



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
Stream Protection and Management Branch

FIELD INVESTIGATION REPORT

FI2008102302 (East Maui, Honopou IIFS Site B)

Date of Field Investigation:	October 23, 2008	Time (24-hour):	0930 - 1230
CWRM Staff:	Dean Uyeno, Ken Kawahara, Chui Ling Cheng		
Individuals Present:	Agency staff - Matt Wong (USGS-Maui field technician), Skippy Hau (DAR staff); Honopou community - Lynn Scott, Beatrice Kekahuna, Sanford Kekahuna, Boni Kekahuna, and Wanda Vierra		
Hydrologic Unit:	Honopou (6034)		
Stream Name:	Honopou Stream		

Findings:

At 0930 hours, the staff crew (CWRM staff, Skippy Hau and Matt Wong) and members from the Honopou community drove to Beatrice Kekahuna's property. Starting from the Kekahuna's loi, everyone hiked along Honopou Stream to where it meets with tributary Puniawa Stream. Matt evaluated that length of the stream and recommended two locations: 1) one for flow measurement; and 2) another with a gage pool to record gage height as well as for the possible installation of a staff gage. Together, these represent interim instream flow standard (IIFS) Site B as indicated in the staff submittal. The flow measurement location is approximately 15 feet downstream of the gage pool. The gage pool is bounded by a concrete-reinforced masonry (CRM) wall. Matt inspected the CRM wall and found a 6.5 inch (O.D.) PVC pipe that extended from the pool to the other side of the concrete wall. When Matt removed some of the sediment that was blocking the upstream end of the pipe, water began flowing through the pipe. In order to stabilize the gage pool for more accurate gage height reading, staff crew plugged the pipe with rocks and sediment. CWRM staff planned to cap the pipe to permanently block water flow through the pipe.

Under Matt Wong's supervision, the staff crew prepared the site for flow measurement. The site was flagged with yellow tape, labeled with the stream name, IIFS site, and the date. While CWRM staff and Skippy Hau were taking the flow measurement, Matt Wong set up a reference point at the gage pool upstream to record changes in gage height (if any) during the flow measurement. Matt used a hammer drill to install an anchor bolt to a rock on the stream bank, then used red spray paint to mark the site. Staff crew completed the entire flow measurement in 20 minutes. Gage height readings were taken at the start and finish of flow measurement. In addition to flow measurement, staff crew also recorded wind velocity, air temperature, water temperature and weather conditions. As computed back in the Honolulu Office, the flow at IIFS Site B was 0.189 cubic feet per second (0.122 million gallons per day), with no change in gage height.

During the flow measurement, Ken Kawahara noticed a property near the IIFS Site. He asked Lynn Scott if it was possible to meet the owner of the property. Ken and Lynn met with the owner, Melissa Souza, and asked if Ken could park the vehicle at her place. He also asked Ms. Souza if CWRM staff could access IIFS Site B through her property in the future. Ms. Souza agreed. After the flow measurement, the rest of the staff crew met with Ms. Souza and her husband Barron Souza.

Staff crew left the Honopou area at approximately 1230 hours, and visited Puolua (Huelo) Stream in the hydrologic unit of Hanehoi. Refer to Field Investigation Report FI2008102303 (East Maui, Huelo IIFS Site A) for more information.

Image Listing: (Attach PDF of image contact sheet)

File Name:	Brief Description:
20081023040	Confluence of Honopou Stream and tributary Puniawa Stream, facing makai.
20081023041	Above the confluence of Honopou Stream and tributary Puniawa Stream, facing mauka.
20081023045	PVC pipe on the gage pool side of Honopou stream.
20081023047	PVC pipe on the gage pool side of Honopou stream.
20081023048	Staff crew setting up the site for flow measurement on Honopou Stream.
20081023050	CWRM staff conducting flow measurement on Honopou Stream.
20081023051	CWRM staff, Dean Uyeno and Chui Ling Cheng, conducting flow measurement on Honopou Stream.
20081023053	Flow measurement site on Honopou Stream.
20081023054	Gage pool and concrete wall on Honopou Stream.
20081023055	Flow measurement site on Honopou Stream.
20081023056	Honopou Stream downstream from the gage pool.

20081023057	Gage pool and concrete wall on Honopou Stream.
20081023059	Gage pool on Honopou Stream.
20081023060	Reference point at the gage pool on Honopou Stream.
20081023063	PVC pipe extending from the gage pool to the other side of the concrete wall on Honopou Stream.

GPS Listing:

Shapefiles: (List file names of all shapefiles created and a brief description of each)

File Name:	Brief Description:
East_Maui_POI.shp	Points of interest (POI) recorded with the GPS unit during the field visit. The file includes POI recorded from all the East Maui field investigations.

Waypoints: (List all waypoints in decimal degrees and provide a brief description of each)

WP No.	Latitude	Longitude	Brief Description:
12	20.931867	-156.244694	IIFS Site B Flow Measurement on Honopou Stream
11	20.931827	-156.244678	IIFS Site B Reference Point on Honopou Stream

Attachments:**Brief Description:**

1. Image Contact Sheet
2. Discharge Measurement and Gage Inspection Notes

Recommendations:

IMAGE CONTACT SHEET



20081023040.JPG



20081023041.JPG



20081023045.JPG



20081023047.JPG



20081023048.JPG



20081023050.JPG



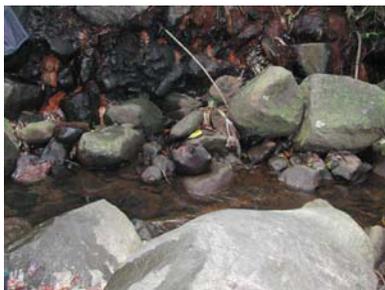
20081023051.JPG



20081023053.JPG



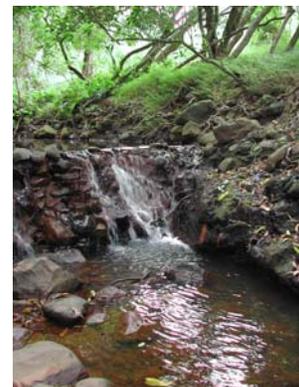
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20081023055.JPG



20081023056.JPG



20081023057.JPG

IMAGE CONTACT SHEET



20081023059.JPG



20081023060.JPG



20081023063.JPG

U.S. DEPARTMENT OF THE INTERIOR
U.S. Geological Survey
WATER RESOURCES DIVISION
DISCHARGE MEASUREMENT AND
GAGE INSPECTION NOTES

Meas. No. _____

Comp. by Chui

Checked by DDU

Sta. No. HONOPOU NFS SITE B

Sta. Name _____

Date 10/23, 2008 Party Dean, Chui, Ken, Matt, Skippy

Width 1.3 Area 0.466 Vel. 0.41 G.H. 0.84 Disch. 0.189 CFS

Method wading No. secs. 40 G.H. change ± 0 in 0.5 hrs.

Method coef. _____ Horiz. angle coef. _____ Susp. _____ Tags checked _____

Meter Type _____ Meter No. _____ Meter _____ ft. above bottom of wt.

Rating used _____ Spin test before meas. _____ ; after _____

Meas. plots _____ % diff. from rating no. _____ Indicated shift _____

GAGE READINGS					
Time				Inside	Outside
	<u>11:09</u>	<u>@ LEW</u>			
Start	<u>11:09</u>	<u>LEW = 5.9</u>			
		<u>GHT = 1.00 - 0.16 = 0.84</u>			
Finish	<u>11:25</u>	<u>@ REW @ 11:25</u>			
		<u>GHT = 1.00 - 0.16 = 0.84</u>			
Weighted MGH					
GH correction					
Correct MGH					

Samples collected: water quality, sediment, biological, other _____

Measurements documented on separate sheets: water quality, aux./base gage, other _____

Rain gage serviced/calibrated _____

Weather: SUNNY, COOL

Air Temp. 20 °C at 11:27

Water Temp. 23 °C at 11:28

Check bar/chain found _____

Changed to _____ at _____

Correct _____

Wading, cable, ice, boat, upstr., downstr., side bridge 15 (ft) mi. upstr., downstr. of gage.
Measurement rated excellent (2%), good (5%), fair (8%), poor (> 8%); based on following control
conditions: Flow: uniform, steady, laminar
Cross section: cobble, fairly flat, uniform

Gage operating: _____ Record Removed _____

Battery voltage: _____ Intake/Orifice cleaned/purged: _____

Bubble-gage pressure, psi: Tank _____, Line _____; Bubble-rate _____ /min.

Extreme-GH indicators: max _____, min _____

CSG checked: _____ HWM height on stick _____ Ref. elev. _____ HWM elev. _____

HWM inside/outside: _____

Control: concrete, clear

Remarks: _____

GH of zero flow = GH _____ - depth at control _____ = _____ ft., rated _____

upstream
concrete

downstr

