Hui O Ka Wai Ola

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

Session No:	Verifiers (pre-sampling):	Pre Date:	Pre Time:	Verifiers (post-sampling):	Post Date:	Post Time:
123 WM	L. Yannell, J. Erwin,	6/12/23	2:00PM	E. Johnson	6/15/23	11:00 AM WM
Lanai 1	E. Johnson	Lanai & back up equipment		L. Yannell	6/17/23	2:00 PM Lanai

QA/QC Check	Inst #	Probe #	Last Cal Date		PRE: Verification Value		POST: Verification Value		Acceptable Range	Comments/ Notes	QA?
Temperature	NIST	n/a	NIST Exp. Date	Std Val	NIST 32.4 °C	NIST 30.1 °C	NIST 28.7 °C	NIST 28.7 °C	± 0.6 °C of NIST	Compare to NIST Std value in tap water	
	4	5	8/17/23		32.4		28.7				
	4	6	8/17/23			29.9		28.6			
Salinity			3 months	Std Val	Tap water 0.11	Salin Std 5/22/23 late 33.4 ppt	Tap water	Salin Std 5/22/23 late 33.4 ppt	± 1 ppt	Tap water - compare pre & post values Salinity Std - compare to value on Salinity Std bottle	
	3	5	5/22/23		0.12	33.7	0.14	32.7			
	4	6	6/12/23		0.11	34.0	0.16	34.5			
Dissolved Oxygen			1 year	Std Val	100%		100%		± 5 %		
	3	1	2/16/23		99.3%		99.0 %				
	4	4	8/15/22		100.8 %		98.3 %				
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	9	6/12/23		7.00	10.01	7.03	10.02		New probe failed 1st calibration	
	4	8	6/12/23		7.00	10.01	7.02	9.92			
Turbidity			3 months	Std Val	BLANK <0.1	LOW 1-10 ____NTU	BLANK <0.1	LOW 1-10 ____NTU	± 0.18 NTU Low 1-10	Compare to Gel LOW 1-10 Std Calibration value	
	1	n/a	5/1/23		0.04	5.34	0.04	5.24		Low standard = 5.34	
	4	n/a	4/10/23		0.08	6.11	0.09	6.09		Low standard = 6.06	

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

OLP LAB

*verifying SM equipment to use as back up for WM #123

Hui O Ka Wai Ola

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

Session No:	Verifiers (pre-sampling):	Pre Date:	Pre Time:	Verifiers (post-sampling):	Post Date:	Post Time:
WM 123	L. Yannell	6/12/23				

QA/QC Check	Inst #	Probe #	Last Cal Date		PRE: Verification Value		POST: Verification Value		Acceptable Range	Comments/ Notes	QA?
Temperature	NIST	n/a	NIST Exp. Date	Std Val	NIST 30.0 °C	NIST °C	NIST °C	NIST °C	± 0.6 °C of NIST	Compare to NIST Std value in tap water	
	WM 4	4	8/17/23		31.2		—			temp out of range on 1st attempt NIST = 29.8 Probe = 32.0 2nd attempt: NIST = 30.0 Sal Probe = 31.2	
Salinity			3 months	Std Val	Tap water	Salin Std 6/12/23 date 34.0 ppt	Tap water	Salin Std ____date ____ppt	± 1 ppt	Tap water - compare pre & post values Salinity Std - compare to value on Salinity Std bottle	
	4	4	6/12/23		0.14	33.2	—	—		1st attempt: stabilization time exceeded. Recalibrated + problem repeated	
Dissolved Oxygen			1 year	Std Val	100%		100%		± 5 %		
	4	2	3/17/23		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	6/6/23		7.02	9.94	—	—			
Turbidity			3 months	Std Val	BLANK <0.1	LOW 1-10 6.93 NTU	BLANK <0.1	LOW 1-10 ____NTU	± 0.18 NTU Low 1-10	Compare to Gel LOW 1-10 Std Calibration value	
	2	n/a	5/09/23		0.06	6.94	—	—			
	n/a										

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

OLP

Team	R2RS
Session	123
Date	06/13/2023

Samplers (Last Name, 1st Initial): Floyd, M Bieser, S
Kranberg, J
Friberg, T

Meters and Probes ID

HQ2200: 3	2100Q: 1	
pH: 9	DO: 1	Salinity: 5

Location Name Sample ID	Freshwater Flowing (Y/N)	Time (of collection)	Temp (°C) variable	Salinity (ppt) 30-35 normal	Dissolved Oxygen (mg/L) 5.2-7.0 normal	Dissolved Oxygen (%) 85-105 normal	pH 8-8.3 normal	Turbidity (NTU)			People (within 100 ft) water	beach	camp
Napili Bay RNS230613	N	8:03	25.5	34.7	6.52	96.7	8.07	1.75 BB 2.72	1.65	2.00	2	7	0
Pohaku RPO230613	N	8:25	25.5	33.3	6.51	96.4	8.13	1.41	1.44	1.27	0	0	0
Kaanapali Shores RKS230613	N	8:45	25.4	35.3	6.65	98.3	8.08	1.09	1.23	1.24 ~~1.37~~ JK	11	6	0
Kahekili Beach Two RKT230613	N	9:10	25.7	35.4	6.51	96.7	8.11	3.10	2.60	2.86	0	5	0
Canoe Beach RCB230613	N	9:30	26.4	35.1	6.64	99.7	8.16	2.87	3.42 ~~3.57~~ yy	3.36	0	34	0
Wahikuli RWA230613	N	9:47	26.2	34.9	6.60	98.9	8.15	1.75	1.97	1.78	0	0	0

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

RNS: Flat surf. 2nd temp - 25.5. ph probe had 25.4 C.

RPO: small swells, incoming tide, light NE breeze overcast, DO(temp): 25.5°, ph(temp):

RKS: Calm, 15-20 kts wind, DO(temp): 25.4 ph(temp): 25.3 25.4

4th reading Turbidity 1.24

RKT: small swell, 10-15 kts trades. / DO Temp = 25.7C, ph probe ↳ 25.6C

RCB - Lite Chop Glass, small swell. Light breeze DO(26.4°)

Sites with potential for freshwater flow: Kaanapali Shores, Canoe Beach

RWA: small rolling waves. PH temp 26.2

ph!

4th Turbidity: 3.42

TURBIDITY VERIFICATION

	Blank (must be <0.10)	Low (+/- 0.18)	Med (+/- 1.80)	High (+/- 18)
Standard	0.04	5.34	57.1	636
Pre-sampling	0.04	5.27	55.9	633
Post-sampling	0.05	5.26	57.0	628

CHAIN OF CUSTODY INFORMATION

	# of samples	Relinquished to	Contact
Sediment	-	-	-
Nutrients	6	OLP	J. Erwin
Bacteria	-	-	-

Signature (Team Lead): Jessica Erwin **Printed Name:** Jessica Erwin

Team	R2RS
Session	123
Date	06/13/2023

Samplers (Last Name, 1st Initial): Floyd, M. Beser, S., Kranberg, J. B Grieberg, T.

Sample ID	Location Name	Sample taken?	Duplicate sample?	Time	Volume	Protocol Notes	Comments
Nutrients							
RNS230613-N-1	Napili Bay	☑	☐	8:03	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RPO230613-N-1	Pohaku	☑	☐	8:25	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RKS230613-N-1	Kaanapali Sh	☑	☐	8:45	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RKT230613-N-1	Kahekili Beach Two	☑	☐	9:10	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RCB230613-N-1	Canoe Beach	☑	☐	9:30	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RWA230613-N-1	Wahikuli	☑	☐	9:47	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
Sediments							
		☐	☐		500 ml		
		☐	☐		500 ml		
		☐	☐		500 ml		
		☐	☐		500 ml		

Signature (Team Lead): Jessica Erwin **Printed Name:** Jessica Erwin

Team	Polanui
Session	123
Date	06/14/2023

Samplers (Last Name, 1st Initial): GUND, K; HARRIS, K

Meters and Probes ID

HQ2200: 3	2100Q: 1	
pH: 9	DO: 1	Salinity: 5

Location Name Sample ID	Freshwater Flowing (Y/N)	Time (of collection)	Temp (°C) variable	Salinity (ppt) 30-35 normal	Dissolved Oxygen (mg/L) 5.2-7.0 normal	Dissolved Oxygen (%) 85-105 normal	pH 8-8.3 normal	Turbidity (NTU)			People (within 100 ft) water	People (within 100 ft) beach	People (within 100 ft) camp
505 Front St PFF230614	Y	8:09	25.8	35.2	5.86	87.0	8.01	0.80	0.68	0.92	0	1~~0~~	0
Lindsey Hale PLH230614	N	8:39	26.0	35.1	6.08	90.9	8.11	2.91 ~~2.09~~	2.67	2.63	0	3	0
Lahaina Town PLT230614	N	9:03	26.8	35.2	6.41	96.9	8.05	2.48	2.52	2.50	0	3	0
Camp Olowalu OCO230614	N	9:42	26.5	35.2	6.54	98.3	8.05	11.1 ~~12.5~~	10.8	10.4	0	0	0
Mile Marker 14 OMM230614	N	10:04	26.6	35.2	6.27	94.4	8.09	2.26	2.29	2.34 ~~2.04~~	0	0	0
Ukumehame OUB230614	N	10:22	26.5	35.7	6.75	101.6	8.26	10.7	9.95	10.3	0	2	0
Papalaua Pali OPP230614	N	10:43	26.1	35.6	6.76	101.2	8.19	4.92	4.98	4.74	0	6	0

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

PFF 25.7 mg/l 25.7 PH very calm water, low tide

PLT monk seal basking in the sun 20-30 ft from shore (called in)

Use the cones at OMM and a pick up ran over the cones *ALL SALINITY ABOVE NORMAL EA

OUB surf picking up

OPP big shore break *FORGOT TO INITIAL 4TH TURBIDITY READING EA

* no tape on KCL probe

Sites with potential for freshwater flow: 505 Front St., Ukumehame

Tons of surfer all along highway

TURBIDITY VERIFICATION

	Blank (must be <0.10)	Low (+/- 0.18)	Med (+/- 1.80)	High (+/- 18)
Standard	0.04	5.34	57.1	636
Pre-sampling	0.04	5.38	57.0	635
Post-sampling	0.06	5.26	56.5	630

CHAIN OF CUSTODY INFORMATION

	# of samples	Relinquished to	Contact
Nutrients	7	OLP	E. JOHNSON

Signature (Team Lead): Emily Johnson **Printed Name:** EMILY JOHNSON

Team	Polanui
Session	123
Date	06/14/2023

Samplers (Last Name, 1st Initial): GUND, K; HARRIS, K

Sample ID	Location Name	Sample taken?	Duplicate sample?	Time	Volume	Protocol Notes	Comments
Nutrients							
PFF230614-N-1	505 Front St	☑	☐	8:09	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
PLH230614-N-1	Lindsey Hale	☑	☐	8:39	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
PLT230614-N-1	Lahaina Town	☑	☐	9:03	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
OCO230614-N-1	Camp Olowalu	☑	☐	9:42	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
OMM230614-N-1	Mile Marker 14	☑	☐	10:04	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
OUB230614-N-1	Ukumehame	☑	☐	10:22	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
OPP230614-N-1	Papalaua Pali	☑	☐	10:43	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
Sediments							
		☐	☐		500 ml		
		☐	☐		500 ml		
		☐	☐		500 ml		
		☐	☐		500 ml		

Signature (Team Lead): Emily Johnson **Printed Name:** EMILY JOHNSON

Team	R2RN
Session	123
Date	06/15/23

Samplers (Last Name, 1st Initial): CiCi Hehemaav, Lyn Hutchings, Christoffe Hurley

Meters and Probes ID		
HQ2200: 3	2100Q: 1	
pH: 9	DO: 1	Salinity: 5

Location Name Sample ID	Freshwater Flowing (Y/N)	Time (of collection)	Temp (°C) variable	Salinity (ppt) 30-35 normal	Dissolved Oxygen (mg/L) 5.2-7.0 normal	Dissolved Oxygen (%) 85-105 normal	pH 8-8.3 normal	Turbidity (NTU)			People (within 100 ft) water	people beach	people camp
Honolua Bay RHL230615	N	8:00 AM	25.0	34.1	5.88	~~34.1~~ 86.5	8.08	1.28	1.39	1.39	3	5	0
Oneloa Bay RON230615	N	9:45	26.0	35.5	6.87	102.8	8.18	0.58	0.52	0.60	3	1	0
Kapalua Bay RFS230615	N	9:10	26.1	33.4	6.52	97.6	8.11	1.08	1.25	1.32	27	20	0
Ka'opala Bay RKO230615	N	9:45	26.4	34.4	6.37	95.8	8.10	8.57	9.32	8.21	0	0	0
Kahana Village RKV230615	N	10:07	27.2	35.3	7.19 / ~~7.16~~ CH	~~109.3~~ 109.1 CH	8.18	15.4	15.6	16.7	1	~~0~~ 1 EJ	0

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

RHL: Calm conditions, flat ocean
Both temperature readings 25.0

RKN: Sunny, breezy, waves (3ft faces)

RFS: Calm, Clear, plenty of people in water
Filter Syringe very difficult, lower tide

RKO: Calm - murky water *MAYBE SHOULD HAVE DONE 4TH TURBIDITY READING EJ

RKV: Calm + murky, breeze / sandy in water EJ
2nd reading Diss / 3rd Reading Still out of range → still ✓lower tide

Sites with potential for freshwater flow: Honolua Bay, Kahana Village

*DO HIGH AGAIN FOR RKV
~~*PH HIGH ALL SITES~~ EJ EJ (7.2Y * PRE-SAMPLE MED TURBIDITY VER IS LOW EJ

TURBIDITY VERIFICATION

	Blank (must be <0.10)	Low (+/- 0.18)	Med (+/- 1.80)	High (+/- 18)
Standard	0.04	5.34	57.1	636
Pre-sampling	0.05	5.39	55.8	636
Post-sampling	0.04	5.24	57.4	637

CHAIN OF CUSTODY INFORMATION

	# of samples	Relinquished to	Contact
Sediment	-	-	-
Nutrients	5	OLP	E.JOHNSON
Bacteria	-	-	-

Signature (Team Lead): Emily Johnson **Printed Name:** EMILY JOHNSON

Team	R2RN
Session	123
Date	06/15/23

Samplers (Last Name, 1st Initial): HUTCHINGS, L; HEHEMANN, C; HURLEY, C

Sample ID	Location Name	Sample taken?	Duplicate sample?	Time	Volume	Protocol Notes	Comments
Nutrients							
RHL230615-N-1	Honolua Bay	☑	☐	8:00	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RON230615-N-1	Oneloa Bay	☑	☐	8:45	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RFS230615-N-1	Kapalua Bay	☑	☐	9:10	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RKO230615-N-1	Ka'opala Bay	☑	☐	9:45	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
RKV230615-N-1	Kahana Village	☑	☐	10:07	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
Sediments							
		☐	☐		500 ml		
		☐	☐		500 ml		
		☐	☐		500 ml		
		☐	☐		500 ml		

Signature (Team Lead): Emily Johnson **Printed Name:** EMILY JOHNSON