

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

Hui O Ka Wai Ola

Session No:	Verifiers (pre-sampling):			Pre Date:	Pre Time:	Verifiers (post-sampling):			Post Date:	Post Time:
WM 129	J Erwin C. Keyhani			10/23/23	10:00 AM	C. Keyhani, L. Yannell			10/27/23	12:15 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 25.3 °C	NIST 28.7 °C	NIST 31.9 °C	± 0.6 °C of NIST	Compare to NIST Std value in tap water	
	3 7	6/28/24			25.1		31.8			
	4 8	6/28/24			28.5					
Salinity			3 months	Std Val	Tap water 0.13	Salin Std 9/11/23 date 34.0 ppt	Tap water 0.13	Salin Std 9/11/23 date 34.0 ppt	± 1 ppt	Tap water - compare pre & post values Salinity Std - compare to value on Salinity Std bottle
	3 7	8/1/23			0.19	33.9	0.19	33.7		
	4 8	8/1/23			0.19	34.0				
Dissolved Oxygen			1 year	Std Val	100%		100%		± 5 %	
	3 3	7/17/23			99.9		100.6			
	4 4	7/17/23			101.2					
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
	3 5	10/16/23			7.01	10.02	7.02	10.01		pH 7 + 10 Exp 5/2024
	4 6	10/19/23			7.03	10.02				
Turbidity			3 months	Std Val	BLANK <0.1 NTU	LOW 1-10 <0.1 NTU	BLANK <0.1 NTU	LOW 1-10 <0.1 NTU	± 0.18 NTU Low 1-10	Compare to Gel LOW 1-10 Std Calibration value
	5	n/a	8/7/23		0.04	6.67	Blank 0.009 Spare 0.096	6.50	post blank 1st = 0.16 2nd = 0.12 3rd = 0.11	Low std. 6.54 post blank spare 1st read = 0.12, 2nd = 0.09
	2	n/a	8/7/23		0.05	6.40	—	—		Low std 6.31

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

NMS Lab

Hanalei Bay Ola - Sample Collection Datasheet

Team	R2RS	Samplers (Last Name, 1st Initial)	Erwin, J. Yannell, L.						Meters and Probes ID		
Session	129								HQ2200: SM 3	2100Q: SM 5	
Date	10/24/2023								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
Napili Bay RNS231024	N	8:40	27.1	35.5	6.75	102.5	8.13	0.95 0.79	0.90	0.93	3
Pohaku RPO231024	N	9:25	26.7	34.9	6.64	100.1	8.17	7.89 8.36	7.25 7.15	0	0
Kaanapali Shores RKS231024	N	10:00	26.9	36.0	6.55	100.0	8.13	2.24 2.80	2.04 1.87	1	5
Kahekili Beach Two RKT231024	N	10:35	27.3	35.9	6.60	101.1	8.15	4.23 3.92	4.16	0	2
Canoe Beach RCB231024	N	11:05	28.1	35.8	6.56	101.8	8.15	22.4 20.5	20.8	0	1
Wahikuli RWA231024	N	11:40	28.0	36.0	6.55	101.7	8.21	2.43 2.40	2.21	0	0

NOTES AND COMMENTS (trends, equipment problems, errors, concerns).

Use the back of the form if needed.

RNS - Rained overnight, overcast, no wind. 2 ft swell with shore break. 4m turbidity taken = 0.95
RPO - lots of algae in the water; shorebreak; Resource + support center set up in parking lot
4m turbidity taken = 7.25

RKT - overcast, slight breeze, calm

4m turbidity = 2.04

RCB - sunny, shorebreak. Murky water

RWA - shorebreak. Campers group 1/4 mile from sample site

TURBIDITY VERIFICATION & PROBE TEMPERATURES

	Blank (must be <0.10)	Low (+/- 0.18)	Med (+/- 1.80)	High (+/- 18)
Turbidity Standard	0.04	6.54	58.4	605
Field - Pre-sample	0.05	6.50	58.6	605
Lab - Post sample	0.08	6.59	58.9	604
Probes (+/- 0.2 °C)	Salinity	D.O.	pH	Notes
Verify Probe Temps	27.1	26.9	27.0	

CHAIN OF CUSTODY INFORMATION

	# of samples	Relinquished to	Contact
Nutrients	6	NMS	Liz Yannell

Signature (Team Lead):

Liz Yannell

Printed Name:

Liz Yannell

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

Last updated April 2023

Team	R2RS	Samplers (Last Name, 1st Initial)
Session	129	
Date	10/24/2023	

Erwin, J. Yannell, L.

Sample ID	Location Name	Sample taken?	Duplicate sample?	Time	Volume	Protocol Notes	Comments
Nutrients							
RNS231024-N-1	Napili Bay	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:40	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RPO231024-N-1	Pohaku	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:25	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RKS231024-N-1	Kaanapali Shores	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10:00	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RKT231024-N-1	Kahekili Beach Two	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10:35	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RCB231024-N-1	Canoe Beach	<input checked="" type="checkbox"/>	<input type="checkbox"/>	11:05	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RWA231024-N-1	Wahikuli	<input checked="" type="checkbox"/>	<input type="checkbox"/>	11:40	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	

		<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:
Liz Yannell	Liz Yannell

Hau O Kāne Ola - Sample Collection Datasheet

Team	Polanui	Samplers (Last Name, 1st Initial)	Gord, M; Gord, K; Brown, J; Sawa Beach, K Yanell, L; Keyhani, C						Meters and Probes ID				
Session	129		HQ2200: SM 3			2100Q: SM 5							
Date	10/25/2023		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 (mg/L) 5.2-7.0 normal	pH 8.8.3 normal	Turbidity (NTU)			People (within 100 ft)			
Camp Olowalu OCO231025	N	9:18	28.0	35.9	6.35	97.5	8.04	4.20	4.59	4.09	Ø	Ø	Ø
Mile Marker 14 OMM231025	N	9:38	27.9	35.8	5.89	90.7	7.98	3.98	3.85	4.45 ^{mg}	Ø	2	1
Ukumehame OUB231025	N	10:01	27.8	36.2	6.63	102.6	8.12	9.57	8.90 mg	9.12	2	10	Ø
Papalaua Pali OPP231025	N	10:23	28.1	36.1	6.69	103.9	8.13	3.00	3.07	3.27	6	2	Ø

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

OCO: calm, 1' waves, week of high surf
OMM: Kayak campers on beach, lots of beach trash
4th turbidity ~~4.03~~ 4.03 mg
OUB: full parking lot, surfers, big wave during water catch
4th turbidity 9.45
OPP: 3-5' waves, surfer came in during collection

TURBIDITY VERIFICATION & PROBE TEMPERATURES

	Blank (must be <0.10)	Low (+/- 0.18)	Med (+/- 1.80)	High (+/- 18)
Turbidity Standard	0.04	6.54	58.4	605
Field – Pre-Sample	0.08	6.51	58.4	605
Lab – Post Sample	0.08	6.54	58.7	605
Probes (+/- 0.2 °C)	Salinity	D.O.	pH	Notes
Verify Probe Temps	28.0	27.4	27.8	
CHAIN OF CUSTODY	# of Samples	Relinquish to	Contact	
Nutrients	4	NMS	Christiane	

Signature (Team Lead): Christiane K Print: Christiane K.

Turbidity
Blank consistently read high in post-sample verification.

Blank 1st read: 0.21 Blank 2nd read ck

Cleaned vial with silicone oil.

Blank 2nd read: 0.12

Replaced grocery store distilled water

Blank 3rd read: 0.08

Sites with potential for freshwater flow: Ukumehame

Hui O Ke Kai Ola - Sample Collection Datasheet

Team	Polanui	Samplers (Last Name, 1st Initial)	Gund, M; Gund, K; Brown, J; Sowa-Beach, K; Yanell, L; Keyhani, C			
Session	129					
Date	10/25/2023					

Sample ID	Location Name	Sample taken?	Duplicate sample?	Time	Volume	Protocol Notes	Comments
Nutrients							
OCO231025-N-1	Camp Olowalu	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:18 am	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
OMM231025-N-1	Mile Marker 14	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:38	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
oub231025-N-1	Ukumehame	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10:01	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
OPP231025-N-1	Papalaau Pali	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10:23	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	

Sediments							
		<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: Christiane Keyhani Print: Christiane Keyhani

Hui O Ke Kai - Sample Collection Datasheet

Team	R2RN	Samplers (Last Name, 1st Initial)	Berg, L Hutchings, L	Keyhani, C						Meters and Probes ID		
Session	129									HQ2200: SM 3	2100Q: SM 5	
Date	10/26/2023			pH: SM 5	DO: SM 3	Salinity: SM 7						

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 RHL231026	N	8:00A	25.0	31.7	6.98	94.7	8.12	10.6	10.8	10.6	0 0 0
Oneloa Bay RON231026	-	8:35	24.7	36.1	6.65	100.8	8.16	0.45 ^{up} 0.86	0.46	0.40	1 4 0
Kapalua Bay RFS231026	N	8:55	26.9	35.5	6.49	98.4	8.11	2.47	2.27 ^{up} 1.87 ^{up}	2.61	142 ⁷ 12 0
Ka'opala Bay RKO231026	N	9:25	26.6	35.0	6.44	96.8	8.08	13.2	14.0	14.5	0 2 0
Kahana Village RKV231026	Y	9:50	27.4	35.8	6.63	101.4	8.13	17.2	16.8	17.4	0 2 0
Kahana Construction Flow		10:15	26.8	10.52	4.31	57.0	8.88	544	573	556	0 0 0

NOTES AND COMMENTS (trends, equipment problems, errors, concerns).

Use the back of the form if needed.

RHL = light wind, calm conditions

RON - sunny, light wind, waves; 4th turbidity

RFS - sunny, light wind, shore break; 4th turbidity

RKO sunny, high tide, shore break - Strong
35ps of waves, usually + light brown waterRKV - Light brown water, small shore break,
water from construction being pumped
into ocean.- Sample taken of the water input
from construction

TURBIDITY VERIFICATION & PROBE TEMPERATURES

	Blank (must be <0.10)	Low (+/- 0.18)	Med (+/- 1.80)	High (+/- 18)
Turbidity Standard	0.040.06	6.54	58.4	605
Field - Pre-sample	0.07	6.54	58.9	604
Lab - Post sample	0.09	6.50	58.6	604
Probes (+/- 0.2 °C)	Salinity	D.O.	pH	Notes
Verify Probe Temps	25.0	25.0	25.0	

CHAIN OF CUSTODY INFORMATION

	# of samples	Relinquished to	Contact
Nutrients	5	NMS	Christiane

Signature (Team Lead):

Printed Name:

Christiane Keyhani Christiane Keyhani

Sites with potential for freshwater flow: Honolua, Kahana Village

* Lab note: Using spare bottle because original blank was reading high
 Sample @ ~~25.0~~ turbidity vial
 Post-tell: Cleaned turbidity vial with silicone oil. 2nd blank read = 0.08

Team	R2RN	Samplers (Last Name, 1st Initial)	Berg, L ; Hutchings, L ; Keyhani, C			
Session	129					
Date	10/26/2023					

Sample ID	Location Name	Sample taken?	Duplicate sample?	Time	Volume	Protocol Notes	Comments
Nutrients							
RHL231026-N-1	Honolua Bay	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:00 am	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RON231026-N-1	Oneloa Bay	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:35	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RFS231026-N-1	Kapalua Bay	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:55	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RKO231026-N-1	Ka`opala Bay	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:25	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RKV231026-N-1	Kahana Village	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:50	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	

Sediments							
		<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*

Hui O Kauai Ola - Sample Collection Dissolved

Team	Lahaina Town Fire Response	Samplers (Last Name, 1st Initial)	Koyhani, C. Yannell, L. Kimmel, J.	Meters and Probes ID				
Session	129			HQ2200: SM 3	2100Q: SM 5	pH: SM 5	DO: SM 3	Salinity: SM 7
Date	10/27/2023							

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 LMT231027	N	7:45	26.6 35.9	35.9	6.64	100.3	8.09	1.68 CK 2.40	1.97 3.31	Ø	Ø	Ø
Mala Ramp LMR231027	Y	8:10	26.8	35.8	6.34	96.4	8.10	5.61 4.21	5.61 5.24	5	Ø	Ø
Papalaau St LPS231027	N	8:28	26.5	35.8	6.65	100.6	8.08	3.17	2.99 2.87	Ø	Ø	Ø
Lahaina Harbor LLH231027	N	8:55	27.9	35.3	5.92	91.4	8.07	4.89 4.98	4.58 4.99	Ø	Ø	Ø
505 Front St PFF231027	N	9:27	27.6	35.9	6.56	101.7	8.13	4.98 4.00 CK	4.76 4.00	Ø	Ø	Ø
Lindsey Hale PLH231027	N	9:52	28.4	35.6	6.46	100.7	8.12	4.16 3.57	4.14 4.14	Ø	Ø	Ø
Lahaina Town PLT231027	N	10:15	29.0	35.3	6.25	98.6	8.10	6.23 6.27	5.98 5.98	Ø	Ø	Ø

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

Mala LMT: Turbidity 4th = 1.98, 5th = 1.68
 LMR: Mala Ramp open to boaters; trickle in
 LPS: not flowing all the way to ocean
 LPS: algae in sample; some swell out at
 the break; partly cloudy; low tide; oil slick
 PLT - Slick and ash visible in sample. Low tide.
 PFF - Low tide. Low swell. Light breeze.
 PLH - Low tide. Pretty clear water. Sediment layer
 under feet. than usual

TURBIDITY VERIFICATION & PROBE TEMPERATURES

	Blank (must be <0.10)	Low (+/- 0.18)	Med (+/- 1.80)	High (+/- 18)
Turbidity Standard	0.06	6.54	58.4	605
Field - Pre-Sample	0.08	6.62	58.8	605
Lab - Post Sample	spare = 0.09 Blank = 0.11	6.50	58.9	604
Probes (+/- 0.2 °C)	Salinity	D.O.	pH	Notes
Verify Probe Temps	26.6	26.3	26.5	
CHAIN OF CUSTODY	# of Samples	Relinquish to	Contact	
Nutrients	7	NMS	Liz	

Signature (Team Lead): *Liz Yannell* Print: Liz Yannell

Sites with potential for freshwater flow: Mala Tavern, Mala Ramp, Papalaau St., 505 Front St
 PLT - Low tide. Dark brown/black particles/debris in shoreline. More CK Brown water 3ft into shoreline, thus way more clear than usual at knee depth. Sediment under feet.

Team	Lahaina Town Fire Response	Samplers (Last Name, 1st Initial)
Session	129	
Date	10/27/2023	

Keyhani, C. Yannell, L.
Kimmel, J.

Sample ID	Location Name	Sample taken?	Duplicate sample?	Time	Volume	Protocol Notes	Comments
Nutrients							
LMT231027-N-1	Mala Tavern	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7:45	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	ENT sample collected for Blue Water Task Force "
LMR231027-N-1	Mala Ramp	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:10	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
LPS231027-N-1	Papalaua St.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:28	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	"
LLH231027-N-1	Lahaina Harbor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:55	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	"
PFF231027-N-1	505 Front St	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:27	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	"
PLH231027-N-1	Lindsey Hale	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:59	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	"
PLT231027-N-1	Lahaina Town	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10:15	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	"

Sediments					500 ml		
					500 ml		
					500 ml		

Signature: Liz Yannell Print: Liz Yannell