

# APPENDIX G

## SCANNED FIELD DATA SHEETS

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Shallow Water Habitat  
Bioaccumulation Survey  
San Diego Bay  
(SWHB)

April-May, 2014

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# STATION OCCUPATION

% Sat: 104.8%  
DO: 7.76 mg/L

SWHB Study

Agency Code

Weather

Clear

Rain

Vessel Name

Overcast

Thunderstorm

Arrival Time

Partly cloudy

Fog

Drizzle

Sea State

Calm

Choppy

Rough

Water Quality

Temp (°C)

pH

Salinity (ppt)

Sp Cond (mS/cm)

Station ID

Date

(hh:mm) occ-PS GPS: 32.67238  
-117.15434

Abandoned site?  Station Fail Code

Y or N (If Y explain in comments)

Wind

Speed (kts)

Swell

Period (s)

Direction (4)

Height (ft)

Direction (4)

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

Depth: 11.5 feet = 3.45 meters  
Tide: 1.2' falling Falling

Target: 32.6716  
-117.154 / SECURP List  
32.671631  
-117.154059

## GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	1548	32.67240	-117.15436	3	95		16cm	silt/clay	NONE	olive grey	N	X	X	X	yes
Grab Event Comments:															
2	1621	32.67247	-117.15434	3	102*	N/A	16cm	silt/clay	None	"	"			X	NO
Grab Event Comments:															
3	1641	32.67236	-117.15424	3	87		"	"	"	"	"			X	"
Grab Event Comments:															
4	1656	32.67237	-117.15425	3	89		"	"	"	"	"			X	"
Grab Event Comments:															
5	1708	32.67250	-117.15428	3	104*		"	"	"	"	"			X	"
Grab Event Comments: German: 32.67238 -117.15438															
6	1723	32.67242	-117.15426	3	94		"	"	"	"	"			X	"
Grab Event Comments: German: 32.67237 -117.15437															

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - Sediment Color: Brown, Gray, Black, Olive green, Red
  - Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

BIGHT'13 EPIBENTHIC INVERTEBRATE FORM

Station: SWKB-01

Page 1 of 1

Date: 7/16/14

Completed by: BCS

1548

Data from Short/Long Trawl @ >300 m Depth  Yes  No

1/2 foil  
+ whirl pak  
↓

	Species	N	Comments (or Anomalies)	Weight (kg)			Photos (D, L, V)
				Gross	Y/N	Net	Y/N
1	Eobies	3		4.5			
2	Gastropod	4	Nassarius sp.	6.4			
3	Bivalve / molluska	100+	Razor Clams, SA white clam	56			
4	Polychaetes		Muscotista - 100+	1.7			
5	Crustacea		3 Mantis, 1 shrimp sp Pyromia	6.8			
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Comments: 1/2 foil + whirl pak for all samples.

Scale worm = 1 quart ziplock + <sup>1/2</sup> foil = 19g.

# STATION OCCUPATION

SWHB Study

Agency Code

Weather

Clear   
 Overcast   
 Partly cloudy   
 Drizzle

Rain   
 Thunderstorm   
 Fog

Sea State

Calm   
 Choppy   
 Rough

Nav Type

DGPS   
 GPS

Station ID

Vessel Name

Date

Arrival Time   
(hh:mm)

Abandoned site?

Y or N (If Y explain in comments)

Station Fail Code

Wind

Speed (kts)   
 Direction (4)

Swell

Period (s)   
 Height (ft)   
 Direction (4)

Station Comments

tide = 0.1+  
 change  
 3 → 2 → 1 → 2 → 3 m  
 depth  
 3652  
 total

## TRAWL EVENTS

target  
 32.671631  
 -117.154059

32.671631  
 -117.154059  
 SCURP list  
 target

Trawl Number		Time (hh:mm)	Latitude (DD°MM.mmmm)	Longitude (DD°MM.mmmm)	Depth (m)	Wire Out	Distance to target (m)	Trawl Fail Code (3)	Tissue Chemistry (Y/N)
1	Net Over	11:45:27	32.67191	-117.15398	3	30			Y
	Start Trawl	11:45:51	32.67228	-117.15424	3	↓			↓
	End Trawl	11:55:52	32.67040	-117.15562	3	↓	51		↓
	Net on Deck	11:58:44	32.67049	-117.15565		↓			↓
2	Net Over	12:26:45	32.67240	-117.15430	3	30			
	Start Trawl	12:27:28	32.67222	-117.15459	↓	↓			
	End Trawl	12:37:35	32.66966	-117.15568	↓	↓	69 m		
	Net on Deck	12:38:03	32.66965	-117.15563	↓	↓			
3	Net Over	12:56:49	32.67223	-117.15447	3	30			
	Start Trawl	12:58:27	32.67199	-117.15465	↓	↓			
	End Trawl	13:07:30	32.66973	-117.15588	↓	↓	66		
	Net on Deck	13:09:08	32.66993	-117.15574		↓			

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

SWHB - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet

Station: SUNB-01

Page 1 of 1

Date: 4/22/14

Completed by: TH

Additional Trawl Coordinates: 25% 50% 75% 1155

Trawl <u>2/1</u>	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time				1151	1153	1155	1156
Depth (m)				3	3	3	3
Lat (32.xxxxx)				32° 40.2953	67111	67044	67046
Long (-117.xxxxx)				-117° 09.317	15572	15557	15555

Trawl <u>3/2</u>	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time		1226	1229	1232	1235		
Depth (m)			3	3	3		
Lat (32.xxxxx)			67173	67126	67038		
Long (-117.xxxxx)			15514	15538	15531		

Trawl <u>4/3</u>	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time		1352	1300	1302	67008		
Depth (m)		3	3	3	13093		
Lat (32.xxxxx)		67184	67150	67084	67006		
Long (-117.xxxxx)		15487	15537	15553	15580		

Trawl 5	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time							
Depth (m)							
Lat (32.xxxxx)							
Long (-117.xxxxx)							

Comments:



# BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: SWHB-01

Page 1 of 1

Date: 04/22/2014

Completed by: CCS

Data from Short/Long Trawl @ >300 m Depth  Yes  No

Trawl #	Species	N	Std Length Size Class (cm) Use for up to 10 individuals. Use Size Class sheet for more abundant spp.	Weight (kg)			Photos
				Gross	Tare	Net	Y/N
1	1 sting rays	20	205 - 310				Y
1	2 spotted sand bass	13	280, 265, 240, 270, 200, 205 210, 200, 205, 150, 140, 140, 135				Y
1	3 shiner perch	4	105, 50, 50, 45				Y
1	4 diamond turbot	1	185				Y
1	5 california halibut	4	85, 100, 110, 150				Y
2	6 sting ray	11	230 - 290				N
2	7 california halibut	5	105, 135, 175, 180, 190				Y
3	8 spotted sand bass	3	160, 190, 260				Y
3	9 spratlefin midshipman	1	350				Y
3	10 sting ray	18	290 - 290				N
3	11 diamond turbot	1	230				Y
3	12 california halibut	<del>4</del> 5	150, 190, 85, 115, 85				Y
3	13 barred sand bass	2	135, 150				Y
	14						
	15						
	16						
	17						
	18						
	19						
	20						
	21						
	22						
	23						
	24						
	25						

only photo on

Comments: depth: 12.25' / 3.7 m

tide: 0.0 flood

MLLW: 12.25' → trawls made close to shore

trawl times (approx):  
 1 1145  
 2 1230  
 3 1300

Inverts:	trawl	sp.	n	f
	1	crustacea (shrimp)	1	Y
	1	naranax	3	Y
	1	musculista	100+	Y
	1	Pyromaira crab	3	Y
	3	Naranax	1	N
	3	cancer crab	1	Y

SWHB - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet - FISH

Station SWHB-01

Page 1 of 1

Date 04/22/2014

Completed by: CCS

FISH SPECIES TRAWL - BIOACCUMULATION

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
spotted sand bass	1,2,3	5	145, 140, 135 145, 135				Y	
calif. halibut	1, 2	5	105, 95, 110 136, 150				Y	
shiner perch	1,	4	45, 50, 50 105				Y	

FISH SPECIES - PLASTIC INGESTION

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
sting ray	1	5	240-270				Y	
spotted sand bass	1, 2	3	210-240				Y	
calif. halibut	1, 2, 3	<del>2</del> <sup>3</sup>	195 <sup>205</sup> , 175				Y	85mm found after moving to next trawl

Comments:

RHMP/ Bight '13 - Bioaccumulation Special Studies Field Data Sheet  
 INVERTEBRATES from Trawls

Station SWHB-01  
 Date 04/22/2014

Page 2 of 1

Completed by: CCS

INVERTEBRATE SPECIES TRAWL- BIOACCUMULATION

Species	Trawl #	N	Weight (kg)			Photo (Y/N)	Footnotes
			Gross	Tare	Net		
crustacea - shrimp	1	1,				Y	
musculista	1	100+				Y	
pyromaia-crab sp	1	3,				Y	
Cancer crab	3	1				Y	

← crusta  
 ← combu  
 in  
 2 place  
 ←

Comments:

**FIELD SAMPLING QA CHECKLIST - TRAWL SAMPLING**

Station ID: SWHB-01

Arrival Date/Time: 4/22/2014 1120

Site Acceptable for Trawl Sampling for Bioaccumulation Samples: Y or N

if No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has conducted pre-trawl survey? Site acceptable?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Trawl Sampling Procedures:**

Proper equipment used (Semi-balloon otter trawl)?	Y
Weighing scales calibrated?	N → office
Vessel passed through 100-m radius of station?	Y
Trawl duration 10 minutes (or long as possible in confined areas)?	Y
Trawl log info recorded (depth, tow wire length, times, coordinates)?	Y
Trawl remained within 10% of target depth?	Y
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	Y
Fish and/or invertebrates obtained in trawl?	Y
All fish positively identified (for specimens collected as samples)?	Y
All invertebrates positively identified (for specimens collected as samples)?	Y
Standard length of all bony fish measured for specimen counts <10? Length range measured for specimen counts >10?	Y
Total biomass of each invertebrate group retained as samples recorded?	Y
Photo of one representative from each species collected and grouped species planned for release?	Y
Fish and invertebrate specimens wrapped in pre-cleaned foil, bagged, and preserved on ice?	Y

SWHB-01 FIELD SAMPLING QA CHECKLIST - TRAWL SAMPLING

3. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	NA
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

4. Sample Storage and Delivery:

Epibenthic macroinvertebrates tissue samples collected?	NA
Fish tissue samples collected?	Y
Tissue samples stored immediately on ice and frozen asap?	Y
Cooler is taped shut for transport to AMEC freezer or lab?	Y
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel:  Date/Time: 4/22/2014 1345

Print Name/Company: Carey Sheridan AMEC

**BIGHT'13 TRAWL DEBRIS FORM**

Agency: AMEC

Page 1 of     

Station: SWHB-01 Trawl #:     

Date: 4/22/2014



**CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE**

Anthropogenic Debris - include Brand Names in Comments if known	Plastic		Count	Comment	Misc. Items/Pieces		Count	Comment
	Bag				Boat/Ship/Engine part			
	Bandaid				Clothing			
	Balloon (mylar/latex)/Ribbon				Concrete/Asphalt			
	Bottle				Fiberglass			
	Buoy				Food			
	Cap/Lid				Leather			
	Cigarette box/wrapper				Lumber			
	Cup				Paper			
	Filmstrip (movie)				Rag/Cloth			
	Fishing Line/Net				Rubber			
	Food Bag / Wrapper				Shoe			
	Polypropylene Rope				Tape			
	Straw				Tire			
	Toy				Other Misc. (comment req.)			
	Utensil				Metal		Count	Comment
	Plastic Piece (unid.)				Drink Can			
	Other Plastic (comment req.)				Can - other			
	Glass		Count	Comment	Can Pull-tab			
	Beer Bottle				Fishing Gear			
Glass Bottle/Jar -other				Wire				
Glass Piece (unid.)				Metal Piece (unid.)				
Other Glass (comment req.)				Other Metal (comment req.)				

Natural Debris	Marine Origin			Count	Est.*	Comment	Terrestrial Vegetation			Count	Est.*	Comment
	Foliose Algae - not kelp						Leaves/Seed Pod					
	Gorgonian Sea Fan (dead)						Stick/Branch/Driftwood					
	Kelp Holdfast						Other Terrest. (comment req)					
	Kelp Stipe/Blade											
	Rock											
	Seagrass											
Other Marine (comment req)												

\*For Natural Debris only, if an exact count cannot be made, leave the "Count" column blank and estimate the amount (L, M or H) in the "Est." column:

Low: L = 2-10

Moderate: M = 11-100

High: H = > 100

Completed by: CCS

# STATION OCCUPATION

SWHB Study

Agency Code

Weather

Clear   
 Overcast   
 Partly cloudy   
 Drizzle

Rain   
 Thunderstorm   
 Fog

Sea State

Calm   
 Choppy   
 Rough

Water Quality

Temp (°C)	19.6
pH	7.95
Salinity (ppt)	34.34
Sp Cond (mS/cm)	52086

Station ID

Date

Vessel Name

Arrival Time

(hh:mm) Station occupation  
 GPS: 32.67501  
 -117.15606

DO (mg/L / % sat) 7.36 / 98.9%

Abandoned site?  Station Fail Code

Y or N (If Y explain in comments)

Wind

Speed (kts)   
 Direction (4)

Swell

Period (s)   
 Height (ft)   
 Direction (4)

Nav Type

DGPS   
 GPS

Equipment Type

Van Veen   
 Tandem Van Veen

Station Comments

eelgrass present in sample, infaunal animals present (clams, snail, crabs)  
 actual water depth: 2m / 6.5ft  
 tide: 1.01 MLLW 1.67 MLLW

## GRAB EVENTS

MLLW = 5.5ft

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	120756	32.67499	-117.15588	2	12	NA	12	silt/clay	ND	olive gm	N	Y	Y	N	Y
Grab Event Comments:															
Grab Event Comments:															
Grab Event Comments:															
Grab Event Comments:															
Grab Event Comments:															

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - Sediment Color: Brown, Gray, Black, Olive green, Red
  - Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

Station ID: SWHB-02

Arrival Date/Time: 04/09/2014 1202

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: NA

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (+ 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	NA



SWHB-02

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

Field staff wearing fresh, powder free nitrile gloves?	NA
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	NA
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	Y
Benthic infauna tissue: samples stored on ice and frozen asap?	NA
Cooler is taped shut for transport to AMEC freezer or lab?	NA
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: C. Sherry Date/Time: 04/09/2014 1220

Print Name/Company: Corey Sherry AMEC

# STATION OCCUPATION

SWHB Study

Agency Code

Weather

Clear	<input checked="" type="checkbox"/>	Rain	<input type="checkbox"/>
Overcast	<input type="checkbox"/>	Thunderstorm	<input type="checkbox"/>
Partly cloudy	<input type="checkbox"/>	Fog	<input type="checkbox"/>
Drizzle	<input type="checkbox"/>		

Sea State

Calm	<input checked="" type="checkbox"/>
Choppy	<input type="checkbox"/>
Rough	<input type="checkbox"/>

Water Quality

Temp (°C)	
pH	
Salinity (ppt)	
Sp Cond (mS/cm)	

Station ID

Vessel Name

Date

Arrival Time

(hh:mm)

Abandoned site?

Station Fail Code

Y or N (If Y explain in comments)

Wind

Speed (kts) \_\_\_\_\_

Direction (4) \_\_\_\_\_

Swell

Period (s) \_\_\_\_\_

Height (ft) \_\_\_\_\_

Direction (4) \_\_\_\_\_

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

SITE TOO SHALLOW. LOCATION ON EXPOSED LAND, SHORELINE > 500M FROM DESIGNATED LOCATION.  
SITE REPLAZED w/ OVERDRAW SWHB-33 (SWHB-31 + 32 REJECTED DUE TO DEPTH > 3M)

## GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmmmm)	Longitude (DD°MM.mmmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - 3 Sediment Color: Brown, Gray, Black, Olive green, Red
  - 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

# STATION OCCUPATION

SWHB Study

Agency Code   
 Vessel Name   
 Arrival Time

(hh:mm)

Weather  
 Clear   
 Overcast   
 Partly cloudy   
 Drizzle   
 Rain   
 Thunderstorm   
 Fog

Sea State  
 Calm   
 Choppy   
 Rough

Water Quality  

Temp (°C)	
pH	
Salinity (ppt)	
Sp Cond (mS/cm)	

Station ID   
 Date

Abandoned site? Station Fail Code   
 Y or N (if Y explain in comments)

Wind  
 Speed (kts) \_\_\_\_\_  
 Direction (4) \_\_\_\_\_

Swell  
 Period (s) \_\_\_\_\_  
 Height (ft) \_\_\_\_\_  
 Direction (4) \_\_\_\_\_

Nav Type  
 DGPS   
 GPS   
 Equipment Type  
 Van Veen   
 Tandem Van Veen

Station Comments  
 SITE TOO DEEP (> 3m MLW). CHECKED  
 MULTIPLE LOCATIONS W/IN 100m RADIUS, ALL  
 > 3m MLW.  
 REPAIRED W/ OUSHDRAW SWHB-36  
 (SWHB-34 + 35 REJECTED DUE TO DEPTH > 3m)

## GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmmm)	Longitude (DD°MM.mmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - 3 Sediment Color: Brown, Gray, Black, Olive green, Red
  - 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

# STATION OCCUPATION

4/17/14

Salt %

101.6  
7.7300 mg/L

SWHB Study

Agency Code AMEC

Weather

Clear

Rain

Overcast

Thunderstorm

Partly cloudy

Fog

Drizzle

Sea State

Calm

Choppy

Rough

Water Quality

Temp (°C) 18.50

pH 8.19

Salinity (ppt) 34.29

Sp Cond (mS/cm) 52,004

Station ID SWHB-06

Date 4/17/14

4/17/14

Vessel Name B32

Arrival Time 0818

(hh:mm)

Stn Occupation:

32.68187  
-117.15130

Abandoned site?

Station Fail Code

Y or N (If Y explain in comments)

Wind

Speed (kts) 3

Direction (4) South

Swell

Period (s) 0

Height (ft) 0

Direction (4) 0

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

8.8 feet deep = 2.5 m.  
tide: +1.4

7.73 mg/L DO.  
101.6 % salt

8.8' / 3.28' = 2.5 m site depth.

Target list: 32.6818  
-117.151

target spread sheet: 32.68178, -117.151475

## GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	0824	32.68185	-117.15135	3	33	NO	7	F.g.S	None	Olive green	N	X	X	X	yes
Grab Event Comments:		Some shell hash present. But Not enough > 50%													
2	0904	32.68198	-117.15141	3	43	NO	7	f.g.s.	"	"	"			X	No
Grab Event Comments:															
3	0912	32.68176	-117.15117	3	14	"	"	"	"	"	"			X	"
Grab Event Comments:															
4	0920	32.68187	-117.15127	3	26	"	"	"	"	"	"			X	"
Grab Event Comments:															
5	0932	32.68172	-117.15125	3	25	"	"	"	"	"	"			X	
Grab Event Comments:															
6	0949	32.68198	-117.15143	3	45	"	7	"	"	"	"			X	
Grab Event Comments:		9.8 feet / 3 meters, tide = 3.0 + rising													

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - Sediment Color: Brown, Gray, Black, Olive green, Red
  - Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

7 0956 32.68224 -117.15161 3m, 75m  
 color = olive green, lots of shell hash, Fix color to be num O.G.?  
 to target  
 f.g.s. w/ lots of shell hash  
 Bio accum  
 lots of shell hash = yes

8 1024 32.68227, -117.15184 3m depth, 94m to less shell hash. f.g.s.  
 10.1 feet depth, new location + 3.5 tide, rising  
 to get

9 1031 32.68236, -117.15189 3m depth 104 less shell hash f.g.s.

10 1051 32.68227 -117.15185 3m 95 " "

11 1102 32.68232 -117.15200 3m 110 " "

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

Station ID: SWHB-06

Arrival Date/Time: 4/17/14

Site Acceptable for Sediment Sampling: (Y) or N

Bioaccumulation Sample Site: (Y) or N

If site not acceptable, provide reason: N/A

Mark each box with Y, N, or NA

Field Procedures

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

2. Sediment Sampling Procedures:

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	NA

**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

Field staff wearing fresh, powder free nitrile gloves?	y
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	y
Sampling instrument given site water rinse prior to deployment?	y
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	y
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	y
Each specimen sample weighed?	y
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	y


**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	y
Proper persons have signed and dated all COCs?	y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	y

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	y
Benthic infauna tissue: samples stored on ice and frozen asap?	y
Cooler is taped shut for transport to AMEC freezer or lab?	y
Completed COC is included in plastic bag in cooler?	y

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel:  Date/Time: 4/17/14 1415

Print Name/Company: Tyler Huff AMEC

BIGHT'13 EPIBENTHIC INVERTEBRATE FORM

Station: SLMB-06

Page 1 of 1

Date: 4/17/14

Completed by: BCS

0835

Data from Short/Long Trawl @ >300 m Depth  Yes  No

Foil ac  
1/2 foil + whirl  
1/8 foil + heavy  
1/4 heavy foil  
1/4 foil + whirl

	Species	N	Comments (or Anomalies)	Weight (kg)			Photos (D, L, V)
				Gross	Y/N	Net	Y/N
1	Polychaets + Anemone	100+	and one anemone	12.0			
2	Crustopod	50	limpits, 1	21.0			
3	Goby	8		4.6			
4	Moll Bivalves / mussels		1 chione (large), 50+ small white clams, 100+ siph (out)	64.0			
5	Crustacea		5 pyromania, 1 shrimp (Bake)	4.0			
6			1 small isopod				
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Item 4 cont.

Comments: Razor clams (5), 5 small mussel-like  
Goby = 1/8 heavy foil + whirl pack. Separate + tear  
Mollusk = 1/4 heavy foil + quart ziplock, separate tear



# STATION OCCUPATION

SWHB Study

Agency Code Amcc

Weather

Clear   
 Overcast   
 Partly cloudy   
 Drizzle

Thunderstorm

Rain   
 Fog

Sea State

Calm   
 Choppy   
 Rough

Nav Type

DGPS   
 GPS

Station ID SWHB-06

Date 9/28/14

Vessel Name Beryl

Arrival Time 135646  
 (hh:mm)

Abandoned site?  
 Y or N (If Y explain in comments)

Station Fail Code

Wind

Speed (kts) 8  
 Direction (4) 80°N

Swell

Period (s) 0  
 Height (ft) 0  
 Direction (4) 0

Station Comments

Look into why Distance to target = 0. for trawl  
 2, but not trawl

# TRAWL EVENTS

Trawl Number		Time (hh:mm)	Latitude (DD°MM.mmmm)	Longitude (DD°MM.mmmm)	Depth (m)	Wire Out	Distance to target (m)	Trawl Fail Code (3)	Tissue Chemistry (Y/N)
1	Net Over	1400:16	32.68261	-117.14963	3	30			
	Start Trawl	14:01:18	32.68267	-117.14988					
	End Trawl	14:11:16	32.68170	-117.15366			61		
	Net on Deck	14:11:48	32.68187	-117.15344					
2	Net Over	14:25:28	32.68138	-117.15087	3	30			
	Start Trawl	14:26:46	32.68163	-117.15091					
	End Trawl	14:36:48	32.68287	-117.15432			0*		
	Net on Deck	14:37:11	32.68281	-117.15417					
4	Net Over	1524:23	32.68182	-117.15179	3	30			
	Start Trawl	15:25:06	32.68154	-117.15183					
	End Trawl	1529:16	32.68042	-117.15348			0		
	Net on Deck	1530:06	32.68057	-117.15343					

target:  
 32.68178  
 -117.151475

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

SWHB - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet

Station: SWHB-06

Page 1 of 1

Date: 4/22/14

Completed by: TT

Additional Trawl Coordinates:

25 50 75

Trawl <u>1</u>	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time		1401	1403	1406	1409	1412	1413
Depth (m)		3	3	3	3	3	3
Lat (32.xxxxx)		68231	68213	68193	68189	68180	68182
Long (-117.xxxxx)		15848	15077	15196	15290	15329	15322

25% 50% 75%

Trawl <u>2</u>	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time	1425	1426	1429	1431	1434	1436	1437
Depth (m)	3	3	3	3	3	3	3
Lat (32.xxxxx)	15087	68181	68202	68219	68237	68287	68281
Long (-117.xxxxx)	68138	15107	15170	15256	15367	15432	15417

25 50 75

Trawl <u>3</u>	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time	1455	1456	1458	1500	1503	1506	1507
Depth (m)	3	3	3	3	3	3	3
Lat (32.xxxxx)	68079	68099	68142	68061	68114	68129	68127
Long (-117.xxxxx)	15128	15134	15206	15316	15378	15444	15441

25 50 75%

Trawl <u>4</u>	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time	1523	1524	1527			15:30:05	
Depth (m)		3	3			3	
Lat (32.xxxxx)		68167	68101			68058	
Long (-117.xxxxx)		15184	15329			15337	

Comments: Trawl 3, No trawl track will need to make heavy  
Trawl 4, possibly start trawl tablet command delayed ~50A  
towards Barge.

# BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: SWHB-06

Page 1 of 1

Date: 04/22/2014

Completed by: CCS

Yes  No

Data from Short/Long Trawl @ >300 m Depth

trawl #	Species	N	Std Length Size Class (cm) <small>Use for up to 10 individuals. Use Size Class sheet for more abundant spp.</small>	Weight (kg)			Photos
				Gross	Tare	Net	Y/N
1	1 California halibut	3	310, 102, 100				Y
1	2 spotted sea bass	1	240				Y
1	3 sting ray	1	240				Y
1	4 butterfly ray	1	540				Y
1	5 Pacific seahorse	1	190				Y
2	6 Black croaker	1	230				Y
2	7 Pacific seahorse	1	<del>195</del> 200				Y
2	8 California halibut	7	65, 60, 120, 120, 98, 65, 55				X
2	9 spotted sand bass	2	190, 210				Y
2	10 sting rays	13	190 - 310				N
2	11 diamond turbot	1	225				Y
2	12 spotted turbot	4	80, 95, 110, 120				X
3	13 California halibut	15	52 - 315				Y
3	14 sting ray	23	240 - 380				N
3	15 yellowfin croaker	1	220				Y
3	16 spotted sand bass	1	260				N
3	17 spotted turbot	2	65, 100				Y
3	18 diamond turbot	1	210				Y
3	19 horn shark	1	430				Y
3	20 barred sand bass	1	145				Y
4	21 spotted sand bass	2	220, 240,				N
4	22 black croaker	1	210				N
4	23 diamond turbot	1	180				N
4	24 Calif. halibut	5	50 - 140				N
4	25 spotted turbot	1	55				N
4	26 sting ray	6	240 - 360				N

=pregn

Comments: depth: 9'      Inverts trawl sp n i

tide:      7 Navenax 1

MLLW:      2 Bulla snail ~25

                 3 Bulla snail ~25

approx trawl times:      3 Pyrosoma crat

- 1 1400
- 2 1420
- 3 1450
- 4 1530

SWHB - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet - FISH

Station SWHB-06

Page 1 of 1

Date 04/22/2014

Completed by: CCS

FISH SPECIES TRAWL - BIOACCUMULATION

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
california halibut	1,2,3	10	65,120,120,90,105 105,100,105,105,109				Y	extra for QC
spotted sand bass	1-4	5	220,230 240,180,210				Y	
spotted turbot	2,3,4	5	110,95,120 90,80				Y	

FISH SPECIES - PLASTIC INGESTION

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
sting rays	1,2	5	260-320				Y	
calif. halibut	2,3	3	180-315				Y	
yellowfin croaker	3	1	220				Y	
black croaker	2,4	2	210,230				Y	

Comments:

RHMP/ Bight '13 - Bioaccumulation Special Studies Field Data Sheet  
 INVERTEBRATES from Trawls

Station SWHB-06

Page 1 of 1

Date 04/22/2014

Completed by: CCS

INVERTEBRATE SPECIES TRAWL- BIOACCUMULATION

Species	Trawl #	N	Weight (kg)			Photo (Y/N)	Footnotes
			Gross	Tare	Net		
Bulla snail	23	n50				4	

Comments:

**FIELD SAMPLING QA CHECKLIST - TRAWL SAMPLING**

Station ID: SWH B-06

Arrival Date/Time: 04/22/2014 1400

Site Acceptable for Trawl Sampling for Bioaccumulation Samples: Y or N

if No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has conducted pre-trawl survey? Site acceptable?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Trawl Sampling Procedures:**

Proper equipment used (Semi-balloon otter trawl)?	Y
Weighing scales calibrated?	N → office
Vessel passed through 100 m radius of station?	Y
Trawl duration 10 minutes (or long as possible in confined areas)?	Y
Trawl log info recorded (depth, tow wire length, times, coordinates)?	Y
Trawl remained within 10% of target depth?	Y
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	Y
Fish and/or invertebrates obtained in trawl?	Y
All fish positively identified (for specimens collected as samples)?	Y
All invertebrates positively identified (for specimens collected as samples)?	Y
Standard length of all bony fish measured for specimen counts <10? Length range measured for specimen counts >10?	Y
Total biomass of each invertebrate group retained as samples recorded?	Y
Photo of one representative from each species collected and grouped species planned for release?	Y
Fish and invertebrate specimens wrapped in pre-cleaned foil, bagged, and preserved on ice?	Y

SWTB-06 FIELD SAMPLING QA CHECKLIST - TRAWL SAMPLING

3. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	NA
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

4. Sample Storage and Delivery:

Epibenthic macroinvertebrates tissue samples collected?	NA
Fish tissue samples collected?	Y
Tissue samples stored immediately on ice and frozen asap?	Y
Cooler is taped shut for transport to AMEC freezer or lab?	Y
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: Corey Sheredy Date/Time: 4/22/2014 1600

Print Name/Company: Corey Sheredy AMEC

BIGHT'13 TRAWL DEBRIS FORM

Agency: AMEC

Page 1 of 1

Station: SWHB-06 Trawl #: 1-4

Date: 04/22/2014



CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE

Anthropogenic Debris - include Brand Names in Comments if known	Plastic		Count	Comment	Misc. Items/Pieces		Count	Comment
	Bag				Boat/Ship/Engine part			
	Bandaid				Clothing			
	Balloon (mylar/latex)/Ribbon				Concrete/Asphalt			
	Bottle				Fiberglass			
	Buoy				Food			
	Cap/Lid				Leather			
	Cigarette box/wrapper				Lumber			
	Cup				Paper			
	Filmstrip (movie)				Rag/Cloth			
	Fishing Line/Net				Rubber			
	Food Bag / Wrapper				Shoe			
	Polypropylene Rope				Tape			
	Straw				Tire			
	Toy				Other Misc. (comment req.)			
	Utensil				Metal		Count	Comment
	Plastic Piece (unid.)				Drink Can			
	Other Plastic (comment req.)				Can - other			
	Glass		Count	Comment	Can Pull-tab			
	Beer Bottle				Fishing Gear			
Glass Bottle/Jar -other				Wire				
Glass Piece (unid.)				Metal Piece (unid.)				
Other Glass (comment req.)				Other Metal (comment req.)				

Natural Debris	Marine Origin			Count	Est.*	Comment	Terrestrial Vegetation			Count	Est.*	Comment
	Foliose Algae - not kelp						Leaves/Seed Pod					
	Gorgonian Sea Fan (dead)						Stick/Branch/Driftwood					
	Kelp Holdfast						Other Terrest. (comment req)					
	Kelp Stipe/Blade						*For Natural Debris only, if an exact count cannot be made, leave the "Count" column blank and estimate the amount (L, M or H) in the "Est." column: Low: L = 2-10 Moderate: M = 11-100 High: H = > 100					
	Rock											
	Seagrass				M							
Other Marine (comment req)												

Completed by: CCS



# STATION OCCUPATION

SWHB Study

Agency Code CSD

Weather

Clear

Rain

Vessel Name Porton

Overcast

Thunderstorm

Arrival Time 0939:21

Partly cloudy

Fog

Drizzle

Sea State

Calm

Choppy

Rough

Wind

Speed (kts) 1

Direction (4) NW

Swell

Period (s) 0

Height (ft) 0

Direction (4) 0

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Water Quality

Temp (°C)	19.8
pH	7.99
Salinity (ppt)	34.32
Sp Cond (mS/cm)	52066

Station ID SWHB-07

Date 04/09/2014

(hh:mm) Station occupation

GPS: 32.64703

-117.14292

DO (mg/L/%Sat) 7.87/106.2%

Abandoned site? Station Fail Code NA

Y or N (If Y explain in comments)

Station Comments

eelgrass present in sample.  
multiple attempts to grab sample due to shallow water - added weight to Van Veen  
actual water depth: 6.0'/1.8m  
tide: 2.37 1.1m MLLW

# GRAB EVENTS

MLLW = 3.63'

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	0950:36	32.64702	-117.14289	1	17	NA	16	silt/clay	N	olive grn	N	Y	Y	N	Y
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - Sediment Color: Brown, Gray, Black, Olive green, Red
  - Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

Station ID: SWHB-07

Arrival Date/Time: 04/09/2014 09

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: NA

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	NA

9WHB-07

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

Field staff wearing fresh, powder free nitrile gloves?	NA
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	NA
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	Y
Benthic infauna tissue: samples stored on ice and frozen asap?	NA
Cooler is taped shut for transport to AMEC freezer or lab?	NA
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: Multiple attempts to grab sample - success on 3rd attempt  
(added weights to van veen)

Signature of QA/QC Personnel: [Signature] Date/Time: 04/09/2014 1015

Print Name/Company: Corey Sheredy AMEC

# STATION OCCUPATION

SWHB Study

Agency Code CSD

Weather

Clear   
 Overcast   
 Partly cloudy   
 Drizzle

Rain   
 Thunderstorm   
 Fog

Sea State

Calm   
 Choppy   
 Rough

Water Quality

Temp (°C)	20.2
pH	7.96
Salinity (ppt)	34.35
Sp Cond (mS/cm)	52104

Station ID SWHB-08

Date 09/09/2014

Vessel Name PONTON

Arrival Time 1025

(hh:mm) station occupation  
 GPS: 32.  
 -117.

\*need to get GPS + time from tablet

DO (mg/L / % Sat) 7.29 / 99.0%

Abandoned site?  Station Fail Code NA

Y or N (if Y explain in comments)

Wind

Speed (kts) 5  
 Direction (4) NW

Swell

Period (s) 0  
 Height (ft) 0  
 Direction (4) 0

Nav Type

DGPS   
 GPS

Station Comments

actual water depth: 2.4 m / 7.9 ft  
 tide: 1.9 ft  
 1.8m MLLW

Equipment Type

Van Veen   
 Tandem Van Veen

## GRAB EVENTS

MLLW = 6.0'

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	1032:45	32.65375	-117.14886	2	52	NA	16	silt/clay	N	olive grn	N	Y	Y	N	Y
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

Station ID: SWHB-08

Arrival Date/Time: 04/09/2014 1025

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: NA

Mark each box with Y, N, or NA

**Field Procedures**

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (+ 3 m) recorded?	Y
Station occupation form completed?	Y

2. Sediment Sampling Procedures:

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	NA

SWHB-08

## FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS

## 3. Infauna Tissue Sampling Procedures (if applicable):

Field staff wearing fresh, powder free nitrile gloves?	NA
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	

## 5. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	NA
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

## 6. Sample Storage and Delivery:

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	Y
Benthic infauna tissue: samples stored on ice and frozen asap?	NA
Cooler is taped shut for transport to AMEC freezer or lab?	NA
Completed COC is included in plastic bag in cooler?	NT

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: CSheredy Date/Time: 04/09/2014 1025Print Name/Company: Corey Sheredy AMEC

# STATION OCCUPATION

SWHB Study

Agency Code CE0

Weather

Clear

Rain

Vessel Name Douglas

Overcast

Thunderstorm

Arrival Time 1228:39

Partly cloudy

Fog

Drizzle

Sea State

Calm

Choppy

Rough

N

Water Quality

Station ID SWHB-09

Temp (°C) 19.8

pH 7.93

Salinity (ppt) 34.30

Sp Cond (mS/cm) 52044

Date 04/09/2014

DD (mg/L / % sat) 7.56 / 101.9%

Abandoned site?  Station Fail Code NA

Y or N (If Y explain in comments)

(hh:mm) Station occupation  
OPS: 32.68074  
-117.15482

Wind

Speed (kts) 5

Direction (4) NW

Swell

Period (s) 0

Height (ft) 0

Direction (4) 0

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

Light shell wash present  
  
actual water depth: 2.2 m / 7.2 ft  
tide: 0.77 ft 1.95 m MLLW

# GRAB EVENTS

MLLW = 6.4'

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmmm)	Longitude (DD°MM.mmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	1230:48	32.68077	-117.15484	2	17	NA	8	fine sand	N	olive green	Y	Y	Y	N	Y
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

SWHB-09

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

Station ID: SWHB-09

Arrival Date/Time: 04/09/2014 1228

Site Acceptable for Sediment Sampling:  Y or N

Bioaccumulation Sample Site: Y or  N

If site not acceptable, provide reason: NA

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	Y/NA



**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

Field staff wearing fresh, powder free nitrile gloves?	NA
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	NA
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	Y
Benthic infauna tissue: samples stored on ice and frozen asap?	NA
Cooler is taped shut for transport to AMEC freezer or lab?	NA
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: animals present in sample

Signature of QA/QC Personnel: C. Sherry Date/Time: 04/01/2014 1255

Print Name/Company: COREY SHERRY AMEC

# STATION OCCUPATION

SWHB Study

Agency Code

Weather

Clear

Rain

Vessel Name

Overcast

Thunderstorm

Arrival Time

Partly cloudy

Fog

Drizzle

Sea State

Calm

Choppy

Rough

Water Quality

Station ID

Temp (°C)

pH

Salinity (ppt)

Sp Cond (mS/cm)

Date

(hh:mm)

station occupation

GPS: 32.68501

-117.16340

DOL (mg/L / % sat)

Abandoned site?  Y or N (if Y explain in comments)

Station Fail Code

Wind

Speed (kts)

Direction (4)

Swell

Period (s)

Height (ft)

Direction (4)

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

eel grass present in sample, benthic infauna (snails)  
actual water depth: 1.5 m / 4.9 ft  
tide: 0.54m MLW 1.95m MLW

## GRAB EVENTS

MLW = 4.4 ft

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
	1305:33	32.68487	-117.16341	1	55	NA	15	silt/clay	N	olive gm	N	Y	Y	N	Y
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

Station ID: SWHB-10

Arrival Date/Time: 04/09/2014 1300

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: NA

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	NA
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	NA

SWHB-10

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

Field staff wearing fresh, powder free nitrile gloves?	NA
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	NA
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	Y
Benthic infauna tissue: samples stored on ice and frozen asap?	NA
Cooler is taped shut for transport to AMEC freezer or lab?	NA
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: CSheredy Date/Time: 04/09/2014 1320

Print Name/Company: Corey Sheredy AMEC

# STATION OCCUPATION

SWHB Study

Agency Code CSD

**Weather**

Clear   
 Overcast   
 Partly cloudy   
 Drizzle

Rain   
 Thunderstorm   
 Fog

**Sea State**

Calm   
 Choppy   
 Rough

**Water Quality**

Temp (°C)	20.4
pH	8.15
Salinity (ppt)	35.59
Sp Cond (mS/cm)	53756

Station ID SWHB-11

Date 4/8/2014

Vessel Name Porton

Arrival Time 0853

(hh:mm)

DO (mg/L / %) 6.66 / 90.7%

Abandoned site?  Station Fail Code N/A

Y or N (If Y explain in comments)

**Wind**

Speed (kts) 0-1 knts  
 Direction (4) NW

**Swell**

Period (s) 0  
 Height (ft) 2.30  
 Direction (4) 0

**Nav Type**

DGPS   
 GPS

**Station Comments**

TIDE: 2.20 FT  
 3.0 FT ABOVE MLLW / 1.0 m  
 0.30 m MLLW

**Equipment Type**

Van Veen   
 Tandem Van Veen

Sta occ  
 GPS  
 08:35:33  
 30.60270 -117.11638

## GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	0914	32.60259	-117.11629	1	24	N/A	16	silt/clay	none	H. brown	N	Y	Y	N	Y
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- 3 Sediment Color: Brown, Gray, Black, Olive green, Red
- 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

Station ID: SWHB-11

Arrival Date/Time: 0853 4/8/14

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: NA

Mark each box with Y, N, or NA

Field Procedures

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	NA
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	NA
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	NA

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

NA

Field staff wearing fresh, powder free nitrile gloves?	NA
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	y
Proper persons have signed and dated all COCs?	
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	

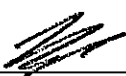
**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	y
Benthic infauna tissue: samples stored on ice and frozen asap?	NA
Cooler is taped shut for transport to AMEC freezer or lab?	NA
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: 

Date/Time: 0930 4/8/14

Print Name/Company: Tyler Hult AMEC 

# STATION OCCUPATION

SWHB Study

Agency Code

Weather

Clear   
 Overcast   
 Partly cloudy   
 Drizzle

Rain   
 Thunderstorm   
 Fog

Sea State

Calm   
 Choppy   
 Rough

Water Quality

Temp (°C)	22.7
pH	8.31
Salinity (ppt)	35.64
Sp Cond (mS/cm)	53076

Station ID

Date

Vessel Name

Arrival Time

(hh:mm) Stn. occupation  
 GPS: 32.61580  
 -117.10535

DO (mg/L/% sat) 10.70/152.0%

Abandoned site?  Station Fail Code

Y or N (If Y explain in comments)

Wind

Speed (kts)   
 Direction (4)

Swell

Period (s)   
 Height (ft)   
 Direction (4)

Nav Type

DGPS   
 GPS

Station Comments

algae of eel grass present in sample  
 actual depth: 3ft/0.91m  
 tide: 1.23 ft 0.54m MLLW

Equipment Type

Van Veen   
 Tandem Van Veen

# GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmmm)	Longitude (DD°MM.mmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	1336:15	32.61583	-117.10535	1	42	NA	11	silt/clay	N	olive green	N	Y	Y	N	Y
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only



**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

Station ID: SWHB-12

Arrival Date/Time: 07/08/2014 / 1328

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: NA

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	NA
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	NA

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

Field staff wearing fresh, powder free nitrile gloves?	NA
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	Y
Benthic infauna tissue: samples stored on ice and frozen asap?	NA
Cooler is taped shut for transport to AMEC freezer or lab?	NA
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: C. Shredy Date/Time: 04/08/2014 1350

Print Name/Company: Covey Shredy AMEC

# STATION OCCUPATION

SWHB Study

Agency Code

Weather

Clear

Rain

Overcast

Thunderstorm

Partly cloudy

Fog

Drizzle

Sea State

Calm

Choppy

Rough

Water Quality

Station ID

Vessel Name

Arrival Time

(hh:mm) station occup. GPS:

32.63540

-117.13823

Temp (°C)	19.3
pH	7.77
Salinity (ppt)	34.38
Sp Cond (mS/cm)	52130

Date

DO (mg/L / % sat) 6.38 / 85.2%

Abandoned site?  Station Fail Code

Y or N (if Y explain in comments)

Wind

Speed (kts)

Direction (4)

Swell

Period (s)

Height (ft)

Direction (4)

Nav Type

DGPS

GPS

Station Comments

minor shell hash in sample  
actual depth: 2.6 m / 8.5'  
tide: 2.98 ft 1.68m MLLW

Equipment Type

Van Veen

Tandem Van Veen

## GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmmmm)	Longitude (DD°MM.mmmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	0841:28	32.63547	-117.13809	3	11	NA	16	silt/clay	N	olive grn.	N	Y	Y	N	Y
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

Station ID: SWHB-13

Arrival Date/Time: 04/09/2014 0832

Site Acceptable for Sediment Sampling: (Y) or N

Bioaccumulation Sample Site: Y or (N)

If site not acceptable, provide reason: N/A

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	NA

SWHB-13

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

Field staff wearing fresh, powder free nitrile gloves?	NA
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	Y
Benthic infauna tissue: samples stored on ice and frozen asap?	NA
Cooler is taped shut for transport to AMEC freezer or lab?	NA
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: C. Shredy Date/Time: 04/09/2014 0900

Print Name/Company: Corey Shredy AMEC

# STATION OCCUPATION

SWHB Study

Agency Code

Weather

Clear

Rain

Vessel Name

Overcast

Thunderstorm

Arrival Time

Partly cloudy

Fog

Drizzle

Sea State

Calm

Choppy

Rough

N

Water Quality

Station ID

Temp (°C)	21.3
pH	8.21
Salinity (ppt)	35.24
Sp Cond (mS/cm)	53325

Date

(hh:mm) stn occupation  
GPS: 32.61415  
-117.12206

DO (mg/L) / (sat) 7.46 / 103.4%

Abandoned site?  Station Fail Code

Y or N (if Y explain in comments)

Wind

Speed (kts)

Direction (4)

Swell

Period (s)

Height (ft)

Direction (4)

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

Some algae present in sample  
  
1.22m MLLW  
  
tide: 0.97 ft, actual depth 5 ft / 1.5m

## GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	1149:11	32.61416	-117.12204	2	8	N/A	16	silt/clay	N	olive gm.	N	Y	Y	N	Y
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - 3 Sediment Color: Brown, Gray, Black, Olive green, Red
  - 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

Station ID: SWHB-14

Arrival Date/Time: 04/08/2014

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: N/A

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	y
Vessel has been anchored (or tied off)?	y
Station DGPS coordinates (+ 3 m) recorded?	y
Station occupation form completed?	y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	y
Field staff wearing fresh, powder free nitrile gloves?	y
Equipment washed/rinsed from previous station?	y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	y
Sampling instrument washed with Alconox?	y
Sampling instrument given site water rinse prior to deployment?	y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	y
Sample bottles are lab certified, contaminant free?	y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	y
Grab disposition / characteristic information recorded?	y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	y
Sediment evenly distributed among containers?	y
Stainless steel scoop used to distribute sediment?	y
Staff avoided contaminating samples at all times?	y
Equipment or field blank collected (if applicable)?	y

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

N/A

Field staff wearing fresh, powder free nitrile gloves?	
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	✓

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	✓
Proper persons have signed and dated all COCs?	✓
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	✓

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	✓
Benthic infauna tissue: samples stored on ice and frozen asap?	✓
Cooler is taped shut for transport to AMEC freezer or lab?	✓
Completed COC is included in plastic bag in cooler?	✓

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: *[Signature]* Date/Time: 1200 4/8/14

Print Name/Company: Tyler Huff, AMEC



**STATION OCCUPATION**

DO: 90.7  
DO: 6.61 mg/L

SWHB Study

Agency Code AMEC

Weather

Sea State

Water Quality

Station ID SWHB-15

Vessel Name M/S Koi

Clear  Rain   
Overcast  Thunderstorm   
Partly cloudy  Fog   
Drizzle

Calm   
Choppy   
Rough

Temp (°C)	20.7°C
pH	8.16
Salinity (ppt)	35.03 ppt
Sp Cond (mS/cm)	53838

Date 4/15/14

Arrival Time 08:49:49

(hh:mm) 08:49:49  
32.60923  
-117.10790

Abandoned site?  Station Fail Code   
Y or N (If Y explain in comments)

Wind

Swell

Nav Type

Station Comments

Speed (kts) 0  
Direction (4) 0

Period (s) 0  
Height (ft) 0  
Direction (4) 0

DGPS   
GPS

tide: 4.1 feet tide,  
Depth: 4.75 feet  
= 1.4 m Depth.

Lat: 32.6096  
Long: -117.107

Depth: 4' 9" = 1.4 m

Equipment Type

Van Veen   
Tandem Van Veen

**GRAB EVENTS**

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmmmm)	Longitude (DD°MM.mmmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (5)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	09:02:22	32.60923	-117.10791	1	95	N/A	16	Silt/clay	None	olive grey	N	X	X	X	yes
Grab Event Comments:															
2	09:21:38	32.60927	-117.10797	1	98	N/A	16	silt/clay	None	olive grey	N			X	no
Grab Event Comments:															
3	09:35:33	32.60915	-117.10791	1	95	N/A	16	"	"	"	"			X	no
Grab Event Comments:															
4	09:41:50	32.60923	-117.10791	1	96	NA	16	"	"	"	"			X	no
Grab Event Comments:															
5	09:50:50	32.60928	-117.10790	1	92	NA	16	"	"	"	"			X	no
Grab Event Comments:															
6	10:06:44	32.60927	-117.10791	1	95	NA	16	"	"	"	N			X	no
Grab Event Comments:															

1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed  
 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)  
 3 Sediment Color: Brown, Gray, Black, Olive green, Red  
 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm  
 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)  
 Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

			distance to flag		SPD. AREA	
7	10:15:42	32.60929 -117.10781	83	16cm	x	
8	10:28:35	32.60938 -117.10801	98	16cm	x	
9	10:44:56	32.60950 -117.10779	75	16	x	
10	10:53:24	32.60948 -117.10769	65	16	x	
11	11:06:13	32.60924 -117.10784	89	16	x	New tide = +4.5 feet 4.75 depth / 4' 9"
12	11:17:09	32.60925 -117.10788	91	16	x	
3	11:35:42	32.60891 -117.10680	79	16	x	New position / tide Depth: 3 feet 8 inch = 1.15 m
4	11:40:48	32.60898 -117.10681	71	16	x	tide = +4.2
5	11:53:05	32.60896 -117.10678	74	16	x	
6	<del>12:08:47</del> 12:06:47	<del>32.60930</del> 32.60930 -117.10783	85	16	x	New Sta. = 3.9 / 4 feet depth Depth = 3.8 feet

SWHB-15

FIELD SAMPLING QA CHECKLIST - TRAWL SAMPLING

3. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	NA
Proper persons have signed and dated all COCs?	NA
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

4. Sample Storage and Delivery:

Epibenthic macroinvertebrates tissue samples collected?	NA
Fish tissue samples collected?	Y
Tissue samples stored immediately on ice and frozen asap?	Y
Cooler is taped shut for transport to AMEC freezer or lab?	NA
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: C. Sherry Date/Time: 4/21/2014 1230

Print Name/Company: Corey Sherry

# BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: SWHB-15

Page 1 of 1

Date: 04/21/2014

Completed by: ecs

Data from Short/Long Trawl @ >300 m Depth  Yes  No

trawl#

	Species	N	Std Length Size Class (cm) <i>Use for up to 10 individuals. Use Size Class sheet for more abundant spp.</i>	Weight (kg)			Photos
				Gross	Tare	Net	Y/N
1	1 sting ray	26	130 - 400				N
1	2 spotted sand bass	1	250				Y
1	3 slough anchovy	5	50, 50, 45, 50, 90				Y
1	4 california halibut	3	125, 100, 100				Y
1	5 diamond turbot	6	100, 80, 92, 85, 90, 45				Y
1	6 white sea bass	1	208				Y
1	7 butterfly ray	1	430				Y
2	8 spotted sand bass	1	290				N
2	9 sting rays	17	150 - 350				Y
2	10 butterfly ray	1	430				N
2	11 diamond turbot	6	50 - 90				N
2	12 california halibut	11	60 - 150				Y
2	13 plainfin midshipman	1	170				Y
3	14 sting ray	7	170 - 230				N
3	15 slough anchovies	5	50, 48, 49, 50, 50				N
3	16 diamond turbot	4	31 - 130				N
3	17 california halibut	4	72 - 110				N
3	18 butterfly ray	1	410				N
4	19 sting ray	2	160, 180				N
4	20 diamond turbot	3	65, 68, 70				N
4	21 california halibut	1	140				N
	22						
	23						
	24						
	25						

Comments:

tide:

depth:

# BIGHT'13 EPIBENTHIC INVERTEBRATE FORM

Station: BWMB-15

Page 1 of 1

Date: 4/15/14

Completed by: BCS

Data from Short/Long Trawl @ >300 m Depth  Yes  No

Species	N	Comments (or Anomalies)	Weight (kg)			Photos (D, L, V)
			Gross	Y/N	Net	Y/N
1 Goby	8	—	✓ 15.0g			
2 Crustacea (8 shrimp) <sup>stomach full</sup> →			✓ 6.3g			
3 mollusk	100+		✓ 5.9g			
4 phoronids	20+		✓ 6.7g			
5 polychaeta	100+		✓ 5.2g			
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

2.5g  
3.3g

1/2 foil +  
whirl pack

Comments: Tear = whirl pack + ID tag + 1/2 foil sheet for all but mollusk.  
1.8g ← Mollusk = 1 quart zip + full foil

**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

Station ID: SWHB-15

Arrival Date/Time: 04/15/14

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

Field Procedures

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	y
Vessel has been anchored (or tied off)?	y
Station DGPS coordinates (± 3 m) recorded?	y
Station occupation form completed?	y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	y
Field staff wearing fresh, powder free nitrile gloves?	y
Equipment washed/rinsed from previous station?	y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	y
Sampling instrument washed with Alconox?	y
Sampling instrument given site water rinse prior to deployment?	y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	y
Sample bottles are lab certified, contaminant free?	y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	y
Grab disposition / characteristic information recorded?	y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	y
Sediment evenly distributed among containers?	y
Stainless steel scoop used to distribute sediment?	y
Staff avoided contaminating samples at all times?	y
Equipment or field blank collected (if applicable)?	NA

**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

Field staff wearing fresh, powder free nitrile gloves?	Y
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	Y
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	Y
Each specimen sample weighed?	Y
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	Y


**5. Data Recording:**

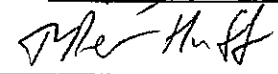
Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	Y
Benthic infauna tissue: samples stored on ice and frozen asap?	Y
Cooler is taped shut for transport to AMEC freezer or lab?	Y
Completed COC is included in plastic bag in cooler?	Y

Additional Notes: ~17 grabs

Signature of QA/QC Personnel:  Date/Time: 4/15/14 1300

Print Name/Company: 

BIGHT'13 TRAWL DEBRIS FORM

Agency: AMWEC

Page 1 of 1

Station: SWHD-15 Trawl #: 1-3

Date: 04/21/2014



CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE

Anthropogenic Debris - include Brand Names in Comments if known	Plastic		Count	Comment	Misc. Items/Pieces		Count	Comment
	Bag				Boat/Ship/Engine part			
	Bandaid				Clothing			
	Balloon (mylar/latex)/Ribbon				Concrete/Asphalt			
	Bottle				Fiberglass			
	Buoy				Food			
	Cap/Lid				Leather			
	Cigarette box/wrapper				Lumber			
	Cup				Paper			
	Filmstrip (movie)				Rag/Cloth			
	Fishing Line/Net				Rubber			
	Food Bag / Wrapper				Shoe			
	Polypropylene Rope				Tape			
	Straw				Tire			
	Toy				Other Misc. (comment req.)			
Utensil				Metal		Count	Comment	
Plastic Piece (unid.)				Drink Can				
Other Plastic (comment req.)				Can - other				
Glass		Count	Comment	Can Pull-tab				
Beer Bottle				Fishing Gear				
Glass Bottle/Jar -other				Wire				
Glass Piece (unid.)				Metal Piece (unid.)				
Other Glass (comment req.)				Other Metal (comment req)				

Natural Debris	Marine Origin			Count	Est.*	Comment	Terrestrial Vegetation			Count	Est.*	Comment
	Foliose Algae - not kelp						Leaves/Seed Pod					
	Gorgonian Sea Fan (dead)						Stick/Branch/Driftwood					
	Kelp Holdfast						Other Terrest. (comment req)					
	Kelp Stipe/Blade											
	Rock											
	Seagrass											
Other Marine (comment req)												

\*For Natural Debris only, if an exact count cannot be made, leave the "Count" column blank and estimate the amount (L, M or H) in the "Est." column:  
 Low: L = 2-10  
 Moderate: M = 11-100  
 High: H = > 100

Completed by: CCS



SWHB - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet - FISH

Station SWHB-15

Page 1 of 1

Date 04/21/2014

Completed by: CCS

FISH SPECIES TRAWL - BIOACCUMULATION

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
california halibut	1,2	7	135,150,165 175,125,125				Y	
diamond turbot	1,2	5	80,95,90 90,85,90				Y	
slough anchorves	1,3	5,5	50,50,45,50,70 45,49,50,50,50				Y	small 1/2 sheet
spotted sand bass	1,2	2	250,290				Y	

FISH SPECIES - PLASTIC INGESTION

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
california halibut	1,2	3	130,130,145				Y	
sting rays	1	5	210-240				Y	
white sea bass	2	1	208				Y	
plainfin midshipman	2	1	170				Y	

Comments:



**FIELD SAMPLING QA CHECKLIST - TRAWL SAMPLING**

Station ID: SWHB-15

Arrival Date/Time: SWHB-15 1630

Site Acceptable for Trawl Sampling for Bioaccumulation Samples:  Y or N

if No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	N
Vessel has conducted pre-trawl survey? Site acceptable?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Trawl Sampling Procedures:**

Proper equipment used (Semi-balloon otter trawl)?	Y
Weighing scales calibrated?	NA → will do at office
Vessel passed through 100 m radius of station?	Y
Trawl duration 10 minutes (or long as possible in confined areas)?	Y
Trawl log info recorded (depth, tow wire length, times, coordinates)?	Y
Trawl remained within 10% of target depth?	Y
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	Y
Fish and/or invertebrates obtained in trawl?	Y
All fish positively identified (for specimens collected as samples)?	Y
All invertebrates positively identified (for specimens collected as samples)?	NA
Standard length of all bony fish measured for specimen counts <10? Length range measured for specimen counts >10?	Y
Total biomass of each invertebrate group retained as samples recorded?	Y
Photo of one representative from each species collected and grouped species planned for release?	Y
Fish and invertebrate specimens wrapped in pre-cleaned foil, bagged, and preserved on ice?	Y

SWHB-15 FIELD SAMPLING QA CHECKLIST – TRAWL SAMPLING

3. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	NA
Proper persons have signed and dated all COCs?	NA
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	√

4. Sample Storage and Delivery:

Epibenthic macroinvertebrates tissue samples collected?	NA
Fish tissue samples collected?	√
Tissue samples stored immediately on ice and frozen asap?	√
Cooler is taped shut for transport to AMEC freezer or lab?	√
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: CS Date/Time: 4/21/2014 1830

Print Name/Company: Corey Sneredy AMEC

# STATION OCCUPATION

SWHB Study

Agency Code RMW

Weather

Clear   
 Overcast   
 Partly cloudy   
 Drizzle

Rain   
 Thunderstorm   
 Fog

Sea State

Calm   
 Choppy   
 Rough

Nav Type

DGPS   
 GPS

Station ID SWHB-15

Vessel Name Bea

Date 4/21/14

Arrival Time 1624

(hh:mm) *check gear occ. #*

*target: 32, 631911? -117.130957*

Abandoned site?   
 Y or N (if Y explain in comments)

Station Fail Code

Wind

Speed (kts) 5  
 Direction (4) South

Swell

Period (s) 0  
 Height (ft) 0  
 Direction (4) 0

Station Comments

*\* enter vent of dph. depth = 11 dupli. 817. Trawl 1/15? \* change Trawl 2 from (SB) . 8017 to SWHB-15 - possibly submitted SWHB-15 trawl 3 date twice.*

*target: 32, 609578 -117.107004 } SWHB-15*

## TRAWL EVENTS

Trawl Number		Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Wire Out	Distance to target (m)	Trawl Fail Code (3)	Tissue Chemistry (Y/N)
1	Net Over	162705	32.61177	-117.10710	1	30			
	Start Trawl	162746	32.61155	-117.10702	↓	30			
	End Trawl	162751	32.60935	-117.10850	↓	↓	94		
	Net on Deck	162855	32.60941	-117.10839	↓	↓			
2	Net Over	165713	32.61209	-117.10741	1	30			
	Start Trawl	165749	32.61185	-117.10737	↓	↓			
	End Trawl	170758	32.60699	-117.10741	↓	↓		NA (used wrong AD)	
	Net on Deck	170830	32.60712	-117.10739	↓	↓			
3	Net Over	172729	32.60979	-117.10504	1	30			
	Start Trawl	172749	32.60984	-117.10534	↓	↓			
	End Trawl	173751	32.60949	-117.10937	↓	↓	0.0?		
	Net on Deck	173845	32.60951	-117.10917	↓	↓			

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot unfed), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

SWHB - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet

Station: SWHB-15

Page 1 of 1

Date: 4/21/14 1624 target  
32,609578  
-112.107804

Completed by: TH

Additional Trawl Coordinates:

25%      50%      75%

Trawl # <u>1</u>	<u>162104</u> Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time		<u>1625</u>	<u>1627</u>	<u>1630</u>	<u>1634</u>	<u>1635</u>	
Depth (m)		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	
Lat (32.xxxxx)	<u>61177</u>	<u>61134</u>	<u>61067</u>	<u>60988</u>	<u>60969</u>	<u>60942</u>	<u>60949</u>
Long (-117.xxxxx)	<u>10710</u>	<u>10693</u>	<u>10674</u>	<u>10693</u>	<u>10842</u>	<u>10844</u>	<u>10843</u>

25%      50%      75%

Trawl # <u>2</u>	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time		<u>1659</u>	<u>1700</u>	<u>1702</u>	<u>1705</u>	<u>1708</u>	
Depth (m)		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	
Lat (32.xxxxx)		<u>61150</u>	<u>61034</u>	<u>60947</u>	<u>60801</u>	<u>60707</u>	
Long (-117.xxxxx)		<u>10739</u>	<u>10738</u>	<u>10737</u>	<u>10754</u>	<u>10745</u>	

25%      50%      75%

Trawl # <u>3</u>	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time		<u>1728</u>	<u>1732</u>	<u>1734</u>	<u>1735</u>		
Depth (m)		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	
Lat (32.xxxxx)		<u>60992</u>	<u>60979</u>	<u>60943</u>	<u>60940</u>		
Long (-117.xxxxx)		<u>10551</u>	<u>10650</u>	<u>10788</u>	<u>10861</u>		

Official 2      25%      50%      75%      end of

Trawl # <u>4</u>	<u>over</u> Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	<u>Trawl</u> Net Retrieval	Net on Board
Time		<u>175824</u>		<u>1803</u>	<u>1806</u>	<u>18:08:25</u>	
Depth (m)		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	
Lat (32.xxxxx)	<u>61172</u>	<u>61151</u>		<u>60958</u>	<u>60946</u>	<u>60882</u>	<u>60886</u>
Long (-117.xxxxx)	<u>10698</u>	<u>10696</u>		<u>10745</u>	<u>10871</u>	<u>10949</u>	<u>10939</u>

30 feet  
wire  
out

Comments:

# STATION OCCUPATION

SWHB Study

Agency Code AMEC

Weather

Clear   
 Overcast   
 Partly cloudy   
 Drizzle

Rain   
 Thunderstorm   
 Fog

Sea State

Calm   
 Choppy   
 Rough

Water Quality

Temp (°C)	
pH	
Salinity (ppt)	
Sp Cond (mS/cm)	

Station ID SWHB-15

Date 4/21/14

Vessel Name Buzz

Arrival Time 16:15:09

(hh:mm)

Abandoned site? Station Fail Code

Y or N (if Y explain in comments)

Wind

Speed (kts) 5  
 Direction (4) South

Swell

Period (s) 0  
 Height (ft) 0  
 Direction (4) 0

Nav Type

DGPS   
 GPS

Station Comments

Equipment Type

Van Veen   
 Tandem Van Veen

# GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmmmm)	Longitude (DD°MM.mmmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
				<u>1</u>											
Grab Event Comments:															
Grab Event Comments:															
Grab Event Comments:															
Grab Event Comments:															

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - 3 Sediment Color: Brown, Gray, Black, Olive green, Red
  - 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

# STATION OCCUPATION

SWHB Study

Agency Code

**Weather**

Clear  Rain   
 Overcast  Thunderstorm   
 Partly cloudy  Fog   
 Drizzle

**Sea State**

Calm   
 Choppy   
 Rough

**Water Quality**

Temp (°C)	21.8
pH	8.23
Salinity (ppt)	35.36
Sp Cond (mS/cm)	53482

Station ID

Vessel Name

Date

Arrival Time

(hh:mm) Sta. occupation  
GPS: 32.61751  
-117.11693

DO (mg/L / sat/%) 8.03 / 112.1%

Abandoned site?  Station Fail Code

Y or N (If Y explain in comments)

**Wind**

Speed (kts) 4  
Direction (4) NW

**Swell**

Period (s) 0  
Height (ft) 0  
Direction (4) 0

**Nav Type**

DGPS   
GPS

**Equipment Type**

Van Veen   
Tandem Van Veen

**Station Comments**

sample contains some fine sands and algae is present. also patches of thick clay  
1.1m MLLW  
tide level: +0.95 ft, water depth 4.5 ft / 0.4m

## GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	1301:00	32.61750	-117.11693	1	13	NA	16	silt/clay	N	olive grn.	N	Y	Y	N	Y
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - 3 Sediment Color: Brown, Gray, Black, Olive green, Red
  - 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only



**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

Station ID: SWHB-1b

Arrival Date/Time: 04/08/2014 / 1257

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: N/A

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	NA
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	NA

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

Field staff wearing fresh, powder free nitrile gloves?	NA
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	Y
Benthic infauna tissue: samples stored on ice and frozen asap?	NA
Cooler is taped shut for transport to AMEC freezer or lab?	NA
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: lost anchor :-

Signature of QA/QC Personnel: C. Shredy Date/Time: 04/08/2014 1315

Print Name/Company: Corey Shredy AMEC

# STATION OCCUPATION

SWHB Study

Agency Code

Weather

Clear

Rain

Overcast

Thunderstorm

Partly cloudy

Fog

Drizzle

Sea State

Calm

Choppy

Rough

Water Quality

Temp (°C)

pH

Salinity (ppt)

Sp Cond (mS/cm)

Station ID

Date

Vessel Name

Arrival Time

(hh:mm)

Abandoned site?

Station Fail Code

Y or N (if Y explain in comments)

Wind

Speed (kts)

Direction (4)

Swell

Period (s)

Height (ft)

Direction (4)

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

DEPTH > 3m MLW. CHECKED MULTIPLE LOCATIONS WITHIN 100M RADIUS. NONE < 3m MLW.  
REPERCUSSO w/ OVERBOARD SWHS-41

## GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - 3 Sediment Color: Brown, Gray, Black, Olive green, Red
  - 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

# STATION OCCUPATION

SWHB Study

Agency Code CSD

Weather

Clear

Rain

Vessel Name pontoon

Overcast

Thunderstorm

Arrival Time 0945:34

Partly cloudy

Fog

Drizzle

Sea State

Calm

Choppy

Rough

Water Quality

Station ID SWHB-18

Temp (°C) 20.9

pH 8.19

Salinity (ppt) 35.44

Sp Cond (mS/cm) 53586

Date 4/8/2014

DO (mg/L / % sat) 6.73 / 12.5%

Abandoned site?

Station Fail Code N/A

Y or N (If Y explain in comments)

(hh:mm)

stn occ 32.60588

GPS -117.12105

Wind

Swell

Speed (kts) 2.4

Period (s) 0

Direction (4) NW

Height (ft) 0

Direction (4) 0

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

TIDE; 1.81 FT 0.4m ALLW  
  
actual depth 3.2 ft / 0.97m

# GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	0953:57	32.60573	-117.12089	1	6	N/A	16	Silt/clay	N	olive green	N	Y	Y	N	Y
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - 3 Sediment Color: Brown, Gray, Black, Olive green, Red
  - 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

Station ID: SWHB-18

Arrival Date/Time: 4/8/2014 / 0945

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: N/A

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	NA
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	NA
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	NA

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

Field staff wearing fresh, powder free nitrile gloves?	NA
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	Y
Benthic infauna tissue: samples stored on ice and frozen asap?	NA
Cooler is taped shut for transport to AMEC freezer or lab?	NA
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: *E. Sheredy* Date/Time: 04/08/2014 1010

Print Name/Company: Avery Sheredy AMEC

# STATION OCCUPATION

SWHB Study

Agency Code

Weather

Clear

Rain

Vessel Name

Overcast

Thunderstorm

Arrival Time

Partly cloudy

Fog

Drizzle

Sea State

Calm

Choppy

Rough

Water Quality

Station ID

Temp (°C)

pH

Salinity (ppt)

Sp Cond (mS/cm)

DO (mg/L/sat)  / 98.4%

Date

Abandoned site?

Station Fail Code

Y or N (If Y explain in comments)

(hh:mm) Station occup  
GPS: 32.60800  
-117.11913

Wind

Speed (kts)

Direction (4)

Swell

Period (s)

Height (ft)

Direction (4)

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

actual depth is 3.9 ft / 1.19m *0.7m Allow*  
all grass present in sample  
13 cm in one bucket, 7 cm in other - sampled  
from 13 cm  
TIDE: 1.57 FT

# GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	1026:16	32.60828	-117.11898	1	20	NA	13	silt/clay	N	olive grn.	N	Y	Y	N	Y
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

Station ID: SWHB-19

Arrival Date/Time: 4/8/2014 / 1019

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: NA

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	NA
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	NA



**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

Field staff wearing fresh, powder free nitrile gloves?	N/A
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	Y
Benthic infauna tissue: samples stored on ice and frozen asap?	NA
Cooler is taped shut for transport to AMEC freezer or lab?	NA
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: *C. Surrency* Date/Time: 4/8/2014 1045

Print Name/Company: Corey Surrency AMEC

# STATION OCCUPATION

SWHB Study

Agency Code

Weather

Clear

Rain

Vessel Name

Overcast

Thunderstorm

Arrival Time

Partly cloudy

Fog

Drizzle

Sea State

Calm

Choppy

Rough

Water Quality

Station ID

Temp (°C)	21.3
pH	8.02
Salinity (ppt)	34.61
Sp Cond (mS/cm)	52460

Date

(hh:mm) Station occupation  
GPS: 32.62634  
-117.11240

N

Do (mg/L / % sat) 7.67 / 106.5%

Abandoned site?  Station Fail Code

Y or N (if Y explain in comments)

Wind

Speed (kts)

Direction (4)

Swell

Period (s)

Height (ft)

Direction (4)

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

Send in sample, shell hash present  
  
water depth: 7.5ft / 2.3m  
tide: +1.78 ft  
1.7m ALLW

# GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	1455:43	32.62629	-117.11212	2	23*	NA	11	silt/clay	None	olive gra.	Y	Y	Y	N	Y
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

\* check tablet distance to target

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - Sediment Color: Brown, Gray, Black, Olive green, Red
  - Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

Station ID: SWHB-20

Arrival Date/Time: 04/08/2014 1447

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: N/A

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (+ 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	N/A, but Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	NA

SWHB-20

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

Field staff wearing fresh, powder free nitrile gloves?	NA
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	✓
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	✓
Proper persons have signed and dated all COCs?	
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	✓
Benthic infauna tissue: samples stored on ice and frozen asap?	NA
Cooler is taped shut for transport to AMEC freezer or lab?	NA
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: latitude entered as negative in tablet [-32°...]

Signature of QA/QC Personnel: C. Shredy Date/Time: 04/08/2014 1515

Print Name/Company: Corey Shredy AMEC

# STATION OCCUPATION

SWHB Study

Agency Code Amptc

Weather

Clear

Rain

Vessel Name Beryl

Overcast

Thunderstorm

Arrival Time 1730

Partly cloudy

Fog

(hh:mm)

173008 occupancy position:

32.63800 -117.12311

New occ. position:

4/16/14 080016

32.63776, -117.12290

Wind

Speed (kts) 10

Direction (4) NW

Swell

Period (s) 0

Height (ft) 0

Direction (4) 0

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Water Quality

Station ID SWHB-21

Temp (°C) 21.0°C

pH 8.82 pH

Salinity (ppt) 34.76 ppt

Sp Cond (mS/cm) 52,673

Date 4/15/14  
+ 4/16/14

Abandoned site?

Station Fail Code NONE

Y or N (If Y explain in comments)

Station Comments

Tide = +1.4 feet  
Depth on tape  
Fine grain sand  
9.1 feet  
2.8 meters  
Day 2  
+ 2.1 feet tide  
Archeology occupancy ✓

## GRAB EVENTS

21 target → 32.638, -117.123

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	1734	32.63798	-117.12307	3	-	NONE	8.5 (9)	Fg. sand	NONE	olive green	N	X	X	X	yes
Grab Event Comments:															
2	080046	32.63776	-117.12288	3	21	NONE	9	Fg. s.	NONE	olive green	N			X	NO
Grab Event Comments:															
3	0828	32.63772	-117.12288	3	23	#	9	"	"	"	"			X	
Grab Event Comments:															
4	0835	32.63777	-117.12292	3	27	"	9	"	"	"	"			X	NO
Grab Event Comments:															
5	0845	32.63790	-117.12290	3	15	"	9	"	"	"	"			X	"
Grab Event Comments:															
6	0900	32.63775	-117.12287	"	30	"	"	"	"	"	"			X	"
Grab Event Comments:															

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - Sediment Color: Brown, Gray, Black, Olive green, Red
  - Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

7 Lat Long pen  
32.65561 -117.14739

16cm pen

olive green

silt / clay

N. also

B/D

No  
photo

14.05.09

BIGHT'13 EPIBENTHIC INVERTEBRATE FORM

Station: ~~4#~~ SWHB - 21

Page 1 of 1

Date: 4/16/14

Completed by: BCS

0888

Data from Short/Long Trawl @ >300 m Depth  Yes  No

	Species	N	Comments (or Anomalies)	Weight (kg)			Photos (D, L, V)
				Gross	Y/N	Net	Y/N
1	Crustacea	15	2 Greenback shrimp (Heptacarpus) 2 pyrenia crabs 2 10 skeleton shrimp				
2	Anemone						
3	Polychaeta						
4	Gastropod - Nassaria sp	12					
5	Bivalves	100+	1 clam (unid) 100+ SM clams + 6 Musculista				
6	molluska (Bulla)	1	Large				
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Comments:

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SWHB-21

~~Goby~~ -

Anemone + Polychaete 7.1g

Ceasthropods 11g

mollusks 32g

Bry-lves 21g

Crustacea 5.7g

all  
1/2 foil  
+ whirl pack



**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

Station ID: SWHB-21

Arrival Date/Time: 4/16/14

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	y
Vessel has been anchored (or tied off)?	y
Station DGPS coordinates (+ 3 m) recorded?	y
Station occupation form completed?	y

**2. Sediment Sampling Procedures:**

Samples collected in following order: <u>chemistry</u> , bioaccumulation (if applicable)	y
Field staff wearing fresh, powder free nitrile gloves?	y
Equipment washed/rinsed from previous station?	y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	y
Sampling instrument washed with Alconox?	y
Sampling instrument given site water rinse prior to deployment?	y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	y
Sample bottles are lab certified, contaminant free?	y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	y
Grab disposition / characteristic information recorded?	y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	y
Sediment evenly distributed among containers?	y
Stainless steel scoop used to distribute sediment?	y
Staff avoided contaminating samples at all times?	y
Equipment or field blank collected (if applicable)?	<del>y</del> NA

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

Field staff wearing fresh, powder free nitrile gloves?	y
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	y
Sampling instrument given site water rinse prior to deployment?	y
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	y
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	y
Each specimen sample weighed?	y
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	y

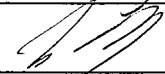
**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	y
Proper persons have signed and dated all COCs?	y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	y

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	y
Benthic infauna tissue: samples stored on ice and frozen asap?	y
Cooler is taped shut for transport to AMEC freezer or lab?	y
Completed COC is included in plastic bag in cooler?	y

Additional Notes: Day 1 - (4/15/14) - chemistry, Day 2, 4/16/14

Signature of QA/QC Personnel:  Date/Time: 4/16/14 1100.

Print Name/Company: Tyler Huff AMEC

# STATION OCCUPATION

SWHB Study

Agency Code AMEC

Weather

Clear

Rain

Sea State

Calm

Nav Type

DGPS

Station ID SWHB-21

Vessel Name SKIP

Overcast

Thunderstorm

Choppy

GPS

Date 4/21/14

Arrival Time (hh:mm)

Partly cloudy

Fog

Rough

Drizzle

Abandoned site?

Station Fail Code

Y or N (If Y explain in comments)

Wind

Speed (kts) 5

Direction (4) South

Swell

Period (s) 0

Height (ft) 0

Direction (4) 0

Station Comments

tide = 0.2 feet  
Depth: 2.4m = 8 feet  
301 Rope (like length)

## TRAWL EVENTS

10 minute trawl

Trawl Number		Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Wire Out	Distance to target (m)	Trawl Fail Code (3)	Tissue Chemistry (Y/N)
1	Net Over	1050:31	32.63747	-117.12255	2 (24)	30			
	Start Trawl (Comp. 6.2.12)	1051:31	32.63747	-117.12254	2	30			
	End Trawl	1101:38	32.63893	-117.12446	2	30	20.27m		
	Net on Deck	1102:04	32.63883	-117.12443	2	30			
2	Net Over	1145:29	32.63853	-117.12307	2	30			
	Start Trawl (Comp. 6.2.12)	1146:28	32.63822	-117.12307	↓	↓			
	End Trawl	1156:22	32.63430	-117.12336	↓	↓	14.2m		
	Net on Deck	1157:16	32.63434	-117.12214	2	30			
3	Net Over	12:18:37	32.64104	-117.12436	2	30			
	Start Trawl (Comp. 6.2.12)	12:19:10	32.64074	-117.12435	↓	↓			
	End Trawl (2275:22)	12:27:22	32.63378	-117.12392	↓	↓	120.6	Trawl	?
	Net on Deck	12:29:04	32.63394	-117.12376	↓	↓		hit unknown obstruction, ended trawl	

30%  
32° 38.27 1187  
-117° 07.40 1412  
60% 32° 38.28 891  
-117° 07.41 36  
70% 32° 30 288  
-117° 07.42 566  
80% 32° 38.29 848  
-117° 07.44 49  
Q 8:45

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

SWHB - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet

Station: SWHB-21

Page 1 of 1

Date: 4/21/14

Completed by: TM

Additional Trawl Coordinates: *Trawls 1-3. No trawl 4+*

Trawl 2	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time							
Depth (m)							
Lat (32.xxxxx)							
Long (-117.xxxxx)							

Trawl 3	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time							
Depth (m)							
Lat (32.xxxxx)							
Long (-117.xxxxx)							

Trawl 4	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time							
Depth (m)							
Lat (32.xxxxx)							
Long (-117.xxxxx)							

Trawl 5	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time							
Depth (m)							
Lat (32.xxxxx)							
Long (-117.xxxxx)							

Comments:



BIGHT'13 TRAWL DEBRIS FORM

Agency: AMEC

Page 1 of 1

Station: SWHB-21 Trawl #: 1-3 Date: 04/21/2014



CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE

Anthropogenic Debris - include Brand Names in Comments if known	<b>Plastic</b>		Count	Comment	<b>Misc. Items/Pieces</b>		Count	Comment			
	Bag				Boat/Ship/Engine part						
	Bandaid				Clothing						
	Balloon (mylar/latex)/Ribbon				Concrete/Asphalt						
	Bottle				Fiberglass						
	Buoy				Food						
	Cap/Lid				Leather						
	Cigarette box/wrapper				Lumber						
	Cup				Paper						
	Filmstrip (movie)				Rag/Cloth						
	Fishing Line/Net				Rubber						
	Food Bag / Wrapper				Shoe						
	Polypropylene Rope				Tape						
	Straw				Tire						
	Toy				Other Misc. (comment req.)						
Utensil											
Plastic Piece (unid.)				<b>Metal</b>	Count	Comment					
Other Plastic (comment req.)				Drink Can							
				Can - other							
				Can Pull-tab							
<b>Glass</b>	Count	Comment		Fishing Gear							
Beer Bottle				Wire							
Glass Bottle/Jar -other				Metal Piece (unid.)							
Glass Piece (unid.)				Other Metal (comment req)							
Other Glass (comment req.)											
Natural Debris	<b>Marine Origin</b>			Count	Est.*	Comment	<b>Terrestrial Vegetation</b>		Count	Est.*	Comment
	Foliose Algae - not kelp						Leaves/Seed Pod				
	Gorgonian Sea Fan (dead)						Stick/Branch/Driftwood				
	Kelp Holdfast						Other Terrest. (comment req)				
	Kelp Stipe/Blade										
	Rock										
	Seagrass										
Other Marine (comment req)											

\*For Natural Debris only, if an exact count cannot be made, leave the "Count" column blank and estimate the amount (L, M or H) in the "Est." column:  
 Low: L = 2-10  
 Moderate: M = 11-100  
 High: H = > 100

Completed by: CCS

SWHB - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet - FISH

Station SWHB-21

Page 1 of 1

Date 04/21/2014

Completed by: CCS

FISH SPECIES TRAWL - BIOACCUMULATION

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
Spotted sand bass	1,2,3	6	148, 150, 140 150, 135, 150				Y	
halibut	1	10	80, 50, 60, 150 80, 80, 95, 115, 145				Y	

FISH SPECIES - PLASTIC INGESTION

Species	Trawl #	N	Size Range (SL) (mm)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
sting ray	1	5	220-270				Y	
Spotted sand bass	1,2	3	190-200				Y	

Comments:

RHMP/ Bight '13 - Bioaccumulation Special Studies Field Data Sheet  
 INVERTEBRATES from Trawls

Station SWHB-21

Page 1 of 1

Date 04/21/2014

Completed by: CCS

INVERTEBRATE SPECIES TRAWL- BIOACCUMULATION

Species	Trawl #	N	Weight (kg)			Photo (Y/N)	Footnotes
			Gross	Tare	Net		
<i>Bulla snail</i>	3	1				Y	

Comments:



**FIELD SAMPLING QA CHECKLIST – TRAWL SAMPLING**

Station ID: SWHB - ~~15~~ 21

Arrival Date/Time: 04/21/2014

Site Acceptable for Trawl Sampling for Bioaccumulation Samples: (Y) or N

if No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	N
Vessel has conducted pre-trawl survey? Site acceptable?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Trawl Sampling Procedures:**

Proper equipment used (Semi-balloon otter trawl)?	Y
Weighing scales calibrated?	Y
Vessel passed through 100 m radius of station?	Y
Trawl duration 10 minutes (or long as possible in confined areas)?	Y
Trawl log info recorded (depth, tow wire length, times, coordinates)?	Y
Trawl remained within 10% of target depth?	Y
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	Y
Fish and/or invertebrates obtained in trawl?	Y
All fish positively identified (for specimens collected as samples)?	Y
All invertebrates positively identified (for specimens collected as samples)?	Y
Standard length of all bony fish measured for specimen counts <10? Length range measured for specimen counts >10?	Y
Total biomass of each invertebrate group retained as samples recorded?	Y
Photo of one representative from each species collected and grouped species planned for release?	Y
Fish and invertebrate specimens wrapped in pre-cleaned foil, bagged, and preserved on ice?	Y

# STATION OCCUPATION

Set % 104.4 %  
 D: 7.51 ms/L

SWHB Study

Agency Code SLMP

Weather

Clear

Overcast

Partly cloudy

Drizzle

Rain

Thunderstorm

Fog

Sea State

Calm

Choppy

Rough

Water Quality

Temp (°C) 21.60C

pH 8.33

Salinity (ppt) 35.16

Sp Cond (mS/cm) 53215

Station ID SWHB-22

Date 4/15/14

Vessel Name Barge

Arrival Time 140457

(hh:mm)

target: 32.6229  
 -117.121

Abandoned site?

Station Fail Code N/A

Y or N (If Y explain in comments)

Wind

Speed (kts) 13

Direction (4) SSE

Swell

Period (s) 0

Height (ft) 0

Direction (4) 0

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

Side + 1.9 feet. GPS marker = 38.  
 Depth: 3.05 m = 10.0 feet.  
 Silt w/ sand  
 Sandy silt.

# GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	1413	32.62310	-117.12018	3	80	NA	16cm	Silt/dry	None	olive gray	N	X	X	X	yes
Grab Event Comments:															
2	1430	32.62319	-117.12016	3	94	NA	16cm	S	"	"	N			X	No.
Grab Event Comments:															
3	1443	32.62319	-117.12017	3	84	NA	16cm	"	"	"	N			X	No.
Grab Event Comments:															
4	145257	32.62311	-117.12008	3	89	NA	16cm	"	"	"	N			X	No.
Grab Event Comments:															
5	15:1516	32.62321	-117.12015	3	87	"	"	"	"	"	"			X	No.
Grab Event Comments:															
6	152704	32.62307	-117.12017	3	80	"	"	"	"	"	"			X	No.
Grab Event Comments:															

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - Sediment Color: Brown, Gray, Black, Olive green, Red
  - Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

	<u>rows</u>	<u>no</u>	<u>depth</u>	<u>Type</u>
7	#5:40:13	84	16cm	32.62304
8	1554 13	75	16cm	32.62297
9	1603 17	84	16	32.62302

-117.12012  
~~-117.1~~  
-117.12020  
-117.12011

8.8:feet depth New site  
= tide  
+0.9 tide @ low

IX No more gabs

# BIGHT'13 EPIBENTHIC INVERTEBRATE FORM

Station: SWHB-22  
 Date: 4/15/14

Page 1 of 1

Completed by: BCS

Data from Short/Long Trawl @ >300 m Depth  Yes  No

1/2 tail  
 1/2 tail  
 1/2 tail  
 in one whirl peck  
 1/2 tail  
 1/2 tail  
 No Fuil.

	Species	N	Comments (or Anomalies)	Weight (kg)			Photos (D, L, V)
				Gross	Y/N	Net	Y/N
1	Goby	2		4.2g			
2	Shrimp + misc arthropods	1	clump	4.2g			
3	Gastropod	6		8g			
4	molluska - small clams	50+		89g			
5	molluska - razor clams	50+					
6	Polychaete	100+		12g			
7	Debris	1					
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Comments: Tear = 1/2 tail + whirl peck + ID tag. = 3.3g 3.5g

SWHB - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet

Station: SWHB-22

Page 1 of 1

Date: 4/21/14

Completed by: TD

Additional Trawl Coordinates:

1420

Trawl <u>2</u> 1	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time			1410	1412	1418	32.6157	32
Depth (m)			3	3	3		
Lat (32.xxxxx)			32.56310	32.6205	32.6199	32.6157	32
Long (-117.xxxxx)			-117.11962	-117.1204	-117.1196	-117.	

11943

Trawl <u>3</u> 2	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time		1440	1442	1245	1247		
Depth (m)		3	3	3	3		
Lat (32.xxxxx)		32.62430	32.62328	32.62217	32.62173		
Long (-117.xxxxx)		-117.11992	-117.11978	-117.11927	-117.11838		

50%      75%

Trawl <u>4</u> 3	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time			1517	1520	1524		
Depth (m)			3	3	3		
Lat (32.xxxxx)			32.62067	32.62084	32.62093		
Long (-117.xxxxx)			-117.11971	-117.11925	-117.11478		

check

Trawl <u>5</u> 4	Net Set <sup>over</sup>	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time							
Depth (m)							
Lat (32.xxxxx)							
Long (-117.xxxxx)							

Comments:

# STATION OCCUPATION

SWHB Study

Agency Code AMEC

Weather

Sea State

Nav Type

Station ID SWHB-22

Vessel Name BARGE

Clear

Overcast

Partly cloudy

Drizzle

Rain

Thunderstorm

Fog

Calm

Choppy

Rough

DGPS

GPS

Date 4/21/14

Arrival Time 13:56:32

(hh:mm)

occupy: 32.62314  
-117.12003

Abandoned site?

Station Fail Code

Y or N (if Y explain in comments)

Wind

Swell

Speed (kts) 10

Period (s) 0

Direction (4) west

Height (ft) 0

target 32.62294  
-117.120726

Direction (4) 0

Station Comments

Depth: 10 ~~met~~ = 3 meters  
tide: +3.2 2.4 → Trawl 3 tide: 3.5 + 1515  
1410  
\* Trawl N # 85 (should be trawl 2)  
check table trawl 3 data

## TRAWL EVENTS

Trawl Number		Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Wire Out	Distance to target (m)	Trawl Fail Code (3)	Tissue Chemistry (Y/N)
1	Net Over	14:12:07	32.62370	-117.11909	3	30			
	Start Trawl	14:12:45	32.62351	-117.11923					
	End Trawl	14:22:50	32.61945	-117.11951			136. m		
	Net on Deck	14:23:28	32.61953	-117.11947					
2	Net Over	14:41:29	32.62405	-117.12089	3	30			
	Start Trawl	14:41:53	32.62491	-117.12020					
	End Trawl	14:51:53	32.62099	-117.11757			149.		
	Net on Deck	04:52:29	32.62108	-117.11759					
3	Net Over	15:17:54	32.62286	-117.12178	3	30			
	Start Trawl	15:19:01	32.62271	-117.12109					
	End Trawl	15:29:02	32.62300	-117.11876			24.7		
	Net on Deck	15:31:08	32.62306	-117.11856					

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

# BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: SWHB-22

Page 1 of 1

Date: 04/21/2014

Completed by: CCS

Data from Short/Long Trawl @ >300 m Depth  Yes  No

Trawl #	Species	N	Std Length Size Class (cm) <i>Use for up to 10 individuals. Use Size Class sheet for more abundant spp.</i>	Weight (kg)			Photos
				Gross	Tare	Net	Y/N
1	1 sting ray	11	230 - 320				Y
1	2 diamond turbot	1	180				Y
1	3 spotted sand bass	3	235, 180, 170				Y
1	4 barred sand bass	1	145				Y
2	5 sting ray	51	200 - 330				N
2	6 California halibut	3	125, 50, 55				Y
2	7 spotted sand bass	8	145 - 225				Y
2	8 barred sand bass	7	140 - 160				Y
2	9 butterfly ray	1	350 (w)				Y
3	10 sting ray	9	190 - 370				N
3	11 spotted sand bass	4	135 - 255				Y
3	12 barred sand bass	2	90				Y
3	13 slough anchovy	1	51				Y
3	14 surf perch	2	54, 64				Y
3	15 California halibut	4	100, 95, 95, 280				Y
	16						
	17						
	18						
	19						
	20						
	21						
	22						
	23						
	24						
	25						

\* 5 sec for pla

Comments: depth: 11.5'

Inverts: trawl #

tide: 3.0 ft flood @ 1410

MLW = 8.5'

1	crab	n=1	picture=Y
2	Naranga	n=1	pic=Y
2	giant sea hare	n=1	pic=Y
2	scallop	n=1	pic=Y

\* SITE 10 needs to be photoshopped into field pics (left blank)

SWHB - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet - FISH

Station SWHB-22

Page 1 of 1

Date 04/21/2014

Completed by: CCS

**FISH SPECIES TRAWL - BIOACCUMULATION**

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
spotted sand bass	1,2,3	6	145, 150, 150 160, 125, 145				Y	
california halibut	2,3	6	100, 95, 95 50, 55, 125				Y	
barred sand bass	1,2,3	6	145, 145, 155 155, 140, 90				Y	
stough anchovy	3	1	54				Y	small foil (1/2 sheet)
shiner perch	3	2	54, 64				Y	small foil (1/2 sheet)

**FISH SPECIES - PLASTIC INGESTION**

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
sting ray	1	5	220-240				Y	
spotted sand bass	1,2,3	3	200, 180, 225				N	
barred sand bass	3	1	155				N	

Comments:



RHMP/ Bight '13 - Bioaccumulation Special Studies Field Data Sheet  
INVERTEBRATES from Trawls

Station SWHB-22

Page 1 of 1

Date 04/21/2014

Completed by: CCS

INVERTEBRATE SPECIES TRAWL- BIOACCUMULATION

Species	Trawl #	N	Weight (kg)			Photo (Y/N)	Footnotes
			Gross	Tare	Net		
Bay scallop	2	1				Y	

Comments:

**FIELD SAMPLING QA CHECKLIST – TRAWL SAMPLING**

Station ID: SWHB-22

Arrival Date/Time: 04/21/2014 1410

Site Acceptable for Trawl Sampling for Bioaccumulation Samples: (Y) or N

if No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

**Field Procedures**

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	N
Vessel has conducted pre-trawl survey? Site acceptable?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

2. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	Y
Weighing scales calibrated?	NA
Vessel passed through 100 m radius of station?	Y
Trawl duration 10 minutes (or long as possible in confined areas)?	Y
Trawl log info recorded (depth, tow wire length, times, coordinates)?	Y
Trawl remained within 10% of target depth?	Y
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	Y
Fish and/or invertebrates obtained in trawl?	Y
All fish positively identified (for specimens collected as samples)?	Y
All invertebrates positively identified (for specimens collected as samples)?	Y
Standard length of all bony fish measured for specimen counts <10? Length range measured for specimen counts >10?	Y
Total biomass of each invertebrate group retained as samples recorded?	Y
Photo of one representative from each species collected and grouped species planned for release?	Y
Fish and invertebrate specimens wrapped in pre-cleaned foil, bagged, and preserved on ice?	Y

will do in off

SWHB-22 FIELD SAMPLING QA CHECKLIST - TRAWL SAMPLING

3. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	NA
Proper persons have signed and dated all COCs?	NA
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

4. Sample Storage and Delivery:

Epibenthic macroinvertebrates tissue samples collected?	N
Fish tissue samples collected?	Y
Tissue samples stored immediately on ice and frozen asap?	Y
Cooler is taped shut for transport to AMEC freezer or lab?	NA
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: C. Shurdy Date/Time: 4/21/2014 1625

Print Name/Company: Covey Shurdy AMEC

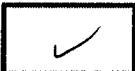
BIGHT'13 TRAWL DEBRIS FORM

Agency: AMEC

Page 1 of 1

Station: SWAB-22 Trawl #: 1-3

Date: 4/21/2014



CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE

Anthropogenic Debris - include Brand Names in Comments if known	Plastic		Count	Comment	Misc. Items/Pieces		Count	Comment
	Bag				Boat/Ship/Engine part			
	Bandaid				Clothing			
	Balloon (mylar/latex)/Ribbon				Concrete/Asphalt			
	Bottle				Fiberglass			
	Buoy				Food			
	Cap/Lid				Leather			
	Cigarette box/wrapper				Lumber			
	Cup				Paper			
	Filmstrip (movie)				Rag/Cloth			
	Fishing Line/Net				Rubber			
	Food Bag / Wrapper				Shoe			
	Polypropylene Rope				Tape			
	Straw				Tire			
	Toy				Other Misc. (comment req.)			
	Utensil				Metal		Count	Comment
	Plastic Piece (unid.)				Drink Can			
	Other Plastic (comment req.)				Can - other			
	Glass		Count	Comment	Can Pull-tab			
	Beer Bottle				Fishing Gear			
Glass Bottle/Jar -other				Wire				
Glass Piece (unid.)				Metal Piece (unid.)				
Other Glass (comment req.)				Other Metal (comment req.)				

Natural Debris	Marine Origin			Count	Est.*	Comment	Terrestrial Vegetation			Count	Est.*	Comment
	Foliose Algae - not kelp						Leaves/Seed Pod					
	Gorgonian Sea Fan (dead)						Stick/Branch/Driftwood					
	Kelp Holdfast						Other Terrest. (comment req.)					
	Kelp Stipe/Blade											
	Rock											
	Seagrass											
Other Marine (comment req.)												

\*For Natural Debris only, if an exact count cannot be made, leave the "Count" column blank and estimate the amount (L, M or H) in the "Est." column:

Low: L = 2-10  
 Moderate: M = 11-100  
 High: H = > 100

Completed by: CCJ

# STATION OCCUPATION

SWHB Study

Agency Code

Weather

Clear

Rain

Vessel Name

Overcast

Thunderstorm

Arrival Time

Partly cloudy

Fog

Drizzle

Sea State

Calm

Choppy

Rough

Water Quality

Station ID

Temp (°C)

pH

Salinity (ppt)

Sp Cond (mS/cm)

Date

(hh:mm) stn occupation GPS:

32.61002

-117.11491

DO (mg/L/sat)

Abandoned site?  Station Fail Code

Y or N (If Y explain in comments)

Wind

Swell

Speed (kts)

Period (s)

Direction (4)

Height (ft)

Direction (4)

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

algae and eel grass present in sample #1  
- some fine grain sand  
0.55m AGLW  
12cm in one chamber, 10cm in other, sampled from 12cm  
tide: +1.29 ft, actual depth 3.1ft/0.9m

# GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmmm)	Longitude (DD°MM.mmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	1055:35	32.61002	-117.11491	1	24	NA	12	silt/clay	N	olive gm.		Y	Y	N	Y
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - Sediment Color: Brown, Gray, Black, Olive green, Red
  - Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

Station ID: SWHB-23

Arrival Date/Time: 1055:34 4/8/14

Site Acceptable for Sediment Sampling:  Y or N

Bioaccumulation Sample Site: Y or  N

If site not acceptable, provide reason: NA

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	y
Vessel has been anchored (or tied off)?	y
Station DGPS coordinates (± 3 m) recorded?	y
Station occupation form completed?	y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	y
Field staff wearing fresh, powder free nitrile gloves?	y
Equipment washed/rinsed from previous station?	y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	NA
Sampling instrument washed with Alconox?	y
Sampling instrument given site water rinse prior to deployment?	y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	y
Sample bottles are lab certified, contaminant free?	y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	y
Grab disposition / characteristic information recorded?	y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	y
Sediment evenly distributed among containers?	y
Stainless steel scoop used to distribute sediment?	y
Staff avoided contaminating samples at all times?	y
Equipment or field blank collected (if applicable)?	NA

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

NA

Field staff wearing fresh, powder free nitrile gloves?	
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	↓

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	y
Proper persons have signed and dated all COCs?	y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	y

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	y
Benthic infauna tissue: samples stored on ice and frozen asap?	NA
Cooler is taped shut for transport to AMEC freezer or lab?	-
Completed COC is included in plastic bag in cooler?	-

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel:  Date/Time: 11:15 4/8/14

Print Name/Company: Tyler Hubbard AMEC

# STATION OCCUPATION

SWHB Study

Agency Code

Weather

Clear

Rain

Vessel Name

Overcast

Thunderstorm

Arrival Time

Partly cloudy

Fog

Drizzle

Sea State

Calm

Choppy

Rough

Water Quality

Station ID

Temp (°C)

pH

Salinity (ppt)

Sp Cond (mS/cm)

DO (mg/L) / % SAT

Date

(hh:mm)

Stn Occupation

GPS: 32.63679

-117.11749

Abandoned site?

Station Fail Code

Y or N (if Y explain in comments)

Wind

Speed (kts)

Direction (4)

Swell

Period (s)

Height (ft)

Direction (4)

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

eel grass present in sample + algae

water depth: 6.5 ft / 1.98 m

tide: +2.56 flood

1.2 m MLLW

## GRAB EVENTS

MLLW = -4ft

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	1622:16	32.63681	-117.11744	1	53	NA	10	silt/clay	N	olive gm	N	Y	Y	N	Y
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - Sediment Color: Brown, Gray, Black, Olive green, Red
  - Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only



**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

Station ID: SWHB-24

Arrival Date/Time: 04/08/2014 1616

Site Acceptable for Sediment Sampling: (Y) or N

Bioaccumulation Sample Site: Y or (N)

If site not acceptable, provide reason: NA

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	NA but y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	NA

SWHB-24 FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS

3. Infauna Tissue Sampling Procedures (if applicable):

Field staff wearing fresh, powder free nitrile gloves?	NA
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	

5. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	

6. Sample Storage and Delivery:

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	Y
Benthic infauna tissue: samples stored on ice and frozen asap?	NA
Cooler is taped shut for transport to AMEC freezer or lab?	NA
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel: CSheredy Date/Time: 07/08/2014 1640

Print Name/Company: Corey SHEREDY AMEC

# STATION OCCUPATION

SWHB Study

Agency Code

Weather

Clear

Rain

Vessel Name

Overcast

Thunderstorm

Arrival Time

Partly cloudy

Fog

Drizzle

Sea State

Calm

Choppy

Rough

Water Quality

Station ID

Temp (°C)

pH

Salinity (ppt)

Sp Cond (mS/cm)

DO (mg/L / % sat)

Date

Abandoned site?  Station Fail Code

Y or N (if Y explain in comments)

(hh:mm) str. occupation  
GPS: 32.63005  
-117.12436

Wind

Speed (kts)

Direction (4)

Swell

Period (s)

Height (ft)

Direction (4)

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

took 4 attempts to grab a sample, due to choppy & windy conditions. Eelgrass present in the sample.  
water depth: 9 ft / 2.7m  
tide: 2.21 ft 2.1m MLLW

# GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	15:37:52	32.63007	-117.12437	2	38	NA	14	silt/clay	N	olive gm	N	Y	Y	N	Y
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

Station ID: SWHB-25

Arrival Date/Time: 04/08/2014 / 1533

Site Acceptable for Sediment Sampling: (Y) or N

Bioaccumulation Sample Site: Y or (N)

If site not acceptable, provide reason: NA

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	NA but Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	NA

SWHB-25

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

Field staff wearing fresh, powder free nitrile gloves?	NA
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	Y
Benthic infauna tissue: samples stored on ice and frozen asap?	NA
Cooler is taped shut for transport to AMEC freezer or lab?	NA
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: 4 attempts to get sample due to chippy conditions  
(van veen would deploy upon entry in water)  
 Signature of QA/QC Personnel: ESheredy Date/Time: 04/05/2014 1600  
 Print Name/Company: Corey Sheredy AMEC

# STATION OCCUPATION

SWHB Study

Agency Code AMEC

Weather

Clear   
Overcast   
Partly cloudy   
Drizzle

Rain   
Thunderstorm   
Fog

Sea State

Calm   
Choppy   
Rough

Water Quality

Temp (°C)	18.5°C
pH	8.24 pH
Salinity (ppt)	34.85 ppt
Sp Cond (mS/cm)	52,093

Station ID SWHB-26

Vessel Name Barge

Date 4/17/14

Arrival Time 1250

(hh:mm)

Occupation: 30.68912  
-117.16327

Abandoned site?

Station Fail Code NONE

Y or N (if Y explain in comments)

Wind

Speed (kts) 5  
Direction (4) South

Swell

Period (s) 0  
Height (ft) 0  
Direction (4) 0

Nav Type

DGPS   
GPS

Station Comments

106.3% DO  
8.08 mg/L DO  
Depth: 5.2 feet = 1.6 m  
Tide: +3.9 falling  
Silty

Target: 35.6892  
-117.163

List  
32.689216  
-117.163231

Large Hump

Equipment Type

Van Veen   
Tandem Van Veen

## GRAB EVENTS

Sample types (Click all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	1256	30.68911	-117.16324	2	25	<del>None</del>	5	silt/llg	no	olive gr	N			X	yes
Grab Event Comments:															
2	1306	30.68913	-117.16325	2	25	Large Hump	5	ll	"	"	"			X	NO
Grab Event Comments:															
3	1313	30.68912	-117.16347	2	45	NONE	8	"	"	"	"			X	NO
Grab Event Comments:															
4	1333	30.68920	-117.16328	2	2	NONE	11	"	"	"	"	X	X	X	yes
Grab Event Comments: Bow depth: 5'8" = tide = +3.9 feet, moved to new spot.															
5	1357	30.68927	-117.16311	2	13	None	7	"	"	"	"			X	NO
Grab Event Comments:															
6	1405	30.68925	-117.16306	2	8	none	7	"	"	"	"			X	"
Grab Event Comments:															

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

7	1414	30.68927	-117.16304	Distance = 9m	silt clay	7/cm pen
8	1423	30.68926	-117.16308	Distance = 9m	"	"
9	1430	30.68927	-117.16309	"	"	7
10	1441	30.68928	-117.16312	"	"	"
	1448	30.68919	-117.16312	"	"	"

BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: SWMB-26

Page 1 of 1

Date: 4/17/14

Completed by: BCS

1256

Data from Short/Long Trawl @ >300 m Depth  Yes  No

Species	N	Std Length Size Class (cm) Use for up to 10 individuals. Use Size Class sheet for more abundant spp.	Weight (kg)			Photos
			Gross	Tare	Net	Y/N
1 Polychaetes	710b		15.0			
2 Crustacea	}	1 Target shrimp 2 cancer crabs	14.0			
3		2 Swimming crabs 1 ghost shrimp				
4		2 box + skeleton shrimp				
5 Bivalves	5		5.0			
6	}	Various cm white clams >100	53.0			
7		1 Latitcardium				
8		Japanese little neck				
9		Musculina 210 Chinese clams - 4 Bay scallop - 1, razor clams 8				
10 Gastropods -	12	Nassarius	14.0			
11 Gastropods - Lg Bulg snail		3 large + 2 med / small	6.0			
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

Comments: gastropod + Lg Little Snail = 1/8 Lg Foil Bag same, + quart. zip  
 Bivalves = 1/8 Lg Foil Bag = 1/8 Lg Foil Bag. 4 quart zip.  
 all other = 1/8 Lg Foil Bag + Univ Pak.



# BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

 Station: SWHIB-26

 Page 1 of 1

 Date: 04/22/2014

 Completed by: CCS

 Data from Short/Long Trawl @ >300 m Depth  Yes  No

trawl	Species	N	Std Length Size Class (cm) Use for up to 10 individuals. Use Size Class sheet for more abundant spp.	Weight (kg)			Photos
				Gross	Tare	Net	Y/N
1	1 diamond sting ray	1	460				Y
1	2 round rays	21	190 - 260				Y
1	3 spotted sand bass	6	145, 150, 150, 180, 225, 220				Y
1	4 calif. halibut	3	150, 155, 230				Y
1	5 black surf perch	6	56, 62, 59, 60, 60, 58				Y
1	6 shiner perch	59	70 - 140				Y
1	7 bay blenny	8	70, 75, 60, 80, 90, 60, 76, 60				Y
1	8 dwarf surfperch	16	30 - 110				Y
1	9 Onlico / Kelp bass	10	60, 60, 70, 58, 70, 87, 70, 60, 72, 60				Y
1	10 Kelp fish	43	45 - 100				Y
1	11 barred sand bass	13	55, 75, 60, 100, 70, 67, 70, 80, 51, 80, 70, 70, 55				Y
2	12 roundray	25	140 - 340				Y
1	13 speckled midshipman	1	275				Y
2	14 diamond turbot	2	205, 175				Y
2	15 cal. halibut	6	130, 180, 190, 250, 220, 240				Y
2	16 barred sand bass	19	50 - 112				N
2	17 SA: scorpionfish	1	110				Y
2	18 dwarf surfperch	1	98				N
2	19 bay blenny	6	68 - 92				Y
2	20 spotted sand bass	10	130 - 235				Y
2	21 shiner perch	30	34 - 110				N
2	22 Kelp fish	22					N
	23						
	24						
	25						

Comments: depth Inverts: trawl sp. n pic  
bde: 1+2 ballas snail 29 Y  
MLW= 1 havanax 3 Y  
2 havanax 5 Y  
2 crustacea-shrimp 1 Y

trawl times (approx) 1 1604  
 2 1640

SWHB - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet - FISH

Station SWHB-26

Page 1 of 1

Date 04/22/2014

Completed by: CCS

FISH SPECIES TRAWL - BIOACCUMULATION

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
calico/kelp bass	1	10	58-87				Y	
black surfperch	1	6	58-60				Y	
barred sand bass	1,1	10	55-100	55-70			Y	
dwarf surfperch	1,1	6	98,92,100 100,93,90				Y	
shiner perch	1,1	10	100,105,105,100,110 105,105,105,110,95				Y	
bay blenny	1,2	8	100 68-92				Y	
cal. halibut	1,2	5	195,180,180, 130,145				Y	
spotted sand bass	1,2	5	140,140,135 140,125				Y	

FISH SPECIES - PLASTIC INGESTION

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
round ray	1	5	250-290				N	
barred sand bass	1,1	3,11	55-100				Y	
dwarf surfperch	1,1	3,1	30-60				Y	
shiner perch	1,2	49,30	30-140				Y	
bay blenny	2	1	77				Y	
cal. halibut	1,2	2	210,220				Y	
spotted sand bass	1,2	2	220,220				Y	

Comments:  
kelp bass/calico 3 1,2 53-60 Y

RHMP/ Bight '13 - Bioaccumulation Special Studies Field Data Sheet  
 INVERTEBRATES from Trawls

Station SWHB-26

Page 1 of 1

Date 04/22/2014

Completed by: ECW

INVERTEBRATE SPECIES TRAWL- BIOACCUMULATION

Species	Trawl #	N	Weight (kg)			Photo (Y/N)	Footnotes
			Gross	Tare	Net		
bull a snail	1,2	29				Y	
shrimp	2	1				Y	

Comments:

**FIELD SAMPLING QA CHECKLIST - TRAWL SAMPLING**

Station ID: SWHB-26

Arrival Date/Time: 4/22/2014 1400

Site Acceptable for Trawl Sampling for Bioaccumulation Samples: Y or N

if No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

**Field Procedures**

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has conducted pre-trawl survey? Site acceptable?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

2. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	Y
Weighing scales calibrated?	N → in offset
Vessel passed through 100 m radius of station?	Y
Trawl duration 10 minutes (or long as possible in confined areas)?	Y
Trawl log info recorded (depth, tow wire length, times, coordinates)?	Y
Trawl remained within 10% of target depth?	Y
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	Y
Fish and/or invertebrates obtained in trawl?	Y
All fish positively identified (for specimens collected as samples)?	Y
All invertebrates positively identified (for specimens collected as samples)?	Y
Standard length of all bony fish measured for specimen counts <10? Length range measured for specimen counts >10?	Y
Total biomass of each invertebrate group retained as samples recorded?	Y
Photo of one representative from each species collected and grouped species planned for release?	Y
Fish and invertebrate specimens wrapped in pre-cleaned foil, bagged, and preserved on ice?	Y

SNHB-26 FIELD SAMPLING QA CHECKLIST - TRAWL SAMPLING

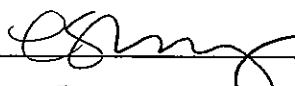
3. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	NA
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

4. Sample Storage and Delivery:

Epibenthic macroinvertebrates tissue samples collected?	NA
Fish tissue samples collected?	Y
Tissue samples stored immediately on ice and frozen asap?	Y
Cooler is taped shut for transport to AMEC freezer or lab?	Y
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel:  Date/Time: 4/22/2014 1915

Print Name/Company: Corey Sheredy AMEC

BIGHT'13 TRAWL DEBRIS FORM

Agency: AMEC

Page 1 of 1

Station: SN HB-20 Trawl #: L-2

Date: 4/22/2014



CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE

Anthropogenic Debris - include Brand Names in Comments if known	Plastic		Count	Comment	Misc. Items/Pieces		Count	Comment
	Bag				Boat/Ship/Engine part			
	Bandaid				Clothing			
	Balloon (mylar/latex)/Ribbon				Concrete/Asphalt			
	Bottle				Fiberglass			
	Buoy				Food			
	Cap/Lid				Leather			
	Cigarette box/wrapper				Lumber			
	Cup				Paper			
	Filmstrip (movie)				Rag/Cloth			
	Fishing Line/Net				Rubber			
	Food Bag / Wrapper				Shoe			
	Polypropylene Rope				Tape			
	Straw				Tire			
	Toy				Other Misc. (comment req.)			
Utensil				Metal		Count	Comment	
Plastic Piece (unid.)				Drink Can				
Other Plastic (comment req.)				Can - other				
Glass		Count	Comment	Can Pull-tab				
Beer Bottle				Fishing Gear				
Glass Bottle/Jar -other				Wire				
Glass Piece (unid.)				Metal Piece (unid.)				
Other Glass (comment req.)				Other Metal (comment req)				

Natural Debris	Marine Origin		Count	Est.*	Comment	Terrestrial Vegetation		Count	Est.*	Comment
	Foliose Algae - not kelp			M		Leaves/Seed Pod				
	Gorgonian Sea Fan (dead)					Stick/Branch/Driftwood				
	Kelp Holdfast					Other Terrest. (comment req)				
	Kelp Stipe/Blade					<p><i>*For Natural Debris only, if an exact count cannot be made, leave the "Count" column blank and estimate the amount (L, M or H) in the "Est." column:</i></p> <p>Low: L = 2-10</p> <p>Moderate: M = 11-100</p> <p>High: H = &gt; 100</p>				
	Rock									
	Seagrass			M						
Other Marine (comment req)					<p>Completed by: _____</p>					

# STATION OCCUPATION

SWHB Study

Agency Code Ameg

Weather

Sea State

Nav Type

Station ID SWHB-26

Vessel Name Barge

Clear  
 Overcast  
 Partly cloudy  
 Drizzle

Rain  
 Thunderstorm  
 Fog

Calm  
 Choppy  
 Rough

DGPS  
 GPS

Date 4/22/14

Arrival Time (hh:mm) 16:04:46

Abandoned site?  
 Y or N (If Y explain in comments)

Station Fail Code

occ - 32.68930  
-117.16307

Wind

Swell

Speed (kts) 5  
Direction (4) W

Period (s) 0  
Height (ft) 0  
Direction (4) 0

Station Comments

tide: 3.6 + rising

target: 32.689216  
-117.163231

## TRAWL EVENTS

Trawl Number		Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Wire Out	Distance to target (m)	Trawl Fail Code (3)	Tissue Chemistry (Y/N)
1	Net Over	16:13:29	32.68723	-117.16306	3	30			
	Start Trawl	16:13:55	32.68748	-117.16303	3	30			
	End Trawl	16:23:57	32.69141	-117.16385	3	30	14.78		
	Net on Deck	16:24:02	32.69135	-117.16392	3	30			
	Net Over								
	Start Trawl								
	End Trawl								
	Net on Deck								
	Net Over								
	Start Trawl								
	End Trawl								
	Net on Deck								

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

SWHB - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet

Station: SWHB-26

Page 1 of 1

Date: 4/22/14

Completed by: TH

Additional Trawl Coordinates: over      25      50      75

Trawl 1	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time		1613	1616	1619	1621	1623	
Depth (m)		3	2	1	1	3	
Lat (32.xxxxx)		68778	68862	68974	69038	69143	69147
Long (-117.xxxxx)		16303	16322	16348	16369	16380	16379

Trawl 3	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time		1707	1709	1712	1714	1717	
Depth (m)		2	2	2	3	2	
Lat (32.xxxxx)		68732	68775	68930	69031	69077	
Long (-117.xxxxx)		16317	16316	16339	16325	16384	

Trawl 4	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time							
Depth (m)							
Lat (32.xxxxx)							
Long (-117.xxxxx)							

Trawl 5	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time							
Depth (m)							
Lat (32.xxxxx)							
Long (-117.xxxxx)							

Comments: Trawl 2, SWHB-26. Tablet did not save. Check to ensure saved.



# STATION OCCUPATION

SWHB Study

Agency Code AMEC

Weather

Clear

Rain

Overcast

Thunderstorm

Partly cloudy

Fog

Drizzle

Sea State

Calm

Choppy

Rough

Water Quality

Station ID SWHB-27

Temp (°C) 18.5

18.5

pH 8.22

8.22

Salinity (ppt) 34.35

34.35

Sp Cond (mS/cm) 52,098

52,098

Date 4/18/14

4/18/14

Vessel Name Barge

Arrival Time 1432

(hh:mm)

in occupation: 32.72413  
-117.18788

target: 32.7241  
-117.187

Abandoned site?

Station Fail Code NONE

NONE

Y or N (if Y explain in comments)

Wind

Speed (kts) 10

Swell

Period (s) 0

Nav Type

DGPS

Direction (4) W

Height (ft) 0

GPS

Direction (4) 0

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

9.7 feet = 2.9 m  
tide = +3.1 falling.  
8.11 mg/L DO  
106.8 % ox Sat.

## GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	1442	32.72411	-117.18791	3	85	NONE	10	silt/clay	old	olive	N	X	X	X	yes
Grab Event Comments: <u>grey</u>															
2	1456	32.72418	-117.18790	3	85	"	"	"	"	"	"			X	NO
Grab Event Comments:															
3	1503	32.72416	-117.18784	3	79	"	8	"	"	"	"			X	"
Grab Event Comments:															
4	1518	32.72407	-117.18787	3	81	"	12	"	"	"	"			X	"
Grab Event Comments:															
5	1531	32.72415	-117.18790	3	84	"	8	"	"	"	"			X	"
Grab Event Comments:															
6	1537	32.72415	-117.18790	3	84	"	8	"	"	"	"			X	"
Grab Event Comments:															

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

	10 cm pen	gen to target	Benthic	Bio Accum.
7 1551	32.72417			
	-117.18787			
8 1602	32.72408	olive/green /	S.H.C log	
	-117.18782	77m to target	"	
9) 1620	32.72417	-117.18787	8cm	82
10) 1637	32.72413	-117.18789	"	83
" 1645	32.72411	-117.18781	"	86

Inverts  
BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: SWMB-27

Page 1 of 1

Date: 4/18/14

Completed by: PCS

Data from Short/Long Trawl @ >300 m Depth  Yes  No

Species	N	Std Length Size Class (cm) Use for up to 10 individuals. Use Size Class sheet for more abundant spp.	Weight (kg) grams			Photos
			Gross	Tare	Net	Y/N
1 Polychaetes	7100		13			
2 Gobies	6		5.2			
3 Crustacea	~20	7 peacesubs, 1 sm cancer crab 1 sm isopod, 5 amphipods	5.2			
4		Skeleton shrimp 26				
5 Bivalve	1100+	1 lg 2 sm chione clam	62			
6		little neck clams ~ 30				
7		sm white clams ~ 80 sm razor clams ~ 3				
8 Crustacea/Bolla Snail		1 snail	59			
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

0.001  
0.006

Comments: 1/8th LARGE FOIL  
Bivalve 1/8th large foil + quart. bag  
Crustacea / Bolla snail 1/8th foil quart. bag

# STATION OCCUPATION

SWHB Study

Agency Code

Weather  
 Clear   
 Overcast   
 Partly cloudy   
 Drizzle

Rain   
 Thunderstorm   
 Fog

Sea State  
 Calm   
 Choppy   
 Rough

Nav Type  
 DGPS   
 GPS

Station ID

Vessel Name

Date

Arrival Time (hh:mm)

Abandoned site? Station Fail Code   
 Y or N (if Y explain in comments)

Wind  
 Speed (kts)   
 Direction (4)

Swell  
 Period (s)   
 Height (ft)   
 Direction (4)

Station Comments

# TRAWL EVENTS

Trawl Number		Time (hh:mm)	Latitude (DD°MM.mmmr)	Longitude (DD°MM.mmmr)	Depth (m)	Wire Out	Distance to target (m)	Trawl Fail Code (3)	Tissue Chemistry (Y/N)
1	Net Over	14:22:31	32.72400	-117.18745	3	30			
	Start Trawl	14:23:55	32.72411	-117.18779	↓	↓			
	End Trawl	14:33:33	32.72435	-117.19214	↓	↓	9.43		
	Net on Deck	14:36:57	32.72431	-117.19174	↓	↓			
2	Net Over	15:00:50	32.72397	-117.18783	3	30			
	Start Trawl	15:01:32	32.72392	-117.18809	↓	↓			
	End Trawl	15:11:13	32.72446	-117.19221	↓	↓	33.706		
	Net on Deck	15:11:45	32.72443	-117.19203	↓	↓			
3	Net Over	15:41:02	32.72418	-117.19111	3	30			
	Start Trawl	15:41:36	32.72412	-117.19123	↓	↓			
	End Trawl	15:49:22	32.72394	-117.18708	↓	↓	2.15		
	Net on Deck	15:49:57	32.72395	-117.18712	↓	↓			

- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

SWHB - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet

Station: 4/23/14

Page 1 of 1

Date: SWHB-27

Completed by: JA

*Island Prime  
Restaurant*

Additional Trawl Coordinates:

Trawl <u>1</u>	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time		1424	1425	1429	1433		
Depth (m)			3	3	3		
Lat (32.xxxxx)			72400	72425	72444		
Long (-117.xxxxx)			18870	19040	19150		

*1502 25 50 75*

Trawl <u>2</u>	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time		1453	1504				
Depth (m)		3	3				
Lat (32.xxxxx)		<del>72352</del> 72406	72407				
Long (-117.xxxxx)		18745	18928				

*18833 25 50 75*

Trawl <u>3</u>	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time		1541		1545	1550		
Depth (m)		3		3	3		
Lat (32.xxxxx)				72398	72388		
Long (-117.xxxxx)				18904	18721		

Trawl 5	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time							
Depth (m)							
Lat (32.xxxxx)							
Long (-117.xxxxx)							

Comments:

BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: SW+HB-27

Page 1 of 1

Date: 4/23/14

Completed by: KTCS

Data from Short/Long Trawl @ >300 m Depth  Yes  No

Trawl #	Species	N	Std Length Size Class (cm) Use for up to 10 individuals. Use Size Class sheet for more abundant spp.	Weight (kg)			Photos
				Gross	Tare	Net	Y/N
1	1 Round Ray	9	250-290				Z
1	2 Calico Bass	1	52				Y
1	3 Spotted Sand Bass	3	155, 145, 130				Y
1	4 Halibut	1	100				Y
2	5 Shovelnose guitarfish	1	<del>400</del> 490				X
2	6 Black surf perch	1	230				Z
2	7 Round Ray	<del>58</del>	230-330				Z
2	8 Spotted sand bass	7	200, 225, 145, 115, 115, 115, 250				Z
2	9 Calico Bass	2	130, 68				Z
2	10 Bay Blenny	1	40				Y
2	11 Halibut	1	36				Z
2	12 Pipefish	1	230				X
2	13 Kelpfish	1	50				Y
2	14 Shiner Surf Perch	2	110, 36				X
3	15 Spotted Sand Bass	7	320, 205, 220, 220, 210, 130, 140				Z
3	16 Barred Sand Bass	1	170				Y
3	17 Halibut	6	335, 225, 152, 120, 115, 115				Y
3	18 Land Ray	16	230-355				Z
3	19 Shiner Surf Perch	7	100, 105, 65, 60, 40, 46, 58				Z
	20						
	21						
	22						
	23						
	24						
	25						

Comments: Trawl 1 - *Panulirus interruptus* (n=2) CL=110 CL=95; *Navanax*; *Conus californicus*

Trawl 2 - *Panulirus interruptus* (n=3) CL=110 CL=100 CL=90  
*Navanax* (n=13); ~~*Squilla* sp. (large shrimp) n=1~~ (dead on arrival)

Trawl 3 - *Navanax* (n=10); razor clam n=1

SWHB - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet - FISH

Station SWHB-27

Page 1 of    

Date 4/23/14

Completed by: KTCS

FISH SPECIES TRAWL - BIOACCUMULATION

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
Spotted Sandbass	1,2	6	155, 145, 130 160, 150, 140				Y	
Halibut	1,2,3	6	100, 50, 100 115, 120				Y	
Calico Bass	1,2	1	130				Y	
Shiner Surf Perch	2,3	6	108, 100, 60 108, 65, 60				Y	

FISH SPECIES - PLASTIC INGESTION

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
Round Ray	1	5	250-290				Y	
Spotted Sand Bass	2	3	180, 230, 180				Y	
Halibut	3	1	225				Y	
<del>Calico Bass</del>								

Comments:





# STATION OCCUPATION

8.6 msl

SWHB Study

Agency Code AME

Weather  
 Clear   
 Overcast   
 Partly cloudy   
 Drizzle

Rain   
 Thunderstorm   
 Fog

Sea State  
 Calm   
 Choppy   
 Rough

Water Quality  
 Temp (°C) 18.4°C  
 pH 8.24 pH  
 Salinity (ppt) 34.4 ppt  
 Sp Cond (mS/cm) 52, 228 mS/cm

Station ID SWHB-27

Date 4/17/14

Vessel Name Barge

Arrival Time 1705

(hh:mm)

Abandoned site? Station Fail Code   
 Y or N (If Y explain in comments)

Wind  
 Speed (kts) 10  
 Direction (4) W

Swell  
 Period (s) 0  
 Height (ft) 0  
 Direction (4) 0

Nav Type  
 DGPS   
 GPS

Equipment Type  
 Van Veen   
 Tandem Van Veen

Station Comments  
 tide = 1.4 + 0 slack / low.  
 9.8' = 3.0m = Depth  
 gormon 4/17  
 N: 32.72398 } near east  
 W: 117.18810 } seat of Restaurant.

# GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmmmm)	Longitude (DD°MM.mmmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1				3											
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - Sediment Color: Brown, Gray, Black, Olive green, Red
  - Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

Station ID: § SWMO-27

Arrival Date/Time: 1430 4/18/14

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

Field Procedures

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	Y

**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

Field staff wearing fresh, powder free nitrile gloves?	✓
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	✓
Vessel engine has been shut off for 3-5 minutes prior to sampling?	✓
Sampling instrument given site water rinse prior to deployment?	✓
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	✓
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	✓
Each specimen sample weighed?	✓
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	✓

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	✓
Proper persons have signed and dated all COCs?	✓
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	✓

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	✓
Benthic infauna tissue: samples stored on ice and frozen asap?	✓
Cooler is taped shut for transport to AMEC freezer or lab?	✓
Completed COC is included in plastic bag in cooler?	✓

Additional Notes: Next to Island Post

Signature of QA/QC Personnel: [Signature] Date/Time: 1700 4/18/14

Print Name/Company: Tyler [Signature]

# STATION OCCUPATION

8.24 mg/L  
107.00% Sat.

SWHB Study

Agency Code RMBC  
Vessel Name Buzz  
Arrival Time 1519:33

Weather  
Clear  Overcast  Partly cloudy  Drizzle   
Rain  Thunderstorm  Fog

Sea State  
Calm  Choppy  Rough

Water Quality

Temp (°C)	17.8°C
pH	8.28 pH
Salinity (ppt)	34.29
Sp Cond (mS/cm)	52013

Station ID SWHB-28

Date 4/17/14

Abandoned site? Station Fail Code NONE  
Y or N (if Y explain in comments)

(hh:mm)  
occ: ~~32.70293~~ / ~~-117.18021~~  
32.70284  
-117.18049

Wind  
Speed (kts) 3  
Direction (4) 5

Swell  
Period (s) 0  
Height (ft) 0  
Direction (4) 0

Nav Type  
DGPS   
GPS

Equipment Type  
Van Veen   
Tandem Van Veen

Station Comments  
Do = 8.24 mg/L / 107%  
7' 1" feet depth,  
tide = +1.5 Dropping

# GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmmmm)	Longitude (DD°MM.mmmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	1612	32.70284	-117.18027	2	104	NONE	11	Silt/clay	None	olive grey	N	X	X	X	yes
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed  
 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)  
 3 Sediment Color: Brown, Gray, Black, Olive green, Red  
 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm  
 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)  
 Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

Station ID: SWHB-28

Arrival Date/Time: 1600 4/17/14

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	Y

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

Field staff wearing fresh, powder free nitrile gloves?	Y
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	Y
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	Y
Each specimen sample weighed?	Y
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	Y

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	Y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	Y
Benthic infauna tissue: samples stored on ice and frozen asap?	Y
Cooler is taped shut for transport to AMEC freezer or lab?	Y
Completed COC is included in plastic bag in cooler?	Y

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel:  Date/Time: 4/17/14

Print Name/Company: Tyler Hill AMEC 1630

# STATION OCCUPATION

SWHB Study

Agency Code

Weather

Clear

Rain

Overcast

Thunderstorm

Partly cloudy

Fog

Drizzle

Sea State

Calm

Choppy

Rough

Water Quality

Station ID

Temp (°C)	17.5°C
pH	8.25 pH
Salinity (ppt)	34.24
Sp Cond (mS/cm)	51,945

Date

Vessel Name

Arrival Time

(hh:mm)

Abandoned site? Station Fail Code

Y or N (if Y explain in comments)

Wind

Speed (kts)

Direction (4)

Swell

Period (s)

Height (ft)

Direction (4)

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

Depth: 10.5 feet depth  
 tide = +1.7' rising  
 8.88 mg/L  
 Abandoned → Neilson Barnat

# GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	1814	32.7199	-117.22474	3											
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- 3 Sediment Color: Brown, Gray, Black, Olive green, Red
- 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

# STATION OCCUPATION

SWHB Study

Agency Code AMEC

Weather

Clear	<input type="checkbox"/>	Rain	<input type="checkbox"/>
Overcast	<input type="checkbox"/>	Thunderstorm	<input type="checkbox"/>
Partly cloudy	<input type="checkbox"/>	Fog	<input type="checkbox"/>
Drizzle	<input type="checkbox"/>		

Sea State

Calm	<input checked="" type="checkbox"/>
Choppy	<input type="checkbox"/>
Rough	<input type="checkbox"/>

Do: 7.92 mg/L

Water Quality

Station ID SWHB-30

Temp (°C)	15.5°C
pH	8.03
Salinity (ppt)	34.12
Sp Cond (mS/cm)	51,819

Date 4/18/14

Vessel Name Bacal

Arrival Time 0827

Target: (hh:mm) 30.6843 / List. 30.6843  
-117.225 / -117.225178

Abandoned site?  Station Fail Code NONE

Y or N (if Y explain in comments)

Wind

Speed (kts) 5  
Direction (4) W

Swell

Period (s) 0  
Height (ft) 0  
Direction (4) 0

Nav Type

DGPS	<input checked="" type="checkbox"/>
GPS	<input type="checkbox"/>

Station Comments

7.87 mg/L  
% 97  
Sgt.  
tide = 0.6 + Rising  
10 feet. MLLW = 9.4 MLLW

occ: 30.68464  
-117.22432

Equipment Type

Van Veen	<input type="checkbox"/>
Tandem Van Veen	<input checked="" type="checkbox"/>

## GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	0830	30.68464	-117.22430	3	76	N	10	Fine sand	N	lt Brown	N	X	X	X	25
Grab Event Comments:															
2	0903	30.68456	-117.22437	3	66	"	"	"	"	"	"			X	NO
Grab Event Comments:															
3	0917	30.68467	-117.22435	3	73	"	"	"	"	"	"			X	"
Grab Event Comments:															
4	0926	30.68465	-117.22436	3	71	"	"	"	"	"	"			X	
Grab Event Comments:															
5	0956	30.68467	-117.22444	3	67	"	"	"	"	"	"			X	"
Grab Event Comments:															
6	1012	30.68479	-117.22456	3	68	"	"	"	"	"	"			X	
Grab Event Comments:															

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only



							<u>Depth</u>	<u>Penetration</u>
7	1029	32.68477	-117.22448	71 n	to target	3 m	deep,	10 cm penetration
8	1041	32.68464	-117.22431	75 n	"	"	"	"
					lt. Brown,			
9	1051	32.68475	-117.22442	74	"	"	"	"
					three			
10	1103	32.68455	-117.22436	66	"	"	"	"

# STATION OCCUPATION

Month of SD Bay

SWHB Study

Agency Code AMEC  
 Vessel Name Bard  
 Arrival Time (hh:mm) 0815

Weather  
 Clear   
 Overcast   
 Partly cloudy   
 Drizzle   
 Rain   
 Thunderstorm   
 Fog

Sea State  
 Calm   
 Choppy   
 Rough   
 Nav Type  
 DGPS   
 GPS   
 Abandoned site?   
Y or N (if Y explain in comments)

Station ID SWHB-30  
 Date 4/23/19  
 Station Fail Code

Wind Speed (kts) 3  
 Direction (4) W  
 Swell Period (s) 0  
 Height (ft) 0  
 Direction (4) 0

Station Comments  
 Lotek: 140A - 3651. Trawl 1. stopped ~5min b/c of kelp loading / fouling.

## TRAWL EVENTS

target: 32.68431 / -117.225178

Trawl Number		Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Wire Out	Distance to target (m)	Trawl Fail Code (3)	Tissue Chemistry (Y/N)
1	Net Over	08:23:55	32.68526	-117.22460	3	30			
	Start Trawl	08:24:15	32.68519	-117.22457	3				
	End Trawl	08:29:17	32.68336	-117.22422			729		
	Net on Deck	08:31:28	32.68351	-117.22424					
2	Net Over	09:01:18	32.68602	-117.22545	3	30			
	Start Trawl	09:01:41	32.68594	-117.22530					
	End Trawl	09:06:42	32.68476	-117.22434			92		
	Net on Deck	09:07:33	32.68485	-117.22437					
3	Net Over	09:52:38	32.68511	-117.22447	2	30			
	Start Trawl	09:52:58	32.68501	-117.22443					
	End Trawl	09:56:56	32.68380	-117.22398			90		
	Net on Deck	09:56:59	32.68385	-117.22340					

5 min. trawl. b/c of kelp

Duplicate square trawl 2 to D.B.

only ~4 min b/c of limited space / Rocks

- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

4) net over 10:19:12 32.68512 -117.22503  
 bottom / trawl 10:19:51 32.68578 -117.22478  
 end 10:24:58 32.68446 -117.22410

SWHB - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet

Station: SUHB-30

Page 1 of 1

Date: 4/23/14 month of S.D. Bay

Completed by: TJ

Additional Trawl Coordinates: 25% 50% 75%

Trawl #1	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time			0825				
Depth (m)			3				
Lat (32.xxxxx)			68441				
Long (-117.xxxxx)			22449				

25% 50%

Trawl #2	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time			0902	0905		0907	
Depth (m)			3	3		3	
Lat (32.xxxxx)			68561	68518		68481	
Long (-117.xxxxx)			22497	22461		22439	

Trawl #3	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time <i>0916</i>							
Depth (m) <i>3</i>						3	
Lat (32.xxxxx)							
Long (-117.xxxxx)							

25% 50% 75%

Trawl #4	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time			1020		1024		
Depth (m)			2		2		
Lat (32.xxxxx)			68519		68457		
Long (-117.xxxxx)			22457		22415		

Comments:

**FIELD SAMPLING QA CHECKLIST - TRAWL SAMPLING**

Station ID: SLH B-30 Arrival Date/Time: 0807

Site Acceptable for Trawl Sampling for Bioaccumulation Samples: Y or N 4/18/14  
N/A  
 if No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	<u>Y</u>
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	<u>Y</u>
Vessel has conducted pre-trawl survey? Site acceptable?	<u>Y</u>
Station DGPS coordinates (± 3 m) recorded?	<u>Y</u>
Station occupation form completed?	<u>Y</u>

**2. Trawl Sampling Procedures:**

Proper equipment used (Semi-balloon otter trawl)?	<u>Y</u>
Weighing scales calibrated?	<u>Y</u>
Vessel passed through 100 m. radius of station?	<u>Y</u>
Trawl duration 10 minutes (or long as possible in confined areas)?	<u>Y</u>
Trawl log info recorded (depth, tow wire length, times, coordinates)?	<u>Y</u>
Trawl remained within 10% of target depth?	<u>Y</u>
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	<u>Y</u>
Fish and/or invertebrates obtained in trawl?	<u>Y</u>
All fish positively identified (for specimens collected as samples)?	<u>Y</u>
All invertebrates positively identified (for specimens collected as samples)?	<u>Y</u>
Standard length of all bony fish measured for specimen counts <10? Length range measured for specimen counts >10?	<u>Y</u>
Total biomass of each invertebrate group retained as samples recorded?	<u>Y</u>
Photo of one representative from each species collected and grouped species planned for release?	<u>Y</u>
Fish and invertebrate specimens wrapped in pre-cleaned foil, bagged, and preserved on ice?	<u>Y</u>

**FIELD SAMPLING QA CHECKLIST - TRAWL SAMPLING**

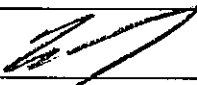
**3. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	✓
Proper persons have signed and dated all COCs?	✓
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	✓

**4. Sample Storage and Delivery:**

Epibenthic macroinvertebrates tissue samples collected?	✓
Fish tissue samples collected?	✓
Tissue samples stored immediately on ice and frozen asap?	✓
Cooler is taped shut for transport to AMEC freezer or lab?	✓
Completed COC is included in plastic bag in cooler?	✓

Additional Notes: None, Regional Board

Signature of QA/QC Personnel:  Date/Time: 4/18/14

Print Name/Company: Tyler Kraft

BIGHT'13 DEMERSAL ~~FISH~~ IDENTIFICATION FORM

Station: SWMB-30

Invertebrates

Page 1 of 1

Date: 4/18/14

Completed by: BCS

0830

Data from Short/Long Trawl @ >300 m Depth  Yes  No

Species	N	Std Length Size Class (cm) Use for up to 10 individuals. Use Size Class sheet for more abundant spp.	Weight (kg)(g)			Photos
			Gross	Tare	Net	Y/N
1 Sipunculida	1		200			
2 Gastropods	2100	Gift cones (10) 10-20 Nassaria olive snails (>100)	1.50			
3 Polychaetes	25-50		14			
4 Crustacea	~15	1 sand crab 214 sand crabs sm pea crab + 1 broke back shrimp	16			
5 Mollusks/Bivalve	12	Small white clams (10) 2 med white clams	7.8			
6		220 amphipods				
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

1/8 Foil + whirl pack

Comments: Sipuncula = 1/4 Foil + quart ziplock of 2x Foil. (2/8 species)  
 Polychaetes = 1/8 foil + whirl pack  
 mollusks/Bivalve = 1/8 foil + whirl pack  
 Crustacea = 1/8 foil + whirl pack - (Foil foil / tight wrap)  
 Gastropods = 1/8 foil + whirl pack

BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: SWHB-30

Page 1 of 1

Date: 4/23/14

Completed by: CS, KT

Data from Short/Long Trawl @ >300 m Depth  Yes  No

Trawl #	Species	N	Std Length Size Class (cm) Use for up to 10 individuals. Use Size Class sheet for more abundant spp.	Weight (kg)			Photos
				Gross	Tare	Net	Y/N
1	Round Ray	7	280, 320				Y
1	Black Surf Perch	9	230, 230, 220, 230, 240, 170, 145, 130, 130				Y
1	Halibut	2	118, 122				Y
1	Spotted Turbot	2	133, 75				Y
1	Spotted Sand Bass	2	225, 260				Y
1	Giant Kelp Fish	2	140, 210, 200, 120				Y
2	Giant Kelp Fish	1	55				Y
2	Halibut	2	200, 80				Y
2	Spotted Turbot	1	85				Y
3	Rebunick Ray	3	330 - 380				Y
3	Halibut	7	123, 100, 132, 140, 120, 90, 102				Y
3	CO Turbot	1	95				Y
2	Bay Blenny	1	75				Y
4	Horn Shark	1	480				Y
4	Halibut	5	175, 92, 115, 122, 100				Y
5	Halibut	3	280, 130, 112				Y
5	Spotted Sandbass	1	290				Y
5	Black Surf Perch	3	140, 68, 60				Y
5	Giant Kelpfish	3	153, 50, 42				Y
5	Rock Wrasse	1	175				Y
6	Black Surf Perch	2	72, 120				Y
6	Round Ray	32	160 - 320				Y
6	Halibut		130, 100				Y
6	Speckled Sanddab	1	92				Y
6	Rock Wrasse	1	165				Y
6	Calico Bass	2	165, 160				Y

Comments:  
 Invert catch - 1 small cancer crab (*C. gracilis?*) (trawl 1)  
 Trawl 2 - 105 CL - berried female *Panulirus interruptus*  
*P. interruptus* post settlement individual (n=1)  
 Trawl 2 - 50 CL - Kelp crab (*Pugettia* sp.) - bioaccum

Trawl 1 - Giant Kelpfish jumped out of container, missing in photo  
 Trawl 3 - *Renilla remiformis* (n=2); *Portunus xantusii* (n=3)  
 Trawl 4 - 3 *Renilla remiformis*  
 Trawl 6 - *Panulirus interruptus* CL=80; CL=55; CL=95; CL=90; CL=65;

SWHB - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet - FISH

Station SWHH-30

Page 1 of 1

Date 4/23/14

Completed by: KTCS

FISH SPECIES TRAWL - BIOACCUMULATION

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
Black Surf Perch	1,5,6	5	130, 150, 115, 145, 135				Y	
Spotted Turbot	1,2	3	133, 75, 85				Y	
Halibut	1,2,3	5	132, 123, 140, 123, 120				Y	
Spotted Sandbass	1,5	3	310, 260, 235				Y	
CO Turbot	3	1	95				Y	
Calico Bass	6	2	165, 160				Y	

FISH SPECIES - PLASTIC INGESTION

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
Round Ray	1	5	270-320				Y	
Bay Blenny	2	1	75				Y	
Giant Kelpfish	1	1	120				Y	
Halibut	1,3,4,6	4	175, 195, 175, 100				Y	
Speckled Sanddab	6	1	92				Y	
Black Surf Perch		3	65, 70, 120				Y	

Comments:



RHMP/ Bight '13 - Bioaccumulation Special Studies Field Data Sheet  
 INVERTEBRATES from Trawls

Station SWHB-30  
 Date 4/23/14

Page 1 of 1  
 Completed by: KTCS

INVERTEBRATE SPECIES TRAWL- BIOACCUMULATION

Species	Trawl #	N	Weight (kg)			Photo (Y/N)	Footnotes
			Gross	Tare	Net		
<del>Kelp crab (Pugettia sp.)</del>	<del>2</del>					<del>Y</del>	<del>discarded</del>
Swimming crab (portunus <sup>kanus.</sup> ) + Cancer sp.	3, 1	4				X	Cancer sp. + portunus in 1 bag Foil was halved

Comments:

**FIELD SAMPLING QA CHECKLIST - TRAWL SAMPLING**

Station ID: SWHRB-30

Arrival Date/Time: 4/23/14

Site Acceptable for Trawl Sampling for Bioaccumulation Samples: Y or N

if No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has conducted pre-trawl survey? Site acceptable?	
Station DGPS coordinates (± 3 m) recorded?	
Station occupation form completed?	

**2. Trawl Sampling Procedures:**

Proper equipment used (Semi-balloon otter trawl)?	Y
Weighing scales calibrated?	Y
Vessel passed through 100 m radius of station?	
Trawl duration 10 minutes (or long as possible in confined areas)?	
Trawl log info recorded (depth, tow wire length, times, coordinates)?	
Trawl remained within 10% of target depth?	
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	
Fish and/or invertebrates obtained in trawl?	
All fish positively identified (for specimens collected as samples)?	
All invertebrates positively identified (for specimens collected as samples)?	
Standard length of all bony fish measured for specimen counts <10? Length range measured for specimen counts >10?	
Total biomass of each invertebrate group retained as samples recorded?	
Photo of one representative from each species collected and grouped species planned for release?	
Fish and invertebrate specimens wrapped in pre-cleaned foil, bagged, and preserved on ice?	

**FIELD SAMPLING QA CHECKLIST - TRAWL SAMPLING**

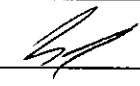
**3. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	9
Proper persons have signed and dated all COCs?	7
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	7

**4. Sample Storage and Delivery:**

Epibenthic macroinvertebrates tissue samples collected?	9
Fish tissue samples collected?	↓
Tissue samples stored immediately on ice and frozen asap?	↓
Cooler is taped shut for transport to AMEC freezer or lab?	↓
Completed COC is included in plastic bag in cooler?	↓

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel:  \_\_\_\_\_ Date/Time: 0840 4/18/14

Print Name/Company: \_\_\_\_\_

# STATION OCCUPATION

SWHB Study

Agency Code

Weather

Clear

Overcast

Partly cloudy

Drizzle

Rain

Thunderstorm

Fog

Sea State

Calm

Choppy

Rough

Water Quality

Temp (°C)	
pH	
Salinity (ppt)	
Sp Cond (mS/cm)	

Station ID

Vessel Name

Date

Arrival Time

(hh:mm)

Abandoned site?

Station Fail Code

Y or N (If Y explain in comments)

Wind

Speed (kts)

Direction (4)

Swell

Period (s)

Height (ft)

Direction (4)

Nav Type

DGPS

GPS

Station Comments

SITE TOO DEEP. > 3m MLW. CHECKED MULTIPLE LOCATIONS W/IN 100m RADIUS

Equipment Type

Van Veen

Tandem Van Veen

## GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmmmm)	Longitude (DD°MM.mmmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- 3 Sediment Color: Brown, Gray, Black, Olive green, Red
- 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

# STATION OCCUPATION

SWHB Study

Agency Code

Weather

Clear

Rain

Vessel Name

Overcast

Thunderstorm

Arrival Time

Partly cloudy

Fog

Drizzle

Sea State

Calm

Choppy

Rough

Water Quality

Temp (°C)

pH

Salinity (ppt)

Sp Cond (mS/cm)

Station ID

Date

(hh:mm)

Abandoned site?

Y or N (If Y explain in comments)

Station Fail Code

Wind

Speed (kts)

Direction (4)

Swell

Period (s)

Height (ft)

Direction (4)

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

SITE TOO DEEP. > 3M MLLW, CHECKED MULTIPLE LOCATIONS W/IN 100M RADIUS, ALL > 3M MLLW

## GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - 3 Sediment Color: Brown, Gray, Black, Olive green, Red
  - 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

# STATION OCCUPATION

SWHB Study

Agency Code CSD

Weather

Clear	<input type="checkbox"/>	Rain	<input type="checkbox"/>
Overcast	<input checked="" type="checkbox"/>	Thunderstorm	<input type="checkbox"/>
Partly cloudy	<input type="checkbox"/>	Fog	<input type="checkbox"/>
Drizzle	<input type="checkbox"/>		

Sea State

Calm	<input type="checkbox"/>
Choppy	<input checked="" type="checkbox"/>
Rough	<input type="checkbox"/>

Water Quality

Temp (°C)	<u>20.2</u>
pH	<u>7.91</u>
Salinity (ppt)	<u>34.32</u>
Sp Cond (mS/cm)	<u>52060</u>

Station ID SWHB-33

Vessel Name pontoon

Date 04/09/2014

Arrival Time 1526.47

(hh:mm) stn. occupation GPS:  
32.66706  
-117.15548

N

DO (mg/L / % Sat) 7.56 / 102.6%

Abandoned site? Station Fail Code NA

Y or N (if Y explain in comments)

Wind

Speed (kts) 9  
Direction (4) NW

Swell

Period (s) 0  
Height (ft) 0  
Direction (4) 0

Nav Type

DGPS	<input checked="" type="checkbox"/>
GPS	<input type="checkbox"/>

Equipment Type

Van Veen	<input type="checkbox"/>
Tandem Van Veen	<input checked="" type="checkbox"/>

Station Comments

\* Will replace station SWHB-04, as site of (and 100m buffer) were too shallow/dry land.   
 → small area of organics matter in sample (was not pulled for chem sample) which had odor  
water depth: 3.5 m / 11.5 ft  
tide: 2.0 ft 2.9 m MLLW

# GRAB EVENTS

MLLW = 9.5'

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmmmm)	Longitude (DD°MM.mmmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	1530:47	32.66704	-117.15545	3	85	NA	15	Silt/clay	NO	olive green	N	X	N	N	Y
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- Sediment Color: Brown, Gray, Black, Olive green, Red
- Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

Station ID: SWHB-33

Arrival Date/Time: 04/09/2014 1526

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: NA

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	NA

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

Field staff wearing fresh, powder free nitrile gloves?	NA
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	NA
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	Y
Benthic infauna tissue: samples stored on ice and frozen asap?	NA
Cooler is taped shut for transport to AMEC freezer or lab?	NA
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: took a long time to find an area <=3m. Eventually tied off to outside of habitat. restriction border pilings.

Signature of QA/QC Personnel: [Signature] Date/Time: 04/02/2014 1545

Print Name/Company: Corey Sherry AMEC



# STATION OCCUPATION

SWHB Study

Agency Code

**Weather**

Clear	<input type="checkbox"/>	Rain	<input type="checkbox"/>
Overcast	<input checked="" type="checkbox"/>	Thunderstorm	<input type="checkbox"/>
Partly cloudy	<input type="checkbox"/>	Fog	<input type="checkbox"/>
Drizzle	<input type="checkbox"/>		

**Sea State**

Calm	<input type="checkbox"/>
Choppy	<input checked="" type="checkbox"/>
Rough	<input type="checkbox"/>

**Water Quality**

Temp (°C)	
pH	
Salinity (ppt)	
Sp Cond (mS/cm)	

Station ID

Vessel Name

Date

Arrival Time

(hh:mm)

Abandoned site?

Station Fail Code

Y or N (If Y explain in comments)

**Wind**

Speed (kts)

Direction (4)

**Swell**

Period (s)

Height (ft)

Direction (4)

**Nav Type**

DGPS

GPS

**Equipment Type**

Van Veen

Tandem Van Veen

**Station Comments**

SITE TOO DEEP, > 3M MULL. CLOSURE  
 MULTIPLE LOCATIONS W/IN 100M RADIUS,  
 ALL > 3M MULL

## GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - 3 Sediment Color: Brown, Gray, Black, Olive green, Red
  - 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

# STATION OCCUPATION

SWHB Study

Agency Code

Weather

Clear

Overcast

Partly cloudy

Drizzle

Rain

Thunderstorm

Fog

Sea State

Calm

Choppy

Rough

Water Quality

Temp (°C)

pH

Salinity (ppt)

Sp Cond (mS/cm)

Station ID

Date

Vessel Name

Arrival Time

(hh:mm)

Abandoned site?

Y or N (if Y explain in comments)

Station Fail Code

Wind

Speed (kts)

Direction (4)

Swell

Period (s)

Height (ft)

Direction (4)

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

*SITE TOO DEEP, > 3M MLW, CHECKED MULTIPLE LOCATIONS W/IN 100M RADIUS, ALL > 3M MLW*

## GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed

2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)

3 Sediment Color: Brown, Gray, Black, Olive green, Red

4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

# STATION OCCUPATION

SWHB Study

Agency Code CSD

Weather

Clear   
 Overcast   
 Partly cloudy   
 Drizzle

Rain   
 Thunderstorm   
 Fog

Sea State

Calm   
 Choppy   
 Rough

Water Quality

Temp (°C)	19.9
pH	7.93
Salinity (ppt)	34.23
Sp Cond (mS/cm)	51937

Station ID SWHB-36

Date 07/07/2014

Vessel Name POATHON

Arrival Time 16091345

(hh:mm) Stn acc GPS:  
32.67868  
-117.16806

DO (mg/L / % sat) 8.15 / 110.2%

Abandoned site?  Station Fail Code NA

Y or N (if Y explain in comments)

N

Wind

Speed (kts) 1  
 Direction (4) NW

Swell

Period (s) 0  
 Height (ft) 0  
 Direction (4) 0

Nav Type

DGPS   
 GPS

Equipment Type

Van Veen   
 Tandem Van Veen

Station Comments

This station replaces station SWHB-05 because depth was > 4m  
two attempts due to shallow water + minor shell hash present  
actual depth: 3.8ft / 1.1m  
tide: 2.85 ft 0.29m MLLW

# GRAB EVENTS

MLLW = 1 ft

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	170140	32.67863	-117.16811	1	74	NA	7	Fine sand	N	olive green	N*	Y	Y	N	Y
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														
	Grab Event Comments:														

1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed  
 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)  
 3 Sediment Color: Brown, Gray, Black, Olive green, Red  
 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm  
 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)  
 Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

Station ID: SWHB-36

Arrival Date/Time: 4/9/2014 1657

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: NA

Mark each box with Y, N, or NA

**Field Procedures**

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

2. Sediment Sampling Procedures:

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	N
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	NA

SWHB-36 FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS

3. Infauna Tissue Sampling Procedures (if applicable):

Field staff wearing fresh, powder free nitrile gloves?	NA
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	

5. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	NA
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

6. Sample Storage and Delivery:

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	Y
Benthic infauna tissue: samples stored on ice and frozen asap?	NA
Cooler is taped shut for transport to AMEC freezer or lab?	NA
Completed COC is included in plastic bag in cooler?	NA

Additional Notes:

Signature of QA/QC Personnel: E. Sneredy Date/Time: 4/1/2014 1720

Print Name/Company: Dorey Sneredy AMEC

replaced site SWHB-05 w/ #36.

pontron broke down so had to continue running engine during all sampling.

# STATION OCCUPATION

100% sat.  
7.40 mg/L

SWHB Study

Agency Code ANPC

Weather

Clear	<input checked="" type="checkbox"/>	Rain	<input type="checkbox"/>
Overcast	<input type="checkbox"/>	Thunderstorm	<input type="checkbox"/>
Partly cloudy	<input type="checkbox"/>	Fog	<input type="checkbox"/>
Drizzle	<input type="checkbox"/>		

Sea State

Calm	<input checked="" type="checkbox"/>
Choppy	<input type="checkbox"/>
Rough	<input type="checkbox"/>

Water Quality

Temp (°C)	20.0°C
pH	8.12
Salinity (ppt)	34.53 ppt
Sp Cond (mS/cm)	52369

Station ID SWHB-40

Vessel Name Orange

Date 4/16/14

Arrival Time 1202

(hh:mm)

occupied let. Log

32.65505  
-117.14751

Abandoned site? Station Fail Code   
Y or N (if Y explain in comments)

Wind

Speed (kts) 5  
Direction (4) W

Swell

Period (s) Ø  
Height (ft) Ø  
Direction (4) Ø

Nav Type

DGPS	<input checked="" type="checkbox"/>
GPS	<input type="checkbox"/>

Station Comments

tide = 4.2 feet tide @ 1200  
Depth = 8' 8" 2.63 meters  
Silt u/s cl.

target: 32.6552  
-117.147

SCURP  
paper target: 32.655226  
-117.146741

Equipment Type

Van Veen	<input type="checkbox"/>
Tandem Van Veen	<input checked="" type="checkbox"/>

## GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	1224	32.65508	-117.14755	3	53	None	16	sediment silt/clay	None	olive green	N				NO
Grab Event Comments:															
2	1246	32.65503	-117.14738	3	40	None	16	"	"	"	N				yes
Grab Event Comments:															
3	1310	32.65509	-117.14739	3	32	"	"	"	"	"	"			X	NO
Grab Event Comments:															
4	1329	32.65500	-117.14739	3	43	"	"	"	"	"	"			X	NO
Grab Event Comments:															
5	1339	32.65502	-117.14741	3	43	"	"	"	"	"	"			X	NO
Grab Event Comments:															
6	1351	32.65507	-117.14735	3	36	"	"	"	"	"	"			X	NO
Grab Event Comments:															

- Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - Sediment Color: Brown, Gray, Black, Olive green, Red
  - Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

Station ID: SWHB-40

Arrival Date/Time: 1222 4/16/14

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: N/A

Mark each box with Y, N, or NA

Field Procedures

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	NA

**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

Field staff wearing fresh, powder free nitrile gloves?	y
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	y
Sampling instrument given site water rinse prior to deployment?	y
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	y
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	y
Each specimen sample weighed?	y
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	y

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	y
Proper persons have signed and dated all COCs?	y
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	y

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	y
Benthic infauna tissue: samples stored on ice and frozen asap?	y
Cooler is taped shut for transport to AMEC freezer or lab?	y
Completed COC is included in plastic bag in cooler?	y

Additional Notes: Inside marsh, Fiddler's Cove

Signature of QA/QC Personnel: [Signature] Date/Time: 4/16/15 1510

Print Name/Company: Tyler H. H. AMEC



BIGHT'13 EPIBENTHIC INVERTEBRATE FORM

Station: SWKB-40

Page 1 of 1

Date: 4/16/14  
14/5 1224

Completed by: BCS

Data from Short/Long Trawl @ >300 m Depth  Yes  No

1/2 Foil + water ↓  
2 quart + Full Foil  
1/2 foil + water ↓

Species	N	Comments (or Anomalies)	Weight (kg)		Photos (D, L, V)
			Gross	Net	
1 Goby	1	1 Eup-Lg shrimp - Ep stirra	4.7		
2 Crustacea (mixed)	109	4 Mantis + 1 pcn crab + 2 cancer + 1 sm shore crab crab	11.5		
3 Mollusks (Bivalve)	100+	50+ Musculista + 100+ sm white clams	10.4		
4 Anisropod	8	3 Nassarius + 5 sm Kela Limp	5.4		
5 polychaete	10		16g		
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Comments: molluscs = 1 Full Foil + quart ziplock,  
some ~~other~~ polychaete water in bag

# STATION OCCUPATION

SWHB Study

Agency Code

Weather

Sea State

Nav Type

Station ID

Vessel Name

Clear  
 Overcast  
 Partly cloudy  
 Drizzle

Rain  
 Thunderstorm  
 Fog

Calm  
 Choppy  
 Rough

DGPS  
 GPS

Date

Arrival Time (hh:mm)

OCC. 32. 65540  
 -117. 14679

Abandoned site?  
Y or N (If Y explain in comments)

Station Fail Code

Wind

Speed (kts)   
Direction (4)

Swell

Period (s)   
 Height (ft)   
 Direction (4)

Station Comments

tide = 1.4 tide.  
 11.5 depth. (3 meters)      Lot # 140 A - 3652

## TRAWL EVENTS

target: 32.655206  
 -117.146741

Trawl 2731 tide: +0.5, falling. Fix trawl 2 tube 2m depth, not 1 @ end.

Trawl Number		Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Wire Out	Distance to target (m)	Trawl Fail Code (3)	Tissue Chemistry (Y/N)
1	Net Over	08:20:25			3	30			
	Start Trawl				↓	↓			
	End Trawl				↓	↓			
	Net on Deck				↓	↓			
2	Net Over	08:49:40	32.65536	-117.14721	2	30			
	Start Trawl	08:50:21	32.65524	-117.14741		↓			
	End Trawl	09:00:25	32.65350	-117.14963	2(?)	↓	44		
	Net on Deck	09:02:13	32.65355	-117.14947	2	↓			
3	Net Over	09:16:38	32.65537	-117.14742	2				
	Start Trawl	09:16:52	32.65529	-117.14744	↓				
	End Trawl	09:26:54	32.65371	-117.14902	↓	55			
	Net on Deck	09:27:54	32.65371	-117.14889	↓				

1 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm

2 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

3 Trawl Fail codes: None, Outside Radius Limit, Outside Target Depth, Fouled Net (comment req.), Open cod end (knot untied), Trawl hit unknown obstruction, Doors - No contact with bottom, Torn Net, Unusually low catch, Improper Deck Time, Improper Bottom Time, Inadequate trawl track, Other - Trawl Failure (comment req.)

SWHB - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet

Station: SWHB-40

Page 1 of 1

Date: 4/22/14

*Fiddlers  
Cove*

Completed by: TM

Additional Trawl Coordinates:

*25%      50%      75%*

Trawl # <i>1</i>	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time		0832	0833			0838	
Depth (m)		3	3	3	3	3	
Lat (32.xxxxx)		65366	65425	/	/	65531	65531
Long (-117.xxxxx)		14597	14623	/	/	14676	14674

*25      50      75*

Trawl # <i>2</i>	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time		0850	0852	0855	0857	0900	
Depth (m)		3	3	3	3	3	
Lat (32.xxxxx)			65472	65384	65369	65350	65350
Long (-117.xxxxx)			14741	14767	14882	14950	14950

*25      50%      75*

Trawl # <i>3</i>	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time		0916	0919	0920	0922	0926	
Depth (m)		2	2	2	2	2	
Lat (32.xxxxx)		65514	65461	65441	65360	65370	65370
Long (-117.xxxxx)		14743	14754	14760	14783	14888	14887

Trawl # <i>5</i>	Net Set	Net on Bottom	Interval 1	Interval 2	Interval 3	Net Retrieval	Net on Board
Time							
Depth (m)							
Lat (32.xxxxx)							
Long (-117.xxxxx)							

Comments: *Trawls 2/3 digging shallow shore line. Trawl 1, trap anchorage. Depth varies from 2 to 3 m. Tried to keep @ 2 m.*

# BIGHT'13 DEMERSAL FISH IDENTIFICATION FORM

Station: SWHB-40

Page 1 of 1

Date: 04/22/2014

Completed by: OCS

Data from Short/Long Trawl @ >300 m Depth  Yes  No

trawl #	Species	N	Std Length Size Class (cm) Use for up to 10 individuals. mm Use Size Class sheet for more abundant spp.	Weight (kg)			Photos
				Gross	Tare	Net	Y/N
1	california halibut	1	110				Y
1	sting ray	1	260				Y
2	shiner perch	5	35, 40, 38, 42, 100				Y
2	spotted sand bass	5	115, 140, 150, 200, 195				Y
2	barred sand bass	4	130, 80, 135, 125				Y
2	diamond turbot	2	115, 165				Y
2	sting rays	28	140 - 260				Y
3	califor. halibut	6	370, 80, 110, 150, 150, 180				Y
3	sting ray	30	175 - 285				Y
3	spotted sand bass	19	60, 60, 80, 120, 130, 125, 205, 180, 250, 275, 290				Y
3	shiner perch	17	36, 35, 115, 100, 102, 38, 39, 42, 42, 38, 39, 29, 46, 42, 41, 44, 47				Y
3	barred sand bass	3	140, 130, 125				Y
3	specklefin midshipman	3	365, 260,				Y
3	diamond turbot	2	170, 185				Y
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Comments: Depth: 11' / 3.5 m

tidal: 1.6 ft ebb

MLLW = 9.4 ft

trawl	sp.	n	pic
1	navanax	1	Y
1	MUSCULISTA	1	Y
2	navanax	1	Y
2	MUSCULISTA	20	Y
3	Navanax	8	N

trawls	1	0830 (5 min trawl) & net twisted
	2	0845
	3	0910

A) 10 changed from plainfin to specklefin midshipman

\* spotted sand bass photo does not include 3 specimens (60, 60, 80 length)

SWHB - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet - FISH

Station SWHB-4D

Page 1 of 1

Date 04/22/2014

Completed by: CCS

FISH SPECIES TRAWL - BIOACCUMULATION

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
<i>california halibut</i>	1, 2, 3	5	150, 155, 110 110, 80				Y	
<i>spotted sand bass</i>	2, 3	6	120, 125, 135 125, 125, 80				Y	
<i>barred sand bass</i>	2, 3	6	85, 130, 125 130, 120, 135				Y	
<i>shiner perch</i>	2, 3	6	50, 50, 100 110, 100, 100				Y	

FISH SPECIES - PLASTIC INGESTION

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
<i>sting ray</i>	1, 2	5	130-160				N	
<i>spotted sand bass</i>	1, 2, 3	4	60-205				Y	
<i>shiner perch</i>	2, 3		35-45				Y	

Comments:

RHMP/ Bight '13 - Bioaccumulation Special Studies Field Data Sheet  
 INVERTEBRATES from Trawls

Station SWHB-40

Page 1 of 1

Date 04/22/2014

Completed by: CCS

INVERTEBRATE SPECIES TRAWL- BIOACCUMULATION

Species	Trawl #	N	Weight (kg)			Photo (Y/N)	Footnotes
			Gross	Tare	Net		
Musculista	1,2	1, 20				Y	small piece half
Bivalve (clam)	2	1				Y	

combin

Comments:

**FIELD SAMPLING QA CHECKLIST - TRAWL SAMPLING**

Station ID: SWHB-40

Arrival Date/Time: 4/22/2014 0730

Site Acceptable for Trawl Sampling for Bioaccumulation Samples: (Y) or N

if No, provide reason: \_\_\_\_\_

Mark each box with Y, N, or NA

**Field Procedures**

1. Upon arriving at the sampling location, the following site observations are recorded:

Is site accessible?	Y
<del>Depth and benthic salinity</del> recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has conducted pre-trawl survey? Site acceptable?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

2. Trawl Sampling Procedures:

Proper equipment used (Semi-balloon otter trawl)?	Y
Weighing scales calibrated?	N → office
Vessel passed through 100 m radius of station?	Y
Trawl duration 10 minutes (or long as possible in confined areas)?	Y
Trawl log info recorded (depth, tow wire length, times, coordinates)?	Y
Trawl remained within 10% of target depth?	Y
Trawl acceptable (i.e. no fouling, bottom debris present, not torn, bottom time acceptable)?	Y
Fish and/or invertebrates obtained in trawl?	Y
All fish positively identified (for specimens collected as samples)?	Y
All invertebrates positively identified (for specimens collected as samples)?	Y
Standard length of all bony fish measured for specimen counts <10? Length range measured for specimen counts >10?	Y
Total biomass of each invertebrate group retained as samples recorded?	Y
Photo of one representative from each species collected and grouped species planned for release?	Y
Fish and invertebrate specimens wrapped in pre-cleaned foil, bagged, and preserved on ice?	Y

SWHB-40 FIELD SAMPLING QA CHECKLIST - TRAWL SAMPLING

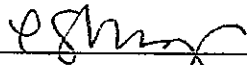
3. Data Recording:

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	NA
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

4. Sample Storage and Delivery:

Epibenthic macroinvertebrates tissue samples collected?	NA
Fish tissue samples collected?	Y
Tissue samples stored immediately on ice and frozen asap?	Y
Cooler is taped shut for transport to AMEC freezer or lab?	Y
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: \_\_\_\_\_

Signature of QA/QC Personnel:  Date/Time: 4/22/2014 1107

Print Name/Company: Corey Sherry AMEC



# STATION OCCUPATION

SWHB Study

Agency Code CSO

Weather

Clear

Rain

Vessel Name PUNYAN

Overcast

Thunderstorm

Arrival Time 1750:39

Partly cloudy

Fog

Drizzle

Sea State

Calm

Choppy

Rough

N

Water Quality

Station ID SWHB-41

Temp (°C)	21.7
pH	8.02
Salinity (ppt)	34.59
Sp Cond (mS/cm)	52446

Date 04/09/2014

DO (mg/L / % sat) 8.25 / 115.2%

Abandoned site?  Station Fail Code NA

Y or N (if Y explain in comments)

(hh:mm) station on GPS  
32.62668  
-117.12810

Wind

Swell

Speed (kts) 6

Period (s) 0

Direction (4) NW

Height (ft) 0

Direction (4) 0

Nav Type

DGPS

GPS

Equipment Type

Van Veen

Tandem Van Veen

Station Comments

replacing station SWHB-17 due to depth  $\geq 3m$   
eel grass present in sample  
actual water depth: 2.9 m / 9.5 ft  
tide: 2.85 ft 2.0m MLLW

# GRAB EVENTS

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmmmm)	Longitude (DD°MM.mmmmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	175622	32.62669	-117.12809	2	9	NA	10	silt/clay	N	olive green	N	Y	Y	N	Y
Grab Event Comments:															
Grab Event Comments:															
Grab Event Comments:															
Grab Event Comments:															
Grab Event Comments:															

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
- 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
- 3 Sediment Color: Brown, Gray, Black, Olive green, Red
- 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
- 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)

Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

Station ID: SWHB-41

Arrival Date/Time: 4/9/2014 1750

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: N/A

Mark each box with Y, N, or NA

Field Procedures

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	NA

SWHB-41

**FIELD SAMPLING QA CHECKLIST - SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

Field staff wearing fresh, powder free nitrile gloves?	NA
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	Y
Proper persons have signed and dated all COCs?	NA
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	Y

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	Y
Benthic infauna tissue: samples stored on ice and frozen asap?	NA
Cooler is taped shut for transport to AMEC freezer or lab?	NA
Completed COC is included in plastic bag in cooler?	NA

Additional Notes: Station SWHB-17 replaced w/ 41

Signature of QA/QC Personnel: [Signature] Date/Time: 4/9/14 1815

Print Name/Company: Corey Sweeney AMEC

BIGHT'13 TRAWL DEBRIS FORM

Agency: ANIEC

Page 1 of 1

Station: SWHB-40 Trawl #: 2

Date: 04/22/2014



CHECK HERE IF NO DEBRIS PRESENT IN SAMPLE

Anthropogenic Debris - include Brand Names in Comments if known	Plastic		Count	Comment	Misc. Items/Pieces		Count	Comment	
	Bag	1	partial bag / liner	Boat/Ship/Engine part					
	Bandaid			Clothing					
	Balloon (mylar/latex)/Ribbon			Concrete/Asphalt					
	Bottle			Fiberglass					
	Buoy			Food					
	Cap/Lid			Leather					
	Cigarette box/wrapper			Lumber					
	Cup			Paper					
	Filmstrip (movie)			Rag/Cloth					
	Fishing Line/Net			Rubber					
	Food Bag / Wrapper			Shoe					
	Polypropylene Rope			Tape					
	Straw			Tire					
	Toy			Other Misc. (comment req.)					
	Utensil			Metal		Count	Comment		
	Plastic Piece (unid.)	1	small silvery piece	Drink Can					
	Other Plastic (comment req.)			Can - other					
Glass		Count	Comment	Can Pull-tab					
Beer Bottle			Fishing Gear						
Glass Bottle/Jar -other			Wire						
Glass Piece (unid.)			Metal Piece (unid.)						
Other Glass (comment req.)			Other Metal (comment req.)						

Natural Debris	Marine Origin			Count	Est.*	Comment	Terrestrial Vegetation			Count	Est.*	Comment
	Foliose Algae - not kelp						Leaves/Seed Pod					
	Gorgonian Sea Fan (dead)						Stick/Branch/Driftwood					
	Kelp Holdfast						Other Terrest. (comment req)					
	Kelp Stipe/Blade						*For Natural Debris only, if an exact count cannot be made, leave the "Count" column blank and estimate the amount (L, M or H) in the "Est." column: Low: L = 2-10 Moderate: M = 11-100 High: H = > 100					
	Rock											
Seagrass												
Other Marine (comment req)												

Completed by: CCS

**STATION OCCUPATION**

SWHB Study

Agency Code AMEL

Weather

Sea State

Water Quality

Station ID SWHB-53

Vessel Name Barge

Clear  
 Overcast  
 Partly cloudy  
 Drizzle  
 Rain  
 Thunderstorm  
 Fog

Calm  
 Choppy  
 Rough

Temp (°C)	18.5°C
pH	8.24
Salinity (ppt)	34.28
Sp Cond (mS/cm)	51997

Date 4/18/14

Arrival Time 1327

(hh:mm) SCWRP  
list:  
traj  
32.727996  
-117.209473  
tablet  
version.  
32.728  
-117.209

Abandoned site? Station Fail Code None  
 Y or N (if Y explain in comments)

Wind Speed (kts) 5  
 Direction (4) W

Swell Period (s) 0  
 Height (ft) 0  
 Direction (4) 0

Nav Type  
 DGPS  
 GPS

Equipment Type  
 Van Veen  
 Tandem Van Veen

Station Comments  
7 feet deep = 2.15 m  
x 3.5' rising  
DO = 8.36 mg/L  
% sat: 110.1%

**GRAB EVENTS**

Sample types (Chk all that apply)

#	Time (hh:mm)	Latitude (DD°MM.mmm)	Longitude (DD°MM.mmm)	Depth (m)	Distance to target (m)	Grab Fail Code (6)	Penetration (cm)	Composition (1)	Odor (2)	Color (3)	Shell Hash (Y/N)	Sed Chem	Grain Size	Infauna for Bioaccum	Photos
1	1329	32.72818	-117.20947	2	70	NONE	10	fg-s	NONE	lt brn	N	X	X	X	yes
Grab Event Comments:															
Grab Event Comments:															
Grab Event Comments:															
Grab Event Comments:															
Grab Event Comments:															

- 1 Sediment Composition: Coarse sand, Fine sand, Silt/clay, Gravel, Cobble, Mixed
  - 2 Sediment Odor: None (N), Petroleum (P), Hydrogen sulfide (HS), Humic (HU), Other (O, describe in comments)
  - 3 Sediment Color: Brown, Gray, Black, Olive green, Red
  - 4 Directions: N, NE, E, SE, S, SW, W, NW, or XX for calm
  - 5 Station Fail codes: None, Temporary - sea conditions (comment req.), Temporary - atmosphere (comment req.), Temporary - mechanical (comment req.), Pre-abandoned (comment req.), Site On Land (comment req.), Vessel safety (comment req.), No Access Allowed (comment req.), Prolonged rough seas, Bottom salinity <25psu, Too Shallow (comment req.), Too many Event Failures (comment req.), Anthropogenic obstruction (comment req.), Natural hard bottom obstructions (comment req.), Not sampleable - other (comment req.)
- Grab Fail codes: None, Outside Radius Limit, Outside Target Depth, Premature closure, Flipped, Rocks/gravel, Dead shell, Live animal (comment req.), Debris (comment req.), Poor closure - other (comment req.), Heavily Canted, Large Humping, Washed, Disturbed Surface, < 5 cm Penetration, <= 7 cm Penetration - biology only

**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

Station ID: SWKB-53

Arrival Date/Time: 1307 4/18/14

Site Acceptable for Sediment Sampling: Y or N

Bioaccumulation Sample Site: Y or N

If site not acceptable, provide reason: NA

Mark each box with Y, N, or NA

**Field Procedures**

**1. Upon arriving at the sampling location, the following site observations are recorded:**

Is site accessible?	Y
Depth and benthic salinity recorded? Are these parameters within project and Bight '13 -acceptable limits? (<3m MLLW depth and ≥25pt salinity).	Y
Vessel has been anchored (or tied off)?	Y
Station DGPS coordinates (± 3 m) recorded?	Y
Station occupation form completed?	Y

**2. Sediment Sampling Procedures:**

Samples collected in following order: chemistry, bioaccumulation (if applicable)	Y
Field staff wearing fresh, powder free nitrile gloves?	Y
Equipment washed/rinsed from previous station?	Y
Vessel engine has been shut off for 3-5 minutes prior to sampling?	Y
Sampling instrument washed with Alconox?	Y
Sampling instrument given site water rinse prior to deployment?	Y
Sample bottles correctly labeled (minimum: station id, date, agency, parameter)?	Y
Sample bottles are lab certified, contaminant free?	Y
Samples containers are the correct type in accordance with Table 11-1 in the SWHB Study QAPP?	Y
Sample condition meets acceptability criteria (e.g. no surface disturbance, leakage, canting, or washing)?	Y
Sample penetration meets acceptability criteria (e.g. minimum 5cm)?	Y
Grab disposition / characteristic information recorded?	Y
Chemistry samples collected from top 5cm, and 1cm from sides of grab?	Y
Sediment evenly distributed among containers?	Y
Stainless steel scoop used to distribute sediment?	Y
Staff avoided contaminating samples at all times?	Y
Equipment or field blank collected (if applicable)?	NA

**FIELD SAMPLING QA CHECKLIST – SEDIMENT COLLECTIONS**

**3. Infauna Tissue Sampling Procedures (if applicable):**

N/A

Field staff wearing fresh, powder free nitrile gloves?	✓
Sampling equipment (van veen, tubs, sieve) washed with Alconox /rinsed from previous station?	
Vessel engine has been shut off for 3-5 minutes prior to sampling?	
Sampling instrument given site water rinse prior to deployment?	
Sample bags correctly labeled (minimum: station id, date, agency, invertebrate group)?	
Photographs of specimen samples taken with ID tags, prior to wrapping in foil?	
Each specimen sample weighed?	
Specimen samples wrapped in pre-cleaned foil, bagged, and preserved on ice?	✓

**5. Data Recording:**

Samples properly logged and cross-checked by a second person on all COC forms?	✓
Proper persons have signed and dated all COCs?	✓
All field datasheets (hard copy and electronic) and associated notes/ photographs have been recorded for the site before moving to the next?	✓

**6. Sample Storage and Delivery:**

Sediment chemistry samples stored cold on wet ice or frozen within 24 hours?	✓
Benthic infauna tissue: samples stored on ice and frozen asap?	✓
Cooler is taped shut for transport to AMEC freezer or lab?	✓
Completed COC is included in plastic bag in cooler?	✓

Additional Notes: near Harbor Island Beach

Signature of QA/QC Personnel: [Signature] Date/Time: 1345 4/18/14

Print Name/Company: [Signature]

# Regional Harbor Monitoring Program (RHMP)

Aug.-Sept. 2013



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RHMP/ Bight '13 - Bioaccumulation Special Studies Field Data Sheet  
 INVERTEBRATES from Trawls

Station Site 8052 - San Diego Bay

Page 1 of 1

Date 8-27-13

Completed by: C. Stransky

INVERTEBRATE SPECIES TRAWL- BIOACCUMULATION

Species	Trawl #	N	Weight (kg)			Photo (Y/N)	Footnotes
			Gross	Tare	Net		
Polychaetes		100+	7.6	2.7	4.9	Y	a few small burrowing anemones
Crustacea		10	4.4	2.7	1.4	Y	5 matts, 2 grass shrimp 3 amphipods
Mollusc		<del>2</del> 100 750	2.8	2.7	25.3	Y	1 mud nassa, 2 round >50 razor clams clams
Pheronids		20	3.9	2.7	1.2	Y	sand inside tubes

Comments:  
 \* Polychaetes mixed with a few small burrowing anemones

\* 5 drops +  $\frac{1}{2} \times 3 = 1.65$  Grabs Total

RHMP/ Bight '13 - Bioaccumulation Special Studies Field Data Sheet  
 INVERTEBRATES from Trawls

Station Site 8060 San Diego Bay

Page 1 of 1

Date 8-27-13

Completed by: C. Strassky

Mr

INVERTEBRATE SPECIES TRAWL- BIOACCUMULATION

Species	Trawl #	N	Weight (kg)			Photo (Y/N)	Footnotes
			Gross	Tare	Net		
Polydactylus		100+	5.5g	2.7g	2.8	Y	including a few bony anemones + nemertean
Crustacea			12g	2.7g	9.3		ghost shrimp - (9) mantis shrimp - (12) crab
<del>Mollusc</del>			<del>3.3g</del>	2.7g			<del>see below</del>
gobbi			3.3g	2.7g	0.6	Y	
Mollusk			20g	2.7g	17.3	Y	see below.

Comments:

Mollusc - small muscardita - 250  
 - small razor clams - 250  
 - small round clams - 210  
 - mud nauga - 2

Crustacea = 4 ghost shrimp  
 12 mantis shrimp  
 1 crab (USA)  
 → cancer branner:

Grabs for bioaccum

$$\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + 2 + 2 + 2 + 2 + 2 + 2$$

RHMP/ Bight '13 - Bioaccumulation Special Studies Field Data Sheet  
 INVERTEBRATES from Sediment Grabs

Station: Site 8122 SD Bay  
 Date: 8-28-13

Page 1 of 1

Completed by: C. Stransky

INVERTEBRATE SPECIES GRABS - BIOACCUMULATION (INFAUNA)

Species	N	Weight (g)			Photo (Y/N)	Footnotes
		Gross	Tare	Net		
Polychaetes	100+	10	2.7	7.3g	Y	
Crustacea	19	6.2g	2.7	3.5g	Y	
Mollusc	31	10g	2.7	7.3g	Y	
Gobies	5	5.0g	2.7	2.3g	Y	

Comments:

Crustacea - Mantis - 3  
 ghost shrimp - 5  
 Mide grass shrimp - 7  
 sm pea crabs - 2  
 sm decorator - 1  
 sm pycnogonid - 1

Mollusc - razor clam - 16 2-species  
 sm round clam - 15

Grabs

$\frac{1}{2} \times 3 + 2 + 2 + 2 + 2 + 2$   
 1345 1401 1428 1427 1432 1439 19:40

*m*



RHMP/ Bight '13 - Bioaccumulation Special Studies Field Data Sheet

INVERTEBRATES from Trawls

Station Site 8109 SD Bay  
 Date 8-28-13

Page 1 of 1

Completed by: C. Stranley

INVERTEBRATE SPECIES TRAWL- BIOACCUMULATION

Species	Trawl #	N	Weight (kg)			Photo (Y/N)	Footnotes
			Gross	Tare	Net		
Polychaetes		100+	10.5	2.7	7.8	Y	
Crustacean		26	12	2.7	9.3	Y	
Ophuroids		5	3.3	2.7	0.6	Y	
Gobies / Midshipman		3	4.7	2.7	2.0	Y	Goby - 1 Midshipman - 2
Burrowing anenomics		2	4.6	2.7	1.9	Y	
Mollusc		26	8.6	2.7	<del>2.3</del> 5.9	Y	

Comments:

<ul style="list-style-type: none"> <li>- Crustacean : Mantis shrimp - 3</li> <li>Ghost shrimp - 9</li> <li>Amphipods - 10</li> <li>Sm. Crabs - 3</li> </ul>	<ul style="list-style-type: none"> <li>Mollusc - Musculista - 1</li> <li>Large clams - 4 lg, 7 small</li> <li>Sm clams - 14</li> </ul>
---	--

Grabs -  
 $\frac{1}{2} \times 3 + 2 + 2 + 2 + 2$

RHMP/ Bight '13 - Bioaccumulation Special Studies Field Data Sheet  
 INVERTEBRATES from Sediment Grabs

Station: Site 8118 SD Bay

Page 1 of 1

Date: 8-28-13

Completed by: C. Stransky

*Foil 622*

INVERTEBRATE SPECIES GRABS - BIOACCUMULATION (INFAUNA)

Species	N	Weight (g)			Photo (Y/N)	Footnotes
		Gross	Tare	Net		
Polychaetes	100+	6.2g	2.7	3.5g	Y	
Crustacea	≈ 77	39g	<del>1.7g</del>	37.3g	Y	
Mollusc	≈ 71	5.3g	<del>2.7</del>	2.6g	Y	
Gobies / Midshipman	4	5.9g	2.7	3.2g	Y	3 gobies 1 midshipman

Comments:

Crustacea - Ghost shrimp - 50  
 Mantis shrimp - ~~44~~ 15  
 Sm. Cancer crabs - 2  
 misc small shrimp - 10

Mollusc: Razor clams - 310 small  
 Small clams - ≈ 60 (rounded)  
 Musculista - 1 small

larger foil used for crustacea. - 1.7g - Foil only.

Grabs

$\frac{1}{2} \times 3 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2$   
 1130    1138    1148    1155    12:01    12:06

RHMP/ Bight '13 - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet - FISH



Station

Site 8122 SD Bay

Page 1 of 1

Date

9-3-13

Completed by: Strandy

**FISH SPECIES TRAWL - BIOACCUMULATION**

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
CA Halibut	1	7	96-185				Y	
Barrred Sand Bass	1	12	116-157				↓	
Spotted Bay Bass	1	3	183-215				↓	

**FISH SPECIES - PLASTIC INGESTION**

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
Diamond Tuleak	1	1						

Comments:





RHMP/ Bight '13 - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet - FISH

Station Site 8109 SD Bay

Page 1 of 1

Date 9-3-13

Completed by: C. Strassky

FISH SPECIES TRAWL - BIOACCUMULATION

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
Ca Halibut	1	6	13-26				Y	
Spotted Sand Bass	1	6/11	18-20				Y	
<del>Spotted Sand Bass</del>	+	-	-	-	-	-	-	-
Banded Sand Bass	1	2	13, 18				Y	

FISH SPECIES - PLASTIC INGESTION

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
Lizard Fish	1	75	9-29				Y	
Tongue Fish	1	15	9-11				Y	
Spotted Turbot	1	7	11-16				Y	

Comments:

RHMP/ Bight '13 - Bioaccumulation and Plastic Ingestion Special Studies  
Field Datasheet - FISH

Station

Site 8118

Page 1 of 1

Date

9-3-13

Completed by: C. Strensky

FISH SPECIES TRAWL - BIOACCUMULATION

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
<sup>panel</sup> Sand Bass	1	4	140-150				Y	
Spotted Sand Bass	1	1	± 250 mm				↓	
Fantail Sole * same as below	1	2	± 20 cm				↓	
CA Halibut	2	10	17-25				↓	
Barred Sand Bass	2	17	12-20				↓	
Spotted Sand Bass	2	2	19-21				↓	

FISH SPECIES - PLASTIC INGESTION

Species	Trawl #	N	Size Range (SL)	Weight (kg)			Photo (Y/N)	Footnotes
				Gross	Tare	Net		
Lizard Fish	1*	36	116-270				Y	
Tongue Fish (or bioaccum)	1*	3	97-123				↓	
Fantail sole (or bioaccum)	21*	2	± 20 cm				↓	
Lizard Fish	2	71	16-28				↓	
Tongue Fish	2	6	9-11		Y		↓	
white seabass	2	1	21				↓	

Comments:

Trawl 1 - failed due to a hung door

RHMP/ Bight '13 - Bioaccumulation Special Studies Field Data Sheet  
 INVERTEBRATES from Trawls

Station B13-8118  
 Date 9/3/13

Page 1 of 1

Completed by: KT

INVERTEBRATE SPECIES TRAWL- BIOACCUMULATION

Species	Trawl #	N	Weight (kg)			Photo (Y/N)	Footnotes
			Gross	Tare	Net		
<del>Urechis caupo?</del>	<del>2</del>						<del>FID</del> (KT)
Farfantepenaeus californiensis	2	2	200	95	105	Y	
<del>Grassostrea sp.</del>							

Comments: