



FIELD EQUIPMENT VERIFICATION (PRE/POST A WEEKLY SAMPLING):

Session No:		Verifiers (pre-sampling):			Pre Date:	Pre Time:	Verifiers (post-sampling):		Post Date:	Post Time:
CK WM 130	J. Erwin				11/13/23	11:30 am	J. Erwin, C. Keyhani		11/16/23	12:30 pm
QA/QC Check	Inst #	Probe #	Last Cal Date		PRE: Verification Value	POST: Verification Value	Acceptable Range	Comments/ Notes		QA?
Temperature	NIST 2	n/a	NIST Exp. Date	Std Val	NIST 26.0 °C	NIST 29.5 °C	NIST 26.1 °C	NIST 26.1 °C	± 0.6 °C of NIST	Compare to NIST Std value in tap water
	4 8	6/28/24			25.8		26.0			
	3 7	6/28/24			29.5		25.9			
Salinity			3 months	Std Val	Tap water 0.13	Salin Std 11/16/23 date 33.5 ppt	Tap water 0.13	Salin Std 11/16/23 date 33.5 ppt	± 1 ppt	Tap water - compare pre & post values Salinity Std - compare to value on Salinity Std bottle
	4 8	11/06/23			0.17	33.5	0.18	33.7		
	3 7	11/06/23			0.18	33.3	0.18	33.7		
Dissolved Oxygen			1 year	Std Val	100%		100%		± 5 %	
	4 4	7/17/23			101.2		102.3			
	3 3	7/17/23			101.4		101.0			
pH			3 weeks	Std Val	pH 7.00	pH 10.00	pH 7.00	pH 10.00	± 0.1 pH of pH std value	Compare to Manufacturer pH Std value on bottle
	4 6	11/06/23			6.98	9.99	7.00	10.03		pH 7+10 exp. 5/2024
	3 5	11/06/23			7.02	10.01	7.00	9.98		
Turbidity			3 months	Std Val	BLANK <0.1 NTU	LOW 1-10 NTU	BLANK <0.1 NTU	LOW 1-10 NTU	± 0.18 NTU Low 1-10	Compare to Gel LOW 1-10 Std Calibration value
	2 n/a	11/06/23			0.06	6.61	0.05	6.56		Low Std 6.60
	5 n/a	11/06/23			0.05	6.80	0.05	6.80		Low Std. 6.82

QA:  
 \* Are pre- and post within one week?  
 \* Delay times are ok?  
 \* Other equipment issues?

NMS Lab

Hui O Ka Wai Ola - Sample Collection Datasheet

Team	R2RS Tues	Samplers (Last Name, 1st Initial)	Floyd, M Bleser, S Keyhani, C						Meters and Probes ID		
Session	130								HQ2200: SM4	2100Q: SM2	
Date	11/14/2023 11/15M4/2023 CK								pH: SM6	DO: SM4	Salinity: SM8

Location Name Sample ID	Fresh water Flowing (Y/N)	Time (of collection)	Temp (°C) variable	Salinity (ppt) 30-35 normal	Dissolved Oxygen		pH 8-8.3 normal	Turbidity (NTU)		People (within 100 ft)			
					(mg/L) 5.2-7.0 normal	(%) 85-105 normal				water	beach	camp	
Napili Bay RNS231114	N	8:25	25.4	35.6	6.89	101.7	8.14	10.72 <sup>at</sup>	1.53	1.66	1	0	0
Pohaku RPO231114	Y	8:50	24.6	34.7	6.81	98.5	8.07	38.1 <sup>at</sup>	45.9	41.0	0	0	0
Kaanapali Shores RKS231114	Y	9:15	25.2	34.6	6.89	100.4	8.13	5.00	5.12	4.76 <sup>at</sup>	0	0	0
Kahekili Beach Two RKT231114	N	9:40	25.0	35.3	6.95	101.7	8.12	4.42 <sup>at</sup>	5.44	4.82	0	0	0
Canoe Beach RCB231114	N	10:00	25.5	35.8	6.168	99.0	8.12	10.7	10.9	12.0	0	0	0
Wahikuli RWA231114	N	10:20	26.1	35.0	6.73	100.0	8.15	0.47	0.42	0.38	0	0	0

NOTES AND COMMENTS (trends, equipment problems, errors, concerns). All sites:  
Use the back of the form if needed. \*Rained up north last night.

RNS - 3-4' Shorebreak, sand in sample  
4th turbidity: 1.72. Windy.

RPO - Fresh water flowing into ocean (brown & foamy).  
Can hear construction above site. Pink algae across beach. Erosion (red dirt) down the beach.  
Turbid brown ocean water. Swell. High tide.  
Strange sulfur smell. Windy. <sup>brown/pink</sup> <sub>turbidity</sub>  
4th Turbidity - 38.1 Fluffy/particulates in sample

RKS - Windy. Murky. 1-2' shorebreak. Light brown.  
whole fresh water canal is full with <sup>brown water</sup> <sub>4ft stream</sub>  
4ft wide stream of brown water flowing into ocean.  
4th turbidity: 4.76.

TURBIDITY VERIFICATION & PROBE TEMPERATURES

	Blank (must be <0.10)	Low (+/- 0.18)	Med (+/- 1.80)	High (+/- 18)
Turbidity Standard	0.06	6.160	58.3	592
Field - Pre-sample	0.06	6.63	58.3	592
Lab - Post sample	0.04	6.61	58.3	591
Probes (+/- 0.2 °C)	Salinity	D.O.	pH	Spare Cell
Verify Probe Temps	25.4	25.2	25.2	

CHAIN OF CUSTODY INFORMATION

	# of samples	Relinquished to	Contact
Nutrients	6	NMS	Christiane

Signature (Team Lead):

Christiane Keyhani

Printed Name:

Christiane Keyhani

Sites with potential for freshwater flow: Ka'anapali Shores, Canoe Beach, Pohaku

\* More notes on back side <sup>last updated April 2023</sup>

RKT - 2-3ft swell. Murky, light brown water. Very windy. Gray clouds.  
4th turbidity : 4.42.

RCB - Super windy. Sand gusting on beach, Calm <sup>on shore</sup> water. No swell. Offshore/North wind.  
4<sup>th</sup> TURB: 9.03 5<sup>th</sup> TURB: 12.4 Getting blown away. → White caps everywhere in deeper sea.

RWA - Super windy. Offshore/North wind. Calm water. No swell.  
on shore  
→ White caps everywhere in deeper sea.

## Hui O Ka Wai Ola - Sample Collection Datasheet

Team	R2RS Tues	Samplers (Last Name, 1st Initial)	Floyd, M.; Bieser, S.; Keyhani, C.			
Session	130					
Date	11/14/2023					

Sample ID	Location Name	Sample taken?	Duplicate sample?	Time	Volume	Protocol Notes	Comments
<b>Nutrients</b>							
RNS231114-N-1	Napili Bay	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:25	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RPO231114-N-1	Pohaku	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:50	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RKS231114-N-1	Kaanapali Shores	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:15	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RKT231114-N-1	Kahekili Beach Two	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:40	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RCB231114-N-1	Canoe Beach	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10:00	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RWA231114-N-1	Wahikuli	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10:20	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
<b>Sediments</b>							
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml		
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml		
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml		
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml		

Signature (Team Lead): *Christiane Keyhani* Printed Name: *Christiane Keyhani*

Hawaiian Water Quality Sample Collection Datasheet

Team	Polanui Wed	Samplers (Last Name, 1st Initial)	E. JOHNSON	K. SOWA - BEACH	Meters and Probes ID		
Session	130		K. GRUND	K. JAMES	HQ2200: SM 4	2100Q: SM 2	
Date	11/15/2023		M. GRUND	J. BROWN	pH: SM 6	DO: SM 4	Salinity: SM 8

Location Name Sample ID	Fresh water Flowing (Y/N)	Time (of collection)	Temp (°C) variable	Salinity (ppt) 30-35 normal	Dissolved Oxygen		pH 8-8.3 normal	Turbidity (NTU)	People (within 100 ft)		
					(mg/L) 5.2-7.0 normal	(%) 85-105 normal			water	beach	camp
Camp Olowalu OCO231115	N/A	9:10 AM	24.0	36.0	6.47	93.4	8.04	1.04	∅	∅	∅
Mile Marker 14 OMM231115	N/A	9:35	24.5	35.9	6.08	88.5	8.03	1.52	∅	2	∅
Ukumehame OUB231115	N/A	9:50	24.5	35.9	7.07	102.8	8.10	3.06	3.51	1	∅
Papalaua Pali OPP231115	N	10:06	25.4	35.8	7.03	103.8	8.10	2.62	2.36	∅	∅

NOTES AND COMMENTS (trends, equipment problems, errors, concerns).  
Use the back of the form if needed.

OCO - BREEZY + CRUSTS OF 30-40 OFFSHORE CALM WATER, SUNNY; TRADEWINDS: 4th turbidity = 1.04  
OMM - CALM WATER  
OUB - more WAVE ACTION, SHOREBREAK UNDER KG 1-1.5  
DPP - WINDY. SHOREBREAK @ 2'. DO IS READING HIGH @ THIS SITE

TURBIDITY VERIFICATION & PROBE TEMPERATURES

	Blank (must be <0.10)	Low (+/- 0.18)	Med (+/- 1.80)	High (+/- 18)
Turbidity Standard	0.06	6.60	58.3	592
Field - Pre-Sample	0.04	6.62	57.8	592
Lab - Post Sample	0.03	6.58	58.3	593
Probes (+/- 0.2 °C)	Salinity	D.O.	pH	Sample Cell
Verify Probe Temps	24.0	23.7	23.9	?
CHAIN OF CUSTODY	# of Samples	Relinquish to	Contact	
Nutrients	4	NMS	Emily Johnson	

Signature (Team Lead): *Emily Johnson* Print: EMILY JOHNSON

\* LOW TIDE THIS MORNING + SUNNY

Sites with potential for freshwater flow: Ukumehame

## Hui O Ka Wai Ola - Sample Collection Datasheet

Team	Polanui Wed	Samplers (Last Name, 1st Initial)	E.JOHNSON	K.SOWA-BEACH
Session	130		K.GUND	K.JAMES
Date	11/15/2023		M.GUND	J.BROWN

Sample ID	Location Name	Sample taken?	Duplicate sample?	Time	Volume	Protocol Notes	Comments
<b>Nutrients</b>							
OCO231115-N-1	Camp Olowalu	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:10	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
OMM231115-N-1	Mile Marker 14	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:35	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
OUN231115-N-1	Ukumehame	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:50	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
OPP231115-N-1	Papalaua Pali	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10:06	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	

<b>Sediments</b>					500 ml		
		<input type="checkbox"/>	<input type="checkbox"/>				
		<input type="checkbox"/>	<input type="checkbox"/>				
		<input type="checkbox"/>	<input type="checkbox"/>				

Signature: Emily Johnson Print: EMILY JOHNSON

## Hui O Ka Wai Ola - Sample Collection Datasheet

Team	Lahaina Fire Response	Samplers (Last Name, 1st Initial)	J. Erwin, C. Keyhani, T. Callender	Meters and Probes ID
Session	TCK 130			HQ2200: SM 3 2100Q: SM 5
Date	11/15/2023			pH: SM 5 DO: SM 3 Salinity: SM 7

Location Name Sample ID	Fresh water Flowing (Y/N)	Time (of collection)	Temp (°C) variable	Salinity (ppt) 30-35 normal	Dissolved Oxygen		pH 8-8.3 normal	Turbidity (NTU)		People (within 100 ft)		
					(mg/L) 5.2-7.0 normal	(%) 85-105 normal				water	beach	camp
Mala Tavern LMT231115	X CK unknown	7:05	24.6	34.8 24.6 CK	6.58	95.2	8.07	4.55	4.13	4.20	0	0
Mala Ramp LMR231115	Y	7:35	23.8	30.3	6.64	92.7	8.16	7.63 6.16 6.22	6.32 5.91 5.22	6.86	0	0
Papalaua St LPS231115	X CK unknown	8:16	24.8	35.8	6.76	98.8	8.13	2.24	2.15	2.53 2.84	0	0
Lahaina Harbor LLH231115	N	8:30	25.4	35.7	6.28	92.7	8.15	1.16	1.04	1.10	0	0
505 Front St PFF231115	N	9:00	25.7	35.7	6.37	94.8	8.12	4.36	4.53	4.52	0	0
Lindsey Hale PLH231115	N	9:39	26.3	34.9	5.94	89.0	8.07	12.8 11.8 CK	12.1	12.2	0	0
Lahaina Town PLT231115	N	10:00	26.7	34.8	5.71	86.2	8.04	19.5	20.0	19.4	0	0

NOTES AND COMMENTS (trends, equipment problems, errors, concerns).  
Use the back of the form if needed.

\* LMT - Clear skies, slight breeze, 1ft swell, impossible to determine freshwater flow due to high tide

LMR - Calm conditions, light breeze - used spare for 1st turbidity accidentally

LPS - 1-2 ft swell, calm, clear skies, 4th reading = 2.53

LLH - calm, sunny, floating black particles

PFF - 0-1 ft swell, light breeze, clear water, turbidity spare vial is concurrent w/ original vial

## TURBIDITY VERIFICATION &amp; PROBE TEMPERATURES

	Blank (must be <0.10)	Low (+/- 0.18)	Med (+/- 1.80)	High (+/- 18)
Turbidity Standard	0.05	6.82	60.8	607
Field - Pre-Sample	0.07	6.87	60.7	606
Lab - Post Sample	0.05	6.80	60.9	606
Probes (+/- 0.2 °C)	Salinity	D.O.	pH	Spare Cell
Verify Probe Temps	24.6	24.3	24.3	
CHAIN OF CUSTODY	# of Samples	Relinquish to	Contact	
Nutrients	7	NMS	Christiane	

Signature (Team Lead): Christiane Keyhani Print: Christiane Keyhani

Sites with potential for freshwater flow: Mala Tavern, Mala Ramp, Papalaua St., 505 Front St

Turbidity-Lab Post Sample: 1st 2 reading 0.19, Cleared vile. 3rd read was 0.05. NOTES ON BACK   
Last updated August 2023

light brown water

PLH - visible turbidity near shore. clear 20' out. Calm. 0-1 ft swell

4th turbidity = 12.8

PLT - murky near shore, calm (condition), little to no swell. ~~brown water at feet~~ sediment at feet.  
brown water  
CK

Sunny 72°W

MW

081

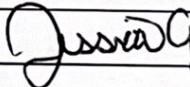
6.98 8.63 0.0 10.0 10.0 10.0

## Hui O Ka Wai Ola - Sample Collection Datasheet

Team	Lahaina Fire Response	Samplers (Last Name, 1st Initial)	Erwin, J. Keyhani, C. Callender, T.			
Session	70K 130					
Date	11/15/2023					

Sample ID	Location Name	Sample taken?	Duplicate sample?	Time	Volume	Protocol Notes	Comments
<b>Nutrients</b>							
LMT231115-N-1	Mala Tavern	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7:05	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
LMR231115-N-1	Mala Ramp	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7:35	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
LPS231115-N-1	Papalaua St.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:16	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
LLH231115-N-1	Lahaina Harbor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:30	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
PFF231115-N-1	505 Front St	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:00	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
PLH231115-N-1	Lindsey Hale	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:39	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
PLT231115-N-1	Lahaina Town	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10:00	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	

<b>Sediments</b>						
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml	
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml	
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml	

Signature:  Print: JESSICA ERWIN

## Hui O Ka Wai Ola - Sample Collection Datasheet

Team	R2RN Thurs	Samplers (Last Name, 1st Initial)	Hutchings, L., Erwin, J. Heinemann, C.						Meters and Probes ID		
Session	130								HQ2200: SM 4	2100Q: SM 2	
Date	11/16/2023		pH: SM 6	DO: SM 4	Salinity: SM 8						

Location Name Sample ID	Freshwater Flowing (Y/N)	Time (of collection)	Temp (°C) variable	Salinity (ppt) 30-35 normal	Dissolved Oxygen		pH 8-8.3 normal	Turbidity (NTU)	People (within 100 ft)		
					(mg/L) 5.2-7.0 normal	(%) 85-105 normal			water	beach	camp
Honolua Bay RHL231116	N	8:20	24.3	35.8	7.03	101.2	8.03	5.24 NTU 5.87	5.48	0	0
Oneloa Bay RON231116	N	9:05	25.1	36.0	7.04	103.4	8.10	1.68	1.54 1.98	0	0
Kapalua Bay RFS231116	N	9:20	25.2	35.9	7.01	103.0	8.12	4.10	4.37 4.56	9	16
Ka'opala Bay RKO231116	N	10:10	25.0	35.6	6.94	101.7	8.07	33.0	31.6 29.6	0	0
Kahana Village RKV231116	NYE	10:40	25.6	35.7	7.09	104.7	8.19	8.48 8.57 NTU 8.44	8.46	0	3

NOTES AND COMMENTS (trends, equipment problems, errors, concerns).  
Use the back of the form if needed.

RHL: 2nd temp D.O.=24.0, Rocky entrance -unable to go to knees, shorebreak, offshore swell - surfers, cloudy - off and on rain, brown water 4m turbidity = 5.29

RON: sunny, windy, big close-out surf. overhead 3-4ft swell 5-6ft NE 4m turbidity = 1.56

RFS: partly sunny, breezy, shark neck, offshore swell

RKO: sunny, breezy, shorebreak, offshore swell brown water

RKV: breezy, shorebreak, small offshore, WINDS  
\* filter on hose from bridge work is on but 4m turbidity 8.57  
hose has a leak - sending photo to LZ

## TURBIDITY VERIFICATION &amp; PROBE TEMPERATURES

	Blank (must be <0.10)	Low (+/- 0.18)	Med (+/- 1.80)	High (+/- 18)
Turbidity Standard	0.06	6.60	58.3	592
Field - Pre-sample	0.04	6.62	57.9	591
Lab - Post sample	0.05	6.56	58.3	592
Probes (+/- 0.2 °C)	Salinity	D.O.	pH	Spare Cell
Verify Probe Temps	24.3	23.7	24.0	24.04

## CHAIN OF CUSTODY INFORMATION

	# of samples	Relinquished to	Contact
Nutrients	5	NMS Lab	J. Erwin

Signature (Team Lead):

Jessica Erwin

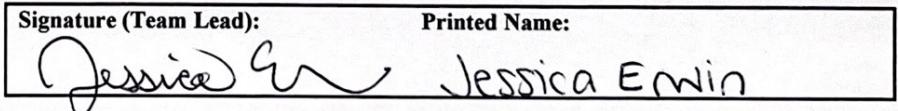
Printed Name:

## Hui O Ka Wai Ola - Sample Collection Datasheet

Team	R2RN Thurs	Samplers (Last Name, 1st Initial)	Hutchings, L. Erwin, J. Hehemann, C.			
Session	130					
Date	11/16/2023					

Sample ID	Location Name	Sample taken?	Duplicate sample?	Time	Volume	Protocol Notes	Comments
<b>Nutrients</b>							
RHL231116-N-1	Honolua Bay	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:20am	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RON231116-N-1	Oneloa Bay	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:05	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RFS231116-N-1	Kapalua Bay	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:20	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RKO231116-N-1	Ka'opala Bay	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10:10	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RKV23-N-1	Kahana Village	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10:40	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	

<b>Sediments</b>						
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml	
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml	
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml	
		<input type="checkbox"/>	<input type="checkbox"/>		500 ml	

Signature (Team Lead):  Printed Name: Jessica Erwin