemical Analyses.....	14
3.1.1 Results of DU-1	19
3.1.2 Results of DU-2.....	19
3.1.3 Results of DU-3.....	20
3.1.4 Conventional and Chemical Analytical QA/QC Summary	20
3.2 Modified Elutriate Testing	20
3.2.1 Results of DU-1	21
3.2.2 Results of DU-2.....	21
3.2.3 Results of DU-3.....	21
3.2.4 MET QA/QC Summary	21
3.3 Biological Evaluation	21
3.3.1 Effects of BMK Sediments on <i>Americamysis bahia</i>	21
3.3.2 Biological Analytical QA/QC Summary.....	22
4. Discussion.....	23
4.1 Sediment and Chemistry Evaluation	23
4.1.1 Sediment and Chemistry Evaluation: DU-1	23
4.1.2 Sediment and Chemistry Evaluation: DU-2.....	23
4.1.3 Sediment and Chemistry Evaluation: DU-3.....	23
4.2 MET Evaluation	23
4.3 Biological Evaluation	23
5. Conclusion.....	24
6. References	25

Table of Contents (continued)

	Page
Tables	
Table 1	Sample Collection and Analysis Summary IV
Table 2	Proposed maintenance dredging for the BMK 1
Table 3	Locations of sampling stations and core depths 12
Table 4	Physical Characterization of Sediment Cores 13
Table 5	Compositing Scheme 13
Table 6	Summary of BMK: Composite Sample Exceedances 14
Table 7	Analytical Results for BMK: Grain Size, Total Solids (%), and Total Organic Carbon (%) 14
Table 8	Analytical Results for BMK: Metals Concentrations (mg/kg, dry wt.) 15
Table 9	Analytical Results for BMK: PAHs (µg/kg, dry wt.) 16
Table 10	Analytical Results for BMK: PCB Congener Concentrations (µg/kg, dry wt.) 17
Table 11	Analytical Results for BMK: Pesticides Concentrations (µg/kg, dry wt.) 18
Table 12	Analytical Results for BMK: Ogranochlorine Pesticide Concentrations (µg/kg, dry wt.) 18
Table 13	Analytical Results for BMK: Dioxins & Furans (ppt) 19
Table 14	Analytical Results for BMK: MET Metals analytes 20
Table 15	Effects of BMK on <i>Americamysis bahia</i> 21
Table 16	Effects of KCl on <i>Americamysis bahia</i> 22

Figures

Figure 1	Vicinity Plan.....	2
Figure 2	Regional Location Map: Bel Marin Keys, Novato, CA and Proposed Disposal Sites.....	3
Figure 3	Sampling Overview Plan.....	5
Figure 4	Dredge Unit 1: Sampling Plan.....	6
Figure 5	Dredge Unit 2: Sampling Plan.....	7
Figure 6	Dredge Unit 3A: Sampling Plan.....	8
Figure 7	Dredge Unit 3B: Sampling Plan.....	9
Figure 8	Dredge Unit 3C: Sampling Plan.....	10

Appendices

Appendix A	Sampling Field Logs and Data Sheets
Appendix B	Analytical Chemistry Laboratory Data Reports Submitted by Eurofins - Calscience
Appendix C	MET Laboratory Data Report Submitted by Eurofins – Calscience
Appendix D	Biological Testing Report Submitted by Pacific EcoRisk

List of Abbreviations, Acronyms, and Symbols

ASTM	American Society for Testing and Materials
Bay	San Francisco Bay
BCDC	Bay Conservation and Development Commission
BMS	Bay Marine Services
BMK	Bel Marin Keys
BMKCSD	Bel Marin Keys Community Services District
COC	chain-of-custody
CV	coefficient-of-variation
DGPS	differential global positioning system
DMMO	Dredged Material Management Office
DU	Dredge Unit
Foth	Foth and Van Dyke & Associates, Inc.
GPS	global positioning system
IAA	Integrated Alternatives Analysis
ITM	Inland Testing Manual
LTMS	Long Term Management Strategy
mg/kg	milligram per kilogram
µg/kg	microgram per kilogram
MLLW	mean lower low water
MRL	method reporting limit
NOAA	National Oceanic and Atmospheric Administration
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyls
PER	Pacific EcoRisk
QA/QC	quality assurance/quality control
RPD	relative percent difference
RWQCB	Regional Water Quality Control Board
SAP	Sampling and Analysis Plan
SAR	Sampling and Analysis Results
SLC	State Lands Commission
SOP	Standard Operating Procedures
SUAD	suitable for undefined aquatic disposal
TOC	total organic carbon
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service

Sediment Characterization Sampling and Analysis Results

Case Narrative

Sediment samples were collected from the Bel Marin Keys (BMK) residential community in Novato, CA from the Novato Creek and the North Lagoon, one of two manmade lagoons at BMK, between July 28 – 29, 2022. Sediments were analyzed for physical and chemical constituents and modified elutriate test (MET) response in support of the proposed dredging. Testing was performed in accordance with the Sampling and Analysis Plan entitled “Novato Creek and North Lagoon Maintenance Dredging Project, Sampling and Analysis Plan (SAP)” dated March 29, 2022 reviewed by the San Francisco Bay Dredged Material Management Office to determine whether sediments are suitable for placement of material at the dredged material at the BMK-DMMS. After collection, samples were stored in a secured area at 4±2°C. Samples were then processed and shipped to the analytical laboratories in coolers. All chemical analyses and toxicity testing were performed within required holding times from sample collection. Table 1 summarizes sample identifications and participating laboratories involved with sample collection and analysis.

Table 1
Sample Collection and Analysis Summary

Sample Identification		Collection	Analysis Delegation		
Individual Core I.D.	Sample Composite I.D.	Sample Collection	Physical & Chemical		MET
DU-1	DU-1	Foth Petaluma, CA	Eurofins Calscience Garden Grove, CA	McCampbell Analytical, Inc. Pittsburg, CA (Subcontracted by Eurofins to perform Ag, Cd) Brooks Applied Labs Seattle, WA (Subcontracted by Eurofins to perform Se)	Pacific EcoRisk Fairfield, CA
DU-2	DU-2				
DU-3A	DU-3				
DU-3B					
DU-3C					

1. Introduction

The Bel Marin Keys Community Services District (BMKCSD) is planning to perform maintenance dredging from shoaled sediments from the Novato Creek and the North Lagoon, one of two manmade lagoons within the Bel Marin Keys residential community in Novato, CA (see Figure 1). BMKCSD is proposing to place the dredged material at the BMK Dredge Material Management Site (BMK-DMMS) the former Leveroni Property.

The proposed dredging depth for the Novato Creek and North Lagoon is 2.5 feet below Mean Lower Low Water (-2.5' MLLW) plus a one-foot over dredge allowance. Approximately 33,013 cubic yards (cy) of material would need to be dredged to reach this depth (this calculation includes a 100% achievement of removing all material including the over dredge tolerance). Approximately 8.4 acres of footprint is proposed to be dredged for Episode 4 (Dredge Unit 1 (DU-1): 0.10 acres, Dredge Unit 2 (DU-2): 0.8 acres and Dredge Unit 3 (DU-3): 7.5 acres). Dredging will be conducted by hydraulic dredging means within the footprints illustrated on Figures 3-8. BMKCSD is proposing to place the dredged material at the BMK-DMMS.

Table 2
Proposed Maintenance Dredging for the Novato Creek/North Lagoon

Episode	Location	Project Depth (ft)	Project Depth Volume (cy)	Over-depth (ft)	Over-depth Volume (cy)	Total Volume (cy)
Episode 4	Novato Creek Culvert (DU-1)	-2.5	112	1.0	141	253*
	North Lock entrance (DU-2)		3,832		1,105	4,937*
	North Lagoon (DU-3)		15,430		12,393	27,823*
Total (cy)						33,013*

*Volumes are estimated based on a condition survey performed on April 29-30, 2021. A formal pre-dredge survey will be submitted with the Dredge Operations plan.

Between July 28 – 29, 2022 sediments were analyzed for physical and chemical constituents and modified elutriate test (MET) response in support of the proposed dredge plans of the. Test results were evaluated to assess the suitability of BMK's dredged material for placement at the BMK-DMMS site. Testing was performed in accordance with the Sampling and Analysis Plan entitled "Novato Creek and North Lagoon Maintenance Dredging Project, Sampling and Analysis Plan (SAP)" dated March 29, 2022 reviewed by the San Francisco Bay Dredged Material Management Office. This evaluation was comprised of collecting sediment samples for Physical, Chemical, and MET analysis.



Figure 1: Vicinity Plan



Figure 2: Regional Location Map: Bel Marin Keys, Novato, CA and Proposed Disposal Sites

1.2 Objectives of the Sediment Investigation

The purpose of this investigation was to evaluate the proposed dredged material to determine whether it will represent an impact during removal operations and placement at the BMK-DDMS. The procedures for sediment sample collection for any sampling and testing performed during 2022 will be to evaluate the proposed dredged material to determine whether it will represent an adverse impact during removal operations and placement at any of the proposed placement sites. Analyses were performed in accordance with sampling and analytical protocols, quality assurance/quality control (QA/QC) procedures, and data interpretation in accordance with:

- ◆ Collect core samples from within the designated sampling areas following field protocol detailed in the SAP;
- ◆ Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines (SFBRWQCB 2000);
- ◆ Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual (ITM; USEPA/USACE 1998);
- ◆ Public Notice 01-1: Guidelines for Implementing the Inland Testing Manual in the San Francisco Bay Region;
- ◆ Public Notice 99-4: Proposed Guidance for Sampling and Analysis Plans (Quality Assurance Project Plans) for Dredging Projects within the USACE San Francisco District;
- ◆ San Francisco Bay Regional Water Quality Control Board Order No R2-2003-0030 Waste Discharge Requirements for: BMK DMMS Project; and any applicable new requirements named within the SFBRWQCB Order to follow the application that is currently under review.
- ◆ Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines (RWQCB 2000);
- ◆ The Dredged Material Management Office (DMMO) review process.

This report follows guidelines as set forth in the SAP and PN 99-4: Proposed Guidance for Sampling and Analysis Plans for Dredging Projects within the USACE San Francisco District (USEPA/USACE, 1999). It includes methods described in the PN 01-01: Guidelines for Implementing the Inland Testing Manual in the San Francisco Bay Region (USEPA/USACE, 2001). It is organized as follows:

Introduction – Section 1.0

Sampling Program – Section 2.0

Results – Section 3.0

Discussion – Section 4.0

Conclusion – Section 5.0

References – Section 6.0

Tuesday, November 08, 2022 9:49:12 AM
DWG Filename: bel_marin_novato_creek & north lagoon dredging_sar.dwg Layout: overall
DWG Folder Location: C:\pwworkdir\pwworking\Bel Marin_Novato Creek & North Lagoon Dredging_SAR.dwg



- LEGEND**
- PROPOSED 2022 SAMPLE LOCATION
 - ACTUAL 2022 SAMPLE LOCATION

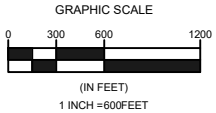


TABLE OF ESTIMATED DREDGE QUANTITIES TO EL. -2.5 MLLW WITH 1' ALLOWABLE OVERDREDGE					
	AREA	DREDGE AREA (SF)	BASE DREDGE VOLUME (CY) (-2.5' MLLW)	OVERDREDGE VOLUME (CY) (1' ALLOWABLE)	TOTAL VOLUME (CY)
NORTH LAGOON	SUMP A	±172,781	6,594	6,492	13,086
	SUMP B	±43,896	2,359	1,728	4,087
	SUMP C	±110,382	6,477	4,173	10,650
	NORTH LOCK	±36,647	3,832	1,105	4,937
	SOUTH CULVERT	±4,238	112	141	253
TOTAL		±367,944	19,374	13,639	33,013

2021 HYDROGRAPHIC SURVEY COMPLETED BY CINQUINI AND PASSARIO ON APRIL 29-30, 2021. A 400KHz MULTIBEAM TRANSDUCER WITH 0.5 DEGREE BEAM WIDTH WAS USED. COORDINATE SYSTEM NAD-83 CA ZONE 3. PROJECT DATUM: DEPTHS IN MEAN LOWER LOW WATER, IN FEET. DATA REDUCTION: 3X3FT GRID, AVERAGE SOUNDING. BENCHMARK: PK NAIL ON PILE AT NORTH LOCK EL. 10.0

OVERALL SITE PLAN
SCALE: 1" = 600'



NOVATO CREEK & NORTH LAGOON DREDGING 2022
BEL MARIN KEYS COMMUNITY SERVICES
DISTRICT
#4 MONTEGO KEY NOVATO, CA 94949

REVISIONS		DATE		BY		DATE		BY		DATE	
NO.	DESCRIPTION										
1											
2											
3											
4											
5											
6											
DATE OF PREPARATION											
SURVEYED						DATE					
DRAWN						DATE					
DESIGNED						DATE					
CHECKED						DATE					

SHEET TITLE:
2022 SAMPLE LOCATION OVERVIEW PLAN

ISSUANCE:
DRAFT

PROJECT NO: 208038

SHEET NUMBER
FIGURE 3

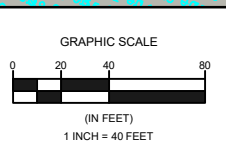
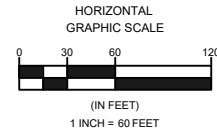
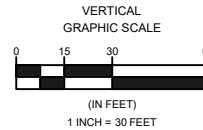
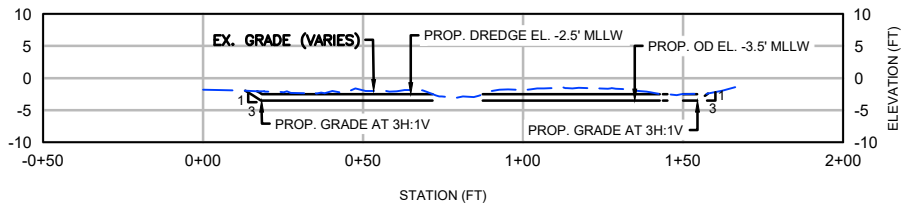


TABLE OF ESTIMATED DREDGE QUANTITIES TO EL. -2.5 MLLW WITH 1' ALLOWABLE OVERDREDGE					
	AREA	DREDGE AREA (SF)	BASE DREDGE VOLUME (CY) (-2.5' MLLW)	OVERDREDGE VOLUME (CY) (1' ALLOWABLE)	TOTAL VOLUME (CY)
NORTH LAGOON	SUMP A	+172,781	5,594	6,492	13,086
	SUMP B	+43,896	2,359	1,728	4,087
	SUMP C	+110,382	6,477	4,173	10,650
	NORTH LOCK	+36,647	3,832	1,105	4,937
	SOUTH CULVERT	+4,238	112	141	253
TOTAL		+367,944	19,374	13,639	33,013

VOLUMES BASED ON APRIL 2021 MULTIBEAM HYDROGRAPHIC SURVEY



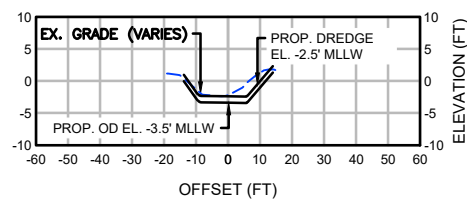
SCALE: 1" = 40'



LEGEND

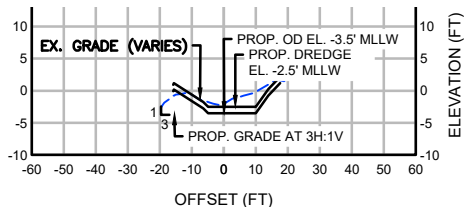
— 2021 DESIGN AND
OVERDREDGE EL.

- - - APRIL 2021
MUDLINE



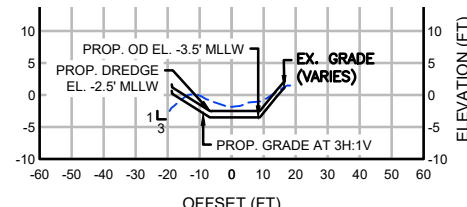
SOUTH CULVERT SECTION: STATION 0+25

VERTICAL SCALE: 1" = 30'
HORIZONTAL SCALE: 1" = 60'



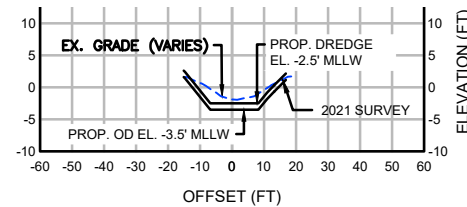
SOUTH CULVERT SECTION: STATION 0+55

VERTICAL SCALE: 1" = 30'
HORIZONTAL SCALE: 1" = 60'



SOUTH CULVERT SECTION: STATION 0+97

VERTICAL SCALE: 1" = 30'
HORIZONTAL SCALE: 1" = 60'



SOUTH CULVERT SECTION: STATION 1+34

VERTICAL SCALE: 1" = 30'
HORIZONTAL SCALE: 1" = 60'



**NOVATO CREEK & NORTH LAGOON DREDGING 2022
BEL MARIN KEYS COMMUNITY SERVICES
DISTRICT**

#4 MONTEGO KEY NOVATO, CA 94949

REVISIONS		
NO.	BY	DATE
DESCRIPTION		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		
76		
77		
78		
79		
80		
81		
82		
83		
84		
85		
86		
87		
88		
89		
90		
91		
92		
93		
94		
95		
96		
97		
98		
99		
100		

DATE OF PREPARATION

	BY	DATE
SURVEYED		SEE NOTES
DRAWN	MGB/SXO	9/17/2021
DESIGNED		
CHECKED	WR	

SHEET TITLE:

**2022 SAMPLING
LOCATION PLAN:
DU-1**

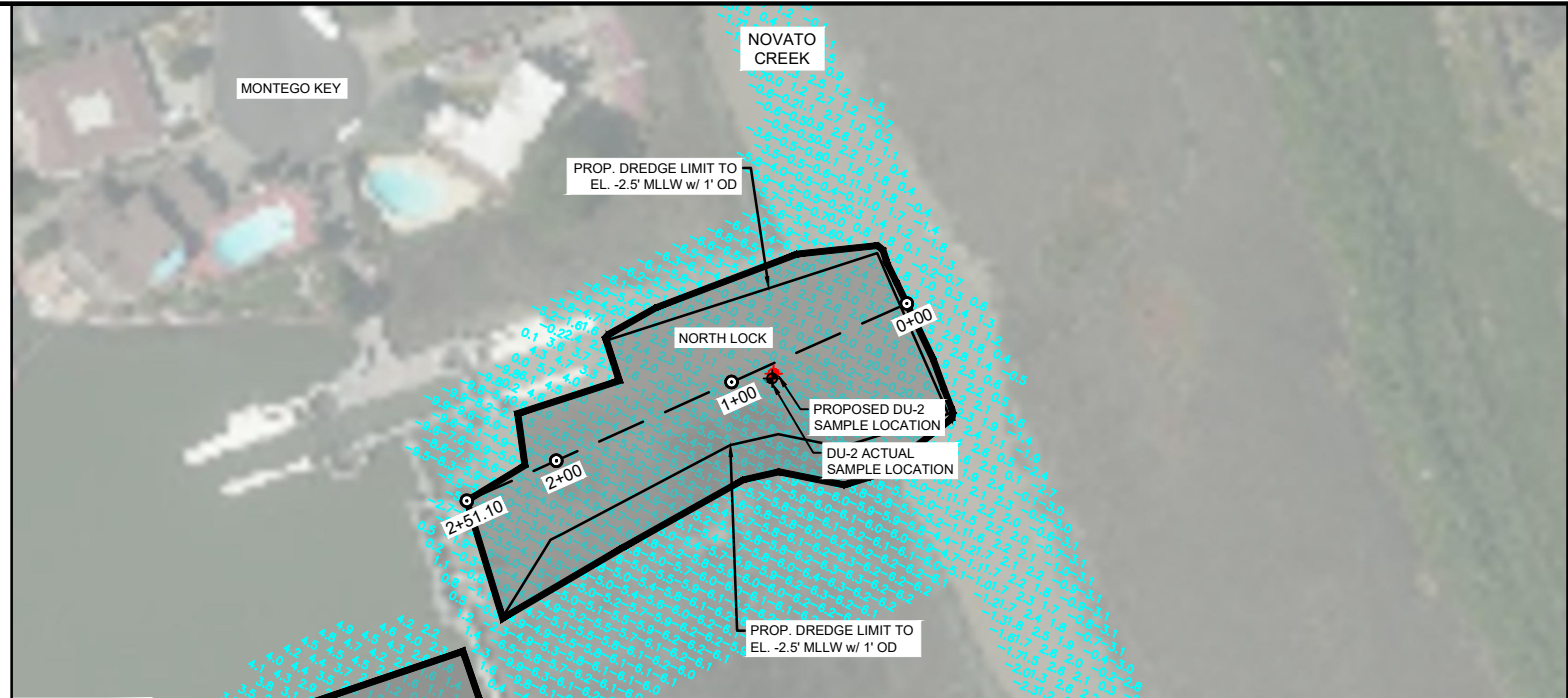
ISSUANCE:

DRAFT

PROJECT NO: 20B038

SHEET NUMBER

FIGURE 4



NORTH LOCK SITE PLAN
SCALE: 1" = 100'

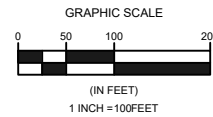
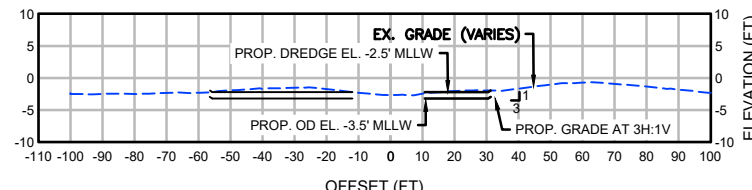
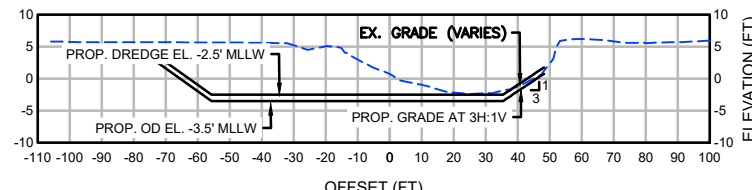


TABLE OF ESTIMATED DREDGE QUANTITIES TO EL. -2.5 MLLW WITH 1' ALLOWABLE OVERDREDGE					
	AREA	DREDGE AREA (SF)	BASE DREDGE VOLUME (CY) (-2.5' MLLW)	OVERDREDGE VOLUME (CY) (1' ALLOWABLE)	TOTAL VOLUME (CY)
NORTH LAGOON	SUMP A	+172,781	6,594	6,492	13,086
	SUMP B	+43,896	2,359	1,728	4,087
	SUMP C	+110,382	6,477	4,173	10,650
	NORTH LOCK	+36,647	3,832	1,105	4,937
	SOUTH CULVERT	+4,238	112	141	253
TOTAL		+367,944	19,374	13,639	33,013

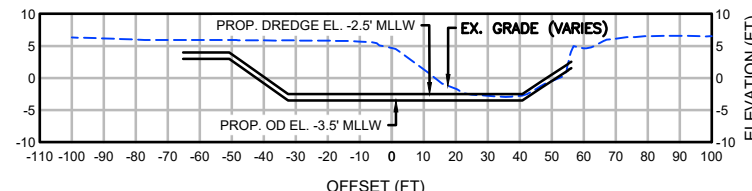
VOLUMES BASED ON APRIL 2021 MULTIBEAM HYDROGRAPHIC SURVEY



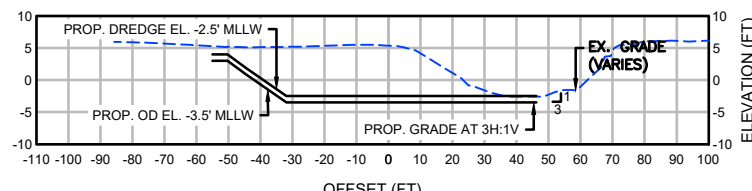
NORTH LOCK SECTION: STATION 0+02
VERTICAL SCALE: 1" = 30'
HORIZONTAL SCALE: 1" = 60'



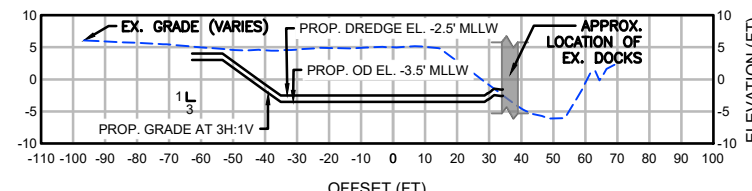
NORTH LOCK SECTION: STATION 0+50
VERTICAL SCALE: 1" = 30'
HORIZONTAL SCALE: 1" = 60'



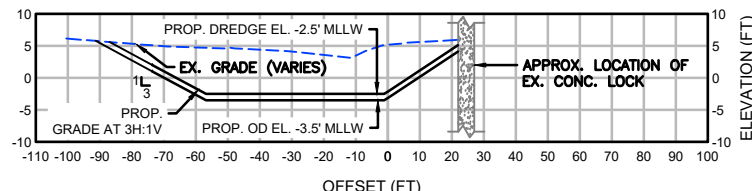
NORTH LOCK SECTION: STATION 1+00
VERTICAL SCALE: 1" = 30'
HORIZONTAL SCALE: 1" = 60'



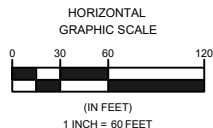
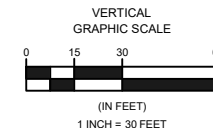
NORTH LOCK SECTION: STATION 1+50
VERTICAL SCALE: 1" = 30'
HORIZONTAL SCALE: 1" = 60'



NORTH LOCK SECTION: STATION 2+00
VERTICAL SCALE: 1" = 30'
HORIZONTAL SCALE: 1" = 60'



NORTH LOCK SECTION: STATION 2+50
VERTICAL SCALE: 1" = 30'
HORIZONTAL SCALE: 1" = 60'



LEGEND

— 2021 DESIGN AND
OVERDREDGE EL.

- - - APRIL 2021
MUDLINE



**NOVATO CREEK & NORTH LAGOON DREDGING 2022
BEL MARIN KEYS COMMUNITY SERVICES
DISTRICT
#4 MONTEGO KEY NOVATO, CA 94949**

REVISIONS	DESCRIPTION	DATE	BY	NO.
				▲
				▲
				▲
				▲
				▲
DATE OF PREPARATION				
	BY	DATE		
SURVEYED		SEE NOTES		
DRAWN	MGB/SXO	9/17/2021		
DESIGNED				
CHECKED	WR			

**2022 SAMPLING
LOCATION PLAN:
DU-2**

ISSUANCE: **DRAFT**

PROJECT NO: 20B038

FIGURE 5

Tuesday, November 08, 2022 10:00:36 AM
 DWG Filename: bel_marin_novato creek & north lagoon dredging_sar.dwg
 DWG Folder Location: C:\pw\workdir\pw_ie\lvd\cfl1d0439091\Bel Marin Novato Creek & North Lagoon Dredging SAR.dwg
 Layout: north lock

Tuesday, November 08, 2022 9:50:49 AM
DWG Filename: bel_marin_novato creek & north lagoon dredging_sar.dwg Layout: sump a
DWG Folder Location: C:\pwworkdir\pwworking\Bel Marin_Novato Creek & North Lagoon Dredging_SAR.dwg

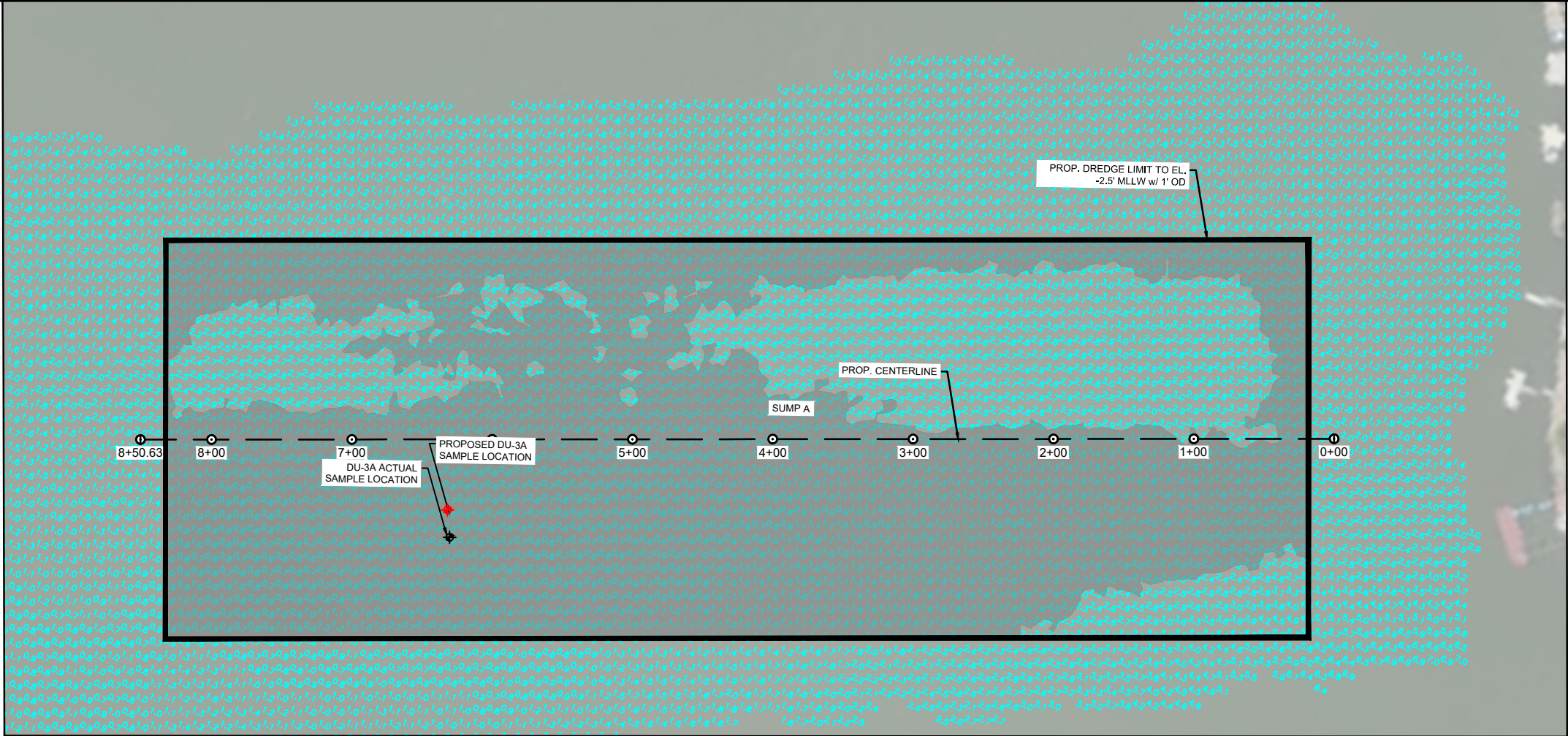
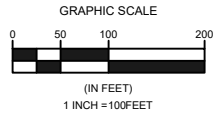
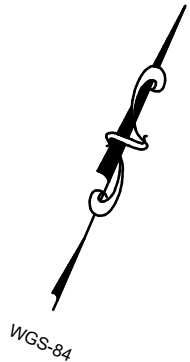
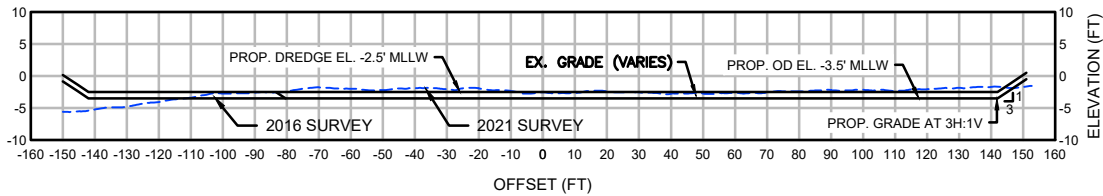


TABLE OF ESTIMATED DREDGE QUANTITIES TO EL. -2.5 MLLW WITH 1' ALLOWABLE OVERDREDGE					
	AREA	DREDGE AREA (SF)	BASE DREDGE VOLUME (CY) (-2.5' MLLW)	OVERDREDGE VOLUME (CY) (1' ALLOWABLE)	TOTAL VOLUME (CY)
NORTH LAGOON	SUMP A	±172,781	6,594	6,492	13,086
	SUMP B	±43,896	2,359	1,728	4,087
	SUMP C	±110,382	6,477	4,173	10,650
	NORTH LOCK	±36,647	3,832	1,105	4,937
	SOUTH CULVERT	±4,238	112	141	253
TOTAL		±367,944	19,374	13,639	33,013

VOLUMES BASED ON APRIL 2021 MULTIBEAM HYDROGRAPHIC SURVEY

SUMP A SITE PLAN

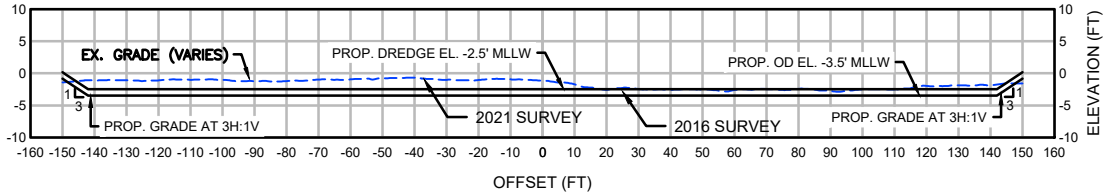
SCALE: 1" = 100'



SUMP A SECTION: STATION 0+50

VERTICAL SCALE: 1" = 30'

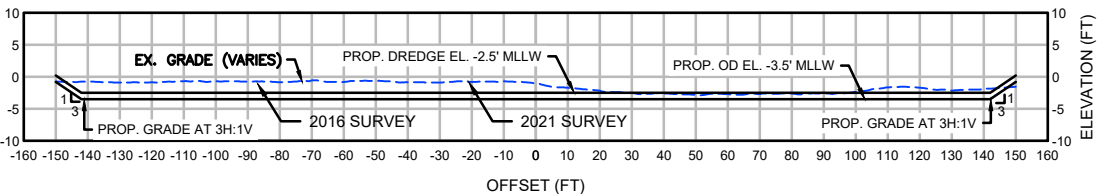
HORIZONTAL SCALE: 1" = 60'



SUMP A SECTION: STATION 4+00

VERTICAL SCALE: 1" = 30'

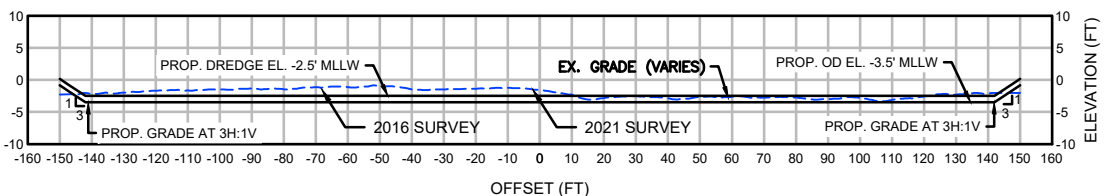
HORIZONTAL SCALE: 1" = 60'



SUMP A SECTION: STATION 7+50

VERTICAL SCALE: 1" = 30'

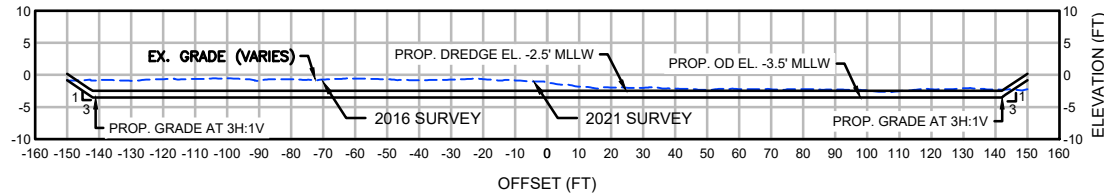
HORIZONTAL SCALE: 1" = 60'



SUMP A SECTION: STATION 2+50

VERTICAL SCALE: 1" = 30'

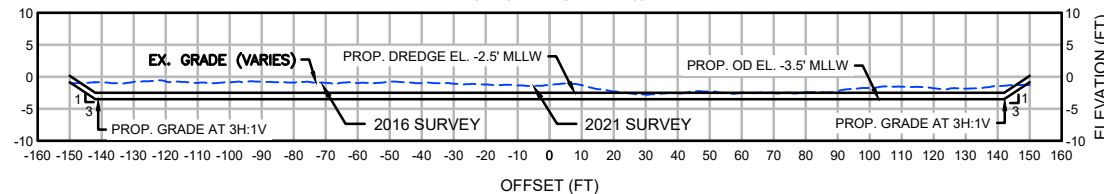
HORIZONTAL SCALE: 1" = 60'



SUMP A SECTION: STATION 5+50

VERTICAL SCALE: 1" = 30'

HORIZONTAL SCALE: 1" = 60'



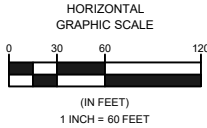
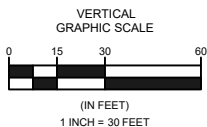
SUMP A SECTION: STATION 8+00

VERTICAL SCALE: 1" = 30'

HORIZONTAL SCALE: 1" = 60'

LEGEND

- 2021 DESIGN AND OVERDREDGE EL.
- APRIL 2021 MUDLINE



NOVATO CREEK & NORTH LAGOON DREDGING 2022
BEL MARIN KEYS COMMUNITY SERVICES
DISTRICT

#4 MONTEGO KEY NOVATO, CA 94949

REVISIONS		DATE	
NO.	DESCRIPTION	DATE	BY
1			
2			
3			
4			
5			

DATE OF PREPARATION	
BY	DATE
MG/BSXO	9/17/2021

SHEET TITLE:

**2022 SAMPLING
LOCATION PLAN:
DU-3A**

ISSUANCE:

DRAFT

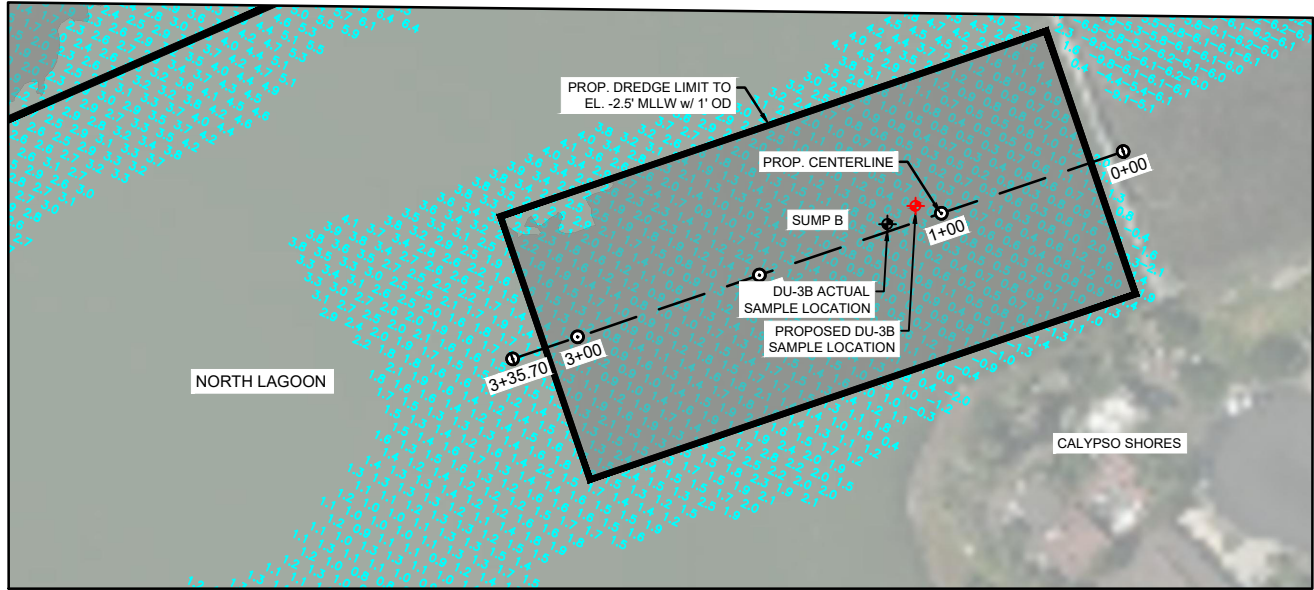
PROJECT NO: 20B038

SHEET NUMBER

FIGURE 6



Tuesday, November 08, 2022 9:55:24 AM
DWG Filename: bel_marin_novato_creek & north_lagoon_dredging_sar.dwg
Layout: sump b
DWG Folder Location: C:\pw_working\pw_levd_off\1d043909\1\bel_marin_novato_creek & North Lagoon Dredging_SAR.dwg



SUMP B SITE PLAN
SCALE: 1" = 100'

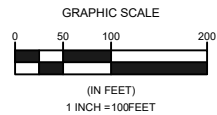
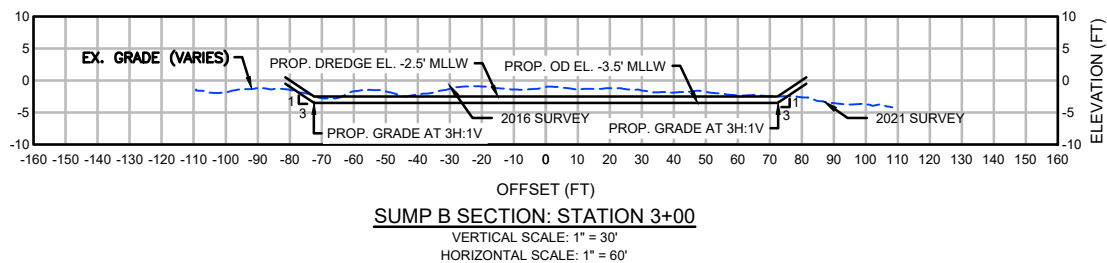
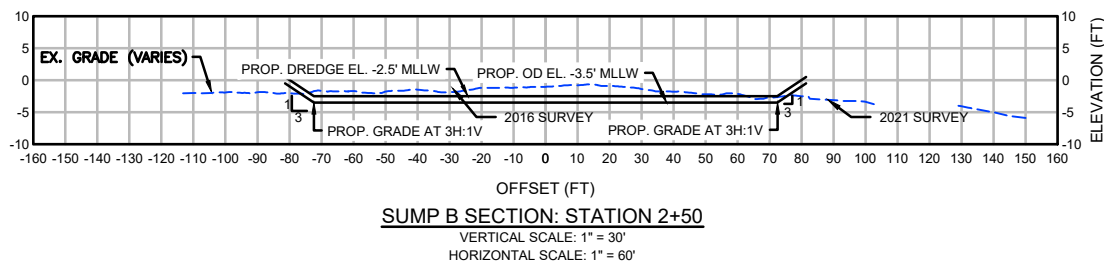
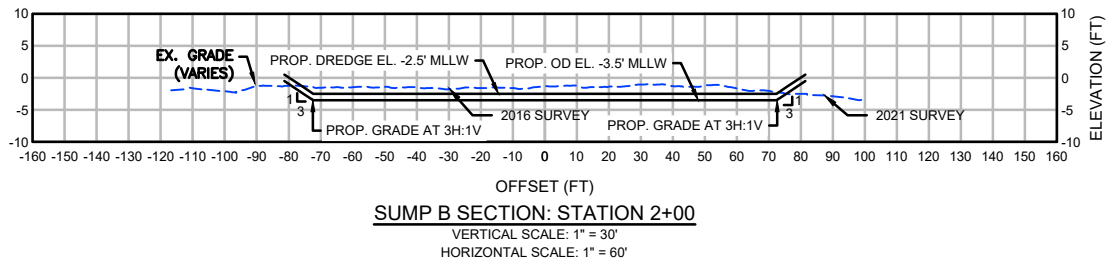
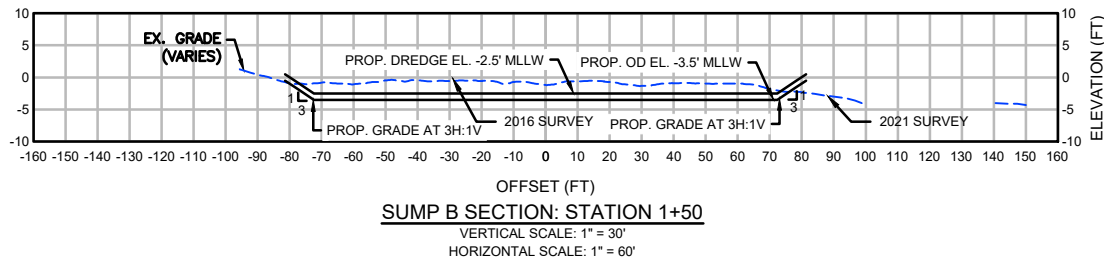
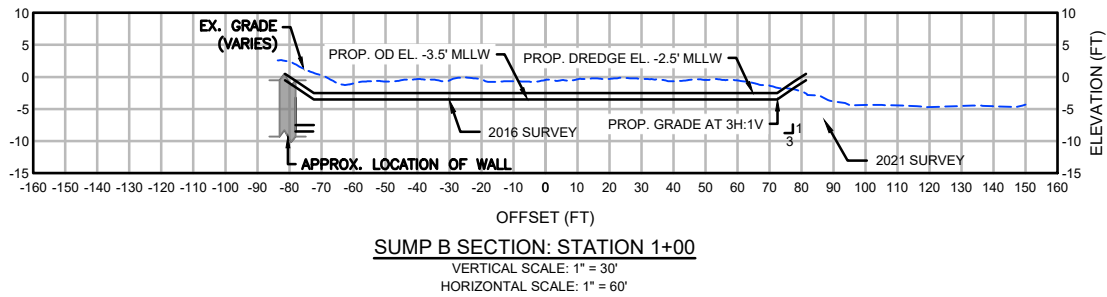
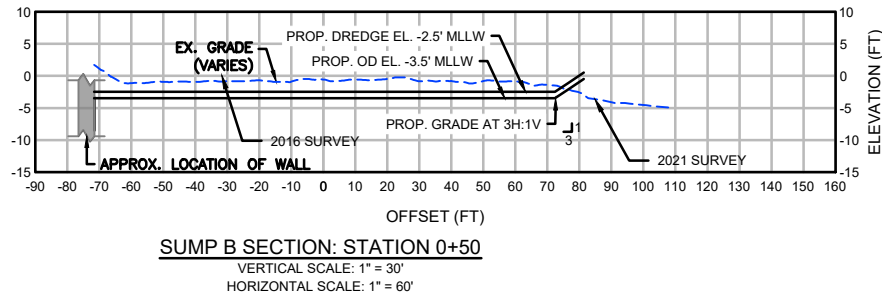
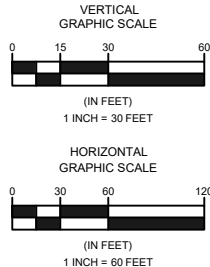


TABLE OF ESTIMATED DREDGE QUANTITIES TO EL. -2.5 MLLW WITH 1' ALLOWABLE OVERDREDGE					
	AREA	DREDGE AREA (SF)	BASE DREDGE VOLUME (CY) (-2.5' MLLW)	OVERDREDGE VOLUME (CY) (1' ALLOWABLE)	TOTAL VOLUME (CY)
NORTH LAGOON	SUMP A	±172,781	6,594	6,492	13,086
	SUMP B	±43,896	2,359	1,728	4,087
	SUMP C	±110,382	6,477	4,173	10,650
	NORTH LOCK	±36,647	3,832	1,105	4,937
	SOUTH CULVERT	±4,238	112	141	253
TOTAL		±367,944	19,374	13,639	33,013

VOLUMES BASED ON APRIL 2021 MULTIBEAM HYDROGRAPHIC SURVEY



LEGEND
— 2021 DESIGN AND OVERDREDGE EL.
- - - APRIL 2021 MUDLINE

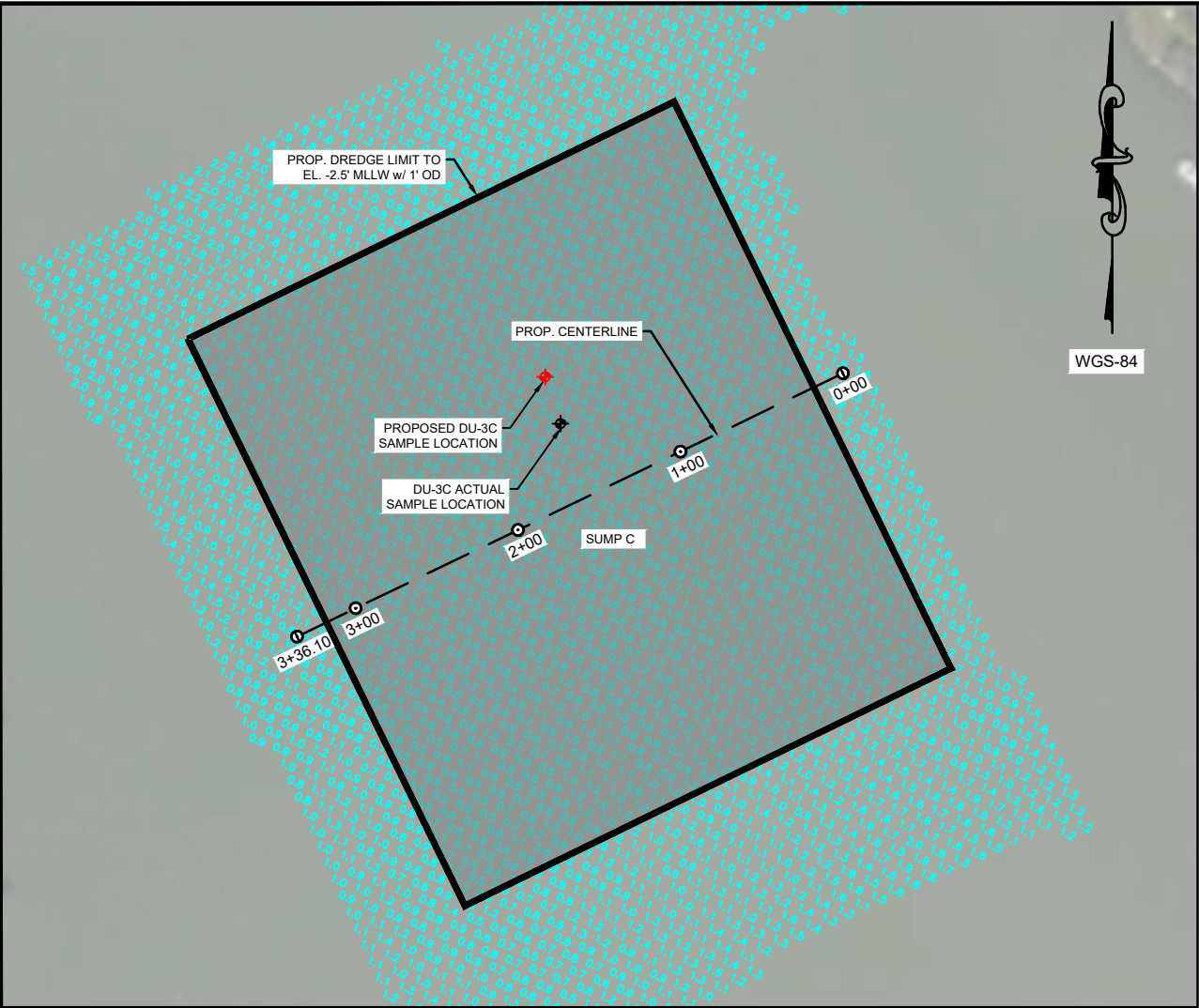


NOVATO CREEK & NORTH LAGOON DREDGING 2022
BEL MARIN KEYS COMMUNITY SERVICES
DISTRICT
#4 MONTEGO KEY NOVATO, CA 94949

REVISIONS		DATE		DATE	
NO.	DESCRIPTION	BY	DATE	DATE	DATE
1					
2					
3					
4					
5					
DATE OF PREPARATION					
SURVEYED		BY		DATE	SEE NOTES
DRAWN	MGB/SXO			9/17/2021	
DESIGNED					
CHECKED	WR				
SHEET TITLE:					
2022 SAMPLING LOCATION PLAN: DU-3B					
ISSUANCE:					
DRAFT					
PROJECT NO: 20B038					
SHEET NUMBER					
FIGURE 7					



Tuesday, November 08, 2022 9:57:55 AM
DWG Filename: bel_marin_novato_creek & north_lagoon_dredging_ssr.dwg Layout: sump c
DWG Folder Location: C:\pwworkdir\pwworking\BelMarin_NovatoCreek & North Lagoon Dredging_SSR.dwg



SUMP C SITE PLAN
SCALE: 1" = 100'

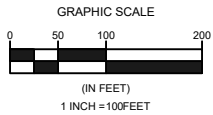
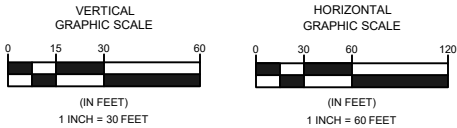
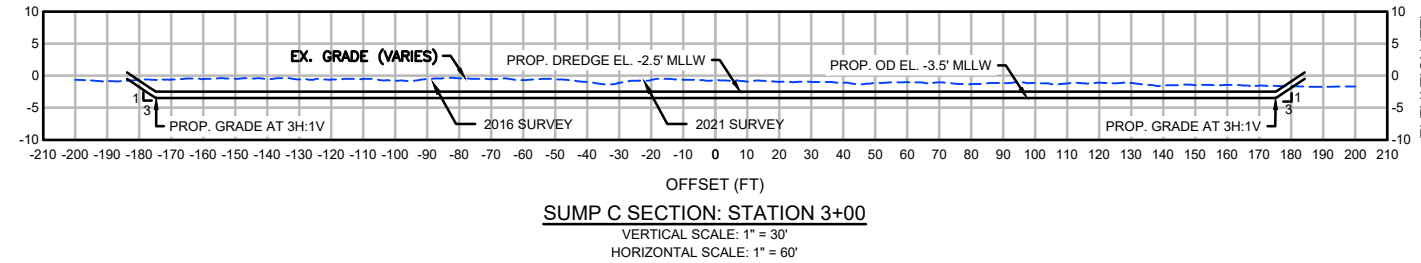
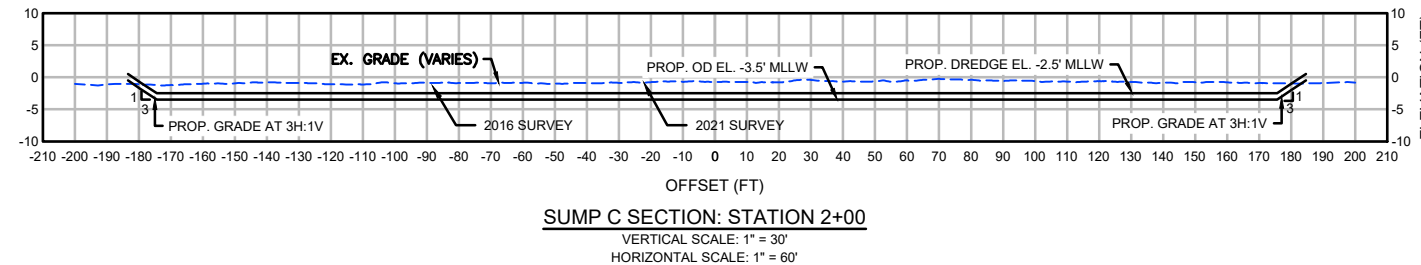
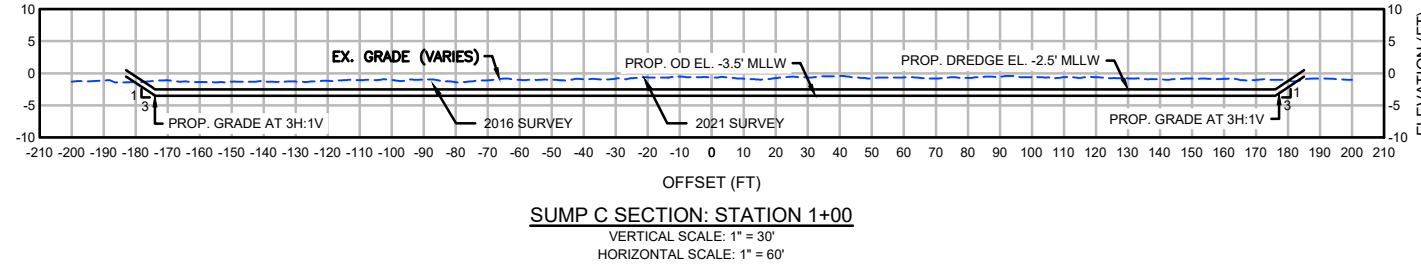
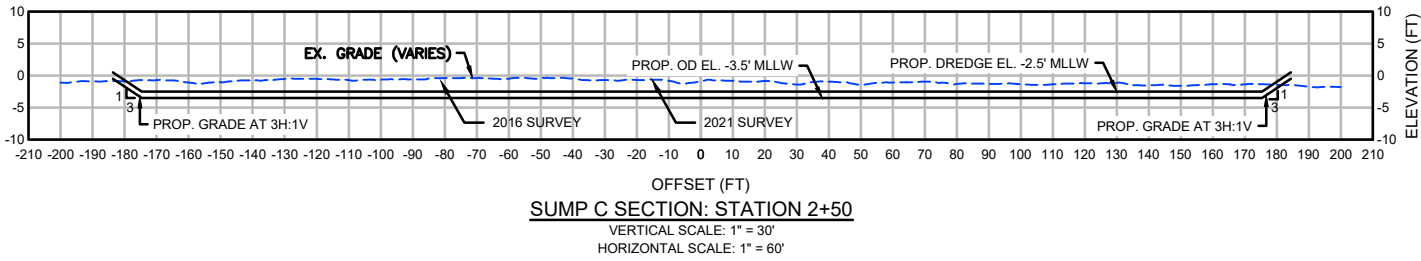
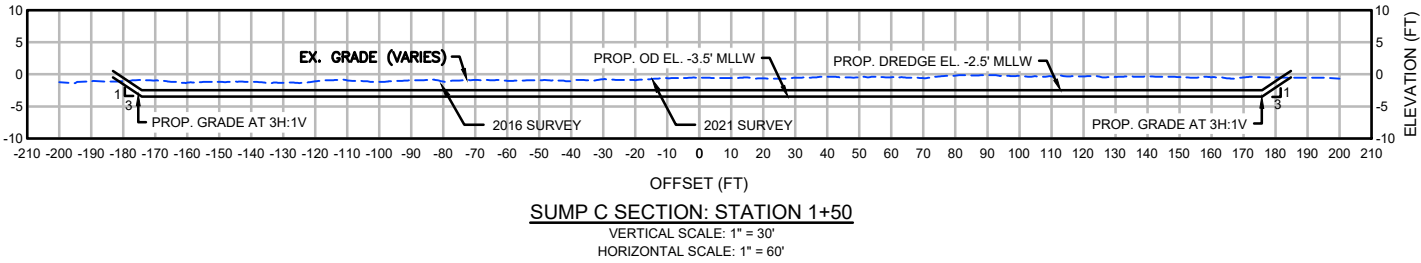
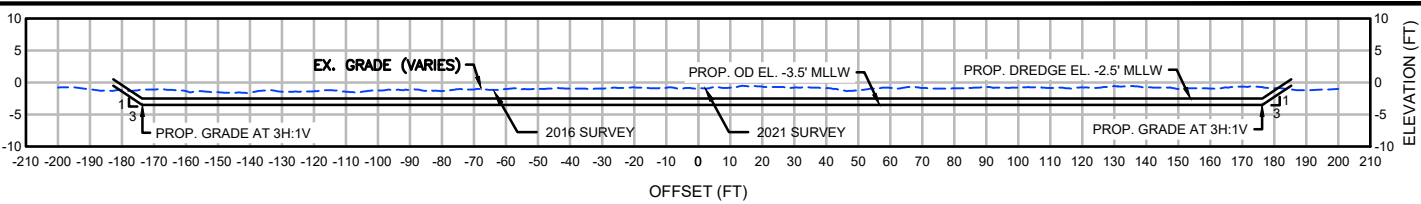


TABLE OF ESTIMATED DREDGE QUANTITIES TO EL. -2.5' MLLW WITH 1' ALLOWABLE OVERDREDGE					
	AREA	DREDGE AREA (SF)	BASE DREDGE VOLUME (CY) (-2.5' MLLW)	OVERDREDGE VOLUME (CY) (1' ALLOWABLE)	TOTAL VOLUME (CY)
NORTH LAGOON	SUMP A	±172,781	6,594	6,492	13,086
	SUMP B	±43,896	2,359	1,728	4,087
	SUMP C	±110,382	6,477	4,173	10,650
	NORTH LOCK	±36,647	3,832	1,105	4,937
	SOUTH CULVERT	±4,238	112	141	253
TOTAL		±367,944	19,374	13,639	33,013

VOLUMES BASED ON APRIL 2021 MULTIBEAM HYDROGRAPHIC SURVEY



- LEGEND
- 2021 DESIGN AND OVERDREDGE EL.
 - APRIL 2021 MUDLINE



NOVATO CREEK & NORTH LAGOON DREDGING 2022
BEL MARIN KEYS COMMUNITY SERVICES DISTRICT
#4 MONTEGO KEY NOVATO, CA 94949

REVISIONS	DESCRIPTION	DATE	BY	HOL.	A	A	A	A	A
DATE OF PREPARATION									
SURVEYED			BY			DATE			
DRAWN			MGB/SXO			SEE NOTES			
DESIGNED						9/17/2021			
CHECKED			WR						

2022 SAMPLING
LOCATION PLAN:
DU-3C

ISSUANCE:
DRAFT

PROJECT NO: 20B038
SHEET NUMBER

2. Sampling Program Sediment Collection and Handling

2.1 Sample Designation

In accordance with the SAP, five (5) sediment core samples were collected from the BMK Novato Creek and North Lagoon in DU-1, DU-2 and DU-3, as depicted on Figures 3-6.

2.2 Overview of Field Activities and Lab Analysis

All sediments were collected in accordance with guidelines and procedures. A total of five (5) sample locations composited into three (3) analytical samples were evaluated within the proposed dredge areas. The subsamples were archived for possible discrete analysis, should elevated concentrations be detected in the composite sample. A 6-inch "Z" sample was also collected and archived at the laboratory in case additional testing is required. The actual composite samples being analyzed are described below.

2.3 Test Sediment Collection and Handling

2.3.1 Project Site Sample Collection

Between July 28 – 29, 2022, Bay Marine Services (BMS) personnel collected five (5) sediment core samples at the locations shown on Figures 3-6. BMS personnel pre-plotted sample locations and their corresponding geographic coordinates on a field map prior to field activities. The vessel was maneuvered into position over each sample location using a differential Global Positioning System (dGPS) and visual verification where possible. The dGPS system uses U.S. Coast Guard differential correction data and is accurate to ± 2 meters.

Continuous sediment cores were collected to the proposed dredge depth plus a two-foot over-dredge allowance and a six-inch 'Z-layer'. Sampling depths and core lengths for each sample station are provided in Table 3. Upon deployment of the core, geographic coordinates were recorded in log sheets. Upon collection of each sample core, penetration depth and sediment retrieval length were measured and recorded. Final sample location coordinates, sampling depths, and core lengths, are provided in Table 3. Physical characterization of sediment cores is provided in Appendix A.

On July 29, 2022, ambient surface water was collected from the site for use in preparing the sediment elutriates for biological testing.

Table 3
Locations of Sampling Stations and Core Depths

Composite	SAMPLE ID	Northing*	Easting*	Mudline Elevation (ft MLLW)	Proposed Project Depth + Over-Depth + Z-layer (ft MLLW)	Required Core Length (ft)	Recovered Core Length (ft)
DU-1	DU-1	2222457.3	5978422.0	-1.2	-4	2.8	2.8
DU-2	DU-2	2224525.700	5981871.700	+4.6	-4	8.6	8.6
DU-3	DU-3A	2224240.900	5980767.700	+0.3	-4	4.3	4.3
	DU-3B	2224283.1	5981628.2	+0.3	-4	4.3	4.3
	DU-3C	2223886.8	5981333.4	+0.7	-4	4.7	4.7

*State Plane Coordinate System, California Zone 3, NAD 83

2.3.2 Sampling Processing and Handling

Upon collection of each sample core, penetration depth and sedimentation retrieval length data were measured and recorded. After each sample was retrieved, the sediment core was extruded onto a PVC tray lined with non-contaminating polyethylene sheets and then characterized for texture, color and odor. Prior to the homogenization of each sediment core for evaluation as per the ITM, the "Z" layer (the 0.5 feet of sediment below the proposed permitted depth plus overdepth for each DU) for each core were collected and homogenized. A sub-sample of each "Z" layer sediment for each individual core was archived to allow for additional chemical analyses if necessary.

Table 4
Physical Characterization of Sediment Cores

Composite	SAMPLE ID	Location	Sediment Depth (feet, MLLW)	Color	Odor	Sediment Type
DU-1	DU-1	Novato Creek South Culvert	-4.0	Black	Slight Sulfuric Odor	Organic Silt (OL)
DU-2	DU-2	Novato Creek North Lock	-4.0	Black	No odor	Organic Silt (OL)
DU-3	DU-3A	North Lagoon	-4.0	Black	No odor	Organic Silt (OL)
	DU-3B	North Lagoon	-4.0	Black	No odor	Organic Silt (OL)
	DU-3C	North Lagoon	-4.0	Black	No odor	Organic Silt (OL)

Table 5
Compositing Scheme

Sample ID	Analysis
DU-1	Physical, Chemical, & MET
DU-2	Physical, Chemical, & MET
DU-3	Physical, Chemical, & MET

Subsamples of the homogenates of each the five (5) cores were mixed to create composite samples for the physical, chemical tests and benthic tests. The remainder of each individual core homogenate was archived at 4°C. Upon completion of the sampling event, were transported and stored in darkened conditions at 4°C until released under chain of custody to the laboratory.

3. Results

Results of the chemical, physical, and biological analyses of the sediments collected from BMK within the Novato Creek and North Lagoon were evaluated to determine the material's suitability for placement at BMK-DMMS. The specific analyses employed for this evaluation are discussed below.

3.1 Physical and Chemical Analyses

Subsamples from the composite sample were taken and shipped on ice to Eurofins | Calscience for grain-size, total organic carbon (TOC), and chemistry testing, McCampbell Analytical (Cadmium, and Silver), and Brooks Applied Labs (Selenium). The State of California has certified Eurofins | Calscience, Brooks Applied Labs, and McCampbell Analytical for the analyses performed. Sediment samples were analyzed for the chemical and conventional parameters specified in the SAP. Conventional parameters included TOC, total solids, and grain size. Chemical analyses of trace metals, polycyclic aromatic hydrocarbons (PAHs), pesticides, polychlorinated biphenyls (PCBs), butyltins and dioxins were performed. The results of these analyses are summarized in Tables 6-14. Complete laboratory reports that were submitted by are included in Appendices B.

Table 6

Summary of BMK: Composite Sample Exceedances

Sample ID	Analytes Exceeding Beneficial Reuse Levels
DU-1	None
DU-2	None
DU-3	Cadmium and DDT

Table 7

Analytical Results for BMK: Grain Size, Total Solids (%), and Total Organic Carbon (%)

Analyte	Method Reference	Reporting Limit	DU-1	DU-2	DU-3
Gravel	ASTMD4464	0.1	ND	ND	ND
Sand	ASTMD4464	0.1	33.14	5.11	10.6
Silt	ASTMD4464	0.1	50.86	65.93	67.91
Clay	ASTMD4464	0.1	15.99	28.93	21.46
Total Fines	ASTMD4464	0.1	66.85	94.86	89.37
TOC (%)	EPA9060A	0.414-0.457	2.85	2.55	2.48
Percent Solids (%)	SM2540B	0.1	43.7	48.3	44.7

Table 8**Analytical Results for BMK: Metals Concentrations (mg/kg, dry wt.)**

Analyte	Method Reference	Reporting Limit	Beneficial Reuse Criteria	DU-1	DU-2	DU-3
As	EPA 6020	1.01-1.17	15.3	11.3	10.8	11.1
Cd	EPA 6020	0.045-0.087	0.33	0.256	0.204	0.349
Cr	EPA 6020	2.02-2.35	112	85	85.3	77.8
Cu	EPA 6020	2.02-2.35	68.1	53.1	52.2	53.1
Pb	EPA 6020	1.01-1.17	43.2	24.7	24.1	29.7
Hg	EPA 7471A	0.169-0.186	0.43	0.272	0.272	0.41
Ni	EPA 6020	2.02-2.35	112	103	98	88.1
Se	EPA 7742	0.19-0.366	0.64	0.44	0.375	0.241
Ag	EPA 6020	0.045-0.087	0.58	0.24	0.23	0.344
Zn	EPA 6020	20.2-22.9	158	122	122	118

Table 9**Analytical Results for BMK: PAHs (µg/kg, dry wt.)**

Analyte	Method Reference	Reporting Limit	Beneficial Reuse Criteria	DU-1	DU-2	DU-3
Acenaphthene	EPA 8270C	21-23	27	ND	ND	ND
Acenaphthylene	EPA 8270C	21-23	32	ND	ND	ND
Anthracene	EPA 8270C	21-23	88	26	21	19
Benzo(a)anthracene	EPA 8270C	21-23	33	21	24	44
Benzo(a)pyrene	EPA 8270C	21-23	412	21	22	53
Benzo(b)fluoranthene	EPA 8270C	21-23	371	20	26	39
Benzo(e)pyrene	EPA 8270C	21-23	371	14	16	38
Benzo(g,h,i)perylene	EPA 8270C	21-23	310	ND	ND	17
Benzo(k)fluoranthene	EPA 8270C	21-23	258	21	20	47
Biphenyl	EPA 8270C	21-23	12.9	ND	ND	ND
Chrysene	EPA 8270C	21-23	289	26	28	57
Dibenzo(a,h)anthracene	EPA 8270C	21-23	33	ND	ND	ND
2,6-Dimethylnaphthalene	EPA 8270C	21-23	12.1	ND	ND	ND
Fluoranthene	EPA 8270C	21-23	514	94	78	120
Fluorene	EPA 8270C	21-23	25	ND	ND	ND
Indeno(1,2,3-cd)pyrene	EPA 8270C	21-23	382	ND	8.8	21
2-Methylnaphthalene	EPA 8270C	21-23	19.4	ND	ND	ND
1-Methylnaphthalene	EPA 8270C	21-23	12.1	ND	ND	ND
1-Methylphenanthrene	EPA 8270C	21-23	31.7	ND	ND	ND
Naphthalene	EPA 8270C	21-23	56	11	8.6	12
Perylene	EPA 8270C	21-23	145	15	26	43
Phenanthrene	EPA 8270C	21-23	237	53	31	42
Pyrene	EPA 8270C	21-23	665	140	130	250
1,6,7-Trimethylnaphthalene	EPA 8270C	21-23	9.8	ND	ND	ND
Dibenzothiophene	EPA 8270C	21-23	32.7	ND	ND	ND
Total PAHs			3,390	462	439.4	802

Table 10**Analytical Results for BMK: PCB Congener Concentrations (µg/kg, dry wt.)**

Analyte	Method Reference	Reporting Limit	Beneficial Reuse Criteria	DU-1	DU-2	DU-3
PCB-5/8	EPA 8270C	0.89-0.91		ND	ND	ND
PCB-18	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-28	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-31	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-33	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-44	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-49	EPA 8270C	0.41-0.46		ND	ND	0.65
PCB-52	EPA 8270C	0.41-0.46		ND	ND	0.65
PCB-56	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-60	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-66	EPA 8270C	0.41-0.46		ND	ND	0.79
PCB-70	EPA 8270C	0.41-0.46		ND	ND	0.3
PCB-74	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-87	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-95	EPA 8270C	0.41-0.46		0.29	ND	0.65
PCB-97	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-99	EPA 8270C	0.41-0.46		0.48	ND	0.94
PCB-101	EPA 8270C	0.41-0.46		0.37	ND	1.3
PCB-105	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-110	EPA 8270C	0.41-0.46		0.46	ND	1.4
PCB-118	EPA 8270C	0.41-0.46		0.55	ND	1.3
PCB-128	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-132/153	EPA 8270C	0.89-0.91		1.8	ND	2
PCB-138/158	EPA 8270C	0.89-0.91		ND	0.52	1.6
PCB-141	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-149	EPA 8270C	0.41-0.46		0.65	0.55	1.5
PCB-151	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-156	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-170	EPA 8270C	0.41-0.46		ND	ND	0.74
PCB-174	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-177	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-180	EPA 8270C	0.41-0.46		0.31	ND	1.1
PCB-183	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-187	EPA 8270C	0.41-0.46		0.48	ND	0.76
PCB-194	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-195	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-201	EPA 8270C	0.41-0.46		ND	ND	ND
PCB-203	EPA 8270C	0.41-0.46		ND	ND	ND
Total PCBs			22.7	5.39	1.07	15.68

Table 11**Analytical Results for BMK: Pesticides Concentrations (µg/kg, dry wt.)**

Analyte	Method Reference	Reporting Limit	Beneficial Reuse Criteria	DU-1	DU-2	DU-3
Aldrin	EPA 8081A	2.1-2.3	--	ND	ND	ND
HCH, alpha	EPA 8081A	4.1-4.6		ND	ND	ND
HCH, beta	EPA 8081A	2.1-2.3		ND	ND	ND
HCH, delta	EPA 8081A	4.1-4.6		ND	ND	ND
HCH, gamma	EPA 8081A	2.1-2.3		ND	ND	ND
HCH, Total	EPA 8081A	2.1-2.3	0.78	ND	ND	ND
Chlordane	EPA 8081A	10-11	2.3	ND	ND	ND
2,4-DDD	EPA 8081A	2.1-2.3	--	ND	ND	0.2
2,4-DDE	EPA 8081A	4.1-4.6		ND	ND	3.8
2,4-DDT	EPA 8081A	2.1-2.3		ND	ND	ND
4,4-DDD	EPA 8081A	2.1-2.3		1.8	2.0	3.4
4,4-DDE	EPA 8081A	2.1-2.3		ND	ND	ND
4,4-DDT	EPA 8081A	2.1-2.3		ND	ND	ND
Total DDT	EPA 8081A	2.1-4.6	7.0	1.8	2.0	7.4
Dieldrin	EPA 8081A	0.41-0.46	0.72	ND	ND	ND
Endosulfan I	EPA 8081A	2.1-2.3	--	ND	ND	ND
Endosulfan II	EPA 8081A	2.1-2.3		ND	ND	ND
Endosulfan sulfate	EPA 8081A	2.1-2.3		ND	ND	ND
Endrin	EPA 8081A	2.1-2.3		ND	ND	ND
Endrin aldehyde	EPA 8081A	2.1-2.3		ND	ND	ND
Heptachlor	EPA 8270C	2.1-2.3		ND	ND	ND
Heptachlor Epoxide	EPA 8270C	2.1-2.3		ND	ND	ND
Toxaphene	EPA 8081A	10-11		ND	ND	ND
Cis-nonachlor	EPA 8081A	2.1-2.3		ND	ND	ND
Oxychlordane	EPA 8081A	2.1-2.3		ND	ND	ND

Table 12**Analytical Results for BMK: Ogranochlorine Pesticide Concentrations (µg/kg, dry wt.)**

Analyte	Method Reference	Reporting Limit	Beneficial Reuse Criteria	DU-1	DU-2	DU-3
Tetrabutyltin	EPA 3550 B	6.2-6.8	--	ND	ND	ND
Tributyltin	EPA 3550 B	6.2-6.6		ND	ND	ND
Dibutyltin	EPA 3550 B	6.2-6.8		ND	ND	ND
Monobutyltin	EPA 3550 B	6.2-6.8		ND	ND	ND

Table 13**Analytical Results for BMK: Dioxins & Furans (ppt)**

Analyte	Method Reference	Reporting Limit	Beneficial Reuse Criteria	DU-1	DU-2	DU-3
2,3,7,8-TCDD	EPA 1631B	10-11	--	0.79	ND	ND
1,2,3,7,8-PeCDF	EPA 1631B	10-11		ND	0.57	0.99
2,3,4,7,8-PeCDF	EPA 1631B	10-11		1	0.88	1.3
1,2,3,7,8-PeCDD	EPA 1631B	10-11		1	ND	0.85
1,2,3,4,7,8-HxCDF	EPA 1631B	10-11		1.5	1	1.3
1,2,3,6,7,8-HxCDF	EPA 1631B	10-11		0.99	0.48	0.78
2,3,4,6,7,8-HxCDF	EPA 1631B	10-11		0.31	0.39	0.45
1,2,3,7,8,9-HxCDF	EPA 1631B	10-11		0.71	0.45	0.51
1,2,3,4,7,8-HxCDD	EPA 1631B	10-11		0.79	0.82	0.9
1,2,3,6,7,8-HxCDD	EPA 1631B	10-11		3	2.4	3.6
1,2,3,7,8,9-HxCDD	EPA 1631B	10-11		3	2.4	3.4
1,2,3,4,6,7,8-HpCDF	EPA 1631B	10-11		8.6	3.6	7.8
1,2,3,4,7,8,9-HpCDF	EPA 1631B	10-11		0.53	0.67	0.78
1,2,3,4,6,7,8-HpCDD	EPA 1631B	10-11		38	20	36
OCDF	EPA 1631B	20-22		270	120	230
OCDD	EPA 1631B	20-22		14	7.6	13
Total TCDD	EPA 1631B	2-2.2		4.0	5.8	1.7
Total TCDF	EPA 1631B	2-2.2		8.6	11	17
Total PeCDD	EPA 1631B	10-11		5.7	2.0	5.2
Total PeCDF	EPA 1631B	10-11		9.1	7.0	11
Total HxCDD	EPA 1631B	10-11		34	26	36
Total HxCDF	EPA 1631B	10-11		15	11	13
Total HpCDD	EPA 1631B	10-11		98	53	88
Total HpCDF	EPA 1631B	10-11		22	12	20

Analyte	Method Reference	Beneficial Reuse Criteria	DU-1	DU-2	DU-3
Total TEQ	EPA 1613	0.02 ug/kg	0.0038	0.0018	0.0032

3.1.1 Results of DU-1

Total solids for DU-1 Composite was 43.7% and TOC levels were 2.85%. Grain size analyses indicated that the sediment consisted primarily of black organic silt (OL) with 66.85% fines.

Metals concentrations were below limits for Beneficial Reuse criteria. All PAH's, pesticides, butyltins, and PCBs were below the method detection limits or below the Beneficial Reuse criteria levels. All analyses were below the Beneficial Reuse criteria requirements for sediment.

3.1.2 Results of DU-2

Total solids for DU-2 Composite was 48.3% and TOC levels were 2.55%. Grain size analyses indicated that the sediment consisted primarily of black organic silt (OL) with 94.86% fines.

Metals concentrations were below limits for Beneficial Reuse criteria. All PAH's, pesticides, butyltins, and PCBs were below the method detection limits or below the Beneficial Reuse criteria levels. All analyses were below the Beneficial Reuse criteria requirements for sediment.

3.1.3 Results of DU-3

Total solids for DU-3 Composite was 44.7% and TOC levels were 2.48%. Grain size analyses indicated that the sediment consisted primarily of black organic silt (OL) with 89.37% fines.

Metals concentrations were below limits for Beneficial Reuse, with the exception of Cadmium with a result of 0.349 mg/kg (Beneficial Reuse criteria for wetlands surface material is 0.33 mg/kg). All PAHs, butyltins, and PCBs were below the method detection limits or below the Beneficial Reuse criteria levels. All pesticides were at levels below the detection limit for Beneficial Reuse criteria, with the exception of Total DDTs with a result of 7.4 µg/kg (Beneficial Reuse criteria for wetlands material is 7.0 µg/kg). All analyses were below the Beneficial Reuse criteria requirements for sediment with the exception of slight exceedances of Cadmium and Total DDT.

3.1.4 Conventional and Chemical Analytical QA/QC Summary

The QA/QC review entailed reviewing the contract lab Data Reports for sample integrity, correct methodology, and compliance with all appropriate quality Lab Control requirements (Calscience). The overall data quality assessment found that all data were usable. There were no significant issues with the analytical chemistry QA/QC limits that would affect the overall quality or interpretation of the data.

3.2 Modified Elutriate Testing

Modified Elutriate Testing (MET) was performed to address the potential impacts from the decant water resulting from the placement of dredged material. The sediment elutriates were analyzed for the suite of heavy metals in accordance with MET methods described in Appendix C of the ITM. Eurofins | Calscience performed the MET analysis as specified in the SAP. The results of these analyses are summarized in Table 14. Complete laboratory reports that were submitted are included in Appendix C.

Table 14
Analytical Results for BMK: MET Metals Analytes

Analyte	Method Reference	Reporting Limit	SFRWQCB Basin Water Quality Objectives Cont. Conc. (4-day avg.) (1-hr avg) (ug/L)		Montezuma Screening Criteria ¹	DU-1	DU-2	DU-3
Total Mercury	EPA 1640	0.495	---	2.1 ³	2.1	0.00668	0.00228	0.0254
Total Selenium	EPA 1640	0.6	5 ⁴	20 ⁴	20	ND	0.441	ND
Dissolved Arsenic	EPA 1640	0.6-3.0	36 ⁴	69 ⁴	69	14.7	17.7	12.1
Dissolved Cadmium	EPA 1640	0.04	9.3 ⁴	42 ⁴	3.9	ND	ND	0.0264
Dissolved Chromium	EPA 1640	0.05	50 ⁴	1100 ^{4,5}	16	0.604	0.523	0.534
Dissolved Copper	EPA 1631E	0.01	6	9.4 ⁶	9.4	0.344	0.513	1.85
Dissolved Lead	EPA 1640	0.025	8.1 ⁴	210 ²	65	0.0385	0.0175	0.0539
Dissolved Nickel	EPA 1640	0.3	8.2	74 ⁷	74	4.18	6.13	5.32
Dissolved Silver	EPA 1640	1.0	---	1.9 ²	1.9	ND	ND	ND
Dissolved Zinc	EPA 1640	0.5	81 ⁴	90 ²	90	1.21	1.81	ND

1 – Montezuma Wetlands Restoration Project Waste Discharge Requirements Order No. R2-2012-0087 (SFRWQCB 2012).

2 – No criteria available.

3 – SFRWQCB Basin Plan Amendment 2008.

4 – California Toxics Rule Criteria (USEPA 2000).

5 – Water Quality Objective is for Chromium VI; however, it may be met as total Chromium.

6 – SFRWQCB Basin Plan Amendment 2009.

7 – USEPA National Recommended Ambient Water Quality Criteria.

3.2.1 Results of DU-1

MET analysis for metals concentrations were below limits for SFRWQCB Basin Water Quality Objectives Concentrations.

3.2.2 Results of DU-2

MET analysis for metals concentrations were below limits for SFRWQCB Basin Water Quality Objectives Concentrations.

3.2.3 Results of DU-3

MET analysis for metals concentrations were below limits for SFRWQCB Basin Water Quality Objectives Concentrations.

3.2.4 MET QA/QC Summary

The QA/QC review entailed reviewing the contract lab Data Reports for sample integrity, correct methodology, and compliance with all appropriate quality Lab Control requirements. The overall data quality assessment found that all data were usable. Appendix D contains the conventional and chemical analysis report. There were no significant issues with the MET QA/QC limits that would affect the overall quality or interpretation of the data.

3.3 Biological Evaluation

To assess the potential biological impacts associated with placement of sediments from BMK Novato Creek and North Lagoon, Pacific EcoRisk performed 96-hr modified elutriate mysid survival test with *Americamysis bahia* on the composite sample. The results of these analyses are summarized in Tables 15 and 16. Complete laboratory reports that were submitted by Pacific EcoRisk are included in Appendix D.

3.3.1 Effects of BMK Sediments on *Americamysis bahia*

There was 98% survival in the Lab Control treatment, indicating an acceptable survival response by the test organisms; there was a 100% survival in Site Water treatment. There was 100% (DU-1), 98% (DU-2), and 100% (DU-3) survival in the BMK site water treatment. The LC50 for these tests are consistent with the “typical response” range established by the reference toxicant test database for this species, indicating that these test organisms were responding to toxic stress in a typical fashion. There were no significant reductions in survival in any of the modified elutriates, indicating that these modified elutriates were not toxic to mysids.

Table 15
Effects of BMK on *Americamysis bahia*

Elutriate Treatment	Mean % Survival
Lab Control	98
Site Water	100
DU-1	100
DU-2	98
DU-3	100

Table 16
Effects of KCl on *Americamysis bahia*

KCl Treatment (g/L)	Mean % Survival
Lab Control	97.5
0.125	97.5
0.25	100
0.5	95
1	0*
2	0*
LC ₅₀	0.69 0g/L KCl
Typical Response Range (mean +/- 2SD) =	0.278 – 0.781 g/L KCl

*The survival response at this treatment was significantly less than the Lab Control response at $p < 0.05$.

3.3.2 Biological Analytical QA/QC Summary

The biological testing of Bel Marin Keys sediments incorporated standard QA/QC procedures to ensure that the test results were valid, including the use of negative Lab Controls, positive Lab Controls, test replicates, and measurements of water quality during testing.

Quality assurance procedures that were used for sediment testing are consistent with methods described in the U.S.EPA/USACE (1998). Sediments for the bioassay testing were stored appropriately at $\leq 4^{\circ}\text{C}$ and were used within the eight week holding time period. Sediment elutriates were prepared using site water.

All measurements of routine water quality characteristics were performed as described in the PER Pacific EcoRick's Standard Operating Procedures (SOPs). All biological testing water quality conditions were within the appropriate limits. Laboratory instruments were calibrated daily according to Lab SOPs, and calibration data were logged and initialed. The biological responses for all the test organisms at the negative Lab Control treatments were within acceptable limits for the sediment and sediment elutriate tests. The key test concentration-response LC and/or EC point estimates determined for each of the test species were all within the respective typical response ranges for these species, indicating that these test organisms were responding to toxic stress in a typical fashion.

4. Discussion

Results of the chemical, physical, and biological analyses of the sediments collected from BMK Novato Creek and North Lagoon were evaluated to determine the material's suitability for placement at BMK-DMMS. The specific analyses employed for this evaluation are discussed below.

4.1 Sediment and Chemistry Evaluation

4.1.1 Sediment and Chemistry Evaluation: DU-1

All organic and inorganic, measured in the BMK sediments for DU-1, were at concentration below dredge material acceptance criteria for determining suitability for placement at the BMK-DMMS. All metals measured in the BMK sediments were below the Beneficial Reuse criteria.

4.1.2 Sediment and Chemistry Evaluation: DU-2

All organic and inorganic, measured in the BMK sediments for DU-2, were at concentration below dredge material acceptance criteria for determining suitability for placement at the BMK-DMMS. All metals measured in the BMK sediments were below the Beneficial Reuse criteria.

4.1.3 Sediment and Chemistry Evaluation: DU-3

All organic and inorganic, measured in the BMK sediments for DU-3, were at concentration below dredge material acceptance criteria for determining suitability for placement at the BMK-DMMS with the exception of Total DDTs with a slight exceedance of 0.4 µg/kg. All metals measured in the BMK sediments were below the Beneficial Reuse criteria, apart from the slightly elevated concentrations of Cadmium with a slight exceedance of 0.01 mg/kg. Overall, sediments from within DU-3 displayed similar physical and chemical analysis results to sediment previously placed at the BMK-DMMS.

4.2 MET Evaluation

All MET analysis for metals concentrations in the BMK sediments for DU-1, DU-2, and DU-3 were at concentration below limits for SFRWQCB Basin Water Quality Objectives Concentrations for determining suitability for placement at the BMK-DMMS.

4.3 Biological Evaluation

Sediments within the BMK proposed dredge location were analyzed for 96-hr modified elutriate mysid survival test with *Americamysis bahia*. Overall, sediment results for biological testing on modified elutriates were higher than results of material previously placed at the BMK-DMMS. All test results indicated an acceptable survival response and demonstrated the sediment at BMK to be non-toxic and suitability for placement at the BMK-DMMS.

5. Conclusion

The intent of this investigation was to evaluate the proposed dredged material to determine whether it will represent an impact during removal operations and placement at the BMK-DMMS. Samples were collected and evaluated to determine whether if the proposed dredge material will represent an adverse impact during removal operations and placement at any of the proposed placement sites. Comparison of the BMK Novato Creek and North Lagoon sediment chemistry to wetland beneficial reuse criteria indicated that, with the exception of Cadmium with a 0.01 mg/kg exceedance and Total DDTs with a 0.4 µg/kg exceedance for composite DU-3, all analytes were generally similar to or below the specified criteria.

Based on the increase in survivability of *A.bahia* and the absence of any significant adverse biological effects and contaminant concentrations within the dredge material acceptance criteria screening for determining suitability for placement at the BMK-DMMS, sediments proposed for dredging from the BMK in DU-1 and DU-2, and DU-3 are not expected to elicit significantly adverse ecological impacts and are suitable for placement at the BMK-DMMS.

All retained sediment samples have been archived for up to six-months should additional site-specific analysis be required.

6. References

- ASTM 2013. Standard Guide for Conducting 10-day Static Sediment Toxicity Tests with Marine and Estuarine Amphipods. Method E 1367-99. American Society for Testing and Materials. Philadelphia, PA.
- ASTM 2013. Standard Guide for Conducting Sediment Toxicity Tests with Marine and Estuarine Polychaetous Annelids. Method E 1611-99. American Society for Testing and Materials. Philadelphia, PA.
- CLE Engineering inc. 2017. Characterization of the Sediment from the Novato Creek / North Lagoon Dredging Project: Novato, CA Sediment Characterization Sampling and Analysis Results (SAR) January 31, 2017. Novato, CA.
- Foth & Van Dyke and Associates, Inc. 2022. Novato Creek and North Lagoon Maintenance Dredging Project, Sampling and Analysis Plan (SAP) March 29, 2022. Petaluma, CA.
- Lee 1980. Reference toxicants in quality control of aquatic bioassays. IN: Aquatic Invertebrate Bioassays, ASTM STP 715. American Society for Testing and Materials. Philadelphia, PA.
- Krone CA, Brown DW, Burrows DG, Bogar RG, Chan SL, Varanasi U (1989) A method for analysis of butyltin species and the measurements of Butyltins in sediment and English sole livers from Puget Sound. Mar. Environ. Res. 27:1-18.
- Plumb RH, Jr. (1981) Procedure for Handling and Chemical Analysis of Sediment and Water Samples. Technical Report U.S. EPA /CE-81-1, prepared by Great Lakes Laboratory, State University College at Buffalo, Buffalo, NY, for the U.S. Environmental Protection Agency/Corps of Army Engineer Waterways Experiment Station, Vicksburg, MS.
- SFRWQCB (1998) Ambient concentrations of toxic chemicals in San Francisco Bay Sediments: Draft Staff Report. San Francisco Regional Water Quality Lab Control Board, Oakland, CA.
- SFRWQCB (2000) Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines: Draft Staff Report. San Francisco Regional Water Quality Lab Control Board, Oakland, CA.
- SFRWQCB (2010) Order No R2-2010-0108 Waste Discharge Requirements for: U.S. Fish and Wildlife Service Cullinan Ranch Restoration Project. San Francisco Regional Water Quality Lab Control Board, Oakland, CA.
- USEPA/USACE (1995) QA/QC Guidance for Sampling and Analysis of Sediments, Water, and Tissues for Dredged Materials Evaluations. U.S. Environmental Protection Agency/U.S. Army Corps of Engineers. EPA/823/B-95/001. Office of Water. Washington, DC. EPA-823-B-95-001. April 1995.
- USEPA/USACE (1998) Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual (Inland Testing Manual). U.S. Environmental Protection Agency/U.S. Army Corps of Engineers. EPA/823/B-94/002. Office of Water. Washington, DC 20460.
- USEPA (1998a) EPA Requirements for Quality Assurance Project Plans. United States Environmental Protection Agency, Quality Assurance Division, Washington, DC. 20460.
- USEPA (1998b) EPA Guidance for Quality Assurance Project Plans. United States Environmental Protection Agency, Office of Research and Development, Washington, DC 20460.

USFWS (2010) Section 7 Biological Opinion (Tracking #: SFB-2010-01/May 7, 2010/Intra-Service Section 7 Consultation on Implementation of the Proposed Cullinan Ranch Restoration Project, Napa and Solano Counties, CA. Prepared by the U.S. Fish and Wildlife Services, Sacramento, CA.

Appendix A

Sampling Field Logs and Data Sheets

Bel Marin Keys Community Services District

SEDIMENT CORE PROCESSING LOGS

Sample ID	DU-1	Page	1 of 1
Vertical Datum	MLLW	Date	7/28/2022
Lead Line Depth	7.0 feet	Sample Collection Time	15:20
Tide (Staion)	5.8 feet	Weather	sunny 70F
Corrected Mudline El. (Top of core El.)	-1.2 feet	Wind/Seas	W 5-10 MPH; flat
Total Core Depth (Bottom El.)	-4.2 feet	USACE Permit #	1996-22397N
Required Core Length	2.8 feet	Project Name & No.	Novato Creek and North Lagoon Maintenance Dredging 0021B038.00
Total Penetration	3.0 feet	Driller	Bay Marine Services
Total Recovery	2.8 feet	Sampling Method (Vibro/Push)	Vibracore using ss core catcher
Final % Recovery	100 %	Positioning	DGPS
As-Built Sample Coordinates	2222457.3	Proposed Dredge Depth El.	-4' MLLW
	5978422.0	Est. Core Length (ft) (per SAP)	2.1'
	N 38.081166	No. of Coring Attempts	2
	W 122.526508	Field Engineer on Site	D. Gewant
	Lat	Additional Notes	
	Long		

Depth feet	Elev. feet	Legend	Sample ID & Interval	ASTM-D2488 Material Description/Classification
0.0'	0.3'			
2.8'	-4.0'		DU-1	Black, Organic Silt, slight sulfuric odor, dense (OL)
				BOTTOM OF CORE

Photos:



Notes: Name (Density, Color, Classification), Moisture, Secondary Grain Size.

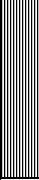
Key: **Fines Content:** trace = <5%, few = 5-10%, little = 15-25%, some = 30-45%, mostly = 50-100%
Color: br = brown, gy = grey, gn = green, yl = yellow, ol = olive, og = orange, bl = black
Odor: Slight, moderate, or strong/ petroleum, hydrocarbon, chemical, sulfur, organic
Relative Density (Non-Cohesive) : v. loose, loose, med. , dense, v. dense
Consistency (Cohesive) : v. soft, soft, firm, hard and v. hard

Signature of Field Engineer:

Bel Marin Keys Community Services District

SEDIMENT CORE PROCESSING LOGS

Sample ID	DU-2	Page	1 of 1
Vertical Datum	MLLW	Date	7/29/2022
Lead Line Depth	1.1 feet	Sample Collection Time	2:01
Tide (Staion)	5.7 feet	Weather	sunny 70F
Corrected Mudline El. (Top of core El.)	4.6 feet	Wind/Seas	W 5-10 MPH; flat
Total Core Depth (Bottom El.)	-4.3 feet	USACE Permit #	1996-22397N
Required Core Length	8.6 feet	Project Name & No.	Novato Creek and North Lagoon Maintenance Dredging 0021B038.00
Total Penetration	8.9 feet	Driller	Bay Marine Services
Total Recovery	8.6 feet	Sampling Method (Vibro/Push)	Vibracore using ss core catcher
Final % Recovery	100 %	Positioning	DGPS
As-Built Sample Coordinates	2224525.700 N	Proposed Dredge Depth El.	-4' MLLW
	5981871.700 E	Est. Core Length (ft) (per SAP)	9.0'
	N 38.08705 Lat	No. of Coring Attempts	1
	W 122.51468 Long	Field Engineer on Site	D. Gewant
		Additional Notes	

Depth feet	Elev. feet	Legend	Sample ID & Interval	ASTM-D2488 Material Description/Classification
0.0'	4.6'			
8.6'	-4.0'		DU-2	Black, Organic Silt, no odor, dense (OL)
				BOTTOM OF CORE

Photos:



Notes: Name (Density, Color, Classification), Moisture, Secondary Grain Size.

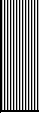
Key: **Fines Content:** trace = <5%, few = 5-10%, little = 15-25%, some = 30-45%, mostly = 50-100%
Color: br = brown, gy = grey, gn = green, yl = yellow, ol = olive, og = orange, bl = black
Odor: Slight, moderate, or strong/ petroleum, hydrocarbon, chemical, sulfur, organic
Relative Density (Non-Cohesive) : v. loose, loose, med. , dense, v. dense
Consistency (Cohesive) : v. soft, soft, firm, hard and v. hard

Signature of Field Engineer:

Bel Marin Keys Community Services District

SEDIMENT CORE PROCESSING LOGS

Sample ID	DU-3A	Page	1 of 1
Vertical Datum	MLLW	Date	7/28/2022
Lead Line Depth	5.6 feet	Sample Collection Time	12:05
Tide (Staion)	5.9 feet	Weather	sunny 70F
Corrected Mudline El. (Top of core El.)	0.3 feet	Wind/Seas	W 5-10 MPH; flat
Total Core Depth (Bottom El.)	-4.7 feet	USACE Permit #	1996-22397N
Required Core Length	4.3 feet	Project Name & No.	Novato Creek and North Lagoon Maintenance Dredging 0021B038.00
Total Penetration	5.0 feet	Driller	Bay Marine Services
Total Recovery	4.3 feet	Sampling Method (Vibro/Push)	Vibracore using ss core catcher
Final % Recovery	100 %	Positioning	DGPS
As-Built Sample Coordinates	2224240.900 N	Proposed Dredge Depth El.	-4' MLLW
	5980767.700 E	Est. Core Length (ft) (per SAP)	3.3'
	N 38.086202 Lat	No. of Coring Attempts	1
	W 122.51849 Long	Field Engineer on Site	D. Gewant
		Additional Notes	

Depth feet	Elev. feet	Legend	Sample ID & Interval	ASTM-D2488 Material Description/Classification
0.0'	0.3'			
4.3'	-4.0'		DU-3A	Black, Organic Silt, no odor, dense (OL)
				BOTTOM OF CORE

Photos:



Notes: Name (Density, Color, Classification), Moisture, Secondary Grain Size.

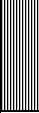
Key: **Fines Content:** trace = <5%, few = 5-10%, little = 15-25%, some = 30-45%, mostly = 50-100%
Color: br = brown, gy = grey, gn = green, yl = yellow, ol = olive, og = orange, bl = black
Odor: Slight, moderate, or strong/ petroleum, hydrocarbon, chemical, sulfur, organic
Relative Density (Non-Cohesive) : v. loose, loose, med. , dense, v. dense
Consistency (Cohesive) : v. soft, soft, firm, hard and v. hard

Signature of Field Engineer:

Bel Marin Keys Community Services District

SEDIMENT CORE PROCESSING LOGS

Sample ID	DU-3B	Page	1 of 1
Vertical Datum	MLLW	Date	7/28/2022
Lead Line Depth	5.6 feet	Sample Collection Time	13:10
Tide (Staion)	5.9 feet	Weather	sunny 70F
Corrected Mudline El. (Top of core El.)	0.3 feet	Wind/Seas	W 5-10 MPH; flat
Total Core Depth (Bottom El.)	-4.7 feet	USACE Permit #	1996-22397N
Required Core Length	4.3 feet	Project Name & No.	Novato Creek and North Lagoon Maintenance Dredging 0021B038.00
Total Penetration	5.0 feet	Driller	Bay Marine Services
Total Recovery	4.3 feet	Sampling Method (Vibro/Push)	Vibracore using ss core catcher
Final % Recovery	100 %	Positioning	DGPS
As-Built Sample Coordinates	2224283.1 N	Proposed Dredge Depth El.	-4' MLLW
	5981628.2 E	Est. Core Length (ft) (per SAP)	3.8'
	N 38.086369 Lat	No. of Coring Attempts	1
	W 122.5155 Long	Field Engineer on Site	D. Gewant
		Additional Notes	

Depth feet	Elev. feet	Legend	Sample ID & Interval	ASTM-D2488 Material Description/Classification
0.0'	0.3'			
4.3'	-4.0'		DU-3B	Black, Organic Silt, no odor, dense (OL)
				BOTTOM OF CORE

Photos:



Notes: Name (Density, Color, Classification), Moisture, Secondary Grain Size.

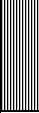
Key: **Fines Content:** trace = <5%, few = 5-10%, little = 15-25%, some = 30-45%, mostly = 50-100%
Color: br = brown, gy = grey, gn = green, yl = yellow, ol = olive, og = orange, bl = black
Odor: Slight, moderate, or strong/ petroleum, hydrocarbon, chemical, sulfur, organic
Relative Density (Non-Cohesive) : v. loose, loose, med. , dense, v. dense
Consistency (Cohesive) : v. soft, soft, firm, hard and v. hard

Signature of Field Engineer:

Bel Marin Keys Community Services District

SEDIMENT CORE PROCESSING LOGS

Sample ID	DU-3C	Page	1 of 1
Vertical Datum	MLLW	Date	7/28/2022
Lead Line Depth	5.2 feet	Sample Collection Time	13:40
Tide (Staion)	5.9 feet	Weather	sunny 70F
Corrected Mudline El. (Top of core El.)	0.7 feet	Wind/Seas	W 5-10 MPH; flat
Total Core Depth (Bottom El.)	-4.3 feet	USACE Permit #	1996-22397N
Required Core Length	4.7 feet	Project Name & No.	Novato Creek and North Lagoon Maintenance Dredging 0021B038.00
Total Penetration	5.0 feet	Driller	Bay Marine Services
Total Recovery	4.7 feet	Sampling Method (Vibro/Push)	Vibracore using ss core catcher
Final % Recovery	100 %	Positioning	DGPS
As-Built Sample Coordinates	2223886.8	Proposed Dredge Depth El.	-4' MLLW
	5981333.4	Est. Core Length (ft) (per SAP)	3.4'
	N 38.08526	No. of Coring Attempts	1
	W 122.51650	Field Engineer on Site	D. Gewant
		Additional Notes	

Depth feet	Elev. feet	Legend	Sample ID & Interval	ASTM-D2488 Material Description/Classification
0.0'	0.7'			
4.7'	-4.0'		DU-3C	Black, Organic Silt, no odor, dense (OL)
				BOTTOM OF CORE

Photos:



Notes: Name (Density, Color, Classification), Moisture, Secondary Grain Size.

Key: **Fines Content:** trace = <5%, few = 5-10%, little = 15-25%, some = 30-45%, mostly = 50-100%
Color: br = brown, gy = grey, gn = green, yl = yellow, ol = olive, og = orange, bl = black
Odor: Slight, moderate, or strong/ petroleum, hydrocarbon, chemical, sulfur, organic
Relative Density (Non-Cohesive) : v. loose, loose, med. , dense, v. dense
Consistency (Cohesive) : v. soft, soft, firm, hard and v. hard

Signature of Field Engineer:

Appendix B
Analytical Chemistry Laboratory Data Reports Submitted
by Eurofins – Calscience

ANALYTICAL REPORT

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Tel: (714)895-5494

Laboratory Job ID: 570-105438-1
Client Project/Site: Bel Marine Keys

For:
Foth Infrastructure & Environment, LLC
384 Bel Marin Keys Boulevard
Suite 140
Novato, California 94949

Attn: Wendy Rocha



Authorized for release by:
9/7/2022 11:14:31 AM

Carla Hollowell, Project Manager I
(714)895-5494
Carla.Hollowell@et.eurofinsus.com

LINKS

Review your project
results through



Have a Question?



Visit us at:

www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1

Table of Contents 2

Definitions/Glossary 3

Case Narrative 4

Client Sample Results 6

Surrogate Summary 25

Isotope Dilution Summary 28

QC Sample Results 30

QC Association Summary 43

Lab Chronicle 48

Certification Summary 51

Method Summary 54

Sample Summary 55

Chain of Custody 56

Receipt Checklists 61



Definitions/Glossary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Job ID: 570-105438-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative 570-105438-1

Comments

The samples were frozen after collection (prior to holding time expiration and pursuant to information obtained from the client) at -18C, and remained frozen until the laboratory was ready to prepare the samples for analysis. Eurofins Calscience, Inc. follows SWAMP criteria and the Puget Sound Protocol (USEPA/PSWQAT, 1997, Table 2) for holding times in marine tissues and / or sediment samples, which states holding times may be extended up to six months to one year (two years for metals) if stored frozen at -18C after collection. Therefore, the sample results have not been flagged as exceeding the EPA Method recommended holding times.

No additional comments.

Receipt

The samples were received on 8/3/2022 11:35 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.0° C.

GC/MS Semi VOA

Method Organotins SIM: The matrix spike / matrix spike duplicate / (MS/MSD) precision for preparation batch 570-254872 and 570-256082 and analytical batch 570-256721 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8270C SIM CON: The continuing calibration verification (CCV) associated with batch 570-256134 recovered above the upper control limit for PCB-201 and PCB-174. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: (CCV 570-256134/3) and (CCVIS 570-256134/2).

Method 8270C SIM CON: The continuing calibration verification (CCV) associated with batch 570-257046 recovered above the upper control limit for PCB-206, PCB-203. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: DU-1 (570-105438-1), DU-2 (570-105438-4) and (CCV 570-257046/3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Dioxin

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: DU-1 (570-105438-1), DU-2 (570-105438-4), DU-3 COMP (570-105438-7), (CCV 320-609487/1), (LCS 320-608401/2-A), (LCSD 320-608401/3-A) and (MB 320-608401/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

Method 9060A: The sample duplicate (DUP) precision for analytical batch 580-402020 was outside control limits. Sample matrix interference is suspected.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

Method D4464: The sample duplicate precision for the following sample associated with analytical batch 570-257988 was flagged as

Case Narrative

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Job ID: 570-105438-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

being outside control limits due to a L.I.M.S. limitation: (570-105330-A-10) and (570-105330-A-10 DU). The mean grain size for the sample and sample duplicate were within RPD acceptance criteria. Method D4464.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Lab Admin

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 8270C SIM CON - PCB Congeners (GC/MS)

Client Sample ID: DU-1
Date Collected: 07/28/22 14:51
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-1
Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-5/8	ND		0.91	0.26	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-18	ND		0.46	0.21	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-28	ND		0.46	0.23	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-31	ND		0.46	0.086	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-33	ND		0.46	0.11	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-44	ND		0.46	0.27	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-49	ND		0.46	0.25	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-52	ND		0.46	0.18	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-56	ND		0.46	0.11	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-60	ND		0.46	0.10	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-66	ND		0.46	0.25	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-70	ND		0.46	0.21	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-74	ND		0.46	0.23	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-87	ND		0.46	0.28	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-95	0.29	J	0.46	0.15	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-97	ND		0.46	0.14	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-99	0.48		0.46	0.20	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-101	0.37	J	0.46	0.25	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-105	ND		0.46	0.24	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-110	0.46		0.46	0.20	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-118	0.55		0.46	0.18	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-128	ND		0.46	0.31	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-132/153	1.8		0.91	0.55	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-138/158	ND		0.91	0.55	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-141	ND		0.46	0.15	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-149	0.65		0.46	0.25	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-151	ND		0.46	0.21	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-156	ND		0.46	0.22	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-170	ND		0.46	0.24	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-174	ND		0.46	0.13	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-177	ND		0.46	0.22	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-180	0.31	J	0.46	0.19	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-183	ND		0.46	0.28	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-187	0.48		0.46	0.20	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-194	ND		0.46	0.25	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-195	ND		0.46	0.14	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-201	ND		0.46	0.32	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1
PCB-203	ND		0.46	0.16	ug/Kg	☆	08/09/22 15:40	08/16/22 09:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	118		20 - 139	08/09/22 15:40	08/16/22 09:55	1
p-Terphenyl-d14 (Surr)	127		37 - 165	08/09/22 15:40	08/16/22 09:55	1

Client Sample ID: DU-2
Date Collected: 07/28/22 15:00
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-4
Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-5/8	ND		0.83	0.24	ug/Kg	☆	08/09/22 15:40	08/16/22 10:16	1
PCB-18	ND		0.41	0.19	ug/Kg	☆	08/09/22 15:40	08/16/22 10:16	1
PCB-28	ND		0.41	0.21	ug/Kg	☆	08/09/22 15:40	08/16/22 10:16	1

Eurofins Calscience

Client Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 8270C SIM CON - PCB Congeners (GC/MS) (Continued)

Client Sample ID: DU-2

Date Collected: 07/28/22 15:00

Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-4

Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-31	ND		0.41	0.078	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-33	ND		0.41	0.098	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-44	ND		0.41	0.25	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-49	ND		0.41	0.23	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-52	ND		0.41	0.16	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-56	ND		0.41	0.098	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-60	ND		0.41	0.092	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-66	ND		0.41	0.23	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-70	ND		0.41	0.19	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-74	ND		0.41	0.21	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-87	ND		0.41	0.26	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-95	ND		0.41	0.14	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-97	ND		0.41	0.13	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-99	ND		0.41	0.18	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-101	ND		0.41	0.22	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-105	ND		0.41	0.22	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-110	ND		0.41	0.18	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-118	ND		0.41	0.17	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-128	ND		0.41	0.28	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-132/153	ND		0.83	0.50	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-138/158	0.52	J	0.83	0.50	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-141	ND		0.41	0.14	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-149	0.55		0.41	0.23	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-151	ND		0.41	0.19	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-156	ND		0.41	0.20	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-170	ND		0.41	0.21	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-174	ND		0.41	0.12	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-177	ND		0.41	0.20	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-180	ND		0.41	0.17	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-183	ND		0.41	0.25	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-187	ND		0.41	0.18	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-194	ND		0.41	0.23	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-195	ND		0.41	0.13	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-201	ND		0.41	0.29	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
PCB-203	ND		0.41	0.14	ug/Kg	✱	08/09/22 15:40	08/16/22 10:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	90		20 - 139				08/09/22 15:40	08/16/22 10:16	1
p-Terphenyl-d14 (Surr)	99		37 - 165				08/09/22 15:40	08/16/22 10:16	1

Client Sample ID: DU-3 COMP

Date Collected: 07/28/22 12:05

Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-7

Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-5/8	ND		0.89	0.25	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-18	ND		0.45	0.21	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-28	ND		0.45	0.22	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-31	ND		0.45	0.084	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-33	ND		0.45	0.11	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-44	ND		0.45	0.27	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1

Eurofins Calscience

Client Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 8270C SIM CON - PCB Congeners (GC/MS) (Continued)

Client Sample ID: DU-3 COMP
Date Collected: 07/28/22 12:05
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-7
Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-49	0.65		0.45	0.24	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-52	0.65		0.45	0.18	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-56	ND		0.45	0.11	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-60	ND		0.45	0.099	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-66	0.79		0.45	0.25	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-70	0.30	J	0.45	0.21	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-74	ND		0.45	0.23	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-87	ND		0.45	0.28	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-95	0.65		0.45	0.15	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-97	ND		0.45	0.14	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-99	0.94		0.45	0.19	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-101	1.3		0.45	0.24	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-105	ND		0.45	0.24	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-110	1.4		0.45	0.20	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-118	1.3		0.45	0.18	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-128	ND		0.45	0.31	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-132/153	2.0		0.89	0.53	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-138/158	1.6		0.89	0.54	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-141	ND		0.45	0.15	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-149	1.5		0.45	0.24	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-151	ND		0.45	0.20	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-156	ND		0.45	0.21	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-170	0.74		0.45	0.23	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-174	ND		0.45	0.13	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-177	ND		0.45	0.21	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-180	1.1		0.45	0.18	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-183	ND		0.45	0.27	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-187	0.76		0.45	0.20	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-194	ND		0.45	0.25	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-195	ND		0.45	0.14	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-201	ND		0.45	0.31	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1
PCB-203	ND		0.45	0.16	ug/Kg	✱	08/09/22 15:40	08/16/22 14:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	79		20 - 139	08/09/22 15:40	08/16/22 14:14	1
p-Terphenyl-d14 (Surr)	100		37 - 165	08/09/22 15:40	08/16/22 14:14	1

Client Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 8270C SIM - PAHs (GC/MS SIM)

Client Sample ID: DU-1

Date Collected: 07/28/22 14:51

Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-1

Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,6,7-Trimethylnaphthalene	ND		23	8.6	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
1-Methylnaphthalene	ND		23	8.9	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
1-Methylphenanthrene	ND		23	9.9	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
2,6-Dimethylnaphthalene	ND		23	5.9	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
2-Methylnaphthalene	ND		23	8.5	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Acenaphthene	ND		23	9.9	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Acenaphthylene	ND		23	9.6	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Anthracene	26		23	8.7	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Benzo[a]anthracene	21 J		23	10	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Benzo[a]pyrene	21 J		23	14	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Benzo[b]fluoranthene	20 J		23	7.5	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Benzo[e]pyrene	14 J		23	5.7	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Benzo[g,h,i]perylene	ND		23	9.9	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Benzo[k]fluoranthene	21 J		23	17	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Biphenyl	ND		23	6.6	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Chrysene	26		23	7.6	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Dibenz(a,h)anthracene	ND		23	8.8	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Dibenzothiophene	ND		23	13	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Fluoranthene	94		23	13	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Fluorene	ND		23	10	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Indeno[1,2,3-cd]pyrene	ND		23	8.5	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Naphthalene	11 J		23	6.5	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Perylene	15 J		23	12	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Phenanthrene	53		23	9.9	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1
Pyrene	140		23	15	ug/Kg	✱	08/09/22 20:20	08/12/22 16:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	74		22 - 130	08/09/22 20:20	08/12/22 16:05	1
Nitrobenzene-d5 (Surr)	67		20 - 145	08/09/22 20:20	08/12/22 16:05	1
p-Terphenyl-d14 (Surr)	109		33 - 147	08/09/22 20:20	08/12/22 16:05	1

Client Sample ID: DU-2

Date Collected: 07/28/22 15:00

Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-4

Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,6,7-Trimethylnaphthalene	ND		21	7.8	ug/Kg	✱	08/09/22 20:20	08/12/22 16:27	1
1-Methylnaphthalene	ND		21	8.1	ug/Kg	✱	08/09/22 20:20	08/12/22 16:27	1
1-Methylphenanthrene	ND		21	9.0	ug/Kg	✱	08/09/22 20:20	08/12/22 16:27	1
2,6-Dimethylnaphthalene	ND		21	5.3	ug/Kg	✱	08/09/22 20:20	08/12/22 16:27	1
2-Methylnaphthalene	ND		21	7.7	ug/Kg	✱	08/09/22 20:20	08/12/22 16:27	1
Acenaphthene	ND		21	9.0	ug/Kg	✱	08/09/22 20:20	08/12/22 16:27	1
Acenaphthylene	ND		21	8.7	ug/Kg	✱	08/09/22 20:20	08/12/22 16:27	1
Anthracene	21		21	7.9	ug/Kg	✱	08/09/22 20:20	08/12/22 16:27	1
Benzo[a]anthracene	24		21	9.3	ug/Kg	✱	08/09/22 20:20	08/12/22 16:27	1
Benzo[a]pyrene	22		21	12	ug/Kg	✱	08/09/22 20:20	08/12/22 16:27	1
Benzo[b]fluoranthene	26		21	6.8	ug/Kg	✱	08/09/22 20:20	08/12/22 16:27	1
Benzo[e]pyrene	16 J		21	5.2	ug/Kg	✱	08/09/22 20:20	08/12/22 16:27	1
Benzo[g,h,i]perylene	ND		21	8.9	ug/Kg	✱	08/09/22 20:20	08/12/22 16:27	1
Benzo[k]fluoranthene	20 J		21	15	ug/Kg	✱	08/09/22 20:20	08/12/22 16:27	1
Biphenyl	ND		21	6.0	ug/Kg	✱	08/09/22 20:20	08/12/22 16:27	1

Eurofins Calscience

Client Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 8270C SIM - PAHs (GC/MS SIM) (Continued)

Client Sample ID: DU-2

Date Collected: 07/28/22 15:00

Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-4

Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	28		21	6.9	ug/Kg	☆	08/09/22 20:20	08/12/22 16:27	1
Dibenz(a,h)anthracene	ND		21	8.0	ug/Kg	☆	08/09/22 20:20	08/12/22 16:27	1
Dibenzothiophene	ND		21	12	ug/Kg	☆	08/09/22 20:20	08/12/22 16:27	1
Fluoranthene	78		21	12	ug/Kg	☆	08/09/22 20:20	08/12/22 16:27	1
Fluorene	ND		21	9.1	ug/Kg	☆	08/09/22 20:20	08/12/22 16:27	1
Indeno[1,2,3-cd]pyrene	8.8 J		21	7.7	ug/Kg	☆	08/09/22 20:20	08/12/22 16:27	1
Naphthalene	8.6 J		21	5.9	ug/Kg	☆	08/09/22 20:20	08/12/22 16:27	1
Perylene	26		21	11	ug/Kg	☆	08/09/22 20:20	08/12/22 16:27	1
Phenanthrene	31		21	9.0	ug/Kg	☆	08/09/22 20:20	08/12/22 16:27	1
Pyrene	130		21	13	ug/Kg	☆	08/09/22 20:20	08/12/22 16:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	83		22 - 130	08/09/22 20:20	08/12/22 16:27	1
Nitrobenzene-d5 (Surr)	58		20 - 145	08/09/22 20:20	08/12/22 16:27	1
p-Terphenyl-d14 (Surr)	111		33 - 147	08/09/22 20:20	08/12/22 16:27	1

Client Sample ID: DU-3 COMP

Date Collected: 07/28/22 12:05

Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-7

Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,6,7-Trimethylnaphthalene	ND		22	8.4	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
1-Methylnaphthalene	ND		22	8.7	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
1-Methylphenanthrene	ND		22	9.7	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
2,6-Dimethylnaphthalene	ND		22	5.7	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
2-Methylnaphthalene	ND		22	8.3	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Acenaphthene	ND		22	9.7	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Acenaphthylene	ND		22	9.4	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Anthracene	19 J		22	8.5	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Benzo[a]anthracene	44		22	10	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Benzo[a]pyrene	53		22	13	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Benzo[b]fluoranthene	39		22	7.3	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Benzo[e]pyrene	38		22	5.6	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Benzo[g,h,i]perylene	17 J		22	9.6	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Benzo[k]fluoranthene	47		22	16	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Biphenyl	ND		22	6.5	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Chrysene	57		22	7.4	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Dibenz(a,h)anthracene	ND		22	8.6	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Dibenzothiophene	ND		22	12	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Fluoranthene	120		22	13	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Fluorene	ND		22	9.8	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Indeno[1,2,3-cd]pyrene	21 J		22	8.3	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Naphthalene	12 J		22	6.3	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Perylene	43		22	12	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Phenanthrene	42		22	9.7	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1
Pyrene	250		22	14	ug/Kg	☆	08/09/22 20:20	08/12/22 16:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	93		22 - 130	08/09/22 20:20	08/12/22 16:48	1
Nitrobenzene-d5 (Surr)	63		20 - 145	08/09/22 20:20	08/12/22 16:48	1
p-Terphenyl-d14 (Surr)	124		33 - 147	08/09/22 20:20	08/12/22 16:48	1

Eurofins Calscience

Client Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: Organotins SIM - Organotins (GC/MS SIM)

Client Sample ID: DU-1

Date Collected: 07/28/22 14:51

Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-1

Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrabutyltin	ND		6.8	3.7	ug/Kg	✱	08/11/22 11:54	08/15/22 17:15	1
Tributyltin	ND		6.8	3.0	ug/Kg	✱	08/11/22 11:54	08/15/22 17:15	1
Dibutyltin	ND		6.8	3.8	ug/Kg	✱	08/11/22 11:54	08/15/22 17:15	1
Monobutyltin	ND	F2	6.8	2.0	ug/Kg	✱	08/11/22 11:54	08/15/22 17:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Triphenyltin	65		39 - 150				08/11/22 11:54	08/15/22 17:15	1

Client Sample ID: DU-2

Date Collected: 07/28/22 15:00

Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-4

Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrabutyltin	ND		6.2	3.4	ug/Kg	✱	08/11/22 11:54	08/15/22 17:34	1
Tributyltin	ND		6.2	2.7	ug/Kg	✱	08/11/22 11:54	08/15/22 17:34	1
Dibutyltin	ND		6.2	3.4	ug/Kg	✱	08/11/22 11:54	08/15/22 17:34	1
Monobutyltin	ND		6.2	1.8	ug/Kg	✱	08/11/22 11:54	08/15/22 17:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Triphenyltin	52		39 - 150				08/11/22 11:54	08/15/22 17:34	1

Client Sample ID: DU-3 COMP

Date Collected: 07/28/22 12:05

Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-7

Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrabutyltin	ND		6.7	3.6	ug/Kg	✱	08/11/22 11:54	08/15/22 17:52	1
Tributyltin	ND		6.7	2.9	ug/Kg	✱	08/11/22 11:54	08/15/22 17:52	1
Dibutyltin	ND		6.7	3.7	ug/Kg	✱	08/11/22 11:54	08/15/22 17:52	1
Monobutyltin	ND		6.7	1.9	ug/Kg	✱	08/11/22 11:54	08/15/22 17:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Triphenyltin	44		39 - 150				08/11/22 11:54	08/15/22 17:52	1

Client Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 8081A - Organochlorine Pesticides (GC)

Client Sample ID: DU-1
Date Collected: 07/28/22 14:51
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-1
Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		2.3	0.15	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
2,4'-DDE	ND		4.6	2.4	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
2,4'-DDT	ND		2.3	0.21	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
4,4'-DDD	ND		2.3	1.1	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
4,4'-DDE	1.8	J	2.3	0.62	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
4,4'-DDT	ND		2.3	0.70	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
Aldrin	ND		2.3	0.83	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
alpha-BHC	ND		2.3	0.18	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
beta-BHC	ND		2.3	0.44	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
Chlordane	ND		11	1.6	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
delta-BHC	ND		2.3	0.34	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
Dieldrin	ND		0.46	0.15	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
Endosulfan I	ND		2.3	0.27	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
Endosulfan II	ND		2.3	0.52	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
Endosulfan sulfate	ND		2.3	0.25	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
Endrin	ND		2.3	0.43	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
Endrin aldehyde	ND		2.3	2.2	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
gamma-BHC (Lindane)	ND		2.3	0.24	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
Heptachlor	ND		2.3	0.14	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
Heptachlor epoxide	ND		2.3	0.19	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1
Toxaphene	ND		11	2.3	ug/Kg	✱	08/09/22 20:41	08/15/22 08:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	82		20 - 131	08/09/22 20:41	08/15/22 08:42	1
DCB Decachlorobiphenyl (Surr)	106		20 - 180	08/09/22 20:41	08/15/22 08:42	1

Client Sample ID: DU-2
Date Collected: 07/28/22 15:00
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-4
Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		2.1	0.13	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
2,4'-DDE	ND		4.1	2.1	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
2,4'-DDT	ND		2.1	0.19	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
4,4'-DDD	ND		2.1	1.0	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
4,4'-DDE	2.0	J	2.1	0.56	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
4,4'-DDT	ND		2.1	0.64	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
Aldrin	ND		2.1	0.75	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
alpha-BHC	ND		2.1	0.17	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
beta-BHC	ND		2.1	0.39	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
Chlordane	ND		10	1.5	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
delta-BHC	ND		2.1	0.31	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
Dieldrin	ND		0.41	0.14	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
Endosulfan I	ND		2.1	0.24	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
Endosulfan II	ND		2.1	0.47	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
Endosulfan sulfate	ND		2.1	0.22	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
Endrin	ND		2.1	0.39	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
Endrin aldehyde	ND		2.1	2.0	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
gamma-BHC (Lindane)	ND		2.1	0.22	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
Heptachlor	ND		2.1	0.12	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
Heptachlor epoxide	ND		2.1	0.18	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1

Eurofins Calscience

Client Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Client Sample ID: DU-2

Date Collected: 07/28/22 15:00

Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-4

Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toxaphene	ND		10	2.1	ug/Kg	✱	08/09/22 20:41	08/15/22 08:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	79		20 - 131				08/09/22 20:41	08/15/22 08:57	1
DCB Decachlorobiphenyl (Surr)	103		20 - 180				08/09/22 20:41	08/15/22 08:57	1

Client Sample ID: DU-3 COMP

Date Collected: 07/28/22 12:05

Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-7

Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	0.24	J p	2.2	0.14	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
2,4'-DDE	ND		4.5	2.3	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
2,4'-DDT	ND		2.2	0.21	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
4,4'-DDD	3.8		2.2	1.1	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
4,4'-DDE	3.4		2.2	0.60	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
4,4'-DDT	ND		2.2	0.69	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
Aldrin	ND		2.2	0.81	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
alpha-BHC	ND		2.2	0.18	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
beta-BHC	ND		2.2	0.43	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
Chlordane	ND		11	1.6	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
delta-BHC	ND		2.2	0.33	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
Dieldrin	ND		0.45	0.15	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
Endosulfan I	ND		2.2	0.26	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
Endosulfan II	ND		2.2	0.51	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
Endosulfan sulfate	ND		2.2	0.24	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
Endrin	ND		2.2	0.42	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
Endrin aldehyde	ND		2.2	2.2	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
gamma-BHC (Lindane)	ND		2.2	0.24	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
Heptachlor	ND		2.2	0.13	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
Heptachlor epoxide	ND		2.2	0.19	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
Toxaphene	ND		11	2.2	ug/Kg	✱	08/09/22 20:41	08/15/22 09:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	76		20 - 131				08/09/22 20:41	08/15/22 09:11	1
DCB Decachlorobiphenyl (Surr)	100		20 - 180				08/09/22 20:41	08/15/22 09:11	1

Client Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: DU-1
Date Collected: 07/28/22 14:51
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-1
Matrix: Sediment

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.79	J q	2.2	0.028	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
1,2,3,7,8-PeCDD	1.0	J	11	0.20	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
1,2,3,7,8-PeCDF	ND		11	0.16	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
2,3,4,7,8-PeCDF	1.0	J	11	0.18	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
1,2,3,4,7,8-HxCDD	0.79	J q B	11	0.27	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
1,2,3,6,7,8-HxCDD	3.0	J B	11	0.31	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
1,2,3,7,8,9-HxCDD	3.0	J B	11	0.27	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
1,2,3,4,7,8-HxCDF	1.5	J B	11	0.14	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
1,2,3,6,7,8-HxCDF	0.99	J B	11	0.15	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
1,2,3,7,8,9-HxCDF	0.31	J q B	11	0.17	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
2,3,4,6,7,8-HxCDF	0.71	J B	11	0.14	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
1,2,3,4,6,7,8-HpCDD	38	B	11	0.40	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
1,2,3,4,6,7,8-HpCDF	8.6	J B	11	0.23	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
1,2,3,4,7,8,9-HpCDF	0.53	J q B	11	0.23	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
OCDD	270	B	22	1.1	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
OCDF	14	J	22	0.13	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
Total TCDD	4.0	q	2.2	0.028	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
Total TCDF	8.6	q	2.2	0.21	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
Total PeCDD	5.7	J q B	11	0.20	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
Total PeCDF	9.1	J q	11	0.17	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
Total HxCDD	34	q B	11	0.28	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
Total HxCDF	15	q B	11	0.15	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
Total HpCDD	98	B	11	0.40	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1
Total HpCDF	22	q B	11	0.23	pg/g	☆	08/09/22 14:26	08/15/22 17:35	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	65		25 - 164	08/09/22 14:26	08/15/22 17:35	1
13C-2,3,7,8-TCDF	59		24 - 169	08/09/22 14:26	08/15/22 17:35	1
13C-1,2,3,7,8-PeCDD	67		25 - 181	08/09/22 14:26	08/15/22 17:35	1
13C-1,2,3,7,8-PeCDF	71		24 - 185	08/09/22 14:26	08/15/22 17:35	1
13C-2,3,4,7,8-PeCDF	69		21 - 178	08/09/22 14:26	08/15/22 17:35	1
13C-1,2,3,4,7,8-HxCDD	72		32 - 141	08/09/22 14:26	08/15/22 17:35	1
13C-1,2,3,6,7,8-HxCDD	63		28 - 130	08/09/22 14:26	08/15/22 17:35	1
13C-1,2,3,4,7,8-HxCDF	74		26 - 152	08/09/22 14:26	08/15/22 17:35	1
13C-1,2,3,6,7,8-HxCDF	63		26 - 123	08/09/22 14:26	08/15/22 17:35	1
13C-1,2,3,7,8,9-HxCDF	65		29 - 147	08/09/22 14:26	08/15/22 17:35	1
13C-2,3,4,6,7,8-HxCDF	68		28 - 136	08/09/22 14:26	08/15/22 17:35	1
13C-1,2,3,4,6,7,8-HpCDD	63		23 - 140	08/09/22 14:26	08/15/22 17:35	1
13C-1,2,3,4,6,7,8-HpCDF	55		28 - 143	08/09/22 14:26	08/15/22 17:35	1
13C-1,2,3,4,7,8,9-HpCDF	66		26 - 138	08/09/22 14:26	08/15/22 17:35	1
13C-OCDD	48		17 - 157	08/09/22 14:26	08/15/22 17:35	1
13C-OCDF	50		17 - 157	08/09/22 14:26	08/15/22 17:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	91		35 - 197	08/09/22 14:26	08/15/22 17:35	1

Client Sample ID: DU-2
Date Collected: 07/28/22 15:00
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-4
Matrix: Sediment

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		2.0	0.033	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1

Eurofins Calscience

Client Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: DU-2

Date Collected: 07/28/22 15:00

Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-4

Matrix: Sediment

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8-PeCDD	ND		10	0.18	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
1,2,3,7,8-PeCDF	0.57	J	10	0.18	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
2,3,4,7,8-PeCDF	0.88	J	10	0.20	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
1,2,3,4,7,8-HxCDD	0.82	J q B	10	0.23	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
1,2,3,6,7,8-HxCDD	2.4	J B	10	0.27	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
1,2,3,7,8,9-HxCDD	2.4	J B	10	0.24	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
1,2,3,4,7,8-HxCDF	1.0	J B	10	0.12	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
1,2,3,6,7,8-HxCDF	0.48	J B	10	0.12	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
1,2,3,7,8,9-HxCDF	0.39	J B	10	0.14	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
2,3,4,6,7,8-HxCDF	0.45	J B	10	0.13	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
1,2,3,4,6,7,8-HpCDD	20	B	10	0.23	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
1,2,3,4,6,7,8-HpCDF	3.6	J B	10	0.21	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
1,2,3,4,7,8,9-HpCDF	0.67	J B	10	0.22	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
OCDD	120	B	20	1.2	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
OCDF	7.6	J	20	0.12	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
Total TCDD	5.8		2.0	0.033	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
Total TCDF	11	q	2.0	0.11	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
Total PeCDD	2.0	J q B	10	0.18	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
Total PeCDF	7.0	J	10	0.19	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
Total HxCDD	26	q B	10	0.25	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
Total HxCDF	11	q B	10	0.13	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
Total HpCDD	53	B	10	0.23	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1
Total HpCDF	12	B	10	0.21	pg/g	☆	08/09/22 14:26	08/15/22 18:22	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	68		25 - 164	08/09/22 14:26	08/15/22 18:22	1
13C-2,3,7,8-TCDF	60		24 - 169	08/09/22 14:26	08/15/22 18:22	1
13C-1,2,3,7,8-PeCDD	68		25 - 181	08/09/22 14:26	08/15/22 18:22	1
13C-1,2,3,7,8-PeCDF	71		24 - 185	08/09/22 14:26	08/15/22 18:22	1
13C-2,3,4,7,8-PeCDF	72		21 - 178	08/09/22 14:26	08/15/22 18:22	1
13C-1,2,3,4,7,8-HxCDD	71		32 - 141	08/09/22 14:26	08/15/22 18:22	1
13C-1,2,3,6,7,8-HxCDD	68		28 - 130	08/09/22 14:26	08/15/22 18:22	1
13C-1,2,3,4,7,8-HxCDF	75		26 - 152	08/09/22 14:26	08/15/22 18:22	1
13C-1,2,3,6,7,8-HxCDF	67		26 - 123	08/09/22 14:26	08/15/22 18:22	1
13C-1,2,3,7,8,9-HxCDF	67		29 - 147	08/09/22 14:26	08/15/22 18:22	1
13C-2,3,4,6,7,8-HxCDF	66		28 - 136	08/09/22 14:26	08/15/22 18:22	1
13C-1,2,3,4,6,7,8-HpCDD	65		23 - 140	08/09/22 14:26	08/15/22 18:22	1
13C-1,2,3,4,6,7,8-HpCDF	58		28 - 143	08/09/22 14:26	08/15/22 18:22	1
13C-1,2,3,4,7,8,9-HpCDF	64		26 - 138	08/09/22 14:26	08/15/22 18:22	1
13C-OCDD	47		17 - 157	08/09/22 14:26	08/15/22 18:22	1
13C-OCDF	48		17 - 157	08/09/22 14:26	08/15/22 18:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	90		35 - 197	08/09/22 14:26	08/15/22 18:22	1

Client Sample ID: DU-3 COMP

Date Collected: 07/28/22 12:05

Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-7

Matrix: Sediment

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		2.2	0.027	pg/g	☆	08/09/22 14:26	08/15/22 19:10	1
1,2,3,7,8-PeCDD	0.85	J	11	0.18	pg/g	☆	08/09/22 14:26	08/15/22 19:10	1

Eurofins Calscience

Client Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: DU-3 COMP
Date Collected: 07/28/22 12:05
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-7
Matrix: Sediment

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8-PeCDF	0.99	J	11	0.18	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
2,3,4,7,8-PeCDF	1.3	J	11	0.20	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
1,2,3,4,7,8-HxCDD	0.90	J B	11	0.29	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
1,2,3,6,7,8-HxCDD	3.6	J B	11	0.33	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
1,2,3,7,8,9-HxCDD	3.4	J B	11	0.29	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
1,2,3,4,7,8-HxCDF	1.3	J B	11	0.10	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
1,2,3,6,7,8-HxCDF	0.78	J B	11	0.10	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
1,2,3,7,8,9-HxCDF	0.45	J B	11	0.11	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
2,3,4,6,7,8-HxCDF	0.51	J q B	11	0.10	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
1,2,3,4,6,7,8-HpCDD	36	B	11	0.32	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
1,2,3,4,6,7,8-HpCDF	7.8	J B	11	0.22	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
1,2,3,4,7,8,9-HpCDF	0.78	J B	11	0.23	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
OCDD	230	B	22	0.67	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
OCDF	13	J	22	0.084	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
Total TCDD	1.7	J	2.2	0.027	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
Total TCDF	17	q	2.2	0.18	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
Total PeCDD	5.2	J q B	11	0.18	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
Total PeCDF	11	q	11	0.19	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
Total HxCDD	36	B	11	0.30	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
Total HxCDF	13	q B	11	0.10	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
Total HpCDD	88	B	11	0.32	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1
Total HpCDF	20	B	11	0.22	pg/g	✱	08/09/22 14:26	08/15/22 19:10	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	65		25 - 164	08/09/22 14:26	08/15/22 19:10	1
13C-2,3,7,8-TCDF	58		24 - 169	08/09/22 14:26	08/15/22 19:10	1
13C-1,2,3,7,8-PeCDD	71		25 - 181	08/09/22 14:26	08/15/22 19:10	1
13C-1,2,3,7,8-PeCDF	73		24 - 185	08/09/22 14:26	08/15/22 19:10	1
13C-2,3,4,7,8-PeCDF	71		21 - 178	08/09/22 14:26	08/15/22 19:10	1
13C-1,2,3,4,7,8-HxCDD	69		32 - 141	08/09/22 14:26	08/15/22 19:10	1
13C-1,2,3,6,7,8-HxCDD	66		28 - 130	08/09/22 14:26	08/15/22 19:10	1
13C-1,2,3,4,7,8-HxCDF	73		26 - 152	08/09/22 14:26	08/15/22 19:10	1
13C-1,2,3,6,7,8-HxCDF	63		26 - 123	08/09/22 14:26	08/15/22 19:10	1
13C-1,2,3,7,8,9-HxCDF	68		29 - 147	08/09/22 14:26	08/15/22 19:10	1
13C-2,3,4,6,7,8-HxCDF	63		28 - 136	08/09/22 14:26	08/15/22 19:10	1
13C-1,2,3,4,6,7,8-HpCDD	73		23 - 140	08/09/22 14:26	08/15/22 19:10	1
13C-1,2,3,4,6,7,8-HpCDF	63		28 - 143	08/09/22 14:26	08/15/22 19:10	1
13C-1,2,3,4,7,8,9-HpCDF	71		26 - 138	08/09/22 14:26	08/15/22 19:10	1
13C-OCDD	61		17 - 157	08/09/22 14:26	08/15/22 19:10	1
13C-OCDF	58		17 - 157	08/09/22 14:26	08/15/22 19:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	90		35 - 197	08/09/22 14:26	08/15/22 19:10	1

Client Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: DU-1

Date Collected: 07/28/22 14:51

Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-1

Matrix: Sediment

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	2.4		2.2	0.073	pg/g	☆	08/09/22 14:26	08/16/22 15:43	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF	67		24 - 169				08/09/22 14:26	08/16/22 15:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	97		35 - 197				08/09/22 14:26	08/16/22 15:43	1

Client Sample ID: DU-2

Date Collected: 07/28/22 15:00

Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-4

Matrix: Sediment

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	2.1		2.0	0.071	pg/g	☆	08/09/22 14:26	08/16/22 16:21	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF	70		24 - 169				08/09/22 14:26	08/16/22 16:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	96		35 - 197				08/09/22 14:26	08/16/22 16:21	1

Client Sample ID: DU-3 COMP

Date Collected: 07/28/22 12:05

Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-7

Matrix: Sediment

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	3.3		2.2	0.088	pg/g	☆	08/09/22 14:26	08/16/22 16:59	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF	67		24 - 169				08/09/22 14:26	08/16/22 16:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	95		35 - 197				08/09/22 14:26	08/16/22 16:59	1

Client Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 6020 - Metals (ICP/MS)

Client Sample ID: DU-1
Date Collected: 07/28/22 14:51
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-1
Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	11.3		1.17	0.214	mg/Kg	☼	08/09/22 11:00	08/11/22 10:29	20
Chromium	85.0		2.35	0.244	mg/Kg	☼	08/09/22 11:00	08/11/22 10:29	20
Copper	53.1		2.35	0.266	mg/Kg	☼	08/09/22 11:00	08/11/22 10:29	20
Lead	24.7		1.17	0.154	mg/Kg	☼	08/09/22 11:00	08/11/22 10:29	20
Nickel	103		2.35	0.223	mg/Kg	☼	08/09/22 11:00	08/11/22 10:29	20
Zinc	122		23.5	1.30	mg/Kg	☼	08/09/22 11:00	08/11/22 10:29	20

Client Sample ID: DU-2
Date Collected: 07/28/22 15:00
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-4
Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	10.8		1.01	0.185	mg/Kg	☼	08/09/22 11:00	08/11/22 10:31	20
Chromium	85.3		2.02	0.210	mg/Kg	☼	08/09/22 11:00	08/11/22 10:31	20
Copper	52.2		2.02	0.229	mg/Kg	☼	08/09/22 11:00	08/11/22 10:31	20
Lead	24.1		1.01	0.132	mg/Kg	☼	08/09/22 11:00	08/11/22 10:31	20
Nickel	98.0		2.02	0.192	mg/Kg	☼	08/09/22 11:00	08/11/22 10:31	20
Zinc	122		20.2	1.12	mg/Kg	☼	08/09/22 11:00	08/11/22 10:31	20

Client Sample ID: DU-3 COMP
Date Collected: 07/28/22 12:05
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-7
Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	11.1		1.15	0.210	mg/Kg	☼	08/09/22 11:00	08/11/22 10:34	20
Chromium	77.8		2.29	0.238	mg/Kg	☼	08/09/22 11:00	08/11/22 10:34	20
Copper	53.1		2.29	0.260	mg/Kg	☼	08/09/22 11:00	08/11/22 10:34	20
Lead	29.7		1.15	0.150	mg/Kg	☼	08/09/22 11:00	08/11/22 10:34	20
Nickel	88.1		2.29	0.218	mg/Kg	☼	08/09/22 11:00	08/11/22 10:34	20
Zinc	118		22.9	1.27	mg/Kg	☼	08/09/22 11:00	08/11/22 10:34	20

Client Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 7471A - Mercury (CVAA)

Client Sample ID: DU-1
Date Collected: 07/28/22 14:51
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-1
Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.272		0.183	0.0297	mg/Kg	☼	08/04/22 18:57	08/05/22 15:15	1

Client Sample ID: DU-2
Date Collected: 07/28/22 15:00
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-4
Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.272		0.169	0.0274	mg/Kg	☼	08/04/22 18:57	08/08/22 13:33	1

Client Sample ID: DU-3 COMP
Date Collected: 07/28/22 12:05
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-7
Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.410		0.186	0.0302	mg/Kg	☼	08/04/22 18:57	08/08/22 13:35	1

Client Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

General Chemistry

Client Sample ID: DU-1
Date Collected: 07/28/22 14:51
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-1
Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	2.85		0.457	0.0221	%	☼		08/25/22 20:59	1
Percent Solids	43.7		0.1	0.1	%			08/08/22 17:43	1

Client Sample ID: DU-2
Date Collected: 07/28/22 15:00
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-4
Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	2.55		0.414	0.0200	%	☼		08/25/22 21:22	1
Percent Solids	48.3		0.1	0.1	%			08/08/22 17:43	1

Client Sample ID: DU-3 COMP
Date Collected: 07/28/22 12:05
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-7
Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	2.48		0.447	0.0216	%	☼		08/25/22 21:30	1
Percent Solids	44.7		0.1	0.1	%			08/08/22 17:43	1

Client Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: DU-1
Date Collected: 07/28/22 14:51
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-1
Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	15.99		0.01	0.01	%			08/19/22 15:36	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			08/19/22 15:36	1
Fine Sand (0.125 to 0.25mm)	22.84		0.01	0.01	%			08/19/22 15:36	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			08/19/22 15:36	1
Medium Sand (0.25 to 0.5 mm)	0.03		0.01	0.01	%			08/19/22 15:36	1
Silt (0.00391 to 0.0625mm)	50.86		0.01	0.01	%			08/19/22 15:36	1
Total Silt and Clay (0 to 0.0626mm)	66.85		0.01	0.01	%			08/19/22 15:36	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			08/19/22 15:36	1
Very Fine Sand (0.0625 to 0.125 mm)	10.27		0.01	0.01	%			08/19/22 15:36	1

Client Sample ID: DU-2
Date Collected: 07/28/22 15:00
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-4
Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	28.93		0.01	0.01	%			08/19/22 15:46	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			08/19/22 15:46	1
Fine Sand (0.125 to 0.25mm)	0.04		0.01	0.01	%			08/19/22 15:46	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			08/19/22 15:46	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			08/19/22 15:46	1
Silt (0.00391 to 0.0625mm)	65.93		0.01	0.01	%			08/19/22 15:46	1
Total Silt and Clay (0 to 0.0626mm)	94.86		0.01	0.01	%			08/19/22 15:46	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			08/19/22 15:46	1
Very Fine Sand (0.0625 to 0.125 mm)	5.09		0.01	0.01	%			08/19/22 15:46	1

Client Sample ID: DU-3 COMP
Date Collected: 07/28/22 12:05
Date Received: 08/03/22 11:35

Lab Sample ID: 570-105438-7
Matrix: Sediment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	21.46		0.01	0.01	%			08/19/22 15:54	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			08/19/22 15:54	1
Fine Sand (0.125 to 0.25mm)	0.89		0.01	0.01	%			08/19/22 15:54	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			08/19/22 15:54	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			08/19/22 15:54	1
Silt (0.00391 to 0.0625mm)	67.91		0.01	0.01	%			08/19/22 15:54	1
Total Silt and Clay (0 to 0.0626mm)	89.37		0.01	0.01	%			08/19/22 15:54	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			08/19/22 15:54	1
Very Fine Sand (0.0625 to 0.125 mm)	9.74		0.01	0.01	%			08/19/22 15:54	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

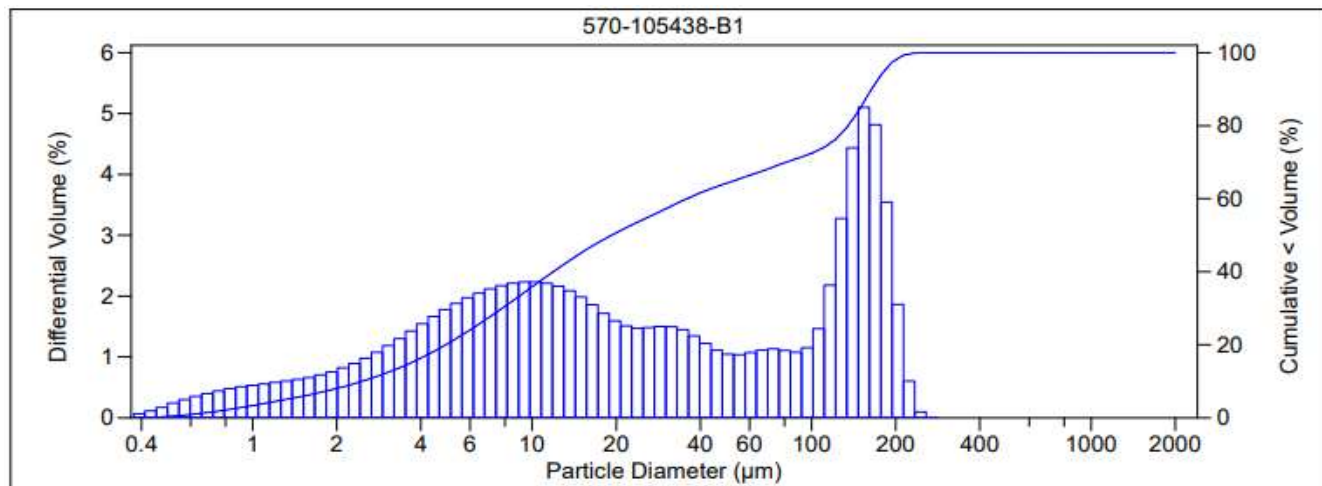
Foth & Van Dyke and Associates, Inc.

Date Sampled: 07/28/22
 Date Received: 08/03/22
 Work Order No: 570-105438
 Date Analyzed: 08/18/22
 Method: ASTM D4464M

Project: Bel Marine Keys

Sample ID	Depth ft	Description	Mean Grain Size mm
DU-1		Silt	0.057

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.03	22.84	10.27	50.86	15.99	66.85



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

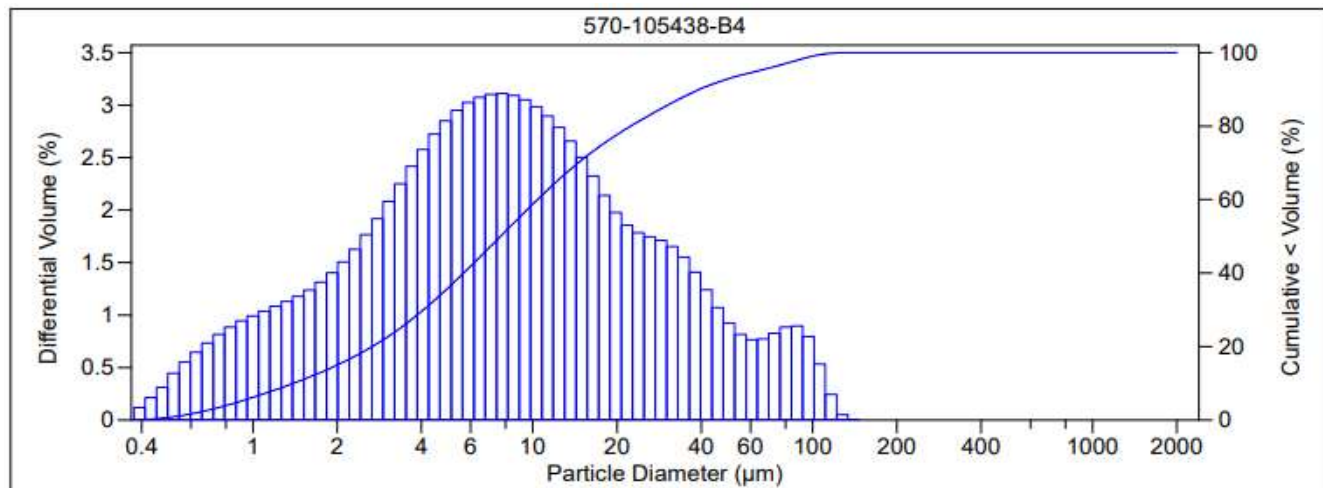
Foth & Van Dyke and Associates, Inc.

Date Sampled: 07/28/22
 Date Received: 08/03/22
 Work Order No: 570-105438
 Date Analyzed: 08/18/22
 Method: ASTM D4464M

Project: Bel Marine Keys

Sample ID	Depth ft	Description	Mean Grain Size mm
DU-2		Silt	0.015

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	0.04	5.09	65.93	28.93	94.86



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

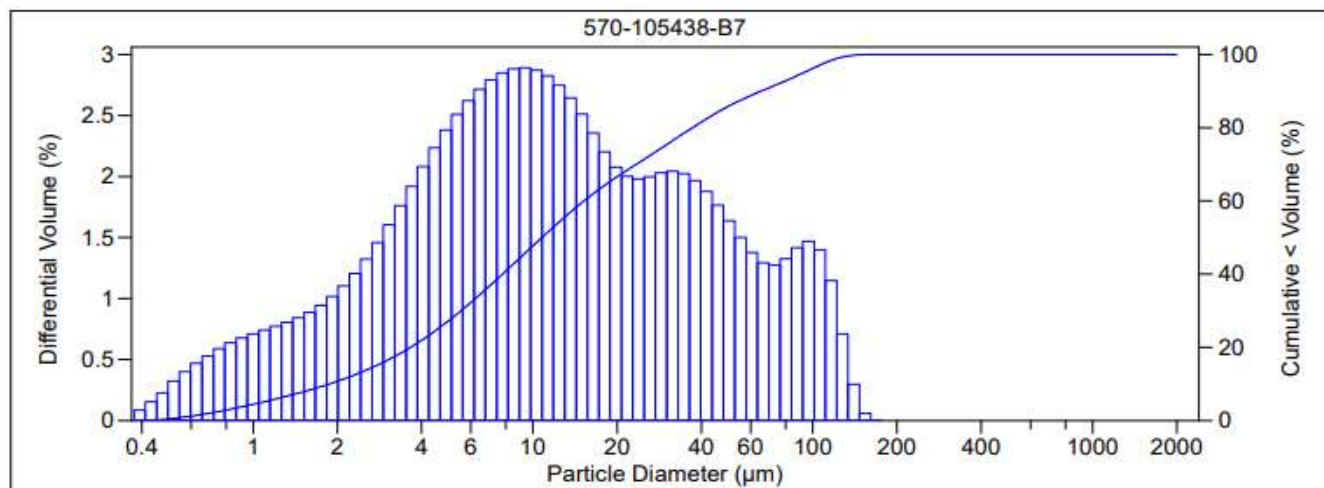
Foth & Van Dyke and Associates, Inc.

Date Sampled: 07/28/22
 Date Received: 08/03/22
 Work Order No: 570-105438
 Date Analyzed: 08/18/22
 Method: ASTM D4464M

Project: Bel Marine Keys

Sample ID	Depth ft	Description	Mean Grain Size mm
DU-3 COMP		Silt	0.023

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	0.89	9.74	67.91	21.46	89.37



V 3.0

Surrogate Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 8270C SIM - PAHs (GC/MS SIM)

Matrix: Sediment

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		FBP (22-130)	NBZ (20-145)	TPHd14 (33-147)
570-105438-1	DU-1	74	67	109
570-105438-4	DU-2	83	58	111
570-105438-7	DU-3 COMP	93	63	124
Surrogate Legend				
FBP = 2-Fluorobiphenyl (Surr)				
NBZ = Nitrobenzene-d5 (Surr)				
TPHd14 = p-Terphenyl-d14 (Surr)				

Method: 8270C SIM - PAHs (GC/MS SIM)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		FBP (22-130)	NBZ (20-145)	TPHd14 (33-147)
LCS 570-255543/2-A	Lab Control Sample	99	110	120
LCSD 570-255543/3-A	Lab Control Sample Dup	89	85	106
MB 570-255543/1-A	Method Blank	86	97	114
Surrogate Legend				
FBP = 2-Fluorobiphenyl (Surr)				
NBZ = Nitrobenzene-d5 (Surr)				
TPHd14 = p-Terphenyl-d14 (Surr)				

Method: 8270C SIM CON - PCB Congeners (GC/MS)

Matrix: Sediment

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		FBP (20-139)	TPHd14 (37-165)
570-105438-1	DU-1	118	127
570-105438-4	DU-2	90	99
570-105438-7	DU-3 COMP	79	100
Surrogate Legend			
FBP = 2-Fluorobiphenyl (Surr)			
TPHd14 = p-Terphenyl-d14 (Surr)			

Method: 8270C SIM CON - PCB Congeners (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		FBP (20-139)	TPHd14 (37-165)
LCS 570-255544/2-A	Lab Control Sample	107	120
LCSD 570-255544/3-A	Lab Control Sample Dup	101	114
MB 570-255544/1-A	Method Blank	109	138
Surrogate Legend			
FBP = 2-Fluorobiphenyl (Surr)			
TPHd14 = p-Terphenyl-d14 (Surr)			

Surrogate Summary

Client: Foth Infrastructure & Environment, LLC

Job ID: 570-105438-1

Project/Site: Bel Marine Keys

Method: Organotins SIM - Organotins (GC/MS SIM)

Matrix: Sediment

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	TPTT (39-150)					
570-105438-1	DU-1	65					
570-105438-1 MS	DU-1	64					
570-105438-1 MSD	DU-1	70					
570-105438-4	DU-2	52					
570-105438-7	DU-3 COMP	44					
Surrogate Legend							
TPTT = Triphenyltin							

Method: Organotins SIM - Organotins (GC/MS SIM)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	TPTT (39-150)					
LCS 570-256082/2-A	Lab Control Sample	73					
LCSD 570-256082/3-A	Lab Control Sample Dup	69					
MB 570-256082/1-A	Method Blank	60					
Surrogate Legend							
TPTT = Triphenyltin							

Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Sediment

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	TCX1 (20-131)	DCB1 (20-180)				
570-105438-1	DU-1	82	106				
570-105438-4	DU-2	79	103				
570-105438-7	DU-3 COMP	76	100				
Surrogate Legend							
TCX = Tetrachloro-m-xylene							
DCB = DCB Decachlorobiphenyl (Surr)							

Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	TCX1 (20-131)	DCB1 (20-180)				
LCS 570-255546/2-A	Lab Control Sample	89	86				
LCS 570-255546/4-A	Lab Control Sample	83	82				
LCSD 570-255546/3-A	Lab Control Sample Dup	71	72				
LCSD 570-255546/5-A	Lab Control Sample Dup	78	69				
MB 570-255546/1-A	Method Blank	88	100				
Surrogate Legend							
TCX = Tetrachloro-m-xylene							
DCB = DCB Decachlorobiphenyl (Surr)							

Surrogate Summary

Client: Foth Infrastructure & Environment, LLC

Job ID: 570-105438-1

Project/Site: Bel Marine Keys

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Sediment

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	37TCDD (35-197)						
570-105438-1	DU-1	91						
570-105438-1 - RA	DU-1	97						
570-105438-4	DU-2	90						
570-105438-4 - RA	DU-2	96						
570-105438-7	DU-3 COMP	90						
570-105438-7 - RA	DU-3 COMP	95						
Surrogate Legend								
37TCDD = 37Cl4-2,3,7,8-TCDD								

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	37TCDD (31-191)						
LCS 320-608401/2-A	Lab Control Sample	95						
LCSD 320-608401/3-A	Lab Control Sample Dup	92						
Surrogate Legend								
37TCDD = 37Cl4-2,3,7,8-TCDD								

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	37TCDD (35-197)						
MB 320-608401/1-A	Method Blank	90						
Surrogate Legend								
37TCDD = 37Cl4-2,3,7,8-TCDD								

Isotope Dilution Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Sediment

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-105438-1	DU-1	65	59	67	71	69	72	63	74
570-105438-1 - RA	DU-1		67						
570-105438-4	DU-2	68	60	68	71	72	71	68	75
570-105438-4 - RA	DU-2		70						
570-105438-7	DU-3 COMP	65	58	71	73	71	69	66	73
570-105438-7 - RA	DU-3 COMP		67						
		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-105438-1	DU-1	63	65	68	63	55	66	48	50
570-105438-1 - RA	DU-1								
570-105438-4	DU-2	67	67	66	65	58	64	47	48
570-105438-4 - RA	DU-2								
570-105438-7	DU-3 COMP	63	68	63	73	63	71	61	58
570-105438-7 - RA	DU-3 COMP								
Surrogate Legend									
TCDD = 13C-2,3,7,8-TCDD									
TCDF = 13C-2,3,7,8-TCDF									
PeCDD = 13C-1,2,3,7,8-PeCDD									
PeCDF = 13C-1,2,3,7,8-PeCDF									
PeCF = 13C-2,3,4,7,8-PeCDF									
HxCDD = 13C-1,2,3,4,7,8-HxCDD									
HxDD = 13C-1,2,3,6,7,8-HxCDD									
HxCDF = 13C-1,2,3,4,7,8-HxCDF									
HxDF = 13C-1,2,3,6,7,8-HxCDF									
HxCF = 13C-1,2,3,7,8,9-HxCDF									
13CHxCF = 13C-2,3,4,6,7,8-HxCDF									
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD									
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF									
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF									
OCDD = 13C-OCDD									
OCDF = 13C-OCDF									

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-608401/2-A	Lab Control Sample	68	63	69	75	75	74	72	85
LCSD 320-608401/3-A	Lab Control Sample Dup	66	64	69	72	73	73	72	83
		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-608401/2-A	Lab Control Sample	78	75	75	70	68	74	62	67
LCSD 320-608401/3-A	Lab Control Sample Dup	75	71	76	72	69	72	61	64
Surrogate Legend									
TCDD = 13C-2,3,7,8-TCDD									

Eurofins Calscience

Isotope Dilution Summary

Client: Foth Infrastructure & Environment, LLC

Job ID: 570-105438-1

Project/Site: Bel Marine Keys

TCDF = 13C-2,3,7,8-TCDF
 PeCDD = 13C-1,2,3,7,8-PeCDD
 PeCDF = 13C-1,2,3,7,8-PeCDF
 PeCF = 13C-2,3,4,7,8-PeCDF
 HxCDD = 13C-1,2,3,4,7,8-HxCDD
 HxDD = 13C-1,2,3,6,7,8-HxCDD
 HxCDF = 13C-1,2,3,4,7,8-HxCDF
 HxDF = 13C-1,2,3,6,7,8-HxCDF
 HxCF = 13C-1,2,3,7,8,9-HxCDF
 13CHxCF = 13C-2,3,4,6,7,8-HxCDF
 HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
 HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
 HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
 OCDD = 13C-OCDD
 OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
MB 320-608401/1-A	Method Blank	57	57	57	65	64	62	61	73
		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
MB 320-608401/1-A	Method Blank	68	68	68	58	58	63	49	55

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
 TCDF = 13C-2,3,7,8-TCDF
 PeCDD = 13C-1,2,3,7,8-PeCDD
 PeCDF = 13C-1,2,3,7,8-PeCDF
 PeCF = 13C-2,3,4,7,8-PeCDF
 HxCDD = 13C-1,2,3,4,7,8-HxCDD
 HxDD = 13C-1,2,3,6,7,8-HxCDD
 HxCDF = 13C-1,2,3,4,7,8-HxCDF
 HxDF = 13C-1,2,3,6,7,8-HxCDF
 HxCF = 13C-1,2,3,7,8,9-HxCDF
 13CHxCF = 13C-2,3,4,6,7,8-HxCDF
 HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
 HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
 HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
 OCDD = 13C-OCDD
 OCDF = 13C-OCDF

QC Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 8270C SIM - PAHs (GC/MS SIM)

Lab Sample ID: MB 570-255543/1-A

Matrix: Solid

Analysis Batch: 256340

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 255543

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,6,7-Trimethylnaphthalene	ND		10	3.8	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
1-Methylnaphthalene	ND		10	3.9	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
1-Methylphenanthrene	ND		10	4.4	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
2,6-Dimethylnaphthalene	ND		10	2.6	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
2-Methylnaphthalene	ND		10	3.7	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Acenaphthene	ND		10	4.3	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Acenaphthylene	ND		10	4.2	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Anthracene	ND		10	3.8	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Benzo[a]anthracene	ND		10	4.5	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Benzo[a]pyrene	ND		10	6.0	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Benzo[b]fluoranthene	ND		10	3.3	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Benzo[e]pyrene	ND		10	2.5	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Benzo[g,h,i]perylene	ND		10	4.3	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Benzo[k]fluoranthene	ND		10	7.4	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Biphenyl	ND		10	2.9	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Chrysene	ND		10	3.3	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Dibenz(a,h)anthracene	ND		10	3.9	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Dibenzothiophene	ND		10	5.6	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Fluoranthene	ND		10	5.6	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Fluorene	ND		10	4.4	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Indeno[1,2,3-cd]pyrene	ND		10	3.7	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Naphthalene	ND		10	2.8	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Perylene	ND		10	5.4	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Phenanthrene	ND		10	4.3	ug/Kg		08/09/22 15:33	08/12/22 10:44	1
Pyrene	ND		10	6.4	ug/Kg		08/09/22 15:33	08/12/22 10:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	86		22 - 130	08/09/22 15:33	08/12/22 10:44	1
Nitrobenzene-d5 (Surr)	97		20 - 145	08/09/22 15:33	08/12/22 10:44	1
p-Terphenyl-d14 (Surr)	114		33 - 147	08/09/22 15:33	08/12/22 10:44	1

Lab Sample ID: LCS 570-255543/2-A

Matrix: Solid

Analysis Batch: 256340

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 255543

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	100	106.1		ug/Kg		106	54 - 132
2-Methylnaphthalene	100	101.6		ug/Kg		102	50 - 127
Acenaphthene	100	100.0		ug/Kg		100	53 - 125
Acenaphthylene	100	111.8		ug/Kg		112	50 - 123
Anthracene	100	108.1		ug/Kg		108	50 - 132
Benzo[a]anthracene	100	111.6		ug/Kg		112	50 - 133
Benzo[a]pyrene	100	110.2		ug/Kg		110	50 - 134
Benzo[b]fluoranthene	100	108.7		ug/Kg		109	50 - 142
Benzo[g,h,i]perylene	100	115.8		ug/Kg		116	50 - 130
Benzo[k]fluoranthene	100	125.0		ug/Kg		125	49 - 150
Chrysene	100	113.7		ug/Kg		114	51 - 129
Dibenz(a,h)anthracene	100	121.6		ug/Kg		122	50 - 133

Eurofins Calscience

QC Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 8270C SIM - PAHs (GC/MS SIM) (Continued)

Lab Sample ID: LCS 570-255543/2-A

Matrix: Solid

Analysis Batch: 256340

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 255543

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoranthene	100	104.2		ug/Kg		104	55 - 127
Fluorene	100	108.2		ug/Kg		108	55 - 127
Indeno[1,2,3-cd]pyrene	100	97.74		ug/Kg		98	50 - 148
Naphthalene	100	96.86		ug/Kg		97	51 - 129
Phenanthrene	100	90.72		ug/Kg		91	50 - 122
Pyrene	100	126.5		ug/Kg		126	50 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	99		22 - 130
Nitrobenzene-d5 (Surr)	110		20 - 145
p-Terphenyl-d14 (Surr)	120		33 - 147

Lab Sample ID: LCSD 570-255543/3-A

Matrix: Solid

Analysis Batch: 256340

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 255543

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
1-Methylnaphthalene	100	98.57		ug/Kg		99	54 - 132	7	20
2-Methylnaphthalene	100	97.07		ug/Kg		97	50 - 127	5	20
Acenaphthene	100	93.71		ug/Kg		94	53 - 125	6	20
Acenaphthylene	100	104.8		ug/Kg		105	50 - 123	6	20
Anthracene	100	108.6		ug/Kg		109	50 - 132	0	20
Benzo[a]anthracene	100	108.1		ug/Kg		108	50 - 133	3	20
Benzo[a]pyrene	100	105.1		ug/Kg		105	50 - 134	5	20
Benzo[b]fluoranthene	100	104.1		ug/Kg		104	50 - 142	4	20
Benzo[g,h,i]perylene	100	105.2		ug/Kg		105	50 - 130	10	20
Benzo[k]fluoranthene	100	120.7		ug/Kg		121	49 - 150	3	20
Chrysene	100	107.2		ug/Kg		107	51 - 129	6	20
Dibenz(a,h)anthracene	100	102.8		ug/Kg		103	50 - 133	17	20
Fluoranthene	100	104.9		ug/Kg		105	55 - 127	1	20
Fluorene	100	102.1		ug/Kg		102	55 - 127	6	20
Indeno[1,2,3-cd]pyrene	100	86.64		ug/Kg		87	50 - 148	12	20
Naphthalene	100	88.93		ug/Kg		89	51 - 129	9	20
Phenanthrene	100	86.94		ug/Kg		87	50 - 122	4	20
Pyrene	100	116.3		ug/Kg		116	50 - 134	8	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Fluorobiphenyl (Surr)	89		22 - 130
Nitrobenzene-d5 (Surr)	85		20 - 145
p-Terphenyl-d14 (Surr)	106		33 - 147

QC Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 8270C SIM CON - PCB Congeners (GC/MS)

Lab Sample ID: MB 570-255544/1-A

Matrix: Solid

Analysis Batch: 256134

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 255544

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-5/8	ND		0.40	0.11	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-18	ND		0.20	0.094	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-28	ND		0.20	0.10	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-31	ND		0.20	0.038	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-33	ND		0.20	0.047	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-44	ND		0.20	0.12	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-49	ND		0.20	0.11	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-52	ND		0.20	0.079	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-56	ND		0.20	0.047	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-60	ND		0.20	0.044	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-66	ND		0.20	0.11	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-70	ND		0.20	0.093	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-74	ND		0.20	0.10	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-87	ND		0.20	0.12	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-95	ND		0.20	0.066	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-97	ND		0.20	0.062	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-99	ND		0.20	0.086	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-101	ND		0.20	0.11	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-105	ND		0.20	0.11	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-110	ND		0.20	0.089	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-118	ND		0.20	0.080	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-128	ND		0.20	0.14	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-132/153	ND		0.40	0.24	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-138/158	ND		0.40	0.24	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-141	ND		0.20	0.066	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-149	ND		0.20	0.11	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-151	ND		0.20	0.092	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-156	ND		0.20	0.095	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-170	ND		0.20	0.10	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-174	ND		0.20	0.057	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-177	ND		0.20	0.094	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-180	ND		0.20	0.083	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-183	ND		0.20	0.12	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-187	ND		0.20	0.089	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-194	ND		0.20	0.11	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-195	ND		0.20	0.062	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-201	ND		0.20	0.14	ug/Kg		08/09/22 15:40	08/15/22 13:31	1
PCB-203	ND		0.20	0.070	ug/Kg		08/09/22 15:40	08/15/22 13:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	109		20 - 139	08/09/22 15:40	08/15/22 13:31	1
p-Terphenyl-d14 (Surr)	138		37 - 165	08/09/22 15:40	08/15/22 13:31	1

QC Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 8270C SIM CON - PCB Congeners (GC/MS) (Continued)

Lab Sample ID: LCS 570-255544/2-A

Matrix: Solid

Analysis Batch: 256134

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 255544

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
PCB-18	50.0	44.06		ug/Kg		88	33 - 114
PCB-28	50.0	44.04		ug/Kg		88	40 - 132
PCB-44	50.0	46.26		ug/Kg		93	38 - 131
PCB-52	50.0	48.53		ug/Kg		97	38 - 131
PCB-66	50.0	51.85		ug/Kg		104	42 - 141
PCB-101	50.0	55.90		ug/Kg		112	40 - 132
PCB-105	50.0	56.04		ug/Kg		112	39 - 135
PCB-118	50.0	57.50		ug/Kg		115	38 - 131
PCB-128	50.0	62.91		ug/Kg		126	43 - 149
PCB-132/153	50.0	66.27		ug/Kg		133	37 - 164
PCB-138/158	50.0	60.66		ug/Kg		121	36 - 124
PCB-170	50.0	61.81		ug/Kg		124	35 - 134
PCB-180	50.0	78.53		ug/Kg		157	38 - 159
PCB-187	50.0	70.54		ug/Kg		141	41 - 147
PCB-201	50.0	76.42		ug/Kg		153	40 - 156

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	107		20 - 139
p-Terphenyl-d14 (Surr)	120		37 - 165

Lab Sample ID: LCSD 570-255544/3-A

Matrix: Solid

Analysis Batch: 256134

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 255544

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-18	50.0	43.18		ug/Kg		86	33 - 114	2	29
PCB-28	50.0	42.48		ug/Kg		85	40 - 132	4	29
PCB-44	50.0	44.65		ug/Kg		89	38 - 131	4	32
PCB-52	50.0	47.53		ug/Kg		95	38 - 131	2	32
PCB-66	50.0	49.22		ug/Kg		98	42 - 141	5	34
PCB-101	50.0	54.66		ug/Kg		109	40 - 132	2	34
PCB-105	50.0	54.25		ug/Kg		108	39 - 135	3	37
PCB-118	50.0	55.88		ug/Kg		112	38 - 131	3	35
PCB-128	50.0	60.70		ug/Kg		121	43 - 149	4	37
PCB-132/153	50.0	63.69		ug/Kg		127	37 - 164	4	38
PCB-138/158	50.0	58.67		ug/Kg		117	36 - 124	3	40
PCB-170	50.0	59.77		ug/Kg		120	35 - 134	3	31
PCB-180	50.0	75.00		ug/Kg		150	38 - 159	5	40
PCB-187	50.0	69.76		ug/Kg		140	41 - 147	1	40
PCB-201	50.0	72.22		ug/Kg		144	40 - 156	6	40

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Fluorobiphenyl (Surr)	101		20 - 139
p-Terphenyl-d14 (Surr)	114		37 - 165

QC Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: Organotins SIM - Organotins (GC/MS SIM)

Lab Sample ID: MB 570-256082/1-A

Matrix: Solid

Analysis Batch: 256721

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 256082

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrabutyltin	ND		3.0	1.6	ug/Kg		08/11/22 11:54	08/15/22 15:42	1
Tributyltin	ND		3.0	1.3	ug/Kg		08/11/22 11:54	08/15/22 15:42	1
Dibutyltin	ND		3.0	1.7	ug/Kg		08/11/22 11:54	08/15/22 15:42	1
Monobutyltin	ND		3.0	0.86	ug/Kg		08/11/22 11:54	08/15/22 15:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tripentyltin	60		39 - 150	08/11/22 11:54	08/15/22 15:42	1

Lab Sample ID: LCS 570-256082/2-A

Matrix: Solid

Analysis Batch: 256721

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 256082

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Tetrabutyltin	20.0	18.24		ug/Kg		91	10 - 153
Tributyltin	20.0	12.76		ug/Kg		64	10 - 126

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tripentyltin	73		39 - 150

Lab Sample ID: LCSD 570-256082/3-A

Matrix: Solid

Analysis Batch: 256721

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 256082

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Tetrabutyltin	20.0	17.96		ug/Kg		90	10 - 153	2	30
Tributyltin	20.0	12.93		ug/Kg		65	10 - 126	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Tripentyltin	69		39 - 150

Lab Sample ID: 570-105438-1 MS

Matrix: Sediment

Analysis Batch: 256721

Client Sample ID: DU-1

Prep Type: Total/NA

Prep Batch: 256082

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Tetrabutyltin	ND		45.5	37.81		ug/Kg	✱	83	10 - 140
Tributyltin	ND		45.5	26.82		ug/Kg	✱	59	10 - 135

Surrogate	MS %Recovery	MS Qualifier	Limits
Tripentyltin	64		39 - 150

Lab Sample ID: 570-105438-1 MSD

Matrix: Sediment

Analysis Batch: 256721

Client Sample ID: DU-1

Prep Type: Total/NA

Prep Batch: 256082

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Tetrabutyltin	ND		45.1	42.98		ug/Kg	✱	95	10 - 140	13	40

Eurofins Calscience

QC Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: Organotins SIM - Organotins (GC/MS SIM) (Continued)

Lab Sample ID: 570-105438-1 MSD

Matrix: Sediment

Analysis Batch: 256721

Client Sample ID: DU-1

Prep Type: Total/NA

Prep Batch: 256082

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Tributyltin	ND		45.1	29.61		ug/Kg	✱	66	10 - 135	10	40
Surrogate	%Recovery	MSD Qualifier	MSD Limits								
Triphenyltin	70		39 - 150								

Method: 8081A - Organochlorine Pesticides (GC)

Lab Sample ID: MB 570-255546/1-A

Matrix: Solid

Analysis Batch: 256532

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 255546

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		1.0	0.064	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
2,4'-DDE	ND		2.0	1.0	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
2,4'-DDT	ND		1.0	0.092	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
4,4'-DDD	ND		1.0	0.50	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
4,4'-DDE	ND		1.0	0.27	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
4,4'-DDT	ND		1.0	0.31	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
Aldrin	ND		1.0	0.37	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
alpha-BHC	ND		1.0	0.080	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
beta-BHC	ND		1.0	0.19	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
Chlordane	ND		5.0	0.71	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
delta-BHC	ND		1.0	0.15	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
Dieldrin	ND		0.20	0.066	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
Endosulfan I	ND		1.0	0.12	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
Endosulfan II	ND		1.0	0.23	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
Endosulfan sulfate	ND		1.0	0.11	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
Endrin	ND		1.0	0.19	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
Endrin aldehyde	ND		1.0	0.98	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
gamma-BHC (Lindane)	ND		1.0	0.11	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
Heptachlor	ND		1.0	0.060	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
Heptachlor epoxide	ND		1.0	0.085	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
Toxaphene	ND		5.0	1.0	ug/Kg		08/09/22 15:44	08/15/22 15:36	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	88		20 - 131				08/09/22 15:44	08/15/22 15:36	1
DCB Decachlorobiphenyl (Surr)	100		20 - 180				08/09/22 15:44	08/15/22 15:36	1

Lab Sample ID: LCS 570-255546/2-A

Matrix: Solid

Analysis Batch: 256532

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 255546

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,4'-DDD	5.00	3.986		ug/Kg		80	54 - 150
4,4'-DDE	5.00	3.790		ug/Kg		76	49 - 146
4,4'-DDT	5.00	3.815		ug/Kg		76	52 - 147
Aldrin	5.00	3.717		ug/Kg		74	28 - 116
alpha-BHC	5.00	4.187		ug/Kg		84	44 - 123

Eurofins Calscience

QC Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 570-255546/2-A

Matrix: Solid

Analysis Batch: 256532

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 255546

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
beta-BHC	5.00	3.857		ug/Kg		77	48 - 127
delta-BHC	5.00	4.398		ug/Kg		88	10 - 149
Dieldrin	5.00	3.885		ug/Kg		78	48 - 132
Endosulfan I	5.00	3.686		ug/Kg		74	44 - 125
Endosulfan II	5.00	3.607		ug/Kg		72	47 - 136
Endosulfan sulfate	5.00	3.954		ug/Kg		79	46 - 133
Endrin	5.00	3.755		ug/Kg		75	43 - 142
Endrin aldehyde	5.00	3.042		ug/Kg		61	29 - 141
gamma-BHC (Lindane)	5.00	4.032		ug/Kg		81	44 - 126
Heptachlor	5.00	3.967		ug/Kg		79	50 - 123
Heptachlor epoxide	5.00	3.920		ug/Kg		78	49 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	89		20 - 131
DCB Decachlorobiphenyl (Surr)	86		20 - 180

Lab Sample ID: LCS 570-255546/4-A

Matrix: Solid

Analysis Batch: 256532

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 255546

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	83		20 - 131
DCB Decachlorobiphenyl (Surr)	82		20 - 180

Lab Sample ID: LCSD 570-255546/3-A

Matrix: Solid

Analysis Batch: 256532

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 255546

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4,4'-DDD	5.00	3.745		ug/Kg		75	54 - 150	6	29
4,4'-DDE	5.00	3.533		ug/Kg		71	49 - 146	7	28
4,4'-DDT	5.00	3.591		ug/Kg		72	52 - 147	6	32
Aldrin	5.00	3.426		ug/Kg		69	28 - 116	8	30
alpha-BHC	5.00	3.892		ug/Kg		78	44 - 123	7	27
beta-BHC	5.00	3.604		ug/Kg		72	48 - 127	7	28
delta-BHC	5.00	3.970		ug/Kg		79	10 - 149	10	27
Dieldrin	5.00	3.598		ug/Kg		72	48 - 132	8	28
Endosulfan I	5.00	3.444		ug/Kg		69	44 - 125	7	29
Endosulfan II	5.00	3.377		ug/Kg		68	47 - 136	7	29
Endosulfan sulfate	5.00	3.756		ug/Kg		75	46 - 133	5	28
Endrin	5.00	3.524		ug/Kg		70	43 - 142	6	27
Endrin aldehyde	5.00	2.877		ug/Kg		58	29 - 141	6	40
gamma-BHC (Lindane)	5.00	3.735		ug/Kg		75	44 - 126	8	28
Heptachlor	5.00	3.681		ug/Kg		74	50 - 123	7	28
Heptachlor epoxide	5.00	3.650		ug/Kg		73	49 - 125	7	28

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Tetrachloro-m-xylene	71		20 - 131

Eurofins Calscience

QC Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCSD 570-255546/3-A

Matrix: Solid

Analysis Batch: 256532

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 255546

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	72		20 - 180

Lab Sample ID: LCSD 570-255546/5-A

Matrix: Solid

Analysis Batch: 256532

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 255546

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Tetrachloro-m-xylene	78		20 - 131
DCB Decachlorobiphenyl (Surr)	69		20 - 180

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-608401/1-A

Matrix: Solid

Analysis Batch: 609487

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 608401

Analyte	MB	MB							
	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		1.0	0.025	pg/g		08/09/22 14:26	08/15/22 14:23	1
2,3,7,8-TCDF	ND		1.0	0.018	pg/g		08/09/22 14:26	08/15/22 14:23	1
1,2,3,7,8-PeCDD	ND		5.0	0.053	pg/g		08/09/22 14:26	08/15/22 14:23	1
1,2,3,7,8-PeCDF	ND		5.0	0.034	pg/g		08/09/22 14:26	08/15/22 14:23	1
2,3,4,7,8-PeCDF	ND		5.0	0.036	pg/g		08/09/22 14:26	08/15/22 14:23	1
1,2,3,4,7,8-HxCDD	0.3780	J	5.0	0.034	pg/g		08/09/22 14:26	08/15/22 14:23	1
1,2,3,6,7,8-HxCDD	0.3586	J q	5.0	0.039	pg/g		08/09/22 14:26	08/15/22 14:23	1
1,2,3,7,8,9-HxCDD	0.3833	J	5.0	0.034	pg/g		08/09/22 14:26	08/15/22 14:23	1
1,2,3,4,7,8-HxCDF	0.2376	J q	5.0	0.024	pg/g		08/09/22 14:26	08/15/22 14:23	1
1,2,3,6,7,8-HxCDF	0.2888	J	5.0	0.023	pg/g		08/09/22 14:26	08/15/22 14:23	1
1,2,3,7,8,9-HxCDF	0.3501	J q	5.0	0.029	pg/g		08/09/22 14:26	08/15/22 14:23	1
2,3,4,6,7,8-HxCDF	0.2186	J q	5.0	0.023	pg/g		08/09/22 14:26	08/15/22 14:23	1
1,2,3,4,6,7,8-HpCDD	0.3686	J	5.0	0.0067	pg/g		08/09/22 14:26	08/15/22 14:23	1
1,2,3,4,6,7,8-HpCDF	0.3457	J q	5.0	0.039	pg/g		08/09/22 14:26	08/15/22 14:23	1
1,2,3,4,7,8,9-HpCDF	0.3247	J q	5.0	0.045	pg/g		08/09/22 14:26	08/15/22 14:23	1
OCDD	1.470	J q	10	0.018	pg/g		08/09/22 14:26	08/15/22 14:23	1
OCDF	ND		10	0.073	pg/g		08/09/22 14:26	08/15/22 14:23	1
Total TCDD	ND		1.0	0.054	pg/g		08/09/22 14:26	08/15/22 14:23	1
Total TCDF	ND		1.0	0.075	pg/g		08/09/22 14:26	08/15/22 14:23	1
Total PeCDD	1.106	J	5.0	0.053	pg/g		08/09/22 14:26	08/15/22 14:23	1
Total PeCDF	ND		5.0	0.63	pg/g		08/09/22 14:26	08/15/22 14:23	1
Total HxCDD	1.120	J q	5.0	0.036	pg/g		08/09/22 14:26	08/15/22 14:23	1
Total HxCDF	1.095	J q	5.0	0.025	pg/g		08/09/22 14:26	08/15/22 14:23	1
Total HpCDD	0.3686	J	5.0	0.0067	pg/g		08/09/22 14:26	08/15/22 14:23	1
Total HpCDF	0.6704	J q	5.0	0.042	pg/g		08/09/22 14:26	08/15/22 14:23	1

	MB	MB							
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	57		25 - 164				08/09/22 14:26	08/15/22 14:23	1
13C-2,3,7,8-TCDF	57		24 - 169				08/09/22 14:26	08/15/22 14:23	1
13C-1,2,3,7,8-PeCDD	57		25 - 181				08/09/22 14:26	08/15/22 14:23	1
13C-1,2,3,7,8-PeCDF	65		24 - 185				08/09/22 14:26	08/15/22 14:23	1

Eurofins Calscience

QC Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-608401/1-A

Matrix: Solid

Analysis Batch: 609487

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 608401

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	64		21 - 178	08/09/22 14:26	08/15/22 14:23	1
13C-1,2,3,4,7,8-HxCDD	62		32 - 141	08/09/22 14:26	08/15/22 14:23	1
13C-1,2,3,6,7,8-HxCDD	61		28 - 130	08/09/22 14:26	08/15/22 14:23	1
13C-1,2,3,4,7,8-HxCDF	73		26 - 152	08/09/22 14:26	08/15/22 14:23	1
13C-1,2,3,6,7,8-HxCDF	68		26 - 123	08/09/22 14:26	08/15/22 14:23	1
13C-1,2,3,7,8,9-HxCDF	68		29 - 147	08/09/22 14:26	08/15/22 14:23	1
13C-2,3,4,6,7,8-HxCDF	68		28 - 136	08/09/22 14:26	08/15/22 14:23	1
13C-1,2,3,4,6,7,8-HpCDD	58		23 - 140	08/09/22 14:26	08/15/22 14:23	1
13C-1,2,3,4,6,7,8-HpCDF	58		28 - 143	08/09/22 14:26	08/15/22 14:23	1
13C-1,2,3,4,7,8,9-HpCDF	63		26 - 138	08/09/22 14:26	08/15/22 14:23	1
13C-OCDD	49		17 - 157	08/09/22 14:26	08/15/22 14:23	1
13C-OCDF	55		17 - 157	08/09/22 14:26	08/15/22 14:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	90		35 - 197	08/09/22 14:26	08/15/22 14:23	1

Lab Sample ID: LCS 320-608401/2-A

Matrix: Solid

Analysis Batch: 609487

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 608401

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	20.0	21.37		pg/g		107	67 - 158
2,3,7,8-TCDF	20.0	21.60		pg/g		108	75 - 158
1,2,3,7,8-PeCDD	100	97.92		pg/g		98	70 - 142
1,2,3,7,8-PeCDF	100	92.36		pg/g		92	80 - 134
2,3,4,7,8-PeCDF	100	95.86		pg/g		96	68 - 160
1,2,3,4,7,8-HxCDD	100	96.60		pg/g		97	70 - 164
1,2,3,6,7,8-HxCDD	100	104.2		pg/g		104	76 - 134
1,2,3,7,8,9-HxCDD	100	102.3		pg/g		102	64 - 162
1,2,3,4,7,8-HxCDF	100	92.03		pg/g		92	72 - 134
1,2,3,6,7,8-HxCDF	100	92.74		pg/g		93	84 - 130
1,2,3,7,8,9-HxCDF	100	92.60		pg/g		93	78 - 130
2,3,4,6,7,8-HxCDF	100	96.04		pg/g		96	70 - 156
1,2,3,4,6,7,8-HpCDD	100	94.73		pg/g		95	70 - 140
1,2,3,4,6,7,8-HpCDF	100	103.0		pg/g		103	82 - 122
1,2,3,4,7,8,9-HpCDF	100	91.80		pg/g		92	78 - 138
OCDD	200	202.2		pg/g		101	78 - 144
OCDF	200	190.3		pg/g		95	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	68		20 - 175
13C-2,3,7,8-TCDF	63		22 - 152
13C-1,2,3,7,8-PeCDD	69		21 - 227
13C-1,2,3,7,8-PeCDF	75		21 - 192
13C-2,3,4,7,8-PeCDF	75		13 - 328
13C-1,2,3,4,7,8-HxCDD	74		21 - 193
13C-1,2,3,6,7,8-HxCDD	72		25 - 163
13C-1,2,3,4,7,8-HxCDF	85		19 - 202

Eurofins Calscience

QC Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-608401/2-A

Matrix: Solid

Analysis Batch: 609487

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 608401

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C-1,2,3,6,7,8-HxCDF	78		21 - 159
13C-1,2,3,7,8,9-HxCDF	75		17 - 205
13C-2,3,4,6,7,8-HxCDF	75		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	70		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	68		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	74		20 - 186
13C-OCDD	62		13 - 199
13C-OCDF	67		13 - 199

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
37Cl4-2,3,7,8-TCDD	95		31 - 191

Lab Sample ID: LCSD 320-608401/3-A

Matrix: Solid

Analysis Batch: 609487

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 608401

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
2,3,7,8-TCDD	20.0	21.43		pg/g		107	67 - 158	0		50
2,3,7,8-TCDF	20.0	21.00		pg/g		105	75 - 158	3		50
1,2,3,7,8-PeCDD	100	95.02		pg/g		95	70 - 142	3		50
1,2,3,7,8-PeCDF	100	95.00		pg/g		95	80 - 134	3		50
2,3,4,7,8-PeCDF	100	94.08		pg/g		94	68 - 160	2		50
1,2,3,4,7,8-HxCDD	100	95.05		pg/g		95	70 - 164	2		50
1,2,3,6,7,8-HxCDD	100	104.5		pg/g		105	76 - 134	0		50
1,2,3,7,8,9-HxCDD	100	100.6		pg/g		101	64 - 162	2		50
1,2,3,4,7,8-HxCDF	100	91.42		pg/g		91	72 - 134	1		50
1,2,3,6,7,8-HxCDF	100	93.27		pg/g		93	84 - 130	1		50
1,2,3,7,8,9-HxCDF	100	93.37		pg/g		93	78 - 130	1		50
2,3,4,6,7,8-HxCDF	100	91.56		pg/g		92	70 - 156	5		50
1,2,3,4,6,7,8-HpCDD	100	91.29		pg/g		91	70 - 140	4		50
1,2,3,4,6,7,8-HpCDF	100	101.1		pg/g		101	82 - 122	2		50
1,2,3,4,7,8,9-HpCDF	100	89.39		pg/g		89	78 - 138	3		50
OCDD	200	211.9		pg/g		106	78 - 144	5		50
OCDF	200	188.1		pg/g		94	63 - 170	1		50

Isotope Dilution	LCSD LCSD		Limits
	%Recovery	Qualifier	
13C-2,3,7,8-TCDD	66		20 - 175
13C-2,3,7,8-TCDF	64		22 - 152
13C-1,2,3,7,8-PeCDD	69		21 - 227
13C-1,2,3,7,8-PeCDF	72		21 - 192
13C-2,3,4,7,8-PeCDF	73		13 - 328
13C-1,2,3,4,7,8-HxCDD	73		21 - 193
13C-1,2,3,6,7,8-HxCDD	72		25 - 163
13C-1,2,3,4,7,8-HxCDF	83		19 - 202
13C-1,2,3,6,7,8-HxCDF	75		21 - 159
13C-1,2,3,7,8,9-HxCDF	71		17 - 205
13C-2,3,4,6,7,8-HxCDF	76		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	72		26 - 166

QC Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-608401/3-A

Matrix: Solid

Analysis Batch: 609487

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 608401

	LCSD	LCSD	
Isotope Dilution	%Recovery	Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDF	69		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	72		20 - 186
13C-OCDD	61		13 - 199
13C-OCDF	64		13 - 199

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
37Cl4-2,3,7,8-TCDD	92		31 - 191

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 570-255263/1-A ^20

Matrix: Solid

Analysis Batch: 256085

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 255263

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.503	0.0919	mg/Kg		08/09/22 11:00	08/11/22 09:38	20
Chromium	ND		1.01	0.104	mg/Kg		08/09/22 11:00	08/11/22 09:38	20
Copper	ND		1.01	0.114	mg/Kg		08/09/22 11:00	08/11/22 09:38	20
Lead	ND		0.503	0.0658	mg/Kg		08/09/22 11:00	08/11/22 09:38	20
Nickel	ND		1.01	0.0955	mg/Kg		08/09/22 11:00	08/11/22 09:38	20
Zinc	ND		10.1	0.557	mg/Kg		08/09/22 11:00	08/11/22 09:38	20

Lab Sample ID: LCS 570-255263/2-A ^20

Matrix: Solid

Analysis Batch: 256085

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 255263

	Spike	LCS	LCS			%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Arsenic	50.5	48.31		mg/Kg		96	80 - 120
Chromium	50.5	50.37		mg/Kg		100	80 - 120
Copper	50.5	50.84		mg/Kg		101	80 - 120
Lead	50.5	50.60		mg/Kg		100	80 - 120
Nickel	50.5	51.47		mg/Kg		102	80 - 120
Zinc	50.5	48.37		mg/Kg		96	80 - 120

Lab Sample ID: LCSD 570-255263/3-A ^20

Matrix: Solid

Analysis Batch: 256085

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 255263

	Spike	LCSD	LCSD			%Rec	RPD	RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	Limit
Arsenic	50.3	48.40		mg/Kg		96	80 - 120	0 20
Chromium	50.3	50.03		mg/Kg		100	80 - 120	1 20
Copper	50.3	51.01		mg/Kg		102	80 - 120	0 20
Lead	50.3	50.81		mg/Kg		101	80 - 120	0 20
Nickel	50.3	51.65		mg/Kg		103	80 - 120	0 20
Zinc	50.3	48.42		mg/Kg		96	80 - 120	0 20

QC Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 570-254584/1-A

Matrix: Solid

Analysis Batch: 254846

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 254584

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0868	0.0141	mg/Kg		08/04/22 18:57	08/05/22 14:58	1

Lab Sample ID: LCS 570-254584/2-A

Matrix: Solid

Analysis Batch: 254846

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 254584

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.385	0.4082		mg/Kg		106	85 - 121

Lab Sample ID: LCSD 570-254584/3-A

Matrix: Solid

Analysis Batch: 254846

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 254584

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.417	0.4459		mg/Kg		107	85 - 121	9	10

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 580-402020/5

Matrix: Solid

Analysis Batch: 402020

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	ND		0.200	0.00967	%			08/25/22 20:51	1

Lab Sample ID: LCS 580-402020/6

Matrix: Solid

Analysis Batch: 402020

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Quad	12.0	11.72		%		98	80 - 120

Lab Sample ID: LCSD 580-402020/7

Matrix: Solid

Analysis Batch: 402020

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon - Quad	12.0	11.74		%		98	80 - 120	0	20

Lab Sample ID: 570-105438-1 MS

Matrix: Sediment

Analysis Batch: 402020

Client Sample ID: DU-1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Quad	2.85		27.4	31.13		%	☆	103	75 - 125

QC Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 570-105438-1 MSD

Matrix: Sediment

Analysis Batch: 402020

Client Sample ID: DU-1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon - Quad	2.85		27.4	31.98		%	✱	106	75 - 125	3	20

Lab Sample ID: 570-105438-1 DU

Matrix: Sediment

Analysis Batch: 402020

Client Sample ID: DU-1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon - Quad	2.85		3.135		%	✱	9	20

QC Association Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

GC/MS Semi VOA

Cleanup Batch: 254872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	Homogenize Prep	
570-105438-4	DU-2	Total/NA	Sediment	Homogenize Prep	
570-105438-7	DU-3 COMP	Total/NA	Sediment	Homogenize Prep	
570-105438-1 MS	DU-1	Total/NA	Sediment	Homogenize Prep	
570-105438-1 MSD	DU-1	Total/NA	Sediment	Homogenize Prep	

Prep Batch: 255543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	3541	254872
570-105438-4	DU-2	Total/NA	Sediment	3541	254872
570-105438-7	DU-3 COMP	Total/NA	Sediment	3541	254872
MB 570-255543/1-A	Method Blank	Total/NA	Solid	3541	
LCS 570-255543/2-A	Lab Control Sample	Total/NA	Solid	3541	
LCSD 570-255543/3-A	Lab Control Sample Dup	Total/NA	Solid	3541	

Prep Batch: 255544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	3541	254872
570-105438-4	DU-2	Total/NA	Sediment	3541	254872
570-105438-7	DU-3 COMP	Total/NA	Sediment	3541	254872
MB 570-255544/1-A	Method Blank	Total/NA	Solid	3541	
LCS 570-255544/2-A	Lab Control Sample	Total/NA	Solid	3541	
LCSD 570-255544/3-A	Lab Control Sample Dup	Total/NA	Solid	3541	

Prep Batch: 256082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	Organotin Prep	254872
570-105438-4	DU-2	Total/NA	Sediment	Organotin Prep	254872
570-105438-7	DU-3 COMP	Total/NA	Sediment	Organotin Prep	254872
MB 570-256082/1-A	Method Blank	Total/NA	Solid	Organotin Prep	
LCS 570-256082/2-A	Lab Control Sample	Total/NA	Solid	Organotin Prep	
LCSD 570-256082/3-A	Lab Control Sample Dup	Total/NA	Solid	Organotin Prep	
570-105438-1 MS	DU-1	Total/NA	Sediment	Organotin Prep	254872
570-105438-1 MSD	DU-1	Total/NA	Sediment	Organotin Prep	254872

Analysis Batch: 256134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-255544/1-A	Method Blank	Total/NA	Solid	8270C SIM CON	255544
LCS 570-255544/2-A	Lab Control Sample	Total/NA	Solid	8270C SIM CON	255544
LCSD 570-255544/3-A	Lab Control Sample Dup	Total/NA	Solid	8270C SIM CON	255544

Analysis Batch: 256340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	8270C SIM	255543
570-105438-4	DU-2	Total/NA	Sediment	8270C SIM	255543
570-105438-7	DU-3 COMP	Total/NA	Sediment	8270C SIM	255543
MB 570-255543/1-A	Method Blank	Total/NA	Solid	8270C SIM	255543

Eurofins Calscience

QC Association Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

GC/MS Semi VOA (Continued)

Analysis Batch: 256340 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-255543/2-A	Lab Control Sample	Total/NA	Solid	8270C SIM	255543
LCSD 570-255543/3-A	Lab Control Sample Dup	Total/NA	Solid	8270C SIM	255543

Analysis Batch: 256721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	Organotins SIM	256082
570-105438-4	DU-2	Total/NA	Sediment	Organotins SIM	256082
570-105438-7	DU-3 COMP	Total/NA	Sediment	Organotins SIM	256082
MB 570-256082/1-A	Method Blank	Total/NA	Solid	Organotins SIM	256082
LCS 570-256082/2-A	Lab Control Sample	Total/NA	Solid	Organotins SIM	256082
LCSD 570-256082/3-A	Lab Control Sample Dup	Total/NA	Solid	Organotins SIM	256082
570-105438-1 MS	DU-1	Total/NA	Sediment	Organotins SIM	256082
570-105438-1 MSD	DU-1	Total/NA	Sediment	Organotins SIM	256082

Analysis Batch: 257046

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	8270C SIM CON	255544
570-105438-4	DU-2	Total/NA	Sediment	8270C SIM CON	255544
570-105438-7	DU-3 COMP	Total/NA	Sediment	8270C SIM CON	255544

GC Semi VOA

Cleanup Batch: 254872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	Homogenize Prep	
570-105438-4	DU-2	Total/NA	Sediment	Homogenize Prep	
570-105438-7	DU-3 COMP	Total/NA	Sediment	Homogenize Prep	

Prep Batch: 255546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	3541	254872
570-105438-4	DU-2	Total/NA	Sediment	3541	254872
570-105438-7	DU-3 COMP	Total/NA	Sediment	3541	254872
MB 570-255546/1-A	Method Blank	Total/NA	Solid	3541	
LCS 570-255546/2-A	Lab Control Sample	Total/NA	Solid	3541	
LCS 570-255546/4-A	Lab Control Sample	Total/NA	Solid	3541	
LCSD 570-255546/3-A	Lab Control Sample Dup	Total/NA	Solid	3541	
LCSD 570-255546/5-A	Lab Control Sample Dup	Total/NA	Solid	3541	

Analysis Batch: 256532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	8081A	255546
570-105438-4	DU-2	Total/NA	Sediment	8081A	255546
570-105438-7	DU-3 COMP	Total/NA	Sediment	8081A	255546
MB 570-255546/1-A	Method Blank	Total/NA	Solid	8081A	255546
LCS 570-255546/2-A	Lab Control Sample	Total/NA	Solid	8081A	255546
LCS 570-255546/4-A	Lab Control Sample	Total/NA	Solid	8081A	255546
LCSD 570-255546/3-A	Lab Control Sample Dup	Total/NA	Solid	8081A	255546
LCSD 570-255546/5-A	Lab Control Sample Dup	Total/NA	Solid	8081A	255546

Eurofins Calscience

QC Association Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Specialty Organics

Prep Batch: 608401

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1 - RA	DU-1	Total/NA	Sediment	HRMS-Sox	
570-105438-1	DU-1	Total/NA	Sediment	HRMS-Sox	
570-105438-4 - RA	DU-2	Total/NA	Sediment	HRMS-Sox	
570-105438-4	DU-2	Total/NA	Sediment	HRMS-Sox	
570-105438-7 - RA	DU-3 COMP	Total/NA	Sediment	HRMS-Sox	
570-105438-7	DU-3 COMP	Total/NA	Sediment	HRMS-Sox	
MB 320-608401/1-A	Method Blank	Total/NA	Solid	HRMS-Sox	
LCS 320-608401/2-A	Lab Control Sample	Total/NA	Solid	HRMS-Sox	
LCSD 320-608401/3-A	Lab Control Sample Dup	Total/NA	Solid	HRMS-Sox	

Analysis Batch: 609487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	1613B	608401
570-105438-4	DU-2	Total/NA	Sediment	1613B	608401
570-105438-7	DU-3 COMP	Total/NA	Sediment	1613B	608401
MB 320-608401/1-A	Method Blank	Total/NA	Solid	1613B	608401
LCS 320-608401/2-A	Lab Control Sample	Total/NA	Solid	1613B	608401
LCSD 320-608401/3-A	Lab Control Sample Dup	Total/NA	Solid	1613B	608401

Analysis Batch: 609831

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1 - RA	DU-1	Total/NA	Sediment	1613B	608401
570-105438-4 - RA	DU-2	Total/NA	Sediment	1613B	608401
570-105438-7 - RA	DU-3 COMP	Total/NA	Sediment	1613B	608401

Metals

Prep Batch: 254584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	7471A	254872
570-105438-4	DU-2	Total/NA	Sediment	7471A	254872
570-105438-7	DU-3 COMP	Total/NA	Sediment	7471A	254872
MB 570-254584/1-A	Method Blank	Total/NA	Solid	7471A	
LCS 570-254584/2-A	Lab Control Sample	Total/NA	Solid	7471A	
LCSD 570-254584/3-A	Lab Control Sample Dup	Total/NA	Solid	7471A	

Analysis Batch: 254846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	7471A	254584
MB 570-254584/1-A	Method Blank	Total/NA	Solid	7471A	254584
LCS 570-254584/2-A	Lab Control Sample	Total/NA	Solid	7471A	254584
LCSD 570-254584/3-A	Lab Control Sample Dup	Total/NA	Solid	7471A	254584

Cleanup Batch: 254872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	Homogenize Prep	
570-105438-4	DU-2	Total/NA	Sediment	Homogenize Prep	
570-105438-7	DU-3 COMP	Total/NA	Sediment	Homogenize Prep	

Eurofins Calscience

QC Association Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Metals

Analysis Batch: 255226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-4	DU-2	Total/NA	Sediment	7471A	254584
570-105438-7	DU-3 COMP	Total/NA	Sediment	7471A	254584

Prep Batch: 255263

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	3050B	254872
570-105438-4	DU-2	Total/NA	Sediment	3050B	254872
570-105438-7	DU-3 COMP	Total/NA	Sediment	3050B	254872
MB 570-255263/1-A ^20	Method Blank	Total/NA	Solid	3050B	
LCS 570-255263/2-A ^20	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 570-255263/3-A ^20	Lab Control Sample Dup	Total/NA	Solid	3050B	

Analysis Batch: 256085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	6020	255263
570-105438-4	DU-2	Total/NA	Sediment	6020	255263
570-105438-7	DU-3 COMP	Total/NA	Sediment	6020	255263
MB 570-255263/1-A ^20	Method Blank	Total/NA	Solid	6020	255263
LCS 570-255263/2-A ^20	Lab Control Sample	Total/NA	Solid	6020	255263
LCSD 570-255263/3-A ^20	Lab Control Sample Dup	Total/NA	Solid	6020	255263

General Chemistry

Cleanup Batch: 254872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	Homogenize Prep	
570-105438-4	DU-2	Total/NA	Sediment	Homogenize Prep	
570-105438-7	DU-3 COMP	Total/NA	Sediment	Homogenize Prep	

Analysis Batch: 255283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	Moisture	254872
570-105438-4	DU-2	Total/NA	Sediment	Moisture	254872
570-105438-7	DU-3 COMP	Total/NA	Sediment	Moisture	254872

Analysis Batch: 402020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	9060A	
570-105438-4	DU-2	Total/NA	Sediment	9060A	
570-105438-7	DU-3 COMP	Total/NA	Sediment	9060A	
MB 580-402020/5	Method Blank	Total/NA	Solid	9060A	
LCS 580-402020/6	Lab Control Sample	Total/NA	Solid	9060A	
LCSD 580-402020/7	Lab Control Sample Dup	Total/NA	Solid	9060A	
570-105438-1 MS	DU-1	Total/NA	Sediment	9060A	
570-105438-1 MSD	DU-1	Total/NA	Sediment	9060A	
570-105438-1 DU	DU-1	Total/NA	Sediment	9060A	

QC Association Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Geotechnical

Analysis Batch: 257988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105438-1	DU-1	Total/NA	Sediment	D4464	
570-105438-4	DU-2	Total/NA	Sediment	D4464	
570-105438-7	DU-3 COMP	Total/NA	Sediment	D4464	

Lab Chronicle

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Client Sample ID: DU-1

Lab Sample ID: 570-105438-1

Date Collected: 07/28/22 14:51

Matrix: Sediment

Date Received: 08/03/22 11:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Prep	3541			20.04 g	2 mL	255543	08/09/22 20:20	UM1W	EET CAL 4
Total/NA	Analysis	8270C SIM		1	1 mL	0 mL	256340	08/12/22 16:05	ULLI	EET CAL 4
Instrument ID: GCMSEEE										
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Prep	3541			20.04 g	2 mL	255544	08/09/22 15:40	UM1W	EET CAL 4
Total/NA	Analysis	8270C SIM CON		1			257046	08/16/22 09:55	AJ2Q	EET CAL 4
Instrument ID: GCMSHHH										
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Prep	Organotin Prep			20.2 g	2 mL	256082	08/11/22 11:54	USUL	EET CAL 4
Total/NA	Analysis	Organotins SIM		1			256721	08/15/22 17:15	ULLI	EET CAL 4
Instrument ID: GCMSY										
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Prep	3541			20.07 g	2 mL	255546	08/09/22 20:41	UM1W	EET CAL 4
Total/NA	Analysis	8081A		1			256532	08/15/22 08:42	N5Y3	EET CAL 4
Instrument ID: GC52A										
Total/NA	Prep	HRMS-Sox	RA		10.47 g	20.0 uL	608401	08/09/22 14:26	CB	EET SAC
Total/NA	Analysis	1613B	RA	1			609831	08/16/22 15:43	DB	EET SAC
Instrument ID: 11D2										
Total/NA	Prep	HRMS-Sox			10.47 g	20.0 uL	608401	08/09/22 14:26	CB	EET SAC
Total/NA	Analysis	1613B		1			609487	08/15/22 17:35	GRB	EET SAC
Instrument ID: DFS 1										
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Prep	3050B			1.95 g	50 mL	255263	08/09/22 11:00	CS5Z	EET CAL 4
Total/NA	Analysis	6020		20			256085	08/11/22 10:29	Y2WS	EET CAL 4
Instrument ID: ICPMS10										
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Prep	7471A			0.52 g	50 mL	254584	08/04/22 18:57	SR3N	EET CAL 4
Total/NA	Analysis	7471A		1			254846	08/05/22 15:15	C0YH	EET CAL 4
Instrument ID: HG7										
Total/NA	Analysis	9060A		1			402020	08/25/22 20:59	FCG	EET SEA
Instrument ID: TAC105										
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Analysis	Moisture		1			255283	08/08/22 17:43	B4QL	EET CAL 4
Instrument ID: BAL62										
Total/NA	Analysis	D4464		1			257988	08/19/22 15:36	SP9M	EET CAL 4
Instrument ID: NOEQUIP										

Lab Chronicle

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Client Sample ID: DU-2

Lab Sample ID: 570-105438-4

Date Collected: 07/28/22 15:00

Matrix: Sediment

Date Received: 08/03/22 11:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Prep	3541			20.01 g	2 mL	255543	08/09/22 20:20	UM1W	EET CAL 4
Total/NA	Analysis	8270C SIM		1	1 mL	0 mL	256340	08/12/22 16:27	ULLI	EET CAL 4
Instrument ID: GCMSEEE										
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Prep	3541			20.01 g	2 mL	255544	08/09/22 15:40	UM1W	EET CAL 4
Total/NA	Analysis	8270C SIM CON		1			257046	08/16/22 10:16	AJ2Q	EET CAL 4
Instrument ID: GCMSHHH										
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Prep	Organotin Prep			20.0 g	2 mL	256082	08/11/22 11:54	USUL	EET CAL 4
Total/NA	Analysis	Organotins SIM		1			256721	08/15/22 17:34	ULLI	EET CAL 4
Instrument ID: GCMSY										
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Prep	3541			20.04 g	2 mL	255546	08/09/22 20:41	UM1W	EET CAL 4
Total/NA	Analysis	8081A		1			256532	08/15/22 08:57	N5Y3	EET CAL 4
Instrument ID: GC52A										
Total/NA	Prep	HRMS-Sox	RA		10.25 g	20.0 uL	608401	08/09/22 14:26	CB	EET SAC
Total/NA	Analysis	1613B	RA	1			609831	08/16/22 16:21	DB	EET SAC
Instrument ID: 11D2										
Total/NA	Prep	HRMS-Sox			10.25 g	20.0 uL	608401	08/09/22 14:26	CB	EET SAC
Total/NA	Analysis	1613B		1			609487	08/15/22 18:22	GRB	EET SAC
Instrument ID: DFS 1										
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Prep	3050B			2.05 g	50 mL	255263	08/09/22 11:00	CS5Z	EET CAL 4
Total/NA	Analysis	6020		20			256085	08/11/22 10:31	Y2WS	EET CAL 4
Instrument ID: ICPMS10										
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Prep	7471A			0.51 g	50 mL	254584	08/04/22 18:57	SR3N	EET CAL 4
Total/NA	Analysis	7471A		1			255226	08/08/22 13:33	C0YH	EET CAL 4
Instrument ID: HG7										
Total/NA	Analysis	9060A		1			402020	08/25/22 21:22	FCG	EET SEA
Instrument ID: TAC105										
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Analysis	Moisture		1			255283	08/08/22 17:43	B4QL	EET CAL 4
Instrument ID: BAL62										
Total/NA	Analysis	D4464		1			257988	08/19/22 15:46	SP9M	EET CAL 4
Instrument ID: NOEQUIP										

Lab Chronicle

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Client Sample ID: DU-3 COMP

Lab Sample ID: 570-105438-7

Date Collected: 07/28/22 12:05

Matrix: Sediment

Date Received: 08/03/22 11:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Prep	3541			20.03 g	2 mL	255543	08/09/22 20:20	UM1W	EET CAL 4
Total/NA	Analysis	8270C SIM		1	1 mL	0 mL	256340	08/12/22 16:48	ULLI	EET CAL 4
Instrument ID: GCMSEEE										
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Prep	3541			20.03 g	2 mL	255544	08/09/22 15:40	UM1W	EET CAL 4
Total/NA	Analysis	8270C SIM CON		1			257046	08/16/22 14:14	AJ2Q	EET CAL 4
Instrument ID: GCMSHHH										
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Prep	Organotin Prep			20.1 g	2 mL	256082	08/11/22 11:54	USUL	EET CAL 4
Total/NA	Analysis	Organotins SIM		1			256721	08/15/22 17:52	ULLI	EET CAL 4
Instrument ID: GCMSY										
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Prep	3541			20.05 g	2 mL	255546	08/09/22 20:41	UM1W	EET CAL 4
Total/NA	Analysis	8081A		1			256532	08/15/22 09:11	N5Y3	EET CAL 4
Instrument ID: GC52A										
Total/NA	Prep	HRMS-Sox	RA		10.30 g	20.0 uL	608401	08/09/22 14:26	CB	EET SAC
Total/NA	Analysis	1613B	RA	1			609831	08/16/22 16:59	DB	EET SAC
Instrument ID: 11D2										
Total/NA	Prep	HRMS-Sox			10.30 g	20.0 uL	608401	08/09/22 14:26	CB	EET SAC
Total/NA	Analysis	1613B		1			609487	08/15/22 19:10	GRB	EET SAC
Instrument ID: DFS 1										
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Prep	3050B			1.95 g	50 mL	255263	08/09/22 11:00	CS5Z	EET CAL 4
Total/NA	Analysis	6020		20			256085	08/11/22 10:34	Y2WS	EET CAL 4
Instrument ID: ICPMS10										
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Prep	7471A			0.50 g	50 mL	254584	08/04/22 18:57	SR3N	EET CAL 4
Total/NA	Analysis	7471A		1			255226	08/08/22 13:35	C0YH	EET CAL 4
Instrument ID: HG7										
Total/NA	Analysis	9060A		1			402020	08/25/22 21:30	FCG	EET SEA
Instrument ID: TAC105										
Total/NA	Cleanup	Homogenize Prep					254872	08/04/22 14:00	KZX6	EET CAL 4
Total/NA	Analysis	Moisture		1			255283	08/08/22 17:43	B4QL	EET CAL 4
Instrument ID: BAL62										
Total/NA	Analysis	D4464		1			257988	08/19/22 15:54	SP9M	EET CAL 4
Instrument ID: NOEQUIP										

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

McC Campbell = McC Campbell Analytical, Inc., 1534 Willow Pass Road, Pittsburg, CA 94565, TEL (925)252-9262

Eurofins Calscience

Accreditation/Certification Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Laboratory: Eurofins Calscience

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8081A	3541	Sediment	2,4'-DDD
8081A	3541	Sediment	2,4'-DDE
8081A	3541	Sediment	2,4'-DDT
8270C SIM	3541	Sediment	1,6,7-Trimethylnaphthalene
8270C SIM	3541	Sediment	1-Methylnaphthalene
8270C SIM	3541	Sediment	1-Methylphenanthrene
8270C SIM	3541	Sediment	2,6-Dimethylnaphthalene
8270C SIM	3541	Sediment	Benzo[e]pyrene
8270C SIM	3541	Sediment	Biphenyl
8270C SIM	3541	Sediment	Dibenzothiophene
8270C SIM	3541	Sediment	Perylene
8270C SIM	3541	Sediment	Pyrene
8270C SIM CON	3541	Sediment	PCB-101
8270C SIM CON	3541	Sediment	PCB-105
8270C SIM CON	3541	Sediment	PCB-110
8270C SIM CON	3541	Sediment	PCB-118
8270C SIM CON	3541	Sediment	PCB-128
8270C SIM CON	3541	Sediment	PCB-132/153
8270C SIM CON	3541	Sediment	PCB-138/158
8270C SIM CON	3541	Sediment	PCB-141
8270C SIM CON	3541	Sediment	PCB-149
8270C SIM CON	3541	Sediment	PCB-151
8270C SIM CON	3541	Sediment	PCB-156
8270C SIM CON	3541	Sediment	PCB-170
8270C SIM CON	3541	Sediment	PCB-174
8270C SIM CON	3541	Sediment	PCB-177
8270C SIM CON	3541	Sediment	PCB-18
8270C SIM CON	3541	Sediment	PCB-180
8270C SIM CON	3541	Sediment	PCB-183
8270C SIM CON	3541	Sediment	PCB-187
8270C SIM CON	3541	Sediment	PCB-194
8270C SIM CON	3541	Sediment	PCB-195
8270C SIM CON	3541	Sediment	PCB-201
8270C SIM CON	3541	Sediment	PCB-203
8270C SIM CON	3541	Sediment	PCB-28
8270C SIM CON	3541	Sediment	PCB-31
8270C SIM CON	3541	Sediment	PCB-33
8270C SIM CON	3541	Sediment	PCB-44
8270C SIM CON	3541	Sediment	PCB-49
8270C SIM CON	3541	Sediment	PCB-5/8
8270C SIM CON	3541	Sediment	PCB-52
8270C SIM CON	3541	Sediment	PCB-56
8270C SIM CON	3541	Sediment	PCB-60
8270C SIM CON	3541	Sediment	PCB-66
8270C SIM CON	3541	Sediment	PCB-70

Accreditation/Certification Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Laboratory: Eurofins Calscience (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8270C SIM CON	3541	Sediment	PCB-74
8270C SIM CON	3541	Sediment	PCB-87
8270C SIM CON	3541	Sediment	PCB-95
8270C SIM CON	3541	Sediment	PCB-97
8270C SIM CON	3541	Sediment	PCB-99
D4464		Sediment	Clay (less than 0.00391 mm)
D4464		Sediment	Coarse Sand (0.5mm to 1mm)
D4464		Sediment	Fine Sand (0.125 to 0.25mm)
D4464		Sediment	Gravel (greater than 2 mm)
D4464		Sediment	Medium Sand (0.25 to 0.5 mm)
D4464		Sediment	Silt (0.00391 to 0.0625mm)
D4464		Sediment	Total Silt and Clay (0 to 0.0626mm)
D4464		Sediment	Very Coarse Sand (1 to 2mm)
D4464		Sediment	Very Fine Sand (0.0625 to 0.125 mm)
Moisture		Sediment	Percent Solids
Organotins SIM	Organotin Prep	Sediment	Dibutyltin
Organotins SIM	Organotin Prep	Sediment	Monobutyltin
Organotins SIM	Organotin Prep	Sediment	Tetrabutyltin
Organotins SIM	Organotin Prep	Sediment	Tributyltin

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-18-22
Arkansas DEQ	State	88-0691	06-17-22 *
California	State	2897	01-31-23
Colorado	State	CA0004	08-31-22
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-30-23
Hawaii	State	<cert No.>	01-29-23
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-22
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-23
Oregon	NELAP	4040	01-29-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Calscience

Accreditation/Certification Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Laboratory: Eurofins Sacramento (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	01-23-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-22
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-08-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	P330-20-00031	02-10-23
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Calscience

Method Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Method	Method Description	Protocol	Laboratory
8270C SIM	PAHs (GC/MS SIM)	SW846	EET CAL 4
8270C SIM CON	PCB Congeners (GC/MS)	SW846	EET CAL 4
Organotins SIM	Organotins (GC/MS SIM)	Lab SOP	EET CAL 4
8081A	Organochlorine Pesticides (GC)	SW846	EET CAL 4
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
6020	Metals (ICP/MS)	SW846	EET CAL 4
7471A	Mercury (CVAA)	SW846	EET CAL 4
9060A	Organic Carbon, Total (TOC)	SW846	EET SEA
Moisture	Percent Moisture	EPA	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
6010B	SW846 6010B Metals by ICP	SW846	McC Campbell
3050B	Preparation, Metals	SW846	EET CAL 4
3541	Automated Soxhlet Extraction	SW846	EET CAL 4
7471A	Preparation, Mercury	SW846	EET CAL 4
Homogenize Prep	Preparation, Homogenization	None	EET CAL 4
HRMS-Sox	Soxhlet Extraction	EPA	EET SAC
Organotin Prep	Extraction (Organotins)	None	EET CAL 4

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

Lab SOP = Laboratory Standard Operating Procedure

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

McC Campbell = McC Campbell Analytical, Inc., 1534 Willow Pass Road, Pittsburg, CA 94565, TEL (925)252-9262

Sample Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-105438-1	DU-1	Sediment	07/28/22 14:51	08/03/22 11:35
570-105438-4	DU-2	Sediment	07/28/22 15:00	08/03/22 11:35
570-105438-7	DU-3 COMP	Sediment	07/28/22 12:05	08/03/22 11:35



Cals ience

7440 Lincoln Way Garden Grove CA 92641-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofins.com or call us.

LABORATORY CLIENT: Foth & Van Dyke and Associates, Inc.

ADDRESS 755 Baywood Drive, Suite 228
CITY Petaluma STATE CA ZIP 94954
TEL 508-642-2469 E-MAIL Wendy.Rocha@foth.com

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☒ STANDARD
☐ COELT EDF GLOBAL ID LOG CODE:

LAB USE ONLY	SAMPLE ID	SAMPLING		MATRIX	NO OF CONT.	LOG CODE:		
		DATE	TIME			Unpreserved	Preserved	Field Filtered
1	DU-1	7/28	751	SOIL	4 ✓	X		
2	DU-1-ARCHIVE	7/28	251	SOIL	1 ✓	X		
3	DU-1Z-ARCHIVE	7/28	751	SOIL	1 ✓	X		
4	DU-2	7/29	300	SOIL	4 ✓	X		
5	DU-2-ARCHIVE	7/29	330	SOIL	1 ✓	X		
6	DU-2Z-ARCHIVE	7/29	330	SOIL	1 ✓	X		
7	DU-3 COMP	7/28	1205	SOIL	4 ✓	X		
8	DU-3-ARCHIVE	7/28	1205	SOIL	1 ✓	X		
9	DU-3Z-ARCHIVE	7/28	140	SOIL	1 ✓	X		
10	DU-3A-ARCHIVE	7/28	1205	SOIL	1 ✓	X		
11	DU-3AZ-ARCHIVE	7/28	1705	SOIL	1 ✓	X		

☒ 1613B - Full List w/ Totals	☒ 9060A_DW - Total Organic Carbon	☒ 6020 - (MOD) California Administrative	☒ 7471A - Mercury	☒ SUBCONTRACT - Ag, Cd, Se by EPA 6010B	☒ 8270C_SIM_PAH - SIM PAH w/Add	☒ 8270C_SIM_CON - (MOD) Regional Monitoring Program (RMP)	☒ 8081A - (MOD) Custom 8081A List	☒ D464 - Full Analyte List	☒ Organotins_SIM - Full Analyte List
---	---	--	---	---	---	---	---	--	--



570-105438 Chain of Custody

Relinquished by (Signature) <i>Wendy Rocha</i>	Date: 8/1/22	Time: 12:10
Relinquished by (Signature) <i>Wendy Rocha</i>	Date: 8/2/22	Time: 11:35
Relinquished by (Signature)	Date:	Time:





Ca'science

7440 Lincoln Way Garden Grove, CA 92841-1427 • (714) 895-5494
For courier service / sample drop off information contact us26_sales@eurofins.com or call us.

LABORATORY CLIENT		Foth & Van Dyke and Associates, Inc.	
ADDRESS		755 Baywood Drive, Suite 228	
CITY	Petaluma	STATE	CA
ZIP	94954		
TEL	508-642-2469	E-MAIL	Wendy.Rocha@foth.com
TURNAROUND TIME (Rush surcharges may apply to any TAT not 'STANDARD')			
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☒ STANDARD			
☐ COELT EDF		GLOBAL ID	
SPECIAL INSTRUCTIONS			
Analysis on archive samples not to be run unless directed by Foth			
LAB USE ONLY	SAMPLE ID	SAMPLING DATE	NO. OF CONT
12	DU-3B-ARCHIVE	7/28 110	1 ✓
13	DU-3BZ-ARCHIVE	7/28 110	1 ✓
14	DU-3C-ARCHIVE	7/28 140	1 ✓
15	DU-3CZ-ARCHIVE	7/28 140	1 ✓
LOG CODE			
Unpreserved			
Preserved			
Field Filtered			
1613B - Full List w/ Totals			
☐ 9060A_DW - Total Organic Carbon			
☐ 6020 - (MOD) California Administrative			
☐ 7471A - Mercury			
☐ SUBCONTRACT - Ag, Cd, Se by EPA 6010B			
☐ 8270C_SIM_PAH - SIM PAH w/Add			
☐ 8270C_SIM_CON - (MOD) Regional Monitoring Program (RMP)			
☐ 8081A - (MOD) Custom 8081A List			
☐ D4464 - Full Analyte List			
☐ Organotins_SIM - Full Analyte List			
Please check box or fill in blank as needed			
REQUESTED ANALYSES			
CLIENT PROJECT NAME / NUMBER			
P.O. NO.			
PROJECT CONTACT			
SAMPLER(S), (PRINT)			
DATE			
PAGE			
2 OF 6			
WO # / LAB USE ONLY			
CHAIN OF CUSTODY RECORD			
105438			

824501

8/1/22, 4 06 PM



570-105438 Waybill

Ship From

EUROFINS CALSCIENCE, INC
ALAN KEMP
5063 COMMERCIAL CIRCLE
H
CONCORD, CA 94520

Tracking #: 557442796

NPS

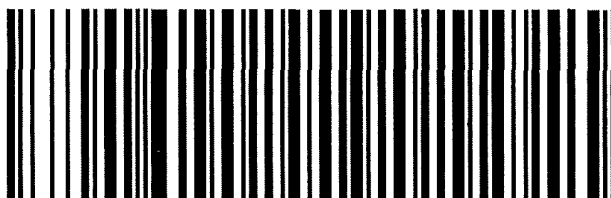


Ship To

EUROFINS CALSCIENCE TUSTIN
SAMPLE RECEIVING
2841 DOW AVENUE
SUITE 100
TUSTIN, CA 92780

TUSTIN

S10248B



69318965

COD: \$0.00

Weight: 0 lb(s)

Reference:

FOTH

Delivery Instructions:

Signature Type: STANDARD

ORC CA927-KB0

Print Date: 8/1/2022 4:06 PM

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

Step 1: Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer.

Step 2: Fold this page in half.

Step 3: Securely attach this label to your package and do not cover the barcode.

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all of the General Logistics Systems US, Inc. (GLS) service terms & conditions including, but not limited to; limits of liability, declared value conditions, and claim procedures which are available on our website at www.gls-us.com.

Chain of Custody Record



Environmental Testing
America



Client Information (Sub Contract Lab)		Lab PM: Hollowell, Carla		Carrier Tracking No(s): 570-182137.1		COC No: 570-182137.1	
Client Contact: Shipping/Receiving		E-Mail: Carla.Hollowell@et.eurofins.com		State of Origin: California		Page: Page 1 of 1	
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State - California		Job #: 570-105438-1		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anichlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - NaHSO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)	
Address: 880 Riverside Parkway, City: West Sacramento State, Zip: CA, 95605 Phone: 916-373-5600(Tel) 916-372-1059(Fax) Email:		Due Date Requested: 8/19/2022 TAT Requested (days):		Analysis Requested		Total Number of Containers	
PO #: WO #: Project #: 57011407 SSOW#:		Field Filled Sample (Yes or No)		Perform MS/MSD (Yes or No)		1618/HRMS_Sox_P Full List w/ Totals	
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)	
DU-1 (570-105438-1)		7/28/22		14:51 Pacific		Solid	
DU-2 (570-105438-4)		7/28/22		15:00 Pacific		Solid	
DU-3 COMP (570-105438-7)		7/28/22		12:05 Pacific		Solid	
570-105438 Chain of Custody							
Special Instructions/Note:							

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Unconfirmed		Return To Client ☐ Disposal By Lab ☐ Archive For ☐ Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:	
Primary Deliverable Rank: 2		Method of Shipment:	
Date:		Time:	
Relinquished by:		Company:	
Relinquished by:		Company:	
Relinquished by:		Company:	
Custody Seals Intact:		Cooler Temperature(s) °C and Other Remarks:	
Δ Yes Δ No		15.0c	

1
 2
 3
 4
 5
 6
 7
 8
 9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 24
 25
 26
 27
 28
 29
 30
 31
 32
 33
 34
 35
 36
 37
 38
 39
 40
 41
 42
 43
 44
 45
 46
 47
 48
 49
 50
 51
 52
 53
 54
 55
 56
 57
 58
 59
 60
 61
 62
 63
 64
 65
 66
 67
 68
 69
 70
 71
 72
 73
 74
 75
 76
 77
 78
 79
 80
 81
 82
 83
 84
 85
 86
 87
 88
 89
 90
 91
 92
 93
 94
 95
 96
 97
 98
 99
 100
 101
 102
 103
 104
 105
 106
 107
 108
 109
 110
 111
 112
 113
 114
 115
 116
 117
 118
 119
 120
 121
 122
 123
 124
 125
 126
 127
 128
 129
 130
 131
 132
 133
 134
 135
 136
 137
 138
 139
 140
 141
 142
 143
 144
 145
 146
 147
 148
 149
 150
 151
 152
 153
 154
 155
 156
 157
 158
 159
 160
 161
 162
 163
 164
 165
 166
 167
 168
 169
 170
 171
 172
 173
 174
 175
 176
 177
 178
 179
 180
 181
 182
 183
 184
 185
 186
 187
 188
 189
 190
 191
 192
 193
 194
 195
 196
 197
 198
 199
 200
 201
 202
 203
 204
 205
 206
 207
 208
 209
 210
 211
 212
 213
 214
 215
 216
 217
 218
 219
 220
 221
 222
 223
 224
 225
 226
 227
 228
 229
 230
 231
 232
 233
 234
 235
 236
 237
 238
 239
 240
 241
 242
 243
 244
 245
 246
 247
 248
 249
 250
 251
 252
 253
 254
 255
 256
 257
 258
 259
 260
 261
 262
 263
 264
 265
 266
 267
 268
 269
 270
 271
 272
 273
 274
 275
 276
 277
 278
 279
 280
 281
 282
 283
 284
 285
 286
 287
 288
 289
 290
 291
 292
 293
 294
 295
 296
 297
 298
 299
 300
 301
 302
 303
 304
 305
 306
 307
 308
 309
 310
 311
 312
 313
 314
 315
 316
 317
 318
 319
 320
 321
 322
 323
 324
 325
 326
 327
 328
 329
 330
 331
 332
 333
 334
 335
 336
 337
 338
 339
 340
 341
 342
 343
 344
 345
 346
 347
 348
 349
 350
 351
 352
 353
 354
 355
 356
 357
 358
 359
 360
 361
 362
 363
 364
 365
 366
 367
 368
 369
 370
 371
 372
 373
 374
 375
 376
 377
 378
 379
 380
 381
 382
 383
 384
 385
 386
 387
 388
 389
 390
 391
 392
 393
 394
 395
 396
 397
 398
 399
 400
 401
 402
 403
 404
 405
 406
 407
 408
 409
 410
 411
 412
 413
 414
 415
 416
 417
 418
 419
 420
 421
 422
 423
 424
 425
 426
 427
 428
 429
 430
 431
 432
 433
 434
 435
 436
 437
 438
 439
 440
 441
 442
 443
 444
 445
 446
 447
 448
 449
 450
 451
 452
 453
 454
 455
 456
 457
 458
 459
 460
 461
 462
 463
 464
 465
 466
 467
 468
 469
 470
 471
 472
 473
 474
 475
 476
 477
 478
 479
 480
 481
 482
 483
 484
 485
 486
 487
 488
 489
 490
 491
 492
 493
 494
 495
 496
 497
 498
 499
 500
 501
 502
 503
 504
 505
 506
 507
 508
 509
 510
 511
 512
 513
 514
 515
 516
 517
 518
 519
 520
 521
 522
 523
 524
 525

Page 60 of 63

Login Sample Receipt Checklist

Client: Cash in Advance (Calscience)

Job Number: 570-105438-1

Login Number: 105438

List Source: Eurofins Calscience

List Number: 1

Creator: Patel, Jayesh

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Cash in Advance (Calscience)

Job Number: 570-105438-1

Login Number: 105438

List Number: 2

Creator: Pratali, Sandra A

List Source: Eurofins Sacramento

List Creation: 08/08/22 07:20 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	Water present in cooler; indicates evidence of melted ice.
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	15.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Cash in Advance (Calscience)

Job Number: 570-105438-1

Login Number: 105438

List Number: 3

Creator: Presley, Kim A

List Source: Eurofins Seattle

List Creation: 08/11/22 03:31 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	A3=1.2c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Tel: (714)895-5494

Laboratory Job ID: 570-105438-3
Client Project/Site: Bel Marine Keys

For:
Foth Infrastructure & Environment, LLC
384 Bel Marin Keys Boulevard
Suite 140
Novato, California 94949

Attn: Wendy Rocha



Authorized for release by:
10/21/2022 12:00:57 PM

Carla Hollowell, Project Manager I
(714)895-5494
Carla.Hollowell@et.eurofinsus.com

LINKS

Review your project
results through



Have a Question?



Visit us at:

www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Method Summary	5
Sample Summary	6
Subcontract Data	7
Chain of Custody	20
Receipt Checklists	34

Definitions/Glossary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-3

Job ID: 570-105438-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-105438-3

Comments

No additional comments.

Receipt

The samples were received on 8/3/2022 11:35 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.0° C.

Lab Admin

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-3

Method	Method Description	Protocol	Laboratory
6020	SW846 6020 Metals by ICPMS	SW846	Brooks

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

Brooks = Brooks Applied Labs LLC, 13751 Lake City Way NE, Suite 108, Seattle, WA 98125

Sample Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-105438-1	DU-1	Sediment	07/28/22 14:51	08/03/22 11:35
570-105438-4	DU-2	Sediment	07/28/22 15:00	08/03/22 11:35
570-105438-7	DU-3 COMP	Sediment	07/28/22 12:05	08/03/22 11:35



October 21, 2022

Eurofins Calscience
ATTN: Carla Lee Hollowell
7440 Lincoln Way
Garden Grove, CA
carlahollowell@eurofinsus.com

RE: Project CEL-GG2002

Client Project: Job#570-105438-3

Dear Carla Lee Hollowell,

On October 12, 2022, Brooks Applied Labs (BAL) received three (3) solids samples. The samples were logged-in for the analyses of total recoverable silver (Ag), cadmium (Cd), selenium (Se), and percent total solids (%TS) according to the chain-of-custody forms. All samples were received and stored according to BAL SOPs and EPA methodology.

Total Metals Quantitation by ICP-QQQ-MS

All solids were digested via modified EPA Method 3050B with a mixture of concentrated nitric acid, hydrochloric acid, and hydrogen peroxide. Trace metals were analyzed using inductively coupled plasma triple quadrupole mass spectrometry (ICP-QQQ-MS). The ICP-QQQ-MS uses advanced interference removal techniques to ensure accuracy of the sample results. For more information, please visit the *Interference Reduction Technology* section on our website, www.brooksapplied.com.

Total Solids

Solid samples were homogenized, and an aliquot of each sample was measured into a pre-weighed vessel and dried in an oven for at least 12 hours. The vessels were removed from the oven, weighed again, and the percent of dried solid material was calculated.

The results were not method blank corrected, as described in the calculations section of the relevant BAL SOP(s), and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

All data was reported without further qualification and all other associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information please see the *Report Information* page in your report. This report should be used in its entirety for interpretation of results.

Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink that reads "Amy Goodall". The signature is fluid and cursive, with the first name "Amy" and last name "Goodall" clearly distinguishable.

Amy Goodall
Project Manager
Brooks Applied Labs
amy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW_ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI

Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)

Issued on: July 1, 2021; Valid to: June 30, 2022

Certificate Number: E87982-37

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Ti, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Ti, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, V, Zn
EPA 1640	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

**Table 2. Accredited method/matrix/analytes for ISO (1),
Non-Governmental TNI (2)**

Issued by: ANAB

Issued on: September 21, 2021; Valid to: March 30, 2024

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod BAL-5000	Non-Potable Waters Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, U, V, Zn Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, V, Zn Hg (Biological Only)
EPA 1640 Mod	Non-Potable Waters	Cd, Cu, Pb, Ni, Zn Ag, As, Cr, Co, Se, Ti, V (ISO Only)
EPA 1631E Mod BAL-3100	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury
EPA 1632A Mod BAL-3300	Non-Potable Waters Biological/Food Solids/Chemicals	Inorganic Arsenic (ISO Only) Inorganic Arsenic (ISO Only)
AOAC 2015.01 Mod BAL-5000	Food	As, Cd, Hg, Pb
BAL-4100	Non-Potable Waters Biological by BAL-4117	As(III), As(V), DMAs, MMAs Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4101	Food by BAL-4117	Inorganic Arsenic, DMAs, MMAs (ISO Only)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II) (ISO Only)
SM2340B	Non-Potable Waters	Hardness
SM 2540G BAL-0501	Solids/Chemicals & Biological	% Dry Weight

Project ID: CEL-GG2002
PM: Amy Goodall



BAL Report 2210140
Client PM: Carla Lee Hollowell
Client Project: Job#570-105438-3

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
DU-1 (570-105438-1)	2210140-01	Solid	Sample	07/28/2022	10/12/2022
DU-2 (570-105438-4)	2210140-02	Solid	Sample	07/28/2022	10/12/2022
DU-3 COMP (570-105438-7)	2210140-03	Solid	Sample	07/28/2022	10/12/2022

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
%TS	Soil/Sediment	SOP BAL-0501	10/12/2022	10/13/2022	B222378	N/A
Ag	Soil/Sediment	EPA 6020B Mod	10/13/2022	10/14/2022	B222410	S221079
Cd	Soil/Sediment	EPA 6020B Mod	10/13/2022	10/14/2022	B222410	S221079
Se	Soil/Sediment	EPA 6020B Mod	10/13/2022	10/14/2022	B222410	S221079

Project ID: CEL-GG2002
PM: Amy Goodall



BAL Report 2210140
Client PM: Carla Lee Hollowell
Client Project: Job#570-105438-3

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
DU-1 (570-105438-1)										
2210140-01	%TS	Solid	NA	48.00		0.01	0.04	%	B222378	N/A
2210140-01	Ag	Solid	dry	0.240		0.029	0.087	mg/kg	B222410	S221079
2210140-01	Cd	Solid	dry	0.256		0.039	0.087	mg/kg	B222410	S221079
2210140-01	Se	Solid	dry	0.440		0.183	0.366	mg/kg	B222410	S221079
DU-2 (570-105438-4)										
2210140-02	%TS	Solid	NA	49.48		0.02	0.05	%	B222378	N/A
2210140-02	Ag	Solid	dry	0.230		0.027	0.082	mg/kg	B222410	S221079
2210140-02	Cd	Solid	dry	0.204		0.036	0.082	mg/kg	B222410	S221079
2210140-02	Se	Solid	dry	0.375		0.172	0.344	mg/kg	B222410	S221079
DU-3 COMP (570-105438-7)										
2210140-03	%TS	Solid	NA	48.05		0.01	0.05	%	B222378	N/A
2210140-03	Ag	Solid	dry	0.344		0.026	0.078	mg/kg	B222410	S221079
2210140-03	Cd	Solid	dry	0.349		0.035	0.078	mg/kg	B222410	S221079
2210140-03	Se	Solid	dry	0.421		0.164	0.328	mg/kg	B222410	S221079

Project ID: CEL-GG2002
PM: Amy Goodall



BAL Report 2210140
Client PM: Carla Lee Hollowell
Client Project: Job#570-105438-3

Accuracy & Precision Summary

Batch: B222378
Lab Matrix: Soil/Sediment
Method: SOP BAL-0501

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222378-DUP3	Duplicate, (2210140-01) %TS	48.00		47.82	%		0.4% 15

Project ID: CEL-GG2002
PM: Amy Goodall



BAL Report 2210140
Client PM: Carla Lee Hollowell
Client Project: Job#570-105438-3

Accuracy & Precision Summary

Batch: B222410
Lab Matrix: Soil/Sediment
Method: EPA 6020B Mod

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B222410-BS1	Blank Spike, (2152010)						
	Ag		5.000	4.379	mg/kg	88% 75-125	
	Cd		5.000	4.730	mg/kg	95% 75-125	
	Se		50.00	48.32	mg/kg	97% 75-125	
B222410-SRM1	Reference Material (2224038, CRM052-50G Loamy Clay)						
	Cd		212.0	195.6	mg/kg	92% 75-125	
B222410-SRM2	Reference Material (2224038, CRM052-50G Loamy Clay)						
	Ag		34.00	31.74	mg/kg	93% 75-125	
	Se		54.40	57.11	mg/kg	105% 75-125	
B222410-DUP1	Duplicate, (2210140-01)						
	Ag	0.240		0.252	mg/kg		5% 30
	Cd	0.256		0.242	mg/kg		5% 30
	Se	0.440		0.428	mg/kg		3% 30
B222410-MS1	Matrix Spike, (2210140-01)						
	Ag	0.240	8.186	7.244	mg/kg	86% 70-130	
	Cd	0.256	8.186	7.846	mg/kg	93% 70-130	
	Se	0.440	81.86	79.44	mg/kg	97% 70-130	
B222410-MSD1	Matrix Spike Duplicate, (2210140-01)						
	Ag	0.240	8.292	7.371	mg/kg	86% 70-130	0.5% 30
	Cd	0.256	8.292	8.153	mg/kg	95% 70-130	3% 30
	Se	0.440	82.92	81.24	mg/kg	97% 70-130	1% 30

Project ID: CEL-GG2002
PM: Amy Goodall



BAL Report 2210140
Client PM: Carla Lee Hollowell
Client Project: Job#570-105438-3

Method Blanks & Reporting Limits

Batch: B222378
Matrix: Soil/Sediment
Method: SOP BAL-0501
Analyte: %TS

Sample	Result	Units	
B222378-BLK1	-0.10	%	
B222378-BLK2	-0.10	%	
Average: -0.10			MDL: 0.03
Limit: 0.10			MRL: 0.10

Project ID: CEL-GG2002
PM: Amy Goodall



BAL Report 2210140
Client PM: Carla Lee Hollowell
Client Project: Job#570-105438-3

Method Blanks & Reporting Limits

Batch: B222410
Matrix: Soil/Sediment
Method: EPA 6020B Mod
Analyte: Ag

Sample	Result	Units	
B222410-BLK1	0.001	mg/kg	
B222410-BLK2	0.001	mg/kg	
B222410-BLK3	0.001	mg/kg	
B222410-BLK4	0.0007	mg/kg	
Average: 0.001			MDL: 0.015
Limit: 0.045			MRL: 0.045

Analyte: Cd

Sample	Result	Units	
B222410-BLK1	0.0003	mg/kg	
B222410-BLK2	0.001	mg/kg	
B222410-BLK3	-0.0001	mg/kg	
B222410-BLK4	0.002	mg/kg	
Average: 0.001			MDL: 0.020
Limit: 0.045			MRL: 0.045

Analyte: Se

Sample	Result	Units	
B222410-BLK1	0.019	mg/kg	
B222410-BLK2	0.010	mg/kg	
B222410-BLK3	0.004	mg/kg	
B222410-BLK4	0.002	mg/kg	
Average: 0.009			MDL: 0.095
Limit: 0.190			MRL: 0.190

Project ID: CEL-GG2002
PM: Amy Goodall



BAL Report 2210140
Client PM: Carla Lee Hollowell
Client Project: Job#570-105438-3

1
2
3
4
5
6
7
8
9

Sample Containers

Lab ID: 2210140-01
Sample: DU-1 (570-105438-1)

Des	Container	Size
A	Client-Provided	n/a

Report Matrix:	Size	Lot	Preservation
Solid	n/a	n/a	none
Sample Type:			
Sample			

P-Lot	Collected:	pH	Ship. Cont.
n/a	07/28/2022	n/a	Cooler -
			2210140
			Received: 10/12/2022

Lab ID: 2210140-02
Sample: DU-2 (570-105438-4)

Des	Container	Size
A	Client-Provided	n/a

Report Matrix:	Size	Lot	Preservation
Solid	n/a	n/a	none
Sample Type:			
Sample			

P-Lot	Collected:	pH	Ship. Cont.
n/a	07/28/2022	n/a	Cooler -
			2210140
			Received: 10/12/2022

Lab ID: 2210140-03
Sample: DU-3 COMP (570-105438-7)

Des	Container	Size
A	Client-Provided	n/a

Report Matrix:	Size	Lot	Preservation
Solid	n/a	n/a	none
Sample Type:			
Sample			

P-Lot	Collected:	pH	Ship. Cont.
n/a	07/28/2022	n/a	Cooler -
			2210140
			Received: 10/12/2022

Shipping Containers

Cooler - 2210140

Received: October 12, 2022 10:13
Tracking No: 6087 6190 8037 via FedEx
Coolant Type: Ice
Temperature: 2.4 °C

Description: Cooler
Damaged in transit? No
Returned to client? No
Comments: IR#1, Temp Blank: 0.4 degrees C

Custody seals present? No
Custody seals intact? No
COC present? Yes



Cals ience

7440 Lincoln Way Garden Grove CA 92641-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofins.com or call us.

LABORATORY CLIENT: Foth & Van Dyke and Associates, Inc.

ADDRESS 755 Baywood Drive, Suite 228
CITY Petaluma STATE CA ZIP 94954

TEL 508-642-2469 E-MAIL Wendy.Rocha@foth.com

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):

☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☒ STANDARD

☐ COELT EDF GLOBAL ID

LOG CODE:

SPECIAL INSTRUCTIONS

Analysis on archive samples not to be run unless directed by Foth

LAB USE ONLY	SAMPLE ID	DATE	SAMPLING TIME	MATRIX	NO OF CONT.	Unpreserved	Preserved	Field Filtered
1	DU-1	7/28	251	SOIL	4 ✓	X		
2	DU-1-ARCHIVE	7/28	251	SOIL	1 ✓	X		
3	DU-1Z-ARCHIVE	7/28	251	SOIL	1 ✓	X		
4	DU-2	7/29	300	SOIL	4 ✓	X		
5	DU-2-ARCHIVE	7/29	330	SOIL	1 ✓	X		
6	DU-2Z-ARCHIVE	7/29	330	SOIL	1 ✓	X		
7	DU-3 COMP	7/28	1205	SOIL	4 ✓	X		
8	DU-3-ARCHIVE	7/28	1205	SOIL	1 ✓	X		
9	DU-3Z-ARCHIVE	7/28	140	SOIL	1 ✓	X		
10	DU-3A-ARCHIVE	7/28	1205	SOIL	1 ✓	X		
11	DU-3AZ-ARCHIVE	7/28	1205	SOIL	1 ✓	X		

Relinquished by (Signature)

Wendy Rocha

Relinquished by (Signature)

App to 6/5 8/1/22 1630

Relinquished by (Signature)

Received by (Signature/Affiliation)

Wendy Rocha

Received by (Signature/Affiliation)

Wendy Rocha

Received by (Signature/Affiliation)

Date: 8/1/22

Time: 12:10

Date: 8/2/22

Time: 11:35

Date:

Time:



570-105438 Chain of Custody

CHAIN OF CUSTODY RECORD

DATE:

PAGE: 1 OF 2

WO # / LAB USE ONLY

CLIENT PROJECT NAME / NUMBER.

P.O. NO.

PROJECT CONTACT:

SAMPLER(S) (PRINT)

REQUESTED ANALYSES

Please check box or fill in blank as needed

☐ 1613B - Full List w/ Totals

☐ 9060A_DW - Total Organic Carbon

☐ 6020 - (MOD) California Administrative

☐ 7471A - Mercury

☐ SUBCONTRACT - Ag, Cd, Se by EPA 6010B

☐ 8270C_SIM_PAH - SIM PAH w/Add

☐ 8270C_SIM_CON - (MOD) Regional Monitoring Program (RMP)

☐ 8081A - (MOD) Custom 8081A List

☐ D464 - Full Analyte List

☐ Organotins_SIM - Full Analyte List

Chain of Custody Record

[illegible]

ICOC No:
570-182408

Containers

Count 3 Container Type Soil jar 4oz - clear glass Preservative None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1, 4, 7	SUBCONTRACT	SUB (Ag, Cd, Se by EPA 6010/6020)/ Ag, Cd, Se by EPA 6010B	Please J Flag, DMMO EDD, mg/kg units

Chain of Custody Record

[illegible]

824501

8/1/22, 4 06 PM



570-105438 Waybill

Ship From

EUROFINS CALSCIENCE, INC
ALAN KEMP
5063 COMMERCIAL CIRCLE
H
CONCORD, CA 94520

Tracking #: 557442796

NPS

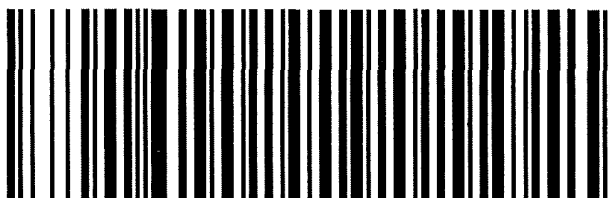


Ship To

EUROFINS CALSCIENCE TUSTIN
SAMPLE RECEIVING
2841 DOW AVENUE
SUITE 100
TUSTIN, CA 92780

TUSTIN

S10248B



69318965

COD: \$0.00

Weight: 0 lb(s)

Reference:

FOTH

Delivery Instructions:

Signature Type: STANDARD

ORC CA927-KB0

Print Date: 8/1/2022 4:06 PM

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

Step 1: Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer.

Step 2: Fold this page in half.

Step 3: Securely attach this label to your package and do not cover the barcode.

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all of the General Logistics Systems US, Inc. (GLS) service terms & conditions including, but not limited to; limits of liability, declared value conditions, and claim procedures which are available on our website at www.gls-us.com.

Chain of Custody Record

[illegible]

ICOC No:
570-186594

Containers

Count 3 Container Type Soil jar 2oz (certified tare wt) Preservative MeOH/DI Water

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1, 4	SUBCONTRACT	SUB (Ag, Cd, Se by EPA 6010/6020)/ Ag, Cd, Se by EPA 6010B	Please J Flag, DMMO EDD, mg/kg units
7	SUBCONTRACT	SUB (Ag, Cd, Se by EPA 6010/6020)/ Ag, Cd, Se by EPA 6010B	Please J Flag, dw; DMMO EDD, mg/kg units

1. *Pharmaceuticals* (1998) 10, 11. *Pharmaceuticals* (1999) 11, 12. *Pharmaceuticals* (2000) 12, 13. *Pharmaceuticals* (2001) 13, 14. *Pharmaceuticals* (2002) 14, 15. *Pharmaceuticals* (2003) 15, 16. *Pharmaceuticals* (2004) 16, 17. *Pharmaceuticals* (2005) 17, 18. *Pharmaceuticals* (2006) 18, 19. *Pharmaceuticals* (2007) 19, 20. *Pharmaceuticals* (2008) 20, 21. *Pharmaceuticals* (2009) 21, 22. *Pharmaceuticals* (2010) 22, 23. *Pharmaceuticals* (2011) 23, 24. *Pharmaceuticals* (2012) 24, 25. *Pharmaceuticals* (2013) 25, 26. *Pharmaceuticals* (2014) 26, 27. *Pharmaceuticals* (2015) 27, 28. *Pharmaceuticals* (2016) 28, 29. *Pharmaceuticals* (2017) 29, 30. *Pharmaceuticals* (2018) 30, 31. *Pharmaceuticals* (2019) 31, 32. *Pharmaceuticals* (2020) 32, 33. *Pharmaceuticals* (2021) 33, 34. *Pharmaceuticals* (2022) 34, 35. *Pharmaceuticals* (2023) 35, 36. *Pharmaceuticals* (2024) 36, 37. *Pharmaceuticals* (2025) 37, 38. *Pharmaceuticals* (2026) 38, 39. *Pharmaceuticals* (2027) 39, 40. *Pharmaceuticals* (2028) 40, 41. *Pharmaceuticals* (2029) 41, 42. *Pharmaceuticals* (2030) 42, 43. *Pharmaceuticals* (2031) 43, 44. *Pharmaceuticals* (2032) 44, 45. *Pharmaceuticals* (2033) 45, 46. *Pharmaceuticals* (2034) 46, 47. *Pharmaceuticals* (2035) 47, 48. *Pharmaceuticals* (2036) 48, 49. *Pharmaceuticals* (2037) 49, 50. *Pharmaceuticals* (2038) 50, 51. *Pharmaceuticals* (2039) 51, 52. *Pharmaceuticals* (2040) 52, 53. *Pharmaceuticals* (2041) 53, 54. *Pharmaceuticals* (2042) 54, 55. *Pharmaceuticals* (2043) 55, 56. *Pharmaceuticals* (2044) 56, 57. *Pharmaceuticals* (2045) 57, 58. *Pharmaceuticals* (2046) 58, 59. *Pharmaceuticals* (2047) 59, 60. *Pharmaceuticals* (2048) 60, 61. *Pharmaceuticals* (2049) 61, 62. *Pharmaceuticals* (2050) 62, 63. *Pharmaceuticals* (2051) 63, 64. *Pharmaceuticals* (2052) 64, 65. *Pharmaceuticals* (2053) 65, 66. *Pharmaceuticals* (2054) 66, 67. *Pharmaceuticals* (2055) 67, 68. *Pharmaceuticals* (2056) 68, 69. *Pharmaceuticals* (2057) 69, 70. *Pharmaceuticals* (2058) 70, 71. *Pharmaceuticals* (2059) 71, 72. *Pharmaceuticals* (2060) 72, 73. *Pharmaceuticals* (2061) 73, 74. *Pharmaceuticals* (2062) 74, 75. *Pharmaceuticals* (2063) 75, 76. *Pharmaceuticals* (2064) 76, 77. *Pharmaceuticals* (2065) 77, 78. *Pharmaceuticals* (2066) 78, 79. *Pharmaceuticals* (2067) 79, 80. *Pharmaceuticals* (2068) 80, 81. *Pharmaceuticals* (2069) 81, 82. *Pharmaceuticals* (2070) 82, 83. *Pharmaceuticals* (2071) 83, 84. *Pharmaceuticals* (2072) 84, 85. *Pharmaceuticals* (2073) 85, 86. *Pharmaceuticals* (2074) 86, 87. *Pharmaceuticals* (2075) 87, 88. *Pharmaceuticals* (2076) 88, 89. *Pharmaceuticals* (2077) 89, 90. *Pharmaceuticals* (2078) 90, 91. *Pharmaceuticals* (2079) 91, 92. *Pharmaceuticals* (2080) 92, 93. *Pharmaceuticals* (2081) 93, 94. *Pharmaceuticals* (2082) 94, 95. *Pharmaceuticals* (2083) 95, 96. *Pharmaceuticals* (2084) 96, 97. *Pharmaceuticals* (2085) 97, 98. *Pharmaceuticals* (2086) 98, 99. *Pharmaceuticals* (2087) 99, 100. *Pharmaceuticals* (2088) 100, 101. *Pharmaceuticals* (2089) 101, 102. *Pharmaceuticals* (2090) 102, 103. *Pharmaceuticals* (2091) 103, 104. *Pharmaceuticals* (2092) 104, 105. *Pharmaceuticals* (2093) 105, 106. *Pharmaceuticals* (2094) 106, 107. *Pharmaceuticals* (2095) 107, 108. *Pharmaceuticals* (2096) 108, 109. *Pharmaceuticals* (2097) 109, 110. *Pharmaceuticals* (2098) 110, 111. *Pharmaceuticals* (2099) 111, 112. *Pharmaceuticals* (2100) 112, 113. *Pharmaceuticals* (2101) 113, 114. *Pharmaceuticals* (2102) 114, 115. *Pharmaceuticals* (2103) 115, 116. *Pharmaceuticals* (2104) 116, 117. *Pharmaceuticals* (2105) 117, 118. *Pharmaceuticals* (2106) 118, 119. *Pharmaceuticals* (2107) 119, 120. *Pharmaceuticals* (2108) 120, 121. *Pharmaceuticals* (2109) 121, 122. *Pharmaceuticals* (2110) 122, 123. *Pharmaceuticals* (2111) 123, 124. *Pharmaceuticals* (2112) 124, 125. *Pharmaceuticals* (2113) 125, 126. *Pharmaceuticals* (2114) 126, 127. *Pharmaceuticals* (2115) 127, 128. *Pharmaceuticals* (2116) 128, 129. *Pharmaceuticals* (2117) 129, 130. *Pharmaceuticals* (2118) 130, 131. *Pharmaceuticals* (2119) 131, 132. *Pharmaceuticals* (2120) 132, 133. *Pharmaceuticals* (2121) 133, 134. *Pharmaceuticals* (2122) 134, 135. *Pharmaceuticals* (2123) 135, 136. *Pharmaceuticals* (2124) 136, 137. *Pharmaceuticals* (2125) 137, 138. *Pharmaceuticals* (2126) 138, 139. *Pharmaceuticals* (2127) 139, 140. *Pharmaceuticals* (2128) 140, 141. *Pharmaceuticals* (2129) 141, 142. *Pharmaceuticals* (2130) 142, 143. *Pharmaceuticals* (2131) 143, 144. *Pharmaceuticals* (2132) 144, 145. *Pharmaceuticals* (2133) 145, 146. *Pharmaceuticals* (2134) 146, 147. *Pharmaceuticals* (2135) 147, 148. *Pharmaceuticals* (2136) 148, 149. *Pharmaceuticals* (2137) 149, 150. *Pharmaceuticals* (2138) 150, 151. *Pharmaceuticals* (2139) 151, 152. *Pharmaceuticals* (2140) 152, 153. *Pharmaceuticals* (2141) 153, 154. *Pharmaceuticals* (2142) 154, 155. *Pharmaceuticals* (2143) 155, 156. *Pharmaceuticals* (2144) 156, 157. *Pharmaceuticals* (2145) 157, 158. *Pharmaceuticals* (2146) 158, 159. *Pharmaceuticals* (2147) 159, 160. *Pharmaceuticals* (2148) 160, 161. *Pharmaceuticals* (2149) 161, 162. *Pharmaceuticals* (2150) 162, 163. *Pharmaceuticals* (2151) 163, 164. *Pharmaceuticals* (2152) 164, 165. *Pharmaceuticals* (2153) 165, 166. *Pharmaceuticals* (2154) 166, 167. *Pharmaceuticals* (2155) 167, 168. *Pharmaceuticals* (2156) 168, 169. *Pharmaceuticals* (2157) 169, 170. *Pharmaceuticals* (2158) 170, 171. *Pharmaceuticals* (2159) 171, 172. *Pharmaceuticals* (2160) 172, 173. *Pharmaceuticals* (2161) 173, 174. *Ph*



Environ Health Perspect • Testing
America

10/21/2022

ICOC No:
570-186594

Containers

<u>Count</u>	<u>Container Type</u>	<u>Preservative</u>
3	Soil jar 2oz (certified tare wt)	MeOH/DI Water

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1 4	SUBCONTRACT	SUB (Ag, Cd, Se by EPA 6010/6020)/ Ag, Cd, Se by EPA 6010B	Please J Flag, DMMO EDD, mg/kg units
7	SUBCONTRACT	SUB (Ag, Cd, Se by EPA 6010/6020)/ Ag, Cd, Se by EPA 6010B	Please J Flag, dw; DMMO EDD, mg/kg units

Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler Lab PM: Hollowell Carla		Carrier Tracking No(s)		DOC No: 570-190776 1							
Client Contact: Shipping/Receiving		Phone:		State of Origin: California		Page: Page 1 of 1							
Company: Brooks Applied Labs LLC		Address: 13751 Lake City Way NE, Suite 108, City Seattle State, Zip. WA, 98125 Phone: Email:		Accreditations Required (See note). State - California		Job #: 570-105438-3							
Due Date Requested 10/14/2022		TAT Requested (days):		Analysis Requested									
PO #:		WO #:		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2SO3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate U - Acetone I - Ice V - MCAA J - DI Water W - pH 4-5 K - EDTA L - EDA Y - Trizma Z - other (specify) Other									
Project #: 57011407		SSOW#:		SUB (General Subcontract Method)									
Perform MS/MSD (Yes or No)		Field Filtered Sample (Yes or No)		Total Number of Containers									
Sample ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Trace, A=air)		Preservation Code		Special Instructions/Note:	
DU-1 (570-105438-1)		7/28/22		14 51 Pacific		Solid		X		1		1	
DU-2 (570-105438-4)		7/28/22		15 00 Pacific		Solid		X		1		1	
DU-3 COMP (570-105438-7)		7/28/22		12 05 Pacific		Solid		X		1		See Attached Instructions	
Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.													
Possible Hazard Identification													
Unconfirmed													
Deliverable Requested I, II, III, IV, Other (specify)													
Primary Deliverable Rank: 2													
Special Instructions/QC Requirements:													
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)													
Return To Client ☐ Disposal By Lab ☐ Archive For ☐ Months													
Method of Shipment:													
Received by:													
Date/Time:													
Company:													
Received by:													
Date/Time:													
Company:													
Received by:													
Date/Time:													
Company:													
Cooler Temperature(s) °C and Other Remarks:													
Custody Seals Intact: ☐ Yes ☐ No													
Custody Seal No													

ICOC No:
570-190776

Containers

<u>Count</u>	<u>Container Type</u>	<u>Preservative</u>
3	Soil jar 2oz - clear glass	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
7	SUBCONTRACT	SUB (General Subcontract Method)	RUSH TAT, Cd,Se,Ag, dry weight; DMMO EDD, J Flag

Chain of Custody Record



Client Information (Sub Contract Lab)			Lab PM: Hollowell, Carla	Carrier Tracking No(s): 570-191224 1	COC No. 570-191224 1
Client Contact: Shipping/Receiving Company Brooks Applied Labs LLC			E-Mail: Carla.Hollowell@et-eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Address: 13751 Lake City Way NE, Suite 108, City Seattle State, Zip: WA, 98125 Phone: Email: Project Name: Bel Marne Keys Site:			Accreditations Required (See note): State - California		
Due Date Requested: 10/13/2022 TAT Requested (days):			Job #: 570-105438-3		
Analysis Requested			Preservation Codes		
Field Filtered Sample (Yes or No)			A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other		
Perform MSM/SD (Yes or No)			M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)		
Sub (General Subcontract Method) EPA 8020 - Cd					
Se Ag in Sediment					
Sample Date			Total Number of Containers		
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date			Special Instructions/Note:		
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					
Sample Type (C=Comp, G=grab)					
Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)					
Preservation Code:					
Sample Date					
Sample Time					

ICOC No:
570-191224

Containers

<u>Count</u>	<u>Container Type</u>	<u>Preservative</u>
3	Soil jar 2oz - clear glass	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1, 4, 7	SUBCONTRACT	SUB (General Subcontract Method)/ EPA 6020 - Cd, Se, Ag in Sediment	RUSH, J Flag, dry weight, DMMO EDD

Login Sample Receipt Checklist

Client: Cash in Advance (Calscience)

Job Number: 570-105438-3

Login Number: 105438

List Number: 1

Creator: Patel, Jayesh

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix C
MET Laboratory Data Report Submitted by Eurofins – Calscience

ANALYTICAL REPORT

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Tel: (714)895-5494

Laboratory Job ID: 570-106268-1
Client Project/Site: Bel Marin Keys

For:
Foth Infrastructure & Environment, LLC
384 Bel Marin Keys Boulevard
Suite 140
Novato, California 94949

Attn: Wendy Rocha



Authorized for release by:
9/13/2022 2:50:10 PM

Carla Hollowell, Project Manager I
(714)895-5494
Carla.Hollowell@et.eurofinsus.com

LINKS

Review your project
results through



Have a Question?



Visit us at:

www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Client Sample Results	5
QC Sample Results	8
QC Association Summary	12
Lab Chronicle	14
Certification Summary	15
Method Summary	16
Sample Summary	17
Chain of Custody	18
Receipt Checklists	22



Definitions/Glossary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marin Keys

Job ID: 570-106268-1

Qualifiers

Metals

Qualifier	Qualifier Description
^2	Calibration Blank (ICB and/or CCB) is outside acceptance limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marin Keys

Job ID: 570-106268-1

Job ID: 570-106268-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative 570-106268-1

Comments

No additional comments.

Receipt

The samples were received on 8/12/2022 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.0° C.

Metals

Method 1640: The continuing calibration blank (CCB) for analytical batch 580-401232 contained Selenium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 1640: The continuing calibration blank (CCB) for analytical batch 580-401960 contained certain analytes above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

The associated Method Blank had detectable concentrations; however, these were below the reporting limit and re-analysis is not necessary. The data has been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marin Keys

Job ID: 570-106268-1

Method: 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: BMK-DU-1-MET

Date Collected: 08/11/22 15:30

Date Received: 08/12/22 09:50

Lab Sample ID: 570-106268-1

Matrix: MET

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	6.68	B	0.495	0.0792	ng/L			08/19/22 16:28	1

Client Sample ID: BMK-DU-2-MET

Date Collected: 08/11/22 15:31

Date Received: 08/12/22 09:50

Lab Sample ID: 570-106268-2

Matrix: MET

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	2.28	B	0.495	0.0792	ng/L			08/19/22 19:53	1

Client Sample ID: BMK-DU-3-MET

Date Collected: 08/11/22 15:32

Date Received: 08/12/22 09:50

Lab Sample ID: 570-106268-3

Matrix: MET

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	25.4	B	0.495	0.0792	ng/L			08/19/22 19:57	1

Client Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marin Keys

Job ID: 570-106268-1

Method: 1640 - Metals (ICPMS)

Client Sample ID: BMK-DU-1-MET

Date Collected: 08/11/22 15:30

Date Received: 08/12/22 09:50

Lab Sample ID: 570-106268-1

Matrix: MET

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		0.600	0.390	ug/L		08/18/22 10:48	08/19/22 11:21	1

Client Sample ID: BMK-DU-2-MET

Date Collected: 08/11/22 15:31

Date Received: 08/12/22 09:50

Lab Sample ID: 570-106268-2

Matrix: MET

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	0.441	J ^2	0.600	0.390	ug/L		08/18/22 10:48	08/19/22 12:04	1

Client Sample ID: BMK-DU-3-MET

Date Collected: 08/11/22 15:32

Date Received: 08/12/22 09:50

Lab Sample ID: 570-106268-3

Matrix: MET

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		0.600	0.390	ug/L		08/18/22 10:48	08/19/22 12:18	1

Client Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marin Keys

Job ID: 570-106268-1

Method: 1640 - Metals (ICPMS) - Dissolved

Client Sample ID: BMK-DU-1-MET

Date Collected: 08/11/22 15:30

Date Received: 08/12/22 09:50

Lab Sample ID: 570-106268-1

Matrix: MET

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	14.7		3.00	2.10	ug/L		08/24/22 00:00	08/25/22 05:38	5
Cadmium	ND		0.0400	0.0110	ug/L		08/24/22 00:00	08/25/22 18:28	1
Chromium	0.604		0.500	0.340	ug/L		08/24/22 00:00	08/25/22 18:28	1
Copper	0.344		0.100	0.0200	ug/L		08/24/22 00:00	08/25/22 18:28	1
Lead	0.0385		0.0250	0.00400	ug/L		08/24/22 00:00	08/25/22 18:28	1
Nickel	4.18		0.300	0.110	ug/L		08/24/22 00:00	08/25/22 18:28	1
Silver	ND		1.00	0.500	ug/L		08/24/22 00:00	08/25/22 18:28	1
Zinc	1.21	B	0.500	0.0700	ug/L		08/24/22 00:00	08/25/22 18:28	1

Client Sample ID: BMK-DU-2-MET

Date Collected: 08/11/22 15:31

Date Received: 08/12/22 09:50

Lab Sample ID: 570-106268-2

Matrix: MET

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	17.7		0.600	0.420	ug/L		08/24/22 00:00	08/25/22 21:05	1
Cadmium	ND		0.0400	0.0110	ug/L		08/24/22 00:00	08/25/22 21:05	1
Chromium	0.523		0.500	0.340	ug/L		08/24/22 00:00	08/25/22 21:05	1
Copper	0.513		0.100	0.0200	ug/L		08/24/22 00:00	08/25/22 21:05	1
Lead	0.0175	J	0.0250	0.00400	ug/L		08/24/22 00:00	08/25/22 21:05	1
Nickel	6.13		0.300	0.110	ug/L		08/24/22 00:00	08/25/22 21:05	1
Silver	ND		1.00	0.500	ug/L		08/24/22 00:00	08/25/22 21:05	1
Zinc	1.81	B	0.500	0.0700	ug/L		08/24/22 00:00	08/25/22 21:05	1

Client Sample ID: BMK-DU-3-MET

Date Collected: 08/11/22 15:32

Date Received: 08/12/22 09:50

Lab Sample ID: 570-106268-3

Matrix: MET

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	12.1		0.600	0.420	ug/L		08/24/22 00:00	08/25/22 21:20	1
Cadmium	0.0264	J	0.0400	0.0110	ug/L		08/24/22 00:00	08/25/22 21:20	1
Chromium	0.534		0.500	0.340	ug/L		08/24/22 00:00	08/25/22 21:20	1
Copper	1.85		0.100	0.0200	ug/L		08/24/22 00:00	08/25/22 21:20	1
Lead	0.0539		0.0250	0.00400	ug/L		08/24/22 00:00	08/25/22 21:20	1
Nickel	5.32		0.300	0.110	ug/L		08/24/22 00:00	08/25/22 21:20	1
Silver	ND		1.00	0.500	ug/L		08/24/22 00:00	08/25/22 21:20	1
Zinc	1.70	B	0.500	0.0700	ug/L		08/24/22 00:00	08/25/22 21:20	1

QC Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marin Keys

Job ID: 570-106268-1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-401350/18

Matrix: Water

Analysis Batch: 401350

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.1161	J	0.495	0.0792	ng/L			08/19/22 16:49	1

Lab Sample ID: MB 580-401350/19

Matrix: Water

Analysis Batch: 401350

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.495	0.0792	ng/L			08/19/22 16:53	1

Lab Sample ID: MB 580-401350/20

Matrix: Water

Analysis Batch: 401350

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.495	0.0792	ng/L			08/19/22 16:57	1

Lab Sample ID: LCS 580-401350/25

Matrix: Water

Analysis Batch: 401350

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	5.00	4.698		ng/L		94	77 - 123

Lab Sample ID: LCSD 580-401350/26

Matrix: Water

Analysis Batch: 401350

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	5.00	4.621		ng/L		92	77 - 123	2	24

Lab Sample ID: 570-106268-1 MS

Matrix: MET

Analysis Batch: 401350

Client Sample ID: BMK-DU-1-MET

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	6.68	B	10.0	15.31		ng/L		86	71 - 125

Lab Sample ID: 570-106268-1 MSD

Matrix: MET

Analysis Batch: 401350

Client Sample ID: BMK-DU-1-MET

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	6.68	B	10.0	14.78		ng/L		81	71 - 125	4	24

QC Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marin Keys

Job ID: 570-106268-1

Method: 1640 - Metals (ICPMS)

Lab Sample ID: MB 580-401004/1-A
Matrix: Water
Analysis Batch: 401232

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 401004

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		0.600	0.390	ug/L		08/18/22 10:48	08/19/22 03:01	1

Lab Sample ID: LCS 580-401004/2-A
Matrix: Water
Analysis Batch: 401232

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 401004

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Selenium	12.5	11.72		ug/L		94	70 - 130

Lab Sample ID: LCSD 580-401004/3-A
Matrix: Water
Analysis Batch: 401232

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 401004

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Selenium	12.5	12.10		ug/L		97	70 - 130	3	20

Lab Sample ID: 570-106268-1 MS
Matrix: MET
Analysis Batch: 401232

Client Sample ID: BMK-DU-1-MET
Prep Type: Total/NA
Prep Batch: 401004

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Selenium	ND		12.5	13.72		ug/L		109	50 - 150

Lab Sample ID: 570-106268-1 MSD
Matrix: MET
Analysis Batch: 401232

Client Sample ID: BMK-DU-1-MET
Prep Type: Total/NA
Prep Batch: 401004

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Selenium	ND		12.5	14.39		ug/L		115	50 - 150	5	20

Lab Sample ID: MB 580-401358/1-A
Matrix: Water
Analysis Batch: 401960

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 401358

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.600	0.420	ug/L		08/24/22 00:00	08/25/22 01:21	1
Cadmium	ND		0.0400	0.0110	ug/L		08/24/22 00:00	08/25/22 01:21	1
Chromium	ND		0.500	0.340	ug/L		08/24/22 00:00	08/25/22 01:21	1
Copper	ND		0.100	0.0200	ug/L		08/24/22 00:00	08/25/22 01:21	1
Lead	ND		0.0250	0.00400	ug/L		08/24/22 00:00	08/25/22 01:21	1
Nickel	ND		0.300	0.110	ug/L		08/24/22 00:00	08/25/22 01:21	1
Silver	ND		1.00	0.500	ug/L		08/24/22 00:00	08/25/22 01:21	1
Zinc	ND		0.500	0.0700	ug/L		08/24/22 00:00	08/25/22 01:21	1

Lab Sample ID: LCS 580-401358/2-A
Matrix: Water
Analysis Batch: 401960

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 401358

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	12.5	12.29		ug/L		98	70 - 130

Eurofins Calscience

QC Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marin Keys

Job ID: 570-106268-1

Method: 1640 - Metals (ICPMS) (Continued)

Lab Sample ID: LCS 580-401358/2-A

Matrix: Water

Analysis Batch: 401960

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 401358

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	1.25	1.257		ug/L		100	70 - 130
Chromium	12.5	12.66		ug/L		101	70 - 130
Copper	12.5	13.18		ug/L		105	70 - 130
Lead	2.50	2.590		ug/L		104	70 - 130
Nickel	12.5	12.69		ug/L		102	70 - 130
Silver	8.25	8.355		ug/L		101	70 - 130
Zinc	12.5	11.84		ug/L		95	70 - 130

Lab Sample ID: LCSD 580-401358/3-A

Matrix: Water

Analysis Batch: 401960

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 401358

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	12.5	13.35		ug/L		107	70 - 130	8	20
Cadmium	1.25	1.278		ug/L		102	70 - 130	2	20
Chromium	12.5	12.51		ug/L		100	70 - 130	1	20
Copper	12.5	13.19		ug/L		105	70 - 130	0	20
Lead	2.50	2.536		ug/L		101	70 - 130	2	20
Nickel	12.5	12.84		ug/L		103	70 - 130	1	20
Silver	8.25	8.365		ug/L		101	70 - 130	0	20
Zinc	12.5	12.30		ug/L		98	70 - 130	4	20

Lab Sample ID: MB 580-400732/1-D

Matrix: Water

Analysis Batch: 401960

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 401358

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.600	0.420	ug/L		08/24/22 00:00	08/25/22 02:03	1
Cadmium	ND		0.0400	0.0110	ug/L		08/24/22 00:00	08/25/22 02:03	1
Chromium	ND		0.500	0.340	ug/L		08/24/22 00:00	08/25/22 02:03	1
Copper	ND		0.100	0.0200	ug/L		08/24/22 00:00	08/25/22 02:03	1
Lead	ND		0.0250	0.00400	ug/L		08/24/22 00:00	08/25/22 02:03	1
Nickel	ND		0.300	0.110	ug/L		08/24/22 00:00	08/25/22 02:03	1
Silver	ND		1.00	0.500	ug/L		08/24/22 00:00	08/25/22 02:03	1
Zinc	0.3104	J	0.500	0.0700	ug/L		08/24/22 00:00	08/25/22 02:03	1

Lab Sample ID: 570-106268-1 MS

Matrix: MET

Analysis Batch: 401960

Client Sample ID: BMK-DU-1-MET

Prep Type: Dissolved

Prep Batch: 401358

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	14.7		12.5	29.60		ug/L		119	50 - 150

Lab Sample ID: 570-106268-1 MS

Matrix: MET

Analysis Batch: 401960

Client Sample ID: BMK-DU-1-MET

Prep Type: Dissolved

Prep Batch: 401358

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		1.25	1.206		ug/L		96	50 - 150
Chromium	0.604		12.5	13.88		ug/L		106	50 - 150

Eurofins Calscience

QC Sample Results

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marin Keys

Job ID: 570-106268-1

Method: 1640 - Metals (ICPMS) (Continued)

Lab Sample ID: 570-106268-1 MS

Matrix: MET

Analysis Batch: 401960

Client Sample ID: BMK-DU-1-MET

Prep Type: Dissolved

Prep Batch: 401358

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Copper	0.344		12.5	14.96		ug/L		117	50 - 150
Lead	0.0385		2.50	2.401		ug/L		94	50 - 150
Nickel	4.18		12.5	19.21		ug/L		120	50 - 150
Silver	ND		8.25	6.702		ug/L		81	50 - 150
Zinc	1.21	B	12.5	14.70		ug/L		108	50 - 150

Lab Sample ID: 570-106268-1 MSD

Matrix: MET

Analysis Batch: 401960

Client Sample ID: BMK-DU-1-MET

Prep Type: Dissolved

Prep Batch: 401358

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	14.7		12.5	28.74		ug/L		112	50 - 150	3	20

Lab Sample ID: 570-106268-1 MSD

Matrix: MET

Analysis Batch: 401960

Client Sample ID: BMK-DU-1-MET

Prep Type: Dissolved

Prep Batch: 401358

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		1.25	1.223		ug/L		98	50 - 150	1	20
Chromium	0.604		12.5	13.83		ug/L		105	50 - 150	0	20
Copper	0.344		12.5	14.94		ug/L		117	50 - 150	0	20
Lead	0.0385		2.50	2.427		ug/L		95	50 - 150	1	20
Nickel	4.18		12.5	19.76		ug/L		125	50 - 150	3	20
Silver	ND		8.25	6.783		ug/L		82	50 - 150	1	20
Zinc	1.21	B	12.5	14.73		ug/L		108	50 - 150	0	20

QC Association Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marin Keys

Job ID: 570-106268-1

Metals

Filtration Batch: 400732

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-106268-1	BMK-DU-1-MET	Dissolved	MET	Filtration	
570-106268-2	BMK-DU-2-MET	Dissolved	MET	Filtration	
570-106268-3	BMK-DU-3-MET	Dissolved	MET	Filtration	
MB 580-400732/1-D	Method Blank	Dissolved	Water	Filtration	
570-106268-1 MS	BMK-DU-1-MET	Dissolved	MET	Filtration	
570-106268-1 MSD	BMK-DU-1-MET	Dissolved	MET	Filtration	

Prep Batch: 401004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-106268-1	BMK-DU-1-MET	Total/NA	MET	1640	
570-106268-2	BMK-DU-2-MET	Total/NA	MET	1640	
570-106268-3	BMK-DU-3-MET	Total/NA	MET	1640	
MB 580-401004/1-A	Method Blank	Total/NA	Water	1640	
LCS 580-401004/2-A	Lab Control Sample	Total/NA	Water	1640	
LCSD 580-401004/3-A	Lab Control Sample Dup	Total/NA	Water	1640	
570-106268-1 MS	BMK-DU-1-MET	Total/NA	MET	1640	
570-106268-1 MSD	BMK-DU-1-MET	Total/NA	MET	1640	

Analysis Batch: 401232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-106268-1	BMK-DU-1-MET	Total/NA	MET	1640	401004
570-106268-2	BMK-DU-2-MET	Total/NA	MET	1640	401004
570-106268-3	BMK-DU-3-MET	Total/NA	MET	1640	401004
MB 580-401004/1-A	Method Blank	Total/NA	Water	1640	401004
LCS 580-401004/2-A	Lab Control Sample	Total/NA	Water	1640	401004
LCSD 580-401004/3-A	Lab Control Sample Dup	Total/NA	Water	1640	401004
570-106268-1 MS	BMK-DU-1-MET	Total/NA	MET	1640	401004
570-106268-1 MSD	BMK-DU-1-MET	Total/NA	MET	1640	401004

Analysis Batch: 401350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-106268-1	BMK-DU-1-MET	Total/NA	MET	1631E	
570-106268-2	BMK-DU-2-MET	Total/NA	MET	1631E	
570-106268-3	BMK-DU-3-MET	Total/NA	MET	1631E	
MB 580-401350/18	Method Blank	Total/NA	Water	1631E	
MB 580-401350/19	Method Blank	Total/NA	Water	1631E	
MB 580-401350/20	Method Blank	Total/NA	Water	1631E	
LCS 580-401350/25	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-401350/26	Lab Control Sample Dup	Total/NA	Water	1631E	
570-106268-1 MS	BMK-DU-1-MET	Total/NA	MET	1631E	
570-106268-1 MSD	BMK-DU-1-MET	Total/NA	MET	1631E	

Prep Batch: 401358

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-106268-1	BMK-DU-1-MET	Dissolved	MET	1640	400732
570-106268-2	BMK-DU-2-MET	Dissolved	MET	1640	400732
570-106268-3	BMK-DU-3-MET	Dissolved	MET	1640	400732
MB 580-400732/1-D	Method Blank	Dissolved	Water	1640	400732
MB 580-401358/1-A	Method Blank	Total/NA	Water	1640	
LCS 580-401358/2-A	Lab Control Sample	Total/NA	Water	1640	
LCSD 580-401358/3-A	Lab Control Sample Dup	Total/NA	Water	1640	

Eurofins Calscience

QC Association Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marin Keys

Job ID: 570-106268-1

Metals (Continued)

Prep Batch: 401358 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-106268-1 MS	BMK-DU-1-MET	Dissolved	MET	1640	400732
570-106268-1 MSD	BMK-DU-1-MET	Dissolved	MET	1640	400732

Analysis Batch: 401960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-106268-1	BMK-DU-1-MET	Dissolved	MET	1640	401358
570-106268-1	BMK-DU-1-MET	Dissolved	MET	1640	401358
570-106268-2	BMK-DU-2-MET	Dissolved	MET	1640	401358
570-106268-3	BMK-DU-3-MET	Dissolved	MET	1640	401358
MB 580-400732/1-D	Method Blank	Dissolved	Water	1640	401358
MB 580-401358/1-A	Method Blank	Total/NA	Water	1640	401358
LCS 580-401358/2-A	Lab Control Sample	Total/NA	Water	1640	401358
LCSD 580-401358/3-A	Lab Control Sample Dup	Total/NA	Water	1640	401358
570-106268-1 MS	BMK-DU-1-MET	Dissolved	MET	1640	401358
570-106268-1 MS	BMK-DU-1-MET	Dissolved	MET	1640	401358
570-106268-1 MSD	BMK-DU-1-MET	Dissolved	MET	1640	401358
570-106268-1 MSD	BMK-DU-1-MET	Dissolved	MET	1640	401358

Lab Chronicle

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marin Keys

Job ID: 570-106268-1

Client Sample ID: BMK-DU-1-MET

Lab Sample ID: 570-106268-1

Date Collected: 08/11/22 15:30

Matrix: MET

Date Received: 08/12/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	1631E		1			401350	08/19/22 16:28	COW	EET SEA
	Instrument ID: 2600-3									
Dissolved	Filtration	Filtration			1 mL	250 mL	400732	08/16/22 13:56	DRM	EET SEA
Dissolved	Prep	1640			10 mL	10 mL	401358	08/24/22 00:00	AJR	EET SEA
Dissolved	Analysis	1640		5			401960	08/25/22 05:38	AJR	EET SEA
	Instrument ID: ICPMS9									
Dissolved	Filtration	Filtration			1 mL	250 mL	400732	08/16/22 13:56	DRM	EET SEA
Dissolved	Prep	1640			10 mL	10 mL	401358	08/24/22 00:00	AJR	EET SEA
Dissolved	Analysis	1640		1			401960	08/25/22 18:28	AJR	EET SEA
	Instrument ID: ICPMS9									
Total/NA	Prep	1640			10 mL	10 mL	401004	08/18/22 10:48	AJR	EET SEA
Total/NA	Analysis	1640		1			401232	08/19/22 11:21	AJR	EET SEA
	Instrument ID: ICPMS9									

Client Sample ID: BMK-DU-2-MET

Lab Sample ID: 570-106268-2

Date Collected: 08/11/22 15:31

Matrix: MET

Date Received: 08/12/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	1631E		1			401350	08/19/22 19:53	COW	EET SEA
	Instrument ID: 2600-3									
Dissolved	Filtration	Filtration			1 mL	250 mL	400732	08/16/22 13:56	DRM	EET SEA
Dissolved	Prep	1640			10 mL	10 mL	401358	08/24/22 00:00	AJR	EET SEA
Dissolved	Analysis	1640		1			401960	08/25/22 21:05	AJR	EET SEA
	Instrument ID: ICPMS9									
Total/NA	Prep	1640			10 mL	10 mL	401004	08/18/22 10:48	AJR	EET SEA
Total/NA	Analysis	1640		1			401232	08/19/22 12:04	AJR	EET SEA
	Instrument ID: ICPMS9									

Client Sample ID: BMK-DU-3-MET

Lab Sample ID: 570-106268-3

Date Collected: 08/11/22 15:32

Matrix: MET

Date Received: 08/12/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	1631E		1			401350	08/19/22 19:57	COW	EET SEA
	Instrument ID: 2600-3									
Dissolved	Filtration	Filtration			1 mL	250 mL	400732	08/16/22 13:56	DRM	EET SEA
Dissolved	Prep	1640			10 mL	10 mL	401358	08/24/22 00:00	AJR	EET SEA
Dissolved	Analysis	1640		1			401960	08/25/22 21:20	AJR	EET SEA
	Instrument ID: ICPMS9									
Total/NA	Prep	1640			10 mL	10 mL	401004	08/18/22 10:48	AJR	EET SEA
Total/NA	Analysis	1640		1			401232	08/19/22 12:18	AJR	EET SEA
	Instrument ID: ICPMS9									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Eurofins Calscience

Accreditation/Certification Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marin Keys

Job ID: 570-106268-1

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-08-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	P330-20-00031	02-10-23
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Calscience

Method Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marin Keys

Job ID: 570-106268-1

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
1640	Metals (ICPMS)	EPA	EET SEA
1640	Preparation, Total Recoverable Metals	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency
None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marin Keys

Job ID: 570-106268-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-106268-1	BMK-DU-1-MET	MET	08/11/22 15:30	08/12/22 09:50
570-106268-2	BMK-DU-2-MET	MET	08/11/22 15:31	08/12/22 09:50
570-106268-3	BMK-DU-3-MET	MET	08/11/22 15:32	08/12/22 09:50

Eurofins Calscience CHAIN-OF-CUSTODY RECORD

Client Name: Foth & Van Dyke and Associates, Inc. 384 Bel Marin Keys Blvd., Ste. 140 Novato, CA 94949		Requested Analysis:	
Sampled By: Foth Infrastructure & Environment, LLC	Client Address:	Total Selenium (USEPA 1640) - Ag, Zn filter upon receipt, USEPA 1640 HNO3 preserved Total Mercury (USEPA 1631E) - HCl preserved	
Phone: (800) 668-3220			
Cell: (508) 642-2469			
Project Manager: Wendy Rocha, Sr Client Mgr			
Project Name: Bel Marin Keys			
PO Number: 36545 (PER#)			
Client Sample ID	Sample Date	Sample Time	Sample Matrix*
1 BMK-DU-1 MET	8/11/22	1540	MET
2 BMK-DU-2 MET	8/11/22	1541	MET
3 BMK-DU-3 MET	8/11/22	1542	MET
4			
5			
6			
7			
8			
9			
10			
Correct Containers: Yes No		RELINQUISHED BY	
Sample Temperature:	Ambient	Signature:	Signature:
Sample Preservative:	Yes No	Print:	Print:
Turnaround Time:	STD	Organization:	Organization:
Comments:		DATE:	TIME:
Sample date/time reflects collection date/time of MET after 24-hr settling period. i.e. required DUA for dissolved metals on 8/11/22 0512		DATE:	TIME:
Please contact Foth to confirm desired analyses prior to proceeding.		RECEIVED BY	
Wendy Rocha <wendy.rocha@foth.com>		Signature:	Signature:
Office: (800) 668-3220; Alt. 1: (508) 762-0777; Alt. 2: (415) 763-4274		Print:	Print:
Cell: (508) 642-2469		Organization:	Organization:
		DATE:	DATE:

*MATRIX CODES (SED = Sediment) (FW = Freshwater), (WW = Wastewater), (STRMW = Stormwater)



Ver. 06/08/2021

FedEx 146525 Rev 1/19 RRD0 21

FedEx FedEx FedEx

**FeedEX**

ORIGIN ID:CCRA
CHARLENE DERHEIM
PACIFIC ECORISK
2250 CORDELIA ROAD
(707) 207-7760

SHIP DATE: 11AUG22
ACTWGT 49 00 LB
CAD: 2549479/NET4490
DIMS: 26x14x14 IN

FAIRFIELD, CA 94534
UNITED STATES

BILL SENDER

TO **ATTN: SAMPLE RECEIVING
EUROFINS CALSCIENCE
2481 DOW AVENUE**

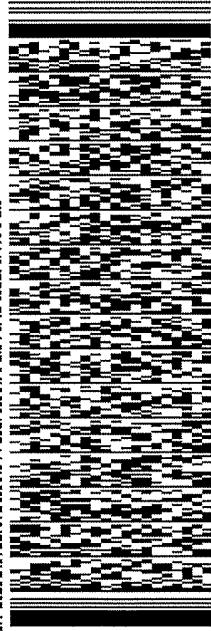
TUSTIN CA 92780

(714) 895-5494
INV.
PO. 36545

REF 35752

DEPT

581 J2/F39D/FE4A



FRI - 12 AUG 10:30A

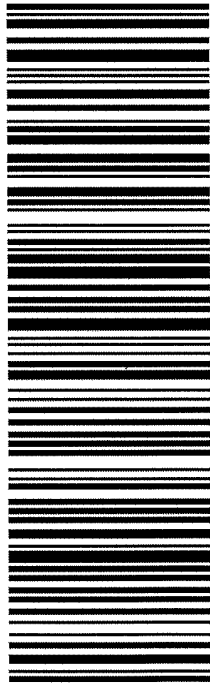
PRIORITY OVERNIGHT

TRK# 7776 4242 5718

0201

92780

CA-115
SNA



The label can be read and scanned



570-106268 Wavbill

- 1 After printing this label
- 2 Fold the printed page along the horizontal line
- 3 Place label in shipping pouch and affix it to your shipment so that the

Warning Use only the printed original label for shipping. Using a photo charges, along with the cancellation of your FedEx account number. Use of this system constitutes your agreement to the service conditions responsible for any claim in excess of \$100 per package, whether the declared a higher value, pay an additional charge, document your actual Your right to recover from FedEx for any loss, including intrinsic value (forms of damage whether direct, incidental, consequential, or special) is \$ actual documented loss Maximum for items of extraordinary value is \$ ServiceGuide Written claims must be filed within strict time limits, see

After printing this label

Environment Testing
America

[illegible]

Login Sample Receipt Checklist

Client: Cash in Advance (Calscience)

Job Number: 570-106268-1

SDG Number:

Login Number: 106268

List Number: 1

Creator: Ortiz-Luis, Michael

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Cash in Advance (Calscience)

Job Number: 570-106268-1

SDG Number:

Login Number: 106268

List Number: 2

Creator: Miller, Darren R

List Source: Eurofins Seattle

List Creation: 08/16/22 12:12 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Wendy Rocha
Foth Infrastructure & Environment, LLC
384 Bel Marin Keys Boulevard
Suite 140
Novato, California 94949
Generated 12/19/2022 10:16:18 AM

JOB DESCRIPTION

Bel Marine Keys

JOB NUMBER

570-105438-4

Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



Generated
12/19/2022 10:16:18 AM

Authorized for release by
Carla Hollowell, Project Manager I
Carla.Hollowell@et.eurofinsus.com
(714)895-5494



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Toxicity Summary	6
Certification Summary	7
Method Summary	8
Sample Summary	9
Receipt Checklists	10

Definitions/Glossary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-4

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-4

Job ID: 570-105438-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative 570-105438-4

Comments

Pursuant to a client request, TEQ values are being reported in this document. No additional comments.

Receipt

The samples were received on 8/3/2022 11:35 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.0° C.

Dioxin

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Toxicity Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-4

Client Sample ID: DU-1

Lab Sample ID: 570-105438-1

						EPA 1989		
						ND = 0		
Analyte	Result	Qualifier	NONE	NONE	Unit	TEF	TEQ	Method
Total Dioxin/Furan TEQ					pg/g		3.8	TEQ

Client Sample ID: DU-2

Lab Sample ID: 570-105438-4

						EPA 1989		
						ND = 0		
Analyte	Result	Qualifier	NONE	NONE	Unit	TEF	TEQ	Method
Total Dioxin/Furan TEQ					pg/g		1.8	TEQ

Client Sample ID: DU-3 COMP

Lab Sample ID: 570-105438-7

						EPA 1989		
						ND = 0		
Analyte	Result	Qualifier	NONE	NONE	Unit	TEF	TEQ	Method
Total Dioxin/Furan TEQ					pg/g		3.2	TEQ

TEF Reference:

EPA 1989 = Environmental Protection Agency (EPA) 1989 TEF, Dioxins, Furans and PCB Congeners

Accreditation/Certification Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-4

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-31-23
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-30-23
Hawaii	State	<cert No.>	01-29-23
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-23
Oregon	NELAP	4040	01-29-23
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	01-23-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-13-22
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Calscience

Method Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-4

Method	Method Description	Protocol	Laboratory
TEQ	Total TEQ Calculation	Lab SOP	EET SAC

Protocol References:

Lab SOP = Laboratory Standard Operating Procedure

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Foth Infrastructure & Environment, LLC
Project/Site: Bel Marine Keys

Job ID: 570-105438-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-105438-1	DU-1	Sediment	07/28/22 14:51	08/03/22 11:35
570-105438-4	DU-2	Sediment	07/28/22 15:00	08/03/22 11:35
570-105438-7	DU-3 COMP	Sediment	07/28/22 12:05	08/03/22 11:35

Login Sample Receipt Checklist

Client: Cash in Advance (Calscience)

Job Number: 570-105438-4

Login Number: 105438

List Number: 1

Creator: Patel, Jayesh

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Cash in Advance (Calscience)

Job Number: 570-105438-4

Login Number: 105438

List Number: 2

Creator: Pratali, Sandra A

List Source: Eurofins Sacramento

List Creation: 08/08/22 07:20 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	Water present in cooler; indicates evidence of melted ice.
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	15.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix D
Biological Testing Report Submitted by Pacific EcoRisk



Wendy Rocha
Foth & Van Dyke and Associates, Inc.
384 Bel Marin Keys Blvd., Ste. 140
Novato, CA 94949

September 14, 2022

Dear Ms. Rocha:

Please find attached an electronic copy of the report "Biological Testing of the Sediment Samples Collected from Bel Marin Keys, Novato, CA" in PDF format. Hard copies can be provided upon request.

If you have any questions, please give my colleague Jeff Cotsifas or myself a call at (707) 207-7760. I look forward to hearing from you.

Sincerely,

Michael McElroy
Senior Project Manager



Pacific EcoRisk is accredited in accordance with NELAP (ORELAP ID 4043). Pacific EcoRisk certifies that the test results reported herein conform to the most current NELAP requirements for parameters for which accreditation is required and available. Any exceptions to NELAP requirements are noted, where applicable, in the body of the report. This report shall not be reproduced, except in full, without the written consent of Pacific EcoRisk. This testing was performed under Lab Order 36545.

DATA REPORT

Biological Testing of the Sediment Samples Collected from Bel Marin Keys, Novato, CA

Prepared for

Foth & Van Dyke and Associates
384 Bel Marin Keys Blvd., Ste 140
Novato, CA 94949

Prepared by

Pacific EcoRisk
2250 Cordelia Road
Fairfield, CA 94534

September 2022



PACIFIC ECORISK
ENVIRONMENTAL CONSULTING & TESTING

Table of Contents

	Page
1. INTRODUCTION	1
2. METHODS.....	1
2.1 Biological Testing Procedures	1
2.2 Receipt and Handling of Sediment Samples	1
2.3 Source of Natural Seawater	1
2.4 Sediment Porewater Characterization.....	2
2.5 Modified Elutriate Test (MET) Procedures	2
2.5.1 Preparation of MET Samples.....	2
2.5.2 MET Toxicity Testing with <i>Americamysis bahia</i>	2
2.5.2.1 Reference Toxicant Testing of the <i>Americamysis bahia</i>	3
3. BIOLOGICAL TESTING RESULTS	4
3.1 Effects of Bel Marin Keys Modified Elutriates on <i>Americamysis bahia</i>	4
3.1.1 Reference Toxicant Toxicity to <i>Americamysis bahia</i>	4
3.2 Biological Testing QA/QC Summary	5
4. REFERENCES	6

Appendices

- Appendix A Chain-of-Custody Records for the Collection and Delivery of the Bel Marin Keys Sediments
- Appendix B Whole Sediment Test Porewater and Water Quality Characteristics of Overlying Water
- Appendix C Test Data and Summary of Statistics for the Evaluation of the Toxicity of the Bel Marin Keys Modified Elutriate Test (MET) Sediment Elutriates to Mysids (*Americamysis bahia*)
- Appendix D Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the Mysid, *Americamysis bahia* – Concurrent with MET testing
- Appendix E Bioassay Standard Test Conditions



List of Tables

	Page
Table 2-1. Sediment Porewater Initial Water Quality Characteristics	2
Table 3-1. Effects of the Bel Marin Keys Modified Elutriates on <i>Americamysis bahia</i>	4
Table 3-2. Reference Toxicant Testing: Effects of KCl on <i>Americamysis bahia</i>	5



1. INTRODUCTION

Foth & Van Dyke and Associates (FOTH) has contracted Pacific EcoRisk (PER) to perform water column (sediment elutriate) bioassay testing of sediments collected from the Bel Marin Keys in support of the Bel Marin Key CSD's maintenance dredging sampling and testing program. The performance and results of this testing are presented in this report.

2. METHODS

2.1 Biological Testing Procedures

This evaluation consisted of performing the 96-hr modified elutriate mysid survival test with *Americamysis bahia*.

The methods used in conducting these tests followed established guidelines:

- Testing Manual for the Evaluation of Dredged Material Discharged in Waters of the U.S. (Inland Testing Manual, US EPA/USACE, 1998);
- Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. (US EPA, 2002); and
- USACE Technical Note EEDP-04-02. Interim Guidance for Predicting Quality of Effluent Discharged from Confined Dredged Material Disposal Areas-Test Procedures. U.S. Army Corps of Engineers, US Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS. USACE (1985).

2.2 Receipt and Handling of Sediment Samples

On July 28 and 29, 2022, sediment samples were collected from Bel Marin Keys. In addition, a 'site water' sample was collected for use in preparing the sediment elutriates on July 29. Upon receipt at the PER testing laboratory, the samples were logged in and stored in the dark and under refrigeration (i.e., at 4°C for the sediment and 0-6°C for the water sample) until needed. The chain-of-custody record for the collection and delivery of these samples is provided in Appendix A.

2.3 Source of Natural Seawater

The natural seawater used in these tests was obtained from the UC Davis - Bodega Marine Laboratory and is characterized as "pristine"; this water was stored at the PER laboratory in a 3000-gallon insulated HDPE tank maintained at 4°C. This seawater was 1-µm filtered and then adjusted to the desired test salinity (e.g., 32 ppt) via addition of Type 1 lab water (reverse-osmosis, de-ionized water) prior to use in these tests (these diluted natural seawaters are referred to using the adjusted salinity level [e.g., '32 ppt seawater']).



2.4 Sediment Porewater Characterization

Upon receipt, the sediment samples were homogenized in large stainless steel bowls. Aliquots of each of the homogenized site sediments were centrifuged at 2,500 rpm for 15 minutes; the resulting supernatant porewaters were carefully collected and analyzed for routine water quality characteristics (Table 2-1).

Table 2-1. Sediment Porewater Initial Water Quality Characteristics.

Sample ID	pH	Salinity (ppt)	Total Ammonia (mg/L N)	Total Sulfide (mg/L)
DU-1-Comp	7.75	16.7	18.7	0.106
DU-2-Comp	7.75	11.6	20.7	0.099
DU-3-Comp	7.96	26.3	7.00	0.077

2.5 Modified Elutriate Test (MET) Procedures

2.5.1 Preparation of MET Samples

All elutriate samples were prepared as described in USACE (1985). All elutriates were prepared using a sediment slurry concentration of 150 g/L dry sediment (the dry weight basis of each homogenized sediment was determined by oven-drying a known volume of sediment). The resulting dry weight concentration of each sediment was used to calculate the volume of sediment and water that would be required to prepare an elutriate slurry at a sediment concentration of 150 g/L dry wt. basis. Each elutriate slurry was prepared by mixing site water and sediment for five minutes, followed with vigorous aeration for 1 hr in a 4-L graduated cylinder, after which any suspended material was allowed to settle for 24-hrs. After the settling period, the elutriate supernatant for each sample was collected from the cylinder by siphoning at a point midway between the water surface and settled sediment interface using clean silicone tubing. Extreme care was taken not to re-suspend any of the settled material. The resulting supernatant was analyzed for total ammonia (Table 2-1); un-ionized ammonia was calculated based on mean test temperature, pH, and salinity. In addition, an aliquot of the MET supernatant was placed into pre-cleaned bottles and submitted to Eurofins Calscience, Inc. (Garden Grove, CA), as per client instruction; the remaining MET supernatant was used for initiating toxicity testing.

2.5.2 MET Toxicity Testing with *Americamysis bahia*

The MET toxicity test with *A. bahia* consists of exposing the mysids to the MET elutriate for ~96-hrs, after which the effects on survival are determined. The specific procedures used in this testing are described below. The modified elutriate test with *A. bahia* was initiated on August 11, 2022.



The *A. bahia* used in the MET testing were obtained from a commercial supplier (Aquatic Indicators, Saint Augustine, FL); upon receipt in the laboratory, the mysids were maintained in small tanks of 25 ppt seawater at 20°C, and were fed brine shrimp nauplii *ad libitum*.

The Lab Water Control medium for this testing consisted of 32 ppt seawater. The sediment MET elutriate was tested at the 100% elutriate only. The site water from the area where the sediment samples were collected was also tested (at the 100% concentration). Initial routine water quality characteristics (temperature, pH, D.O., total ammonia, and salinity) were measured for each treatment test solution prior to use in testing.

There were five test replicates at each treatment, each replicate consisting of a 400-mL glass beaker containing 200 mL of appropriate test solution. The testing was initiated with the allocation of 10 randomly selected 5-day old mysids into each test replicate. The test replicates were then placed into a temperature-controlled room at 20°C under a 16L:8D photoperiod.

Each day, water quality conditions were determined for one randomly selected replicate per treatment, and the test replicates were examined to determine the number of surviving organisms, with any dead organisms being removed via pipette. Each replicate was fed brine shrimp nauplii daily.

After 96 (± 2) hours exposure, the testing was terminated, at which time the final water quality conditions were determined for one randomly selected replicate per treatment, after which each of the test replicates was examined to determine the number of surviving mysids. The resulting survival data were then statistically analyzed and key concentration-response EC point estimates determined for each site sediment elutriate using CETIS®. The results of this testing are summarized in Section 3.1.

2.5.2.1 Reference Toxicant Testing of the *Americamysis bahia*- In order to assess the sensitivity of these test organisms to chemical stress, a reference toxicant test was performed concurrently with the elutriate test. The reference toxicant testing was performed similarly to the sediment elutriate test, but used test solutions consisting of Lab Water Control medium spiked with KCl at test concentrations of 0.125, 0.25, 0.5, 1, and 2 g/L, instead of elutriate dilutions. The resulting test response data were statistically analyzed to determine key dose-response point estimates (e.g., EC₅₀); all statistical analyses were made using the CETIS® software. These response endpoints were then compared to the typical response range established by the mean $\pm$ 2 SD of the point estimates generated by the 20 most-recent previous reference toxicant tests performed by this lab. The results of this test are summarized in Section 3.1.1.



3. BIOLOGICAL TESTING RESULTS

The evaluation consisted of performing the 96-hr modified elutriate mysid survival test with *Americamysis bahia*.

A summary table of the ammonia concentrations in the modified elutriates at test initiation are presented in Appendix B. Summaries of test conditions and test acceptability criteria are provided in Appendix E.

3.1 Effects of Bel Marin Keys Modified Elutriates on *Americamysis bahia*

The results of these tests are summarized below in Table 3-1. There was 98% survival in the Lab Control treatment, indicating acceptable survival responses by the test organisms; there was 100% survival in the Site Water treatment. There was $\geq 98\%$ survival in Bel Marin Keys METs.

The test data and summary of statistical analyses for this test are attached as Appendix C.

Table 3-1. Effects of the Bel Marin Keys Modified Elutriates on *Americamysis bahia*.

Test Treatment	Mean % Survival
Lab Control	98
Site Water	100
DU1-Comp	100
DU2-Comp	98
DU3-Comp	100

3.1.1 Reference Toxicant Toxicity to *Americamysis bahia*

The results of these tests are summarized in Table 3-2. The LC50 for this test is consistent with the “typical response” range established by the reference toxicant test database for this species, indicating that these test organisms were responding to toxic stress in a typical fashion. The test data and summary of statistical analyses for this test are attached as Appendix D.



Table 3-2. Reference Toxicant Testing: Effects of KCl on *Americamysis bahia*.

KCl Treatment (g/L)	Mean % Survival
Lab Control	97.5
0.125	97.5
0.25	100
0.5	95.0
1	0.0*
2	0.0*
LC ₅₀ =	0.69 g/L KCl
Typical Response Range (mean ± 2SD) =	0.278 – 0.781 g/L KCl

* The survival response at this treatment was significantly less than the Lab Control response at $p < 0.05$.

3.2 Biological Testing QA/QC Summary

The biological testing of Bel Marin Keys sediments incorporated standard QA/QC procedures to ensure that the test results were valid, including the use of negative Lab Controls, positive Lab Controls, test replicates, and measurements of water quality during testing.

Quality assurance procedures that were used for sediment testing are consistent with methods described in the U.S.EPA/USACE (1998). Sediments for the bioassay testing were stored appropriately at $\leq 4^{\circ}\text{C}$ and were used within the eight week holding time period. Sediment elutriates were prepared using site water.

All measurements of routine water quality characteristics were performed as described in the PER Lab Standard Operating Procedures (SOPs). All biological testing water quality conditions were within the appropriate limits. Laboratory instruments were calibrated daily according to Lab SOPs, and calibration data were logged and initialed.

Negative Lab Control – The biological responses for the test organisms at the negative Lab Control treatments were within acceptable limits for the sediment elutriate tests.

Positive Lab Control – The key test concentration-response LC point estimate determined for the test species were within the typical response range for this species, indicating that these test organisms were responding to toxic stress in a typical fashion.



4. REFERENCES

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. U.S. EPA, Environmental Office of Research and Development, Washington DC.

USEPA/USACE (1998) Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual (Inland Testing Manual). U.S. Environmental Protection Agency/U.S. Army Corps of Engineers. EPA/823/B-94/002. Office of Water. Washington, DC 20460.

USACE (1985) USACE Technical Note EEDP-04-02. Interim Guidance for Predicting Quality of Effluent Discharged from Confined Dredged Material Disposal Areas-Test Procedures. U.S. Army Corps of Engineers, US Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS.

Appendix A

Chain-of-Custody Records for the Collection and Delivery of the Bel Marin Keys Sediments



1250 Cordelia Rd., Fairfield, CA 94534
707)207-7760

Pacific EcoRisk CHAIN-OF-CUSTODY RECORD

Client Name:		Foth Infrastructure & Environment, LLC				REQUESTED ANALYSIS													
Client Address:		755 Baywood Drive, Suite 228 Petaluma, CA 94954				MET PREP AND TESTING	100% only mysid or fish test on MET	Site Water Test											
Sampled By:		KT																	
Phone:		508-642-2469																	
FAX:		NA																	
Project Manager:		Mike McElroy																	
Project Name:		Bel Marine Keys CSD																	
PO Number:																			
Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Container															
				Number	Type														
1	DU-1 COMP	7/28	251	Sed	1	Poly Bag	X	X											
2	DU-2 COMP	7/29	300	Sed	1	Poly Bag	X	X											
3	DU-3 COMP	7/28	1205	Sed	1	Poly Bag	X	X											
4	Site Water	7/29	400	FW	2	Cubi			X										
5																			
6																			
7																			
8																			
9																			
10																			
Correct Containers:		Yes	No			RELIQUISHED BY													
Sample Temperature:		Ambient	Cold	Warm		Signature: <i>[Signature]</i>				Signature: <i>[Signature]</i>									
Sample Preservative:		Yes	No			Print: <i>Kyle MacDonald</i>				Print: <i>Jamison Nagle</i>									
Turnaround Time:		STD	Specify:		Organization: <i>Foth</i>				Organization: <i>PER</i>										
Comments:					DATE: <i>8/1/2012</i> TIME: <i>09:21</i>				DATE: <i>8/1/22</i> TIME: <i>0945</i>										
					RECEIVED BY														
					Signature: <i>[Signature]</i>				Signature: <i>[Signature]</i>										
					Print: <i>Jamison Nagle</i>				Print: <i>Trevor Kelly</i>										
					Organization: <i>PER</i>				Organization: <i>PER</i>										
					DATE: <i>8/1/22</i> TIME: <i>0921</i>				DATE: <i>8/1/22</i> TIME: <i>1045</i>										

*MATRIX CODES: (SED = Sediment); (FW = Freshwater); (WW = Wastewater); (STRMW = Stormwater)

Appendix B

Whole Sediment Test Porewater and Water Quality Characteristics of Overlying Water

Table B-1. Total Ammonia Levels for the Modified Elutriate Test (MET) Sample.

Sample ID	Total Ammonia (mg/L N)
DU-1 Comp	15.0
DU-2 Comp	18.5
DU-3 Comp	3.05



Appendix C

Test Data and Summary of Statistics for the Evaluation of the Toxicity of the Bel Marin Keys Modified Elutriate Test (MET) Sediment Elutriates to Mysids (*Americamysis bahia*)

CETIS Summary Report

Report Date: 12 Sep-22 09:28 (p 1 of 1)
Test Code/ID: BMK_0822AB_MET / 02-9659-6474

Acute Mysid Survival Test

Pacific EcoRisk

Batch ID: 01-1113-2987	Test Type: Survival (96h)	Analyst: Matessa Martin
Start Date: 11 Aug-22 17:44	Protocol: EPA-821-R-02-012 (2002)	Diluent: Diluted Seawater
Ending Date: 15 Aug-22 16:36	Species: Americamysis bahia	Brine: Not Applicable
Test Length: 95h	Taxon:	Source: Aquatic Indicators, FL Age: 5

Sample ID: 06-4494-3236	Code: BMK_0822AB_MET	Project: 36545
Sample Date: 11 Aug-22 17:44	Material: Lab Water	Source: Bel Marin Keys
Receipt Date: 11 Aug-22 17:44	CAS (PC):	Station: LABQA
Sample Age: --- (20.6 °C)	Client: Foth	

Sample Code	Sample ID	Sample Date	Receipt Date	Sample Age	Client Name	Project
BMK_0822AB_MET	06-4494-3236	11 Aug-22 17:44	11 Aug-22 17:44	--- (20.6 °C)	Foth	36545
Site Water	20-3108-9227	29 Jul-22 16:00	01 Aug-22 10:45	13d 2h (5.1 °C)		
DU-1 COMP	05-3058-6032	28 Jul-22 14:51	01 Aug-22 10:45	14d 3h (5.1 °C)		
DU-2 COMP	21-2131-5184	28 Jul-22 15:00	01 Aug-22 10:45	14d 3h (3.3 °C)		
DU-3 COMP	19-3673-2109	28 Jul-22 12:05	01 Aug-22 10:45	14d 6h (3.3 °C)		

Sample Code	Material Type	Sample Source	Station Location	Lat/Long
BMK_0822AB_MET	Lab Water	Bel Marin Keys	LABQA	
Site Water	Site Water	Bel Marin Keys	Site Water	
DU-1 COMP	Elutriate	Bel Marin Keys	DU-1 COMP	
DU-2 COMP	Elutriate	Bel Marin Keys	DU-2 COMP	
DU-3 COMP	Elutriate	Bel Marin Keys	DU-3 COMP	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
21-4534-9517	96h Survival Rate	Wilcoxon Rank Sum Two-Sample Test	1.0000	Site Water passed 96h survival rate	1
17-1937-6079	96h Survival Rate	Wilcoxon Rank Sum Two-Sample Test	1.0000	DU-1 COMP passed 96h survival rate	1
02-7278-8731	96h Survival Rate	Wilcoxon Rank Sum Two-Sample Test	0.7778	DU-2 COMP passed 96h survival rate	1
05-9830-0599	96h Survival Rate	Wilcoxon Rank Sum Two-Sample Test	1.0000	DU-3 COMP passed 96h survival rate	1

96h Survival Rate Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
BMK_0822AB_MET	LW	5	0.9800	0.9245	1.0360	0.9000	1.0000	0.0200	0.0447	4.56%	0.00%
Site Water	SW	5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	-2.04%
DU-1 COMP		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	-2.04%
DU-2 COMP		5	0.9800	0.9245	1.0360	0.9000	1.0000	0.0200	0.0447	4.56%	0.00%
DU-3 COMP		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	-2.04%

96h Survival Rate Detail

MD5: A6EFDE5A49338095DFDF06A50F94B954

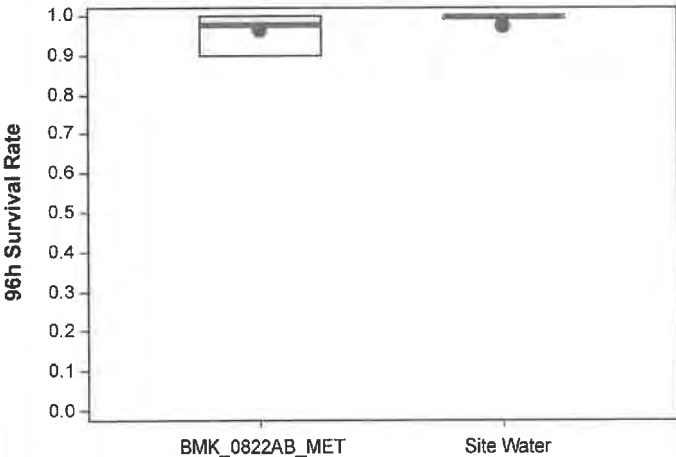
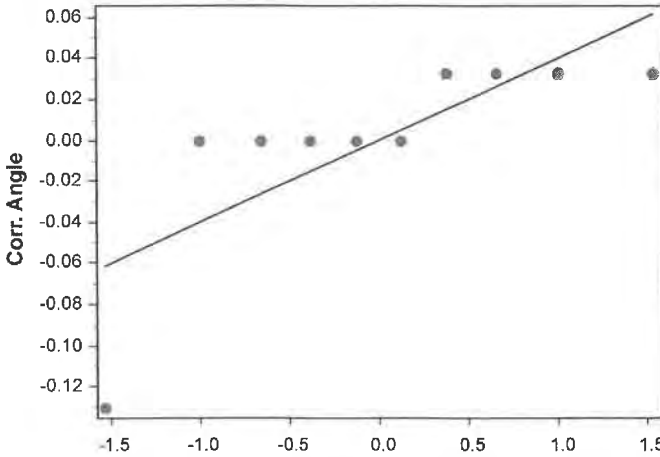
Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
BMK_0822AB_MET	LW	1.0000	1.0000	1.0000	1.0000	0.9000
Site Water	SW	1.0000	1.0000	1.0000	1.0000	1.0000
DU-1 COMP		1.0000	1.0000	1.0000	1.0000	1.0000
DU-2 COMP		0.9000	1.0000	1.0000	1.0000	1.0000
DU-3 COMP		1.0000	1.0000	1.0000	1.0000	1.0000

96h Survival Rate Binomials

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
BMK_0822AB_MET	LW	10/10	10/10	10/10	10/10	9/10
Site Water	SW	10/10	10/10	10/10	10/10	10/10
DU-1 COMP		10/10	10/10	10/10	10/10	10/10
DU-2 COMP		9/10	10/10	10/10	10/10	10/10
DU-3 COMP		10/10	10/10	10/10	10/10	10/10

CETIS Analytical Report

Report Date: 12 Sep-22 09:28 (p 1 of 4)
Test Code/ID: BMK_0822AB_MET / 02-9659-6474

Acute Mysid Survival Test										Pacific EcoRisk	
Analysis ID: 21-4534-9517		Endpoint: 96h Survival Rate				CETIS Version: CETISv2.1.2					
Analyzed: 12 Sep-22 9:28		Analysis: Nonparametric-Two Sample				Status Level: 1					
Edit Date: 12 Sep-22 9:25		MD5 Hash: CC8B41386AC2C7D418019493E17D3709				Editor ID: 006-243-107-9					
Data Transform		Alt Hyp		Comparison Result					PMSD		
Angular (Corrected)		C > T		Site Water passed 96h survival rate endpoint					4.30%		
Wilcoxon Rank Sum Two-Sample Test											
Sample I	vs	Sample II	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(α:5%)		
Lab Water Control		Site Water	8	30	---	1	Exact	1.0000	Non-Significant Effect		
ANOVA Table											
Source		Sum Squares		Mean Square		DF	F Stat	P-Value	Decision(α:5%)		
Between		0.0026559		0.0026559		1	1	0.3466	Non-Significant Effect		
Error		0.0212475		0.0026559		8					
Total		0.0239034				9					
ANOVA Assumptions Tests											
Attribute		Test		Test Stat		Critical	P-Value	Decision(α:1%)			
Variance		Variance Ratio F Test						Indeterminate			
Distribution		Shapiro-Wilk W Normality Test		0.6247		0.7411	0.0001	Non-Normal Distribution			
96h Survival Rate Summary											
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
BMK_0822AB_MET	LW	5	0.9800	0.9245	1.0000	1.0000	0.9000	1.0000	0.0200	4.56%	0.00%
Site Water	SW	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.04%
Angular (Corrected) Transformed Summary											
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
BMK_0822AB_MET	LW	5	1.3790	1.2890	1.4700	1.4120	1.2490	1.4120	0.0326	5.28%	0.00%
Site Water	SW	5	1.4120	1.4120	1.4120	1.4120	1.4120	1.4120	0.0000	0.00%	-2.36%
Graphics											
											
96h Survival Rate						Corr. Angle					
Sample Code						Rankits					

96 Hour Acute *Americamysis bahia* Water Column Toxicity Test

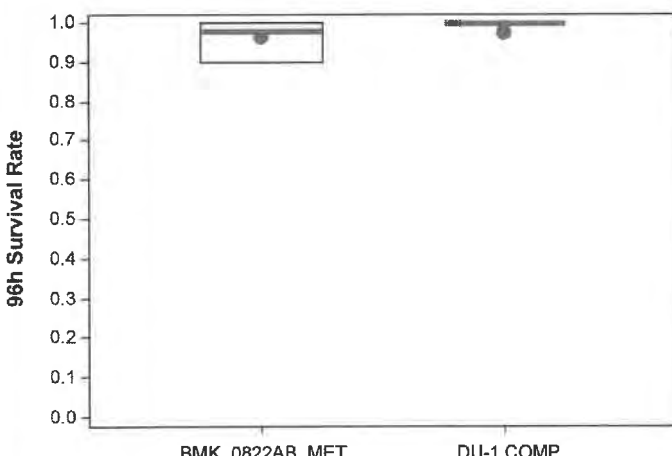
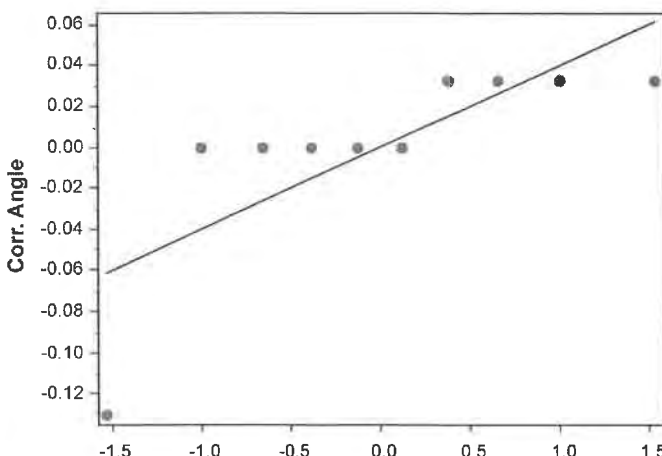
Client: FOTH: Bel Marin Keys
 Test Material: Site Water
 Test ID#: 96563-65 Project #: 36454
 Test Date: 8/11/22 Randomization: 555

Organism Log #: 13358 Age: 5 days
 Organism Supplier: Aquatic Indicators
 Control/Diluent: 32 ppt ±2
 Sample Salinity adjusted with: —

Treatment	Temp (°C)	pH		D.O. (mg/L)		Salinity (ppt)		# Live Organisms					SIGN-OFF
		new	old	new	old	new	old	Rep A	Rep B	Rep C	Rep D	Rep E	
Lab Control	20.6	8.17		8.3		32.0		10	10	10	10	10	Test Solution Prep: MD
Site Water	20.2	8.45		8.2		31.9		10	10	10	10	10	New WQ: MD
													Initiation Date: 8/11/22
													Initiation Time: 1744
													Initiation Signoff: MD
													a.m. Feeding Signoff: MEM
													p.m. Feeding Signoff: MD
Meter ID	660A	PH25		RD13		EC15							
Lab Control	19.3		7.37		5.7		32.1	10	10	10	10	10	Count Date: 8/12/22
Site Water	19.2		7.60		5.5		32.2	10	10	10	10	10	Count Time: 1253
													Count Signoff: OK
													Old WQ: KM
													a.m. Feeding Signoff: R6
													p.m. Feeding Signoff: OK
Meter ID	31A	PH25		RD13		EC15							
Lab Control	19.3		7.71		5.7		33.0	10	10	10	10	9	Count Date: 8/13/22
Site Water	19.2		7.80		5.6		33.2	10	10	10	10	10	Count Time: 0950
													Count Signoff: OK
													Old WQ: OK
													a.m. Feeding Signoff: MD
													p.m. Feeding Signoff: MD
Meter ID	30A	PH20		RD15		EC16							
Lab Control	19.8		7.74		7.1		34.3	10	10	10	10	9	Count Date: 8/14/22
Site Water	19.6		7.88		6.9		35.2	10	10	10	10	10	Count Time: 1217
													Count Signoff: OK
													Old WQ: EK
													a.m. Feeding Signoff: OK
													p.m. Feeding Signoff: OK
Meter ID	133A	PH29		RD10		EC13							
Lab Control	19.6		7.18		5.8		35.11	10	10	10	10	9	Termination Date: 8/15/22
Site Water	19.5		7.25		5.7		35.4	10	10	10	10	10	Termination Time: 1636
													Termination Signoff: MEM
													Old WQ: EK
													a.m. Feeding Signoff: EK
Meter ID	131A	PH29		RD10		EC13							Effective Date: 7/25/21

CETIS Analytical Report

Report Date: 12 Sep-22 09:28 (p 2 of 4)
 Test Code/ID: BMK_0822AB_MET / 02-9659-6474

Acute Mysid Survival Test										Pacific EcoRisk	
Analysis ID: 17-1937-6079		Endpoint: 96h Survival Rate				CETIS Version: CETISv2.1.2					
Analyzed: 12 Sep-22 9:28		Analysis: Nonparametric-Two Sample				Status Level: 1					
Edit Date: 12 Sep-22 9:25		MD5 Hash: 806881B1484C1FDE32ED3A9114F030B1				Editor ID: 006-243-107-9					
Data Transform		Alt Hyp		Comparison Result					PMSD		
Angular (Corrected)		C > T		DU-1 COMP passed 96h survival rate endpoint					4.30%		
Wilcoxon Rank Sum Two-Sample Test											
Sample I	vs	Sample II	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(α:5%)		
Lab Water Control		DU-1 COMP	8	30	---	1	Exact	1.0000	Non-Significant Effect		
ANOVA Table											
Source		Sum Squares		Mean Square		DF	F Stat	P-Value	Decision(α:5%)		
Between		0.0026559		0.0026559		1	1	0.3466	Non-Significant Effect		
Error		0.0212475		0.0026559		8					
Total		0.0239034				9					
ANOVA Assumptions Tests											
Attribute		Test		Test Stat		Critical	P-Value	Decision(α:1%)			
Variance		Variance Ratio F Test						Indeterminate			
Distribution		Shapiro-Wilk W Normality Test		0.6247		0.7411	0.0001	Non-Normal Distribution			
96h Survival Rate Summary											
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
BMK_0822AB_MET	LW	5	0.9800	0.9245	1.0000	1.0000	0.9000	1.0000	0.0200	4.56%	0.00%
DU-1 COMP		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.04%
Angular (Corrected) Transformed Summary											
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
BMK_0822AB_MET	LW	5	1.3790	1.2890	1.4700	1.4120	1.2490	1.4120	0.0326	5.28%	0.00%
DU-1 COMP		5	1.4120	1.4120	1.4120	1.4120	1.4120	1.4120	0.0000	0.00%	-2.36%
Graphics											
											
96h Survival Rate						Corr. Angle					
Sample Code						Rankits					

96 Hour Acute *Americamysis bahia* Water Column Toxicity Test

Client: FOTH: Bel Marin Keys
 Test Material: BMK-DU1 MET
 Test ID#: 96563 Project #: 36545
 Test Date: 8/11/22 Randomization: 5-5-5

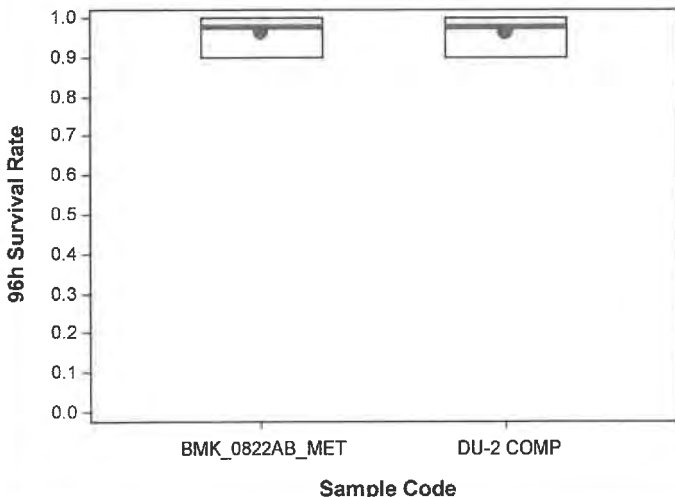
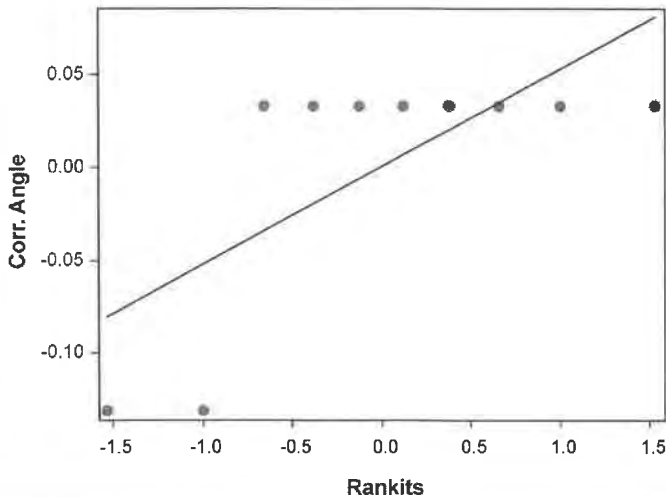
Organism Log #: 13358 Age: 5 days
 Organism Supplier: Aquatic Indicators
 Control: DI + FSW at 32 ppt ± 2
 Sample Salinity adjusted with: —

Treatment (% Elutriate)	Temp (°C)	pH		D.O. (mg/L)		Salinity (ppt)		NH3 (mg/L)	# Live Organisms					SIGN-OFF
		new	old	new	old	new	old		Rep A	Rep B	Rep C	Rep D	Rep E	
Lab Control	20.6	8.17		0.3		32.0			10	10	10	10	10	Test Solution Prep: <i>W</i>
100%	20.7	7.75		5.0		30.6		15-0	10	10	10	10	10	New WQ: <i>W</i>
														Initiation Date: 8/11/22
														Initiation Time: 1744
														Initiation Signoff: <i>ND</i>
														a.m. Feeding: <i>mem</i>
														p.m. Feeding: <i>mem</i>
Meter ID	1175	PH25		RD13		EC15		RL300						Count Date: 8/12/22
Lab Control	19.3		7.37		5.7		32.1		10	10	10	10	10	Count Time: 1753
100%	19.3		7.87		5.9		30.2		10	10	10	10	10	Count Signoff: <i>OK</i>
														Old WQ: <i>W</i>
														a.m. Feeding: <i>mem</i>
														p.m. Feeding: <i>mem</i>
Meter ID	131A		PH25		RD13		EC16							Count Date: 8/13/22
Lab Control	19.3		7.71		5.7		33.0		10	10	10	10	9	Count Time: 1950
100%	19.3		7.94		5.8		30.6		10	10	10	10	10	Count Signoff: <i>IF</i>
														Old WQ: <i>OK</i>
														a.m. Feeding: <i>ND</i>
														p.m. Feeding: <i>ND</i>
Meter ID	170A		PH30		RD15		EC16							Count Date: 8/14/22
Lab Control	19.8		7.74		7.1		34.3		10	10	10	10	9	Count Time: 1217
100%	19.6		7.98		7.0		32.5		10	10	10	10	10	Count Signoff: <i>OK</i>
														Old WQ: <i>OK</i>
														a.m. Feeding: <i>ND</i>
														p.m. Feeding: <i>ND</i>
Meter ID	133A		PH29		RD10		EC13							Termination Date: 8/15/22
Lab Control	19.6		7.18		5.8		35.11		10	10	10	10	9	Termination Time: 1636
100%	19.5		7.32		5.8		32.4		10	10	10	10	10	Termination Signoff: <i>mem</i>
														Old WQ: <i>OK</i>
														a.m. Feeding: <i>OK</i>
Meter ID	131A		PH29		RD10		EC13							

CETIS Analytical Report

Report Date: 12 Sep-22 09:28 (p 3 of 4)

Test Code/ID: BMK_0822AB_MET / 02-9659-6474

Acute Mysid Survival Test										Pacific EcoRisk	
Analysis ID: 02-7278-8731		Endpoint: 96h Survival Rate				CETIS Version: CETISv2.1.2					
Analyzed: 12 Sep-22 9:28		Analysis: Nonparametric-Two Sample				Status Level: 1					
Edit Date: 12 Sep-22 9:25		MD5 Hash: 4EC87098C513EBBE5FDF840BBEF5CCC				Editor ID: 006-243-107-9					
Data Transform		Alt Hyp		Comparison Result					PMSD		
Angular (Corrected)		C > T		DU-2 COMP passed 96h survival rate endpoint					5.60%		
Wilcoxon Rank Sum Two-Sample Test											
Sample I	vs	Sample II	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(α:5%)		
Lab Water Control		DU-2 COMP	8	27.5	---	2	Exact	0.7778	Non-Significant Effect		
ANOVA Table											
Source		Sum Squares		Mean Square		DF	F Stat	P-Value	Decision(α:5%)		
Between		0		0		1	0	1.0000	Non-Significant Effect		
Error		0.0424949		0.0053119		8					
Total		0.0424949				9					
ANOVA Assumptions Tests											
Attribute		Test				Test Stat	Critical	P-Value	Decision(α:1%)		
Variance		Variance Ratio F Test				1	23.15	1.0000	Equal Variances		
Distribution		Shapiro-Wilk W Normality Test				0.5093	0.7411	<1.0E-05	Non-Normal Distribution		
96h Survival Rate Summary											
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
BMK_0822AB_MET	LW	5	0.9800	0.9245	1.0000	1.0000	0.9000	1.0000	0.0200	4.56%	0.00%
DU-2 COMP		5	0.9800	0.9245	1.0000	1.0000	0.9000	1.0000	0.0200	4.56%	0.00%
Angular (Corrected) Transformed Summary											
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
BMK_0822AB_MET	LW	5	1.3790	1.2890	1.4700	1.4120	1.2490	1.4120	0.0326	5.28%	0.00%
DU-2 COMP		5	1.3790	1.2890	1.4700	1.4120	1.2490	1.4120	0.0326	5.28%	0.00%
Graphics											
											

96 Hour Acute *Americamysis bahia* Water Column Toxicity Test

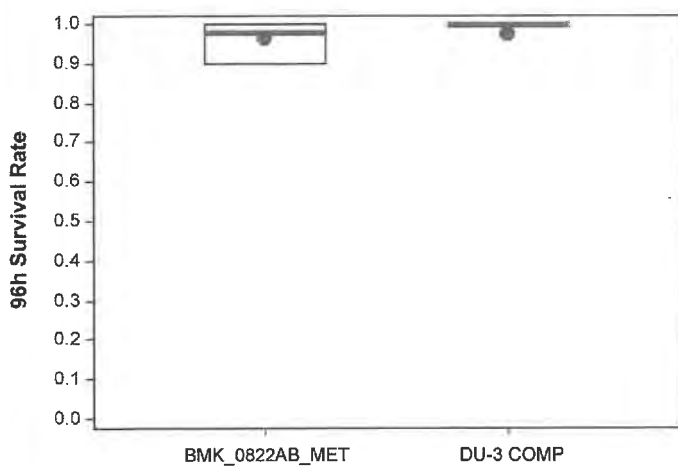
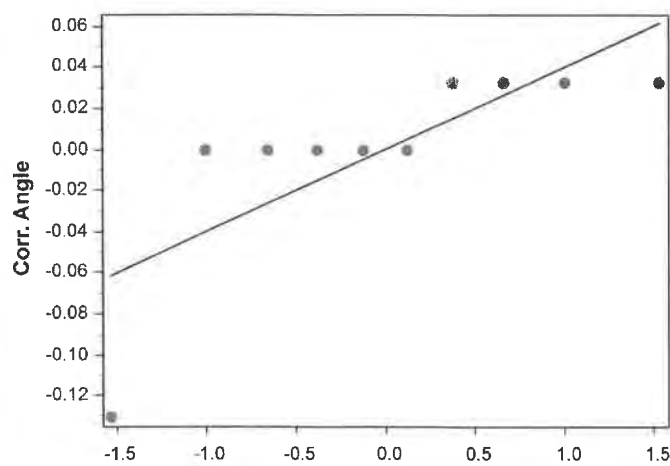
Client: FOTH: Bel Marin Keys
 Test Material: BMK-DU2 MET
 Test ID#: 96564 Project #: 36545
 Test Date: 8/11/22 Randomization: 5-5-5

Organism Log #: 13358 Age: 5 days
 Organism Supplier: Aquatic Indicators
 Control: DI + FSW at 32 ppt 32
 Sample Salinity adjusted with:

Treatment (% Elutriate)	Temp (°C)	pH		D.O. (mg/L)		Salinity (ppt)		NH3 (mg/L)	# Live Organisms					SIGN-OFF
		new	old	new	old	new	old		Rep A	Rep B	Rep C	Rep D	Rep E	
Lab Control	20.6	8.17		8.3		32.0			10	10	10	10	10	Test Solution Prep: MD
100%	20.3	7.85		5.0		30.8		10.5	10	10	10	10	10	New WQ: MD
														Initiation Date: 8/11/22
														Initiation Time: 1744
														Initiation Signoff: MD
														a.m. Feeding: MEM
														p.m. Feeding: MD
Meter ID	666A	PH25		RD15		EC15		DK300						
Lab Control	19.3		7.37		5.7		32.1		10	10	10	10	10	Count Date: 8/12/22
100%	19.3		7.94		6.3		30.0		10	10	10	10	10	Count Time: 1253
														Count Signoff: SK
														Old WQ: SK
														a.m. Feeding: RB
														p.m. Feeding: SK
Meter ID	131A		PH25		RD15		EC16							
Lab Control	19.3		7.71		5.7		33.0		10	10	10	10	9	Count Date: 8/13/22
100%	19.3		8.09		6.2		30.9		10	10	10	10	10	Count Time: 0950
														Count Signoff: TF
														Old WQ: SK
														a.m. Feeding: MD
														p.m. Feeding: SK
Meter ID	130A		PH30		RD15		EC16							
Lab Control	19.8		7.74		7.1		34.3		10	10	10	10	9	Count Date: 8/14/22
100%	19.7		7.99		6.3		33.2		10	10	10	10	10	Count Time: 1217
														Count Signoff: SK
														Old WQ: SK
														a.m. Feeding: MD
														p.m. Feeding: SK
Meter ID	133A		PH29		RD10		EC13							
Lab Control	19.6		7.18		5.8		35.11		10	10	10	10	9	Termination Date: 8/15/22
100%	19.5		7.43		5.6		33.4		9	10	10	10	10	Termination Time: 1636
														Termination Signoff: MEM
														Old WQ: SK
														a.m. Feeding: SK
Meter ID	131A		PH29		RD10		EC13							

CETIS Analytical Report

Report Date: 12 Sep-22 09:28 (p 4 of 4)
Test Code/ID: BMK_0822AB_MET / 02-9659-6474

Acute Mysid Survival Test										Pacific EcoRisk	
Analysis ID: 05-9830-0599		Endpoint: 96h Survival Rate				CETIS Version: CETISv2.1.2					
Analyzed: 12 Sep-22 9:28		Analysis: Nonparametric-Two Sample				Status Level: 1					
Edit Date: 12 Sep-22 9:25		MD5 Hash: 64F8B6073DE1F10494AC994AA7595B12				Editor ID: 006-243-107-9					
Data Transform		Alt Hyp		Comparison Result					PMSD		
Angular (Corrected)		C > T		DU-3 COMP passed 96h survival rate endpoint					4.30%		
Wilcoxon Rank Sum Two-Sample Test											
Sample I	vs	Sample II	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(α:5%)		
Lab Water Control		DU-3 COMP	8	30	---	1	Exact	1.0000	Non-Significant Effect		
ANOVA Table											
Source		Sum Squares		Mean Square		DF	F Stat	P-Value	Decision(α:5%)		
Between		0.0026559		0.0026559		1	1	0.3466	Non-Significant Effect		
Error		0.0212475		0.0026559		8					
Total		0.0239034				9					
ANOVA Assumptions Tests											
Attribute	Test					Test Stat	Critical	P-Value	Decision(α:1%)		
Variance	Variance Ratio F Test								Indeterminate		
Distribution	Shapiro-Wilk W Normality Test					0.6247	0.7411	0.0001	Non-Normal Distribution		
96h Survival Rate Summary											
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
BMK_0822AB_MET	LW	5	0.9800	0.9245	1.0000	1.0000	0.9000	1.0000	0.0200	4.56%	0.00%
DU-3 COMP		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.04%
Angular (Corrected) Transformed Summary											
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
BMK_0822AB_MET	LW	5	1.3790	1.2890	1.4700	1.4120	1.2490	1.4120	0.0326	5.28%	0.00%
DU-3 COMP		5	1.4120	1.4120	1.4120	1.4120	1.4120	1.4120	0.0000	0.00%	-2.36%
Graphics											
											
96h Survival Rate						Corr. Angle					
Sample Code						Rankits					

96 Hour Acute *Americamysis bahia* Water Column Toxicity Test

Client: FOTH: Bel Marin Keys
 Test Material: BMK-DU3 MET
 Test ID#: 96565 Project #: 36545
 Test Date: 8/11/12 Randomization: S-S-S

Organism Log #: 13358 Age: 5 days
 Organism Supplier: Aquatic Indicators
 Control: DI + FSW at 32 ppt ± 2
 Sample Salinity adjusted with: —

Treatment (% Elutriate)	Temp (°C)	pH		D.O. (mg/L)		Salinity (ppt)		NH3 (mg/L)	# Live Organisms					SIGN-OFF
		new	old	new	old	new	old		Rep A	Rep B	Rep C	Rep D	Rep E	
Lab Control	20.6	8.17		8.3		32.0			10	10	10	10	10	Test Solution Prep: MD
100%	20.4	8.20		9.5		32.4		3.05	10	10	10	10	10	New WQ: MD
														Initiation Date: 8/11/12
														Initiation Time: 1744
														Initiation Signoff: MD
														a.m. Feeding: MCM
														p.m. Feeding: MD
Meter ID	660A	PH25		RD13		EC15		W3800						
Lab Control	19.3		7.37		5.7		32.1		10	10	10	10	10	Count Date: 8/12/12
100%	19.3		7.74		5.9		32.0		10	10	10	10	10	Count Time: 1253
														Count Signoff: JR
														Old WQ: KM
														a.m. Feeding: MD
														p.m. Feeding: MD
Meter ID	131A	PH25		RD13		EC16								
Lab Control	19.3		7.71		5.7		33.0		10	10	10	10	9	Count Date: 8/13/12
100%	19.4		7.92		6.4		32.9		10	10	10	10	10	Count Time: 0950
														Count Signoff: TF
														Old WQ: JR
														a.m. Feeding: MD
														p.m. Feeding: JR
Meter ID	130A	PH20		RD15		EC16								
Lab Control	19.8		7.74		7.1		34.3		10	10	10	10	9	Count Date: 8/14/12
100%	19.9		7.80		6.1		34.0		10	10	10	10	10	Count Time: 1217
														Count Signoff: JR
														Old WQ: EK
														a.m. Feeding: MD
														p.m. Feeding: JR
Meter ID	133A	PH29		RD10		EC13								
Lab Control	19.6		7.18		5.8		35.11		10	10	10	10	9	Termination Date: 8/15/12
100%	19.7		7.47		5.8		36.0		10	10	10	10	10	Termination Time: 1636
														Termination Signoff: MCM
														Old WQ: EK
														a.m. Feeding: EK
Meter ID	134A	PH29		RD10		EC13								

Appendix D

Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the Mysid, *Americamysis bahia*

CETIS Summary Report

 Report Date: 06 Sep-22 13:11 (p 1 of 1)
 Test Code/ID: 97567 / 15-5187-9326

Acute Mysid Survival Test

Pacific EcoRisk

Batch ID: 21-1495-9647	Test Type: Survival (96h)	Analyst: Matessa Martin
Start Date: 11 Aug-22 17:25	Protocol: EPA-821-R-02-012 (2002)	Diluent: Laboratory Water
Ending Date: 15 Aug-22 16:12	Species: Americamysis bahia	Brine: Crystal Sea
Test Length: 95h	Taxon:	Source: Aquatic Indicators, FL Age: 5

Sample ID: 03-0025-7433	Code: KCl	Project: 36818
Sample Date: 11 Aug-22 17:25	Material: Potassium chloride	Source: Reference Toxicant
Receipt Date: 11 Aug-22 17:25	CAS (PC):	Station: In House
Sample Age: --- (20.1 °C)	Client: Reference Toxicant	

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	PMSD	S
07-0680-5072	96h Survival Rate	Steel Many-One Rank Sum Test	0.5	1	0.7071	7.43%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓ Level	g/L	95% LCL	95% UCL	S
20-2006-9298	96h Survival Rate	Spearmen-Kärber	EC50	0.69	0.664	0.719	1

96h Survival Rate Summary

Conc-g/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	4	0.975	0.895	1.050	0.900	1.000	0.025	0.050	5.13%	0.00%
0.125		4	0.975	0.895	1.050	0.900	1.000	0.025	0.050	5.13%	0.00%
0.25		4	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	-2.56%
0.5		4	0.950	0.858	1.040	0.900	1.000	0.029	0.058	6.08%	2.56%
1		4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	100.00%
2		4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---	100.00%

96h Survival Rate Detail

MD5: 7D82851E44DA3A402BE90FB62E3087DC

Conc-g/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	1.000	1.000	0.900	1.000
0.125		0.900	1.000	1.000	1.000
0.25		1.000	1.000	1.000	1.000
0.5		1.000	0.900	1.000	0.900
1		0.000	0.000	0.000	0.000
2		0.000	0.000	0.000	0.000

96h Survival Rate Binomials

Conc-g/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	12/12	10/10	9/10	10/10
0.125		9/10	10/10	10/10	10/10
0.25		10/10	10/10	10/10	10/10
0.5		10/10	9/10	10/10	9/10
1		0/10	0/10	0/10	0/10
2		0/10	0/10	0/10	0/10

Acute Mysid Survival Test

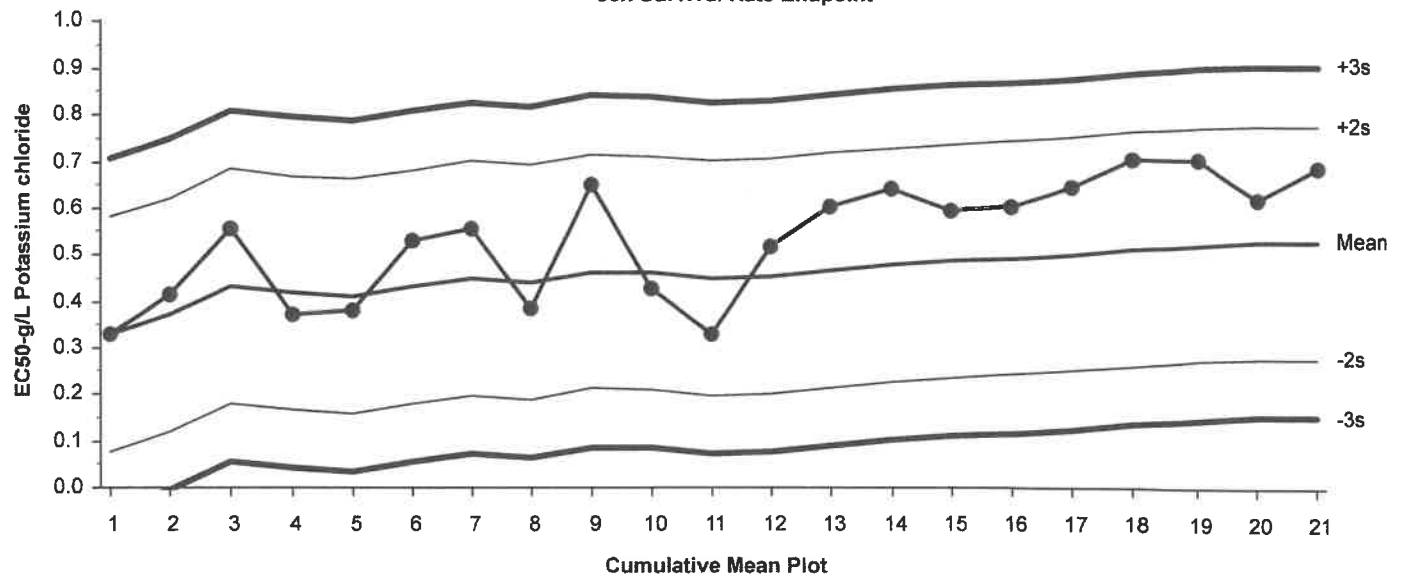
Pacific EcoRisk

Test Type: Survival (96h)
Protocol: EPA-821-R-02-012 (2002)

Organism: Americamysis bahia
Endpoint: 96h Survival Rate

Material: Potassium chloride
Source: Reference Toxicant-REF

Acute Mysid Survival Test
96h Survival Rate Endpoint



Mean: 0.5292 Count: 20 -2s Warning Limit: 0.278 -3s Action Limit: 0.152
Sigma: 0.1257 CV: 23.80% +2s Warning Limit: 0.781 +3s Action Limit: 0.906

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2021	Jun	3	16:51	0.3299	-0.1993	-1.586			18-0931-3727	06-7437-2819
2			10	16:45	0.4132	-0.116	-0.9226			19-1090-0810	20-7612-4525
3		Aug	29	14:17	0.5563	0.02709	0.2155			06-9463-4810	16-9976-2616
4		Sep	9	13:15	0.3737	-0.1555	-1.237			02-5069-7869	02-9615-0166
5			15	17:45	0.3811	-0.1481	-1.178			20-6904-0573	04-1594-0688
6		Oct	7	17:10	0.5319	0.002681	0.02133			19-8872-5146	04-1924-1611
7			19	15:47	0.555	0.02584	0.2056			03-9040-5982	08-9534-3958
8			26	15:58	0.3871	-0.1421	-1.131			05-2502-9992	13-4212-3132
9		Nov	3	17:34	0.6516	0.1224	0.9734			05-5944-4346	18-0980-6331
10			30	16:45	0.4271	-0.1021	-0.8122			15-6496-3159	03-1213-2396
11		Dec	14	18:05	0.3299	-0.1993	-1.586			15-7678-7516	01-8058-0189
12	2022	Jan	20	14:01	0.5176	-0.01157	-0.09202			02-8903-5760	20-3293-1186
13		Feb	3	15:10	0.605	0.0758	0.603			03-1298-5867	11-0687-6466
14			10	12:40	0.6404	0.1112	0.885			09-9892-7937	01-1079-5086
15		Apr	14	16:20	0.5946	0.0654	0.5203			05-9261-8796	10-6699-4864
16			28	10:49	0.6057	0.07653	0.6088			09-7471-5899	18-8035-5819
17		May	11	16:44	0.6477	0.1185	0.9428			17-5050-0960	07-5573-4854
18		Jun	30	14:20	0.7071	0.1779	1.415			07-4692-5072	19-1612-4685
19		Jul	7	18:04	0.7071	0.1779	1.415			19-5567-3491	08-0978-3038
20			28	17:42	0.6214	0.09218	0.7334			06-4185-6988	11-6992-6899
21		Aug	11	17:25	0.6905	0.1613	1.283			15-5187-9326	20-2006-9298

96 Hour Acute *Americamysis bahia* Reference Toxicant Test

Client: **Reference Toxicant** Organism Log #: **13358** Age: **5 days**
 Test Material: **Potassium Chloride** Organism Supplier: **Aquather Indicators**
 Test ID#: **97567** Project #: **36818** Control/Diluent: **DI + Crystal Sea @ 25 ppt**
 Test Date: **8/11/22** Randomization: **4-6-10** Control Water Batch: **1517**

Treatment (g/L KCl)	Temp (°C)	pH		D.O. (mg/L)		Salinity (ppt)		# Live Organisms				SIGN-OFF
		new	old	new	old	new	old	Rep A	Rep B	Rep C	Rep D	
Control	20.1	8.30		7.1		25.0		10	10	10	10	Test Solution Prep: AR
0.125	20.2	8.37		7.3		25.3		10	10	10	10	New WQ: EK
0.25	20.1	8.37		7.3		25.6		10	10	10	10	Initiation Date: 8/11/22
0.5	20.2	8.38		7.4		25.9		10	10	10	10	Initiation Time: 17:25
1	20.2	8.39		7.5		26.4		10	10	10	10	Initiation Signoff: AR
2	20.2	8.43		7.6		27.1		10	10	10	10	RT Batch #: 55
Meter ID	112A	PH30		RD13		EC16						a.m. Feeding Signoff: AR
												p.m. Feeding Signoff: AR
Control	19.0		7.69		7.3		26.2	12	10	9	10	Count Date: 8/12/22
0.125	19.2		7.72		7.3		26.5	10	10	10	10	Count Time: 10:21
0.25	19.2		7.72		7.4		26.6	10	10	10	10	Count Signoff: ND
0.5	19.2		7.76		7.4		26.9	10	10	10	10	Old WQ: AR
1	19.3		7.74		7.4		27.4	0	0	0	0	a.m. Feeding Signoff: AR
2	19.2		7.79		7.5		28.4	0	0	0	0	p.m. Feeding Signoff: AR
Meter ID	63A		PH29		RD10		EC13					
Control	19.1	8.32	7.73	7.6	7.6	24.2	26.9	12	10	9	10	Test Solution Prep: AR
0.125	19.1	8.32	7.74	7.5	7.5	24.8	27.2	9	10	10	10	New WQ: IR
0.25	19.0	8.32	7.70	7.6	7.4	25.0	27.1	10	10	10	10	Renewal Date: 8/13/22
0.5	19.0	8.34	7.73	7.6	7.3	25.4	27.3	10	8	10	10	Renewal Time: 15:05
1	-	-	-	-	-	-	-	-	-	-	-	Renewal Signoff: AR
2	-	-	-	-	-	-	-	-	-	-	-	Old WQ: AR
Meter ID	119A	PH29	PH50	RD10	RD15	EC13	EC16					a.m. Feeding Signoff: AR
												p.m. Feeding Signoff: AR
												RT Batch #: 55
Control	19.4		7.61		6.5		25.2	12	10	9	10	Count Date: 8/14/22
0.125	19.1		7.57		6.4		25.7	9	10	10	10	Count Time: 15:23
0.25	19.0		7.67		6.7		26.1	10	10	10	10	Count Signoff: AR
0.5	19.1		7.74		7.2		26.3	10	9	10	10	Old WQ: AR
1	-	-	-	-	-	-	-	-	-	-	-	a.m. Feeding Signoff: AR
2	-	-	-	-	-	-	-	-	-	-	-	p.m. Feeding Signoff: AR
Meter ID	107A		PH30		RD15		EC10					
Control	19.1		7.08		8.2		25.8	12	10	9	10	Termination Date: 8/15/22
0.125	19.1		7.11		8.0		25.7	9	10	10	10	Termination Time: 16:12
0.25	19.0		7.11		7.9		26.4	10	10	10	10	Termination Signoff: AR
0.5	19.1		7.12		7.9		26.9	10	9	10	9	Old WQ: EK
1	-	-	-	-	-	-	-	-	-	-	-	a.m. Feeding Signoff: AR
2	-	-	-	-	-	-	-	-	-	-	-	
Meter ID	131A		PH29		RD10		EC13					

Appendix E

Bioassay Standard Test Conditions

Summary of Test Conditions and Acceptability Criteria for the Mysid (<i>Americamysis bahia</i>) Water Column Toxicity Test.	
1. Test type	Static non-renewal
2. Test duration	96 hours
3. Salinity	25-30 ppt $\pm$ 10 ppt
4. Temperature	20 $\pm$ 1°C
5. Light quality	Ambient Laboratory
6. Light intensity	50 – 100 ft c.
7. Photoperiod	16L/8D
8. Test chamber size	400 mL beaker
9. Test solution volume	200 mL
10. Renewal of seawater	None
11. Age of test organisms	1-5 days; 24 hour range in age
12. # of organisms per test chamber	10
13. # of replicate chambers per concentration	5
14. # of organisms per concentration	50
15. Feeding regime	daily
16. Test chamber cleaning	Lab washing prior to test
17. Test chamber aeration	If needed to maintain >40% saturation
18. Elutriate preparation water	Site water or Clean sea water
19. Test concentrations	Test sites, and Lab Control
20. Dilution series	100% and a Lab Control.
21. Dilution water	Natural seawater/artificial seawater
22. Endpoints	% Survival
23. Sampling holding requirements	< 8 weeks
24. Sample volume required	2L
25. Test acceptability criteria	$\geq$ 90% survival in the Lab Controls

