

Hui O Ka Wai Ola

FIELD EQUIPMENT VERIFICATION      PRE and POST at Weekly Sampling

Session No:	Verifiers (pre-sampling):			Pre Date:	Pre Time:	Verifiers (post-sampling):		Post Date:	Post Time:	
106 South Maui	Y.St-Louis, C.Keyhani			11/27/2023	0900	E.JOHNSON, C.KEYHANI		11/30/2023	10:30 am	
QA	Inst #	Probe #	Last Cal Date		PRE: Verification Value	POST: Verification Value	Acceptable Range	Comments/ Notes	QA	
Temperature	NIST 2		NIST Exp. Date	Std Val	NIST 25.8 °C	NIST 25.7°C	<del>25.8</del> °C	29.2°C	± 0.6 °C of NIST	Compare to NIST Std value in tap water
	4	27	6/28/24		25.6					
	4	8	6/28/24		25.4			29.3		
Salinity	Meter #	Probe #	3 months	Std Val	Tap water 0.13	Saline Std 116123 date 33.5 ppt	Tap water	Saline Std 116123 date 33.5 ppt	± 1 ppt	Tap water – compare pre & post Values Salinity Std – compare to value on Salinity Std bottle
	4	7	11/6/23		0.18	33.6				
	4	8	11/6/23		0.18	33.7	0.18	33.5		
Dissolved Oxygen	Meter #	Probe #	1 year	Std Val	100%		100%		± 5 %	
	4	4	7/202		101.9		102.4			
	4	3	7/2023		100.99.9		<del>100.99.9</del>			verified wrong probe.
pH	Meter #	Probe #	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	11/27/23		7.00	10.01	6.99	9.99		Low values read in field 11/29/23 verification: 6.97; 9.99
	4	5	11/27/23		7.00	10.01	<del>7.00</del>	<del>10.01</del>		
Turbidity	Meter #		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
	2	—	11/6/23		0.08	6.63	0.04	6.64	6.63 CK	Low 6.60
	5	—	11/6/23		0.08	6.83	<del>0.08</del>	<del>6.83</del>		Low 6.82

QA:

\* Are pre & and post within one week?  Delay times ok? \_\_\_\_\_ Any Equipment issues? \_\_\_\_\_

NMS

Hui O Kauai Ola - Sample Collection Datasheet

Team	Kamaole	Samplers (Last Name, 1st Initial)	CK Christiane, Harry Hecht, Scott Graves C. Keyhani, K. McHugh				Meters and Probes ID		
Session	106						HQ2200: 4		2100Q: 2
Date	11/28/2023		pH: 6	DO: 4	Salinity: 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
Kalepolepo North NKN20231128 CK	N	7:55	25.3	35.4	6.43	94.9	8.08	6.93	6.90	7.19	1
Waipuilani Park KWP20231128 CK	N	8:17	24.5	34.5	6.59	95.8	8.01	20.50	19.10	17.8	2
Kihei South KKS20231128 CK	N	8:35	25.3	35.0	5.97	89.3	8.00	8.01	8.94	8.08	7.97
Kalama Park KKP20231128 CK	N	8:54	25.4	35.3	6.67	98.9	9.05	8.86	8.53	8.17	1
								7.72			0

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

NKN - Canoe ~ small shore break - No wind - sunny  
 KWP - small surf - sunny - plant debris at sample site and in turbidity vial. Brown water.  
 KKS - sunny - small surf - brown water - Net fishing along beach  
 KKP - small surf, sunny - light breeze - Yellow-brown water. 4th turbidity: 8.17  
 4th turbidity: 19.10  
 4th turbidity: 8.01

TURBIDITY VERIFICATION & PROBE TEMPERATURES

	Blank (must be <0.10)	Low (+/- 0.18)	Med (+/- 1.80)	High (+/- 18)
Turbidity Standard	0.08	6.60	58.3	592
Field - Pre-sample	0.09	6.59	58.0	59.3
Lab - Post sample	0.05	6.63	58.3	59.3
Probes (+/- 0.2 °C)	Salinity CK	D.O. CK	pH	Notes
Verify Probe Temps	26.3	25.0	25.2	

CHAIN OF CUSTODY INFORMATION

	# of samples	Relinquished to	Contact
Nutrients	4	NMS	Christiane

Signature (Team Lead):

Christiane Keyhani Christiane Keyhani

Team	Kamaole	Samplers (Last Name, 1st Initial)					
Session	106						
Date	11/28/2023		<i>H. Hecht, S. Graves, K. McHugh, C. Keyhani</i>				

Sample ID	Location Name	Sample taken?	Duplicate sample?	Time	Volume	Protocol Notes	Comments
<b>Nutrients</b>							
NKN20231128-N-1 <i>CK</i>	Kalepolepo North	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7:55	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
KWP20231128-N-1 <i>CK</i>	Waipuilani Park	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:17	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
KKS20231128-N-1 <i>CK</i>	Kihei South	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:35	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
KKP20231128-N-1 <i>CK</i>	Kalama Park	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:54	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): *Christiane Keyhani* Printed Name: *Christiane Keyhani*

Hui Ola - Sample Collection Data Sheet

Team	Wailea-Makena	Samplers (Last Name, 1st Initial)	J. Dunning, B. Sousa, D. Bentley C. Keyhani				Meters and Probes ID		
Session	106						HQ2200: 4		2100Q: 2
Date	11/29/2023		pH: 6	DO: 4	Salinity: 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
Cove Park KCP20231129 <del>CK</del>	Y	8:00	25.9	35.5	6.37	95.2	8.01	2.02 2.08 1.89	∅	∅	2
S Maluaka Beach MMB20231129 <del>CK</del>	N	8:40	25.5	35.9	6.57	98.1	8.09	0.59 0.63 0.63	∅	∅	∅
Ahihi Kinau North MAN20231129 <del>CK</del>	N	8:58	25.7	35.7	5.86	87.3	7.95	1.31 1.18 1.26	3 X 90 1	∅	∅
Ahihi Kinau South MAS20231129 <del>CK</del>	N	9:20	25.6	35.9	6.00	89.6	8.04	0.52 0.43 0.47	∅	2	∅

NOTES AND COMMENTS (trends, equipment problems, errors, concerns).  
Use the back of the form if needed. All sites: Rained this morning/ last night.

~~cloudy~~, cloudy.

Cove Park - ~~4th reading~~ 2.02 ; stream flowing  
no swell, no wind, 4th turbidity reading 2.02

Malauaka - calm ocean, high tide, low breeze  
100% cloud cover, ~~no rain today~~ but recent  
rain evident, drizzling with

Ahihi N 100% cloud cover, high tide, recent  
rain evident, not raining currently.

Ahihi S - 100% cloud cover, high tide, recent  
rain evident, not raining currently, drizzling.

→ Ahihi N - 2nd bucket sample

9:40am, 25.6°C, 35.7 ppt, 6.11 mg/L, 90.3%, 7.96  
ppt

TURBIDITY VERIFICATION & PROBE TEMPERATURES

	Blank (must be <0.10)	Low (+/- 0.18)	Med (+/- 1.80)	High (+/- 18)
Turbidity Standard	0.08	6.60	58.3	592
Field - Pre-sample	0.05	6.58	58.4	598
Lab - Post sample	0.06	6.63	58.3	593
Probes (+/- 0.2°C)	Salinity <del>D.O.</del>	D.O. <del>Salinity</del>	pH	Notes
Verify Probe Temps	25.9	25.6	25.7	

CHAIN OF CUSTODY INFORMATION

	# of samples	Relinquished to	Contact
Nutrients	4	NMS	Christiane

Signature (Team Lead):

Christiane Keyhani

Printed Name:

Christiane Keyhani

in lab, verified the pH probe. pH 10.00 std: 9.99 pH . pH 7.00 std: 6.97

Sites with potential for freshwater flow: Cove Park

Team	Wailea-Makena	Samplers (Last Name, 1st Initial)				
Session	106					
Date	11/29/2023		<i>J. Dunning, B. Sousa, D. Bentley, C. Keyhani</i>			

Sample ID	Location Name	Sample taken?	Duplicate sample?	Time	Volume	Protocol Notes	Comments
<b>Nutrients</b>							
KCP20231129-N-1 <i>CK</i>	Cove Park	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:00	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
MMB20231129-N-1 <i>CK</i>	S Maluaka Beach	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:40	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
MAN20231129-N-1 <i>CK</i>	Ahihi Kinau North	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:58	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
MAS20231129-N-1 <i>CK</i>	Ahihi Kinau South	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:20	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):

Printed Name:

*Christiane Keyhani    Christiane Keyhani*

Hilo O Keiki 2023 - Sample Collection Data-sheet

Team	North Kihei	Samplers (Last Name, 1st Initial)	E. JOHNSON	A. HELGELAND	Meters and Probes ID		
Session	106		C. KEYHANI	K. GAVACHAN	HQ2200: 4		
Date	11/30/2023				pH: 6	DO: 4	Salinity: 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
Maalaea Harbor NMH20231130 CK	N	8:10	25.6	35.3	6.16	91.3	8.06	0.65 2.53	0.79	0.70	0 0 0
Maalaea Condos NMC20231130 CK	N	8:35	25.8	35.6	6.02	89.6	7.98	4.48 5.59	4.28	4.36	0 0 0
Haycraft Park NHP20231130 CK	N	9:02	25.7	35.7	6.64	98.7	8.07	4.79 5.79	5.79	5.50 4.46	0 0 0
Kealia Pond NKP20231130 CK	N	9:27	25.1	35.9	6.91	101.6	8.11	0.94 1.02	1.84	0.93	0 2 0
Kihei Canoe Club NKC20231130 CK	N	9:51	25.5	35.6	6.67	98.7	8.09	9.41 6.73	10.9 7.78	10.8	0 1 0

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

+ ALL DAY NOTE - HEAVY RAINS + FLASH FLOOD last night + ADVISORY FOR MAUI COUNTY + currently CLOUD COVER  
- NMH - LIGHT SPRINKLE OF RAIN; 4TH TURBIDITY HIGH TIDE READING 0.65 NTU  
- NMC - RAINING; WATER COLLECTED IN CULVERT BUT NOT FLOWING; LOW pH; PARTICULATES IN TURBIDITY SAMPLE  
- NHP - RAINING; PARKING LOT CONSTRUCTION FINISHED; 4TH TURBIDITY READING 5.59 NTU 5TH TURBIDITY READING 5.50 NTU  
- NKP - LIGHT WIND; RAIN STOPPED; SMALL 4TH TURBIDITY READING 0.80 NTU SHOREBREAK; 5TH TURBIDITY READING 1.00 NTU

Sites with potential for freshwater flow: Maalaea Harbor, Maalaea Condos,

Kealia Pond, Canoe Club 6TH TURBIDITY - 9.41 READING

TURBIDITY VERIFICATION & PROBE TEMPERATURES

	Blank (must be <0.10)	Low (+/- 0.18)	Med (+/- 1.80)	High (+/- 18)
Turbidity Standard	0.08	6.60	58.3	592
Field - Pre-sample	0.06	6.63	58.3	593
Lab - Post sample	0.04	6.64	58.3	592
Probes (+/- 0.2°C)	Salinity CK	D.O. CK	pH	Notes
Verify Probe Temps	25.6	25.3	25.4	

CHAIN OF CUSTODY INFORMATION

	# of samples	Relinquished to	Contact
Nutrients	5	NMS	EMILY JOHNSON

Signature Team Lead:

Emily Johnson

Printed Name:

EMILY JOHNSON

- NKC - LIGHT WIND; SPRINKLING RAIN; LOTS OF PARTICULATE MATTER IN TURBIDITY READING - 8.62 NTU IN TURBIDITY READING - 10.9 NTU SAMPLE

1st Additional April 2023

Team	North Kihei	Samplers (Last Name, 1st Initial)				
Session	*** 106					
Date	**/**/**** 11/30/2023		<i>E. Johnson, A. Helgeland, C. Keyhani, K. Gavagan</i>			

Sample ID	Location Name	Sample taken?	Duplicate sample?	Time	Volume	Protocol Notes	Comments
<b>Nutrients</b>							
NMH20231130-N-1 <i>ck</i>	Maalaea Harbor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:10	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
NMC20231130-N-1 <i>ck</i>	Maalaea Condos	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8:35	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
NHP20231130-N-1 <i>ck</i>	Haycraft Park	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:02	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
NKP20231130-N-1 <i>ck</i>	Kealia Pond	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:27	125 ml	Washed, rinsed syringes; acid washed bottles; 0.2 um disposable filters	
NKC20231130-N-1 <i>ck</i>	Kihei Canoe Club	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9:51	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:

*Christian Keyhani Christiane Keyhani*