



## HAWAII

### 4th in Beachwater Quality

3% of samples exceeded national standards in 2010

Polluted urban and suburban runoff is a major threat to water quality at the nation's coastal beaches. Runoff from storms and irrigation carries pollution from parking lots, yards, and streets directly to waterways. In some parts of the country, stormwater routinely causes overflows from sewage systems. Innovative solutions known as green infrastructure enable communities to naturally absorb or use runoff before it causes problems. The U.S. Environmental Protection Agency is modernizing its national rules for sources of runoff pollution and should develop strong, green infrastructure-based requirements.

Hawaii has more than 400 public beaches stretching along nearly 300 miles of Pacific Ocean coastline. Its beachwater monitoring program is administered by the Clean Water Branch of the Hawaii Department of Health (DOH).

Hawaii funded a project that concluded in 2010 in which wastewater plumes off the island of Maui were identified. These wastewater plumes result from municipal wastewater that is being injected into wells.<sup>1</sup> This year, DOH is working with the Kauai chapter of the Surfrider Foundation to investigate the presence of wastewater constituents in the waters of Nawiliwili Bay. In addition to identifying the species responsible for fecal indicator bacteria found in bay waters, sampling will be conducted for two human pharmaceuticals, carbamazepine (an anticonvulsant) and sulfamethoxazole (an antibiotic).<sup>2</sup> These pharmaceuticals are present in wastewater and are not destroyed during wastewater treatment, which makes them useful indicators for the presence of wastewater effluent.<sup>1</sup>

In response to a tsunami warning in late February 2010, the County of Maui shut down power to all low-lying coastal wastewater pumps. If power were not shut down and a tsunami had hit, there would have been extensive damage to pumps, and sewage would have flowed to the ocean. As soon as the all-clear was given, pumps were turned on, but not before four pump stations experienced minor overflows. A 7-day sewage warning was issued for more than 16 miles of beach.<sup>3</sup>

Mokaaea Island was under warning nearly every day in 2010. This island is located in Ke'ehi Lagoon, where several homes were directly discharging sewage into the ocean.<sup>3</sup> All of the homes that are currently occupied now have a dry compost system, and beachwater sampling around the island will verify whether these systems are working properly.<sup>2</sup> Hawaii does not list the beach on this island as a BEACH Act beach because of accessibility constraints.

#### KEY FINDINGS IN HAWAII

##### Beachwater Contamination

(% of samples exceeding state standards in 2010)

- Lumaha'i Beach (29%) in Kauai County
- Kalihiwai Bay (27%) in Kauai County
- Waimea Recreation Pier State Park (24%) in Kauai County

##### Reported Sources of Beachwater Contamination

Statewide (number of closing/advisory days)

- 4,032 (96%) stormwater runoff
- 179 (4%) other unspecified sources

### Monitoring Results

In 2010, Hawaii reported 463 coastal beaches, 43 (9%) of which were monitored more than once a week, 13 (3%) once a week, 90 (19%) every other week, 18 (4%) once a month, 4 (<1%) less than once a month; 288 (62%) were not monitored and 7 (2%) had no data for monitoring frequency. For this section of the report, NRDC looked at the percent of monitoring samples that exceeded the state's daily maximum bacterial standards (all reported samples were used to calculate the 2010 percent exceedance rates, including duplicate samples and samples taken outside the official beach season, if any). In 2010, 3% of all reported beach monitoring samples exceeded the state's daily maximum bacterial standards. The beaches with the highest percent exceedance rates in 2010 were Lumaha'i Beach (29%), Kalihiwai Bay (27%), Waimea Rec. Pier St. Pk. (24%), Hanalei Beach Co. Park (15%), and Kekaha Beach Co. Pk. (12%), all in Kauai County. Kauai County had the highest exceedance rate (8%) in 2010 followed by Maui (2%), the Hawaii (2%), and Honolulu (1%) counties.

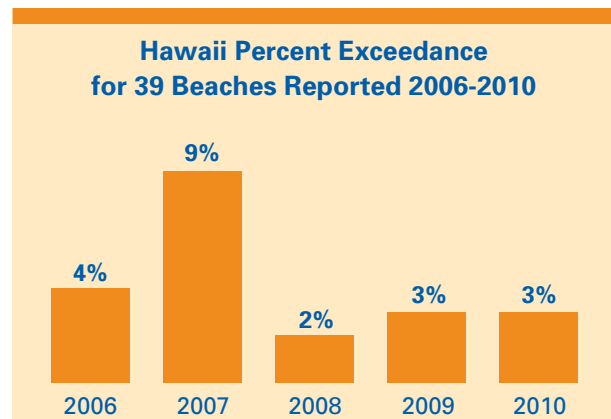
**Sampling Practices:** The monitoring season in this tropical state is year-round.

Sampling practices, locations, standards, and notification protocols and practices are uniform throughout the state. Samples are taken 1 foot below the surface in water that is knee to waist deep. Hawaii's beach monitoring program prioritizes sampling efforts based on the risk of illness to swimmers and the frequency of use. Tier 1 beaches are Hawaii's important and threatened beaches and (except for Oahu) were monitored three times a week in 2010. Tier 2 beaches are moderate-use beaches and were sampled once or twice a week for 6 months at a time. If a Tier 2 beach shows periodic elevated counts for no obvious reason, it is sampled once or twice a week for another 6 months or is elevated to Tier 1 status. If a beach does not have a high likelihood of contamination and has consistently low fecal indicator counts, then it is assigned Tier 3 status and is sampled at least once every six months. Circumstances such as inaccessibility, sampler illness or vacation, or lab closure may prevent these frequencies from being maintained. For instance, because of reductions in budget and manpower, the beaches on Oahu were not sampled at these frequencies in 2010. Instead, Oahu's Tier 1 beaches were sampled at least once a week, and Tier 2 and 3 beaches were unmonitored.<sup>3</sup>

If a warning is issued, daily monitoring is performed until bacteria levels no longer exceed action levels, and the beach is reopened.<sup>2</sup> States that monitor more frequently after an exceedance is found will tend to have higher percent exceedance rates and lower total warning/advisory days than they would if their sampling frequency did not increase after an exceedance was found.

### Warnings and Advisories

Total closing/advisory days for 1,028 events lasting six consecutive weeks or less increased 79% to 4,215 days in 2010 from 2,352 days in 2009. For prior years, there were 2,766 days in 2008, 4,134 days in 2007, 6,507 days in 2006, and 2,228 days in 2005. In addition, there was one permanent event (362 days) and no extended events in 2010. Extended events are those in effect more than six weeks but not more than 13 consecutive weeks; permanent events are in effect for more than 13 consecutive weeks. Essentially all (96%) of the advisories in 2010 were preemptive due to rain (what Hawaii calls "brown water advisories"). To calculate the number of advisory days, NRDC applied the duration of each rain advisory. Hawaii and the EPA did not report these advisories by beach, but rather by island or area. NRDC applied the duration of each rain advisory to each beach in the designated area.<sup>2</sup> Four percent (179) of closing/advisory days in 2010 were preemptive (i.e. without waiting for monitoring results) due to known sewage spills/leaks and <1% (4) were preemptive due to other reasons.



**Standards and Procedures:** Hawaii's Department of Health does not have the authority to close beaches; instead, it posts warnings and issues advisories. In 2009 Hawaii began using a single-sample maximum standard of 104 cfu/100ml (for beaches that are not sampled at least five times a month) and a geometric mean standard of 35 cfu/100ml (for beaches that are sampled at least five times a month).<sup>2</sup> Hawaii also uses quantitative information about the presence of *Clostridium perfringens* (a tracer for human sewage) when making beach warning decisions.<sup>2</sup>

At beaches that are monitored at least five times a month, a warning is posted when the enterococcus geometric mean is exceeded and the *Clostridium perfringens* count exceeds its level of action.<sup>2</sup> When these standards are exceeded, the rule is absolute: There are no overriding factors that can be taken into account before an advisory is issued. For beaches that are monitored less frequently than five times a month, a beach is resampled before posting a warning based on the single-sample maximum standard, unless the cause of the exceedance was noted by the sampler.<sup>2</sup>

Preemptive rainfall advisories are issued when a flood warning from the National Weather Service indicates that there will be a discharge of a significant quantity of turbid stormwater into coastal areas. When a storm event does not generate a flood warning but creates turbid waters with debris and possibly dead animals in near-shore waters, a preemptive rainfall advisory may be issued. These preemptive rainfall advisories, called brown water advisories, can be issued statewide, island-wide, or for specific areas of one island. If a sewage spill is suspected or if there are indications of human fecal contamination, the beach is posted immediately and a sample is taken.<sup>2</sup>

<b>Hawaii 2010 Monitoring Results and Closing or Advisory Days</b>					
<b>Beach</b>	<b>Tier</b>	<b>Assigned Monitoring Frequency</b>	<b>Total Samples</b>	<b>% of Samples Exceeding State Standards</b>	<b>Closing or Advisory Days</b>
<b>Hawaii County</b>					
2nd Beach (Next to Mahaiula)	2	2/mo	16	0%	0
Anaeho'omalua Bay	1	3/wk	78	1%	0
Analani Pond (Puala'a)	1	3/wk	84	2%	0
Banyan's Surfing Area	3	2/wk	9	11%	0
Coconut Island Park	2	2/mo	39	0%	0
Hakalau Co. Pk.	2	2/mo	8	13%	0
Hapuna Beach St. Rec. Area	2	2/mo	19	0%	0
Hilo Bay (Boat Landing)	no data	no data	0	NA	3
Hilo Bayfront	1	3/wk	103	1%	3
Holoholokai Beach	2	2/mo	15	0%	0
Honaunau Bay	2	2/mo	9	0%	0
Honoli'i Beach Co. Park	1	3/wk	84	4%	0
Ho'okena	2	2/mo	9	0%	0
Ice Pond (single point)	2	2/mo	43	5%	0
James Kealoha Park	1	3/wk	84	1%	0
Ka Lae (South Point)	2	2/mo	1	0%	0
Kahalu'u Beach Co. Pk.	1	3/wk	79	1%	0
Kailua Bay	2	2/mo	98	4%	0
Kalapana Beach (new) (Harry K. Brown Beach Co. Pk.)	2	2/mo	5	0%	0
Kamakaokahonu	1	3/wk	82	6%	0
Kapoho Bay	2	2/mo	44	9%	0
Kapoho Tidepools (Vacationland)	2	2/mo	45	0%	0
Kauna'oa Beach	2	2/mo	15	0%	0
Kawaihae Harbor	2	2/mo	15	0%	0
Keahou Bay (Kona)	2	2/mo	18	0%	0
Kealia Beach	3	None	0	NA	7
Keaukaha Beach Park	2	2/mo	44	2%	0
Kehena	2	2/mo	5	0%	0
Keokea Beach Co. Pk.	3	2/wk	1	0%	0
Kolekole Beach Co. Park	2	2/mo	8	13%	0
Laupahoehoe Beach Co. Park	2	2/mo	8	0%	0

Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
<b>Hawaii County</b>					
Lehia Beach Co. Pk.	2	2/mo	10	0%	0
Leleiwi Beach Co. Pk.	1	3/wk	135	2%	0
Manini'owali	2	2/mo	18	0%	0
Mauna Lani (Kalahuihua'a)	3	None	14	0%	0
Miloli'i Beach	2	2/mo	9	0%	0
Ninole	2	2/mo	3	0%	0
Onekahakaha Beach Co. Pk.	1	3/wk	121	2%	0
Pelekane Bay	2	2/mo	13	0%	0
Pine Trees	2	2/mo	16	0%	0
Pohoiki Beach	2	2/mo	19	5%	0
Pololu Valley	3	2/wk	1	0%	0
Puako	1	3/wk	78	1%	0
Punalu'u	2	2/mo	3	0%	0
Radio Bay	2	2/mo	10	0%	0
Spencer Beach Co. Pk.	2	2/mo	16	0%	0
Waipi'o Bay	2	2/mo	1	0%	0
Waiulaula	2	2/mo	11	0%	0
White Sands Beach Co. Pk. (Magic Sands)	2	2/mo	30	0%	0
Whittington Beach Co. Pk.	2	2/mo	3	0%	0
<b>Beaches in Hawaii County that were not monitored and that had no closing or advisory days in 2010:</b>					
Apua	Ka'iliki'i	Keawaiki	Old Kona Airport		
Cape Kumukahi	Ka'upulehu	Kiholo Bay	St. Rec. Area		
Green Sand Beach	Kahuwai Bay	Kuki'o	Onomea		
Halape Shelter	Kalahiki Beach	Lapakahi St. Hist. Park	Pahoehoe Beach Co. Pk.		
Hawaiian Beaches Co. Park	Kalu'e Pt.	MacKenzie State Rec. Area	Paiahaa		
Hawaiian Paradise Co. Pk.	Kaluhika'a Beach	Mahai'ula Bay	Papa'i (King's Landing)		
Heeia	Kamehame Hill	Mahukona Beach Co. Pk.	Pohue Bay		
Honokane Iki	Kamoa Pt.	Makalawena	Pu'u Hou		
Honokane Nui	Kapa'a Beach Co. Pk.	Makole'a Beach	Pu'u honua Pt. (Pu'u o Honaunau)		
Honokea	Kapoho Beach Lots	Manini Point Co. Pk.	Pueo Bay		
Honokohau Beach	Kapu'a Bay	Manuka Bay	Reeds Bay Park		
Honolulu Landing	Kauhako Bay - Hookena	Mau'umae Beach	Road to the Sea		
Honomalino Bay	Kawa Bay	Nanawale Co. Park	Wai'ahukini		
Honopue	Ke'ei	Napo'apo'o Beach Co. Pk.	Waialea Bay		
Isaac Hale Beach Co. Pk.	Kea'au	Ohai'ula Beach	Waimanu Bay		
Ka'alu'alu Bay	Kealakekua Bay	Old Kona Airport (Pawai)	Wawaloli Beach		
<b>Honolulu County</b>					
Ala Moana Beach Co. Park	1	2/wk	127	6%	13
Aukai Beach Co. Park	3	None	0	NA	13
Banzai	3	None	0	NA	13

Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
<b>Honolulu County</b>					
Barbers Point Beach Co. Pk.	3	None	0	NA	13
Bellows Field Beach Co. Pk.	3	1/mo	0	NA	13
Camp Harold Erdman	2	1/wk	0	NA	13
Chun's Reef	1	2/wk	8	0%	13
Diamond Head	2	None	0	NA	13
Diving area east of Reef Runway	no data	None	0	NA	13
Ehukai Beach Co. Pk.	3	None	0	NA	13
Ewa Beach	3	None	0	NA	13
Ewa Beach Co. Park	2	2/wk	0	NA	13
Ewa Plantation Beach	3	None	0	NA	13
Fort DeRussy Beach	2	None	0	NA	13
Fort DeRussy Beach Park	2	None	0	NA	13
Fort Hase Beach	3	None	0	NA	13
Fort Kamehameha Beach	3	None	0	NA	13
Gray's Beach	2	None	0	NA	13
Hale'iwa Ali'i Beach Co. Pk.	3	None	0	NA	13
Hale'iwa Beach Co. Pk.	3	None	0	NA	13
Halona Blowhole	2	None	0	NA	13
Hanaka'ilio Beach	3	None	0	NA	13
Hanauma Bay	1	2/wk	41	0%	13
Hau'ula Beach Co. Park	2	None	0	NA	13
Hawaiian Electric Beach Park	3	None	0	NA	13
He'eia	2	1/wk	0	NA	13
Hickam Harbor Beach	2	None	0	NA	13
Ihilani Honu	3	None	0	NA	13
Ihilani Kohola	3	None	0	NA	13
Ihilani Naia	3	None	0	NA	13
Ihilani Ulua	3	None	0	NA	13
Iroquois Pt.	3	None	0	NA	13
Ka'a'awa Beach Co. Park	2	None	0	NA	13
Ka'alawai Beach	2	None	0	NA	13
Ka'ena Pt.	3	None	0	NA	13
Kahala	2	1/wk	0	NA	13
Kahala Hilton Beach	2	1/mo	0	NA	13
Kahana Bay	3	None	0	NA	13
Kahanamoku Beach	1	2/wk	66	0%	14
Kahanamoku Lagoon	no data	no data	0	NA	13
Kahe Pt. Beach Co. Pk.	2	None	0	NA	13
Kahuku Golf Course	3	None	0	NA	13
Kaiaka	3	None	0	NA	13

Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
<b>Honolulu County</b>					
Kaihalulu Beach	3	None	0	NA	13
Kailua Beach	2	None	0	NA	13
Kailua Beach Middle	2	None	0	NA	16
Kailua Beach Pk.	2	3/wk	19	5%	13
Kaiona Beach Co. Park	3	None	0	NA	13
Kaipapa'u Beach	2	None	0	NA	13
Kakaako Waterfront	3	None	0	NA	13
Kalae'o'io Beach Co. Park	3	None	0	NA	13
Kalama Beach	2	1/mo	0	NA	21
Kalaniana'ole Beach	3	None	0	NA	13
Kaloko (Queens) Beach	3	None	0	NA	13
Kaluahole Beach	3	None	0	NA	13
Kaluanui Beach	2	None	0	NA	13
Kananelu Beach	3	None	0	NA	13
Kane'ohe Bay	3	None	0	NA	26
Kapaeloa Beach	2	4/yr	0	NA	13
Kapi'olani Park	2	None	0	NA	13
Kaunala Beach	3	None	0	NA	13
Kaupo Beach Co. Park	3	None	0	NA	13
Kawaiku'i Beach Park	2	1/mo	0	NA	13
Kawailoa Beach	3	None	0	NA	13
Kawela Bay	2	None	0	NA	13
Kea'au Beach Co. Park	3	None	0	NA	13
Kealia Beach	2	1/wk	0	NA	13
Ke'ehi Lagoon	2	None	0	NA	18
Koke'e Beach Park	2	1/wk	0	NA	13
Koko Kai Beach Park	2	1/wk	0	NA	13
Kokololio Beach	2	None	0	NA	13
Kualoa Co. Regional Park	1	1/mo	13	0%	13
Kualoa Sugar Mill Beach	3	None	0	NA	13
Kuhio Beach Park	1	2/wk	54	2%	13
Kuilei Cliffs Beach Park	3	None	0	NA	13
Kuilima Cove	3	None	0	NA	13
Kuli'ou'ou	2	1/wk	0	NA	13
Laenani Beach Co. Park	2	None	0	NA	13
Laie Beach Co. Park	3	None	0	NA	13
Laniakea Beach	2	4/yr	0	NA	13
Lanikai	2	None	0	NA	13
Laniloa Peninsula (Beach)	3	None	0	NA	13
Laukinui Beach	3	None	0	NA	13

Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
<b>Honolulu County</b>					
Lualualei Beach Co. Park	2	None	0	NA	13
Magic Island Beach	1	2/wk	62	0%	13
Magic Island East	3	None	0	NA	13
Ma'ili Beach Co. Park	3	1/mo	25	0%	13
Maipalaoa Beach	3	None	0	NA	13
Makaha Beach Co. Park	1	1/mo	25	4%	13
Makao Beach	3	None	0	NA	13
Makapu'u Beach Co. Park	1	1/mo	14	0%	13
Makaua Beach Co. Park	3	None	0	NA	13
Makua Beach	3	None	0	NA	13
Malaekahana Bay	1	1/mo	1	0%	13
Manner's Beach	3	None	0	NA	13
Mauna Lahilahi Beach Co. Pk.	3	None	0	NA	13
Maunalua Bay	3	None	0	NA	18
Maunalua Bay Beach Park	2	1/wk	0	NA	13
Mokule'ia Beach	3	None	0	NA	13
Mokule'ia Beach Park	2	4/yr	0	NA	13
Nanaikapono Beach	3	None	0	NA	13
Nanakuli Beach Co. Pk.	1	1/mo	25	0%	13
Nimitz Beach	3	None	0	NA	13
Niu	2	1/wk	0	NA	13
North Beach	3	None	0	NA	13
Ohikilolo Beach(Barking Sands)	3	None	0	NA	13
Oneawa Beach	2	1/mo	0	NA	13
One'ula Beach Co. Park	3	None	0	NA	13
Outrigger Canoe Club Beach	2	None	0	NA	13
Pahipahi'alu Beach	2	None	0	NA	13
Paiko Lagoon	2	1/wk	0	NA	13
Papa'iloa Beach	2	None	0	NA	13
Papaoneone Beach	3	None	0	NA	13
Pearl Harbor-Middle Loch	3	None	0	NA	13
Piliokahe Beach	no data	no data	0	NA	13
Pipeline, The	2	1/wk	0	NA	13
Point Panic Beach Park	3	None	0	NA	13
Poka'i Bay Beach Co. Pk.	1	1/mo	25	0%	13
Pounders Beach	3	None	0	NA	13
Punalu'u Beach Co. Park	2	None	0	NA	13
Pupukea Beach Co. Pk.	3	None	0	NA	13
Pu'uiki	3	None	0	NA	13
Pu'uohulu Beach	3	None	0	NA	13

Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
<b>Honolulu County</b>					
Queen's Surf Beach Park	1	2/wk	53	0%	13
Royal-Moana Beach	1	2/wk	57	2%	13
Sand Island	1	1/mo	0	NA	13 (362) *
Sandy Beach Co. Park	1	1/mo	37	0%	13
Sans Souci St. Rec. Area	1	2/wk	53	0%	13
Sunset Beach	1	1/mo	13	0%	13
Swanzy Beach Co. Park	3	None	0	NA	13
Tongg's Beach	2	None	0	NA	13
Turtle Bay	3	None	0	NA	13
Ulehawa Beach Co. Park	2	None	0	NA	13
Waiahole Beach Co. Park	2	4/yr	0	NA	13
Wai'ala'e Beach Co. Park	1	2/wk	0	NA	13
Waiale'e	2	None	0	NA	13
Wai'anae Kai Military Reservation Beach	3	None	0	NA	13
Wai'anae Regional Park	3	None	0	NA	13
Waikiki Beach Center	2	None	0	NA	13
Wailupe Beach Park	2	1/mo	0	NA	13
Waimanalo Bay St. Rec. Area	2	1/wk	0	NA	17
Waimanalo Beach	3	1/wk	0	NA	13
Waimanalo Beach Co. Park	1	3/wk	19	0%	13
Waimea Bay Beach Co. Pk.	1	1/mo	13	0%	13
War Memorial Natatorium	3	None	0	NA	13
Wawamalu Beach Park	3	None	0	NA	13
White Plains Beach	1	1/mo	25	0%	13
Yokohama Bay	3	None	0	NA	13
<b>Kauai County</b>					
(Honopuwaikua) Honopu Valley	2	None	0	NA	18
Ahukini Rec. Pier St. Pk.	2	None	0	NA	18
Aliomanu Beach	3	None	0	NA	18
Anahola Beach	3	None	0	NA	18
Anahola Beach Co. Park	3	None	7	0%	18
Anini Beach	2	2/mo	16	6%	18
Anini Beach Park	3	None	0	NA	18
Barking Sands	2	2/mo	0	NA	18
Beach House Beach	2	2/mo	1	0%	18
Black Pot Beach Park	3	None	0	NA	18
Brennecke Beach	3	None	3	0%	18
Donkey Park	3	None	0	NA	18
Gillin's Beach	3	None	0	NA	18
Glass Beach	3	None	2	0%	18

Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
<b>Kauai County</b>					
Ha'ena Beach Co. Park	2	2/mo	22	0%	18
Hanakapi'ai Beach	2	None	0	NA	18
Hanalei Beach Co. Park	1	3/wk	149	15%	18
Hanama'ulu Beach Co. Park	2	2/mo	5	60%	18
Haula Beach	3	None	0	NA	18
Kahili Beach	3	None	0	NA	18
Kalalau Beach	2	None	0	NA	18
Kalapaki Beach	1	3/wk	77	9%	18
Kalihiwai Bay	2	2/mo	15	27%	18
Kapa'a Beach Co. Park	3	None	16	0%	18
Kaupea Beach (Secret Beach)	3	None	0	NA	18
Kawailoa Beach	3	None	0	NA	18
Kealia	2	2/mo	7	0%	18
Ke'e Beach	2	2/mo	22	0%	18
Kekaha Beach Co. Pk.	3	None	17	12%	18
Kepuhi Beach	3	None	0	NA	18
Kikiaola Beach	3	None	2	0%	22
Kilauea Pt. Nat. Wildlife Ref.	3	None	0	NA	18
Kipu Kai	3	None	0	NA	18
Koloa Landing	3	None	2	0%	18
Kukui'ula Bay	3	None	0	NA	18
Larsens Beach	3	None	0	NA	18
Lawa'i Kai	3	None	0	NA	18
Lucy Wright Beach Co. Park	3	None	2	50%	18
Lumaha'i Beach	3	None	35	29%	18
Lydgate State Park	1	3/wk	77	4%	18
Maha'ulepu Beach	2	None	0	NA	18
Miloli'i	2	None	0	NA	18
Moloa'a Bay	3	None	0	NA	18
Na Pali Coast State Park	3	None	0	NA	18
Ninini Pt.	2	None	0	NA	18
Niumalu Beach Park	3	None	0	NA	18
Nu'alolo	2	None	0	NA	18
Nukoli'i Beach Park	3	None	16	0%	18
Pacific Missile Range Facility	3	None	24	4%	18
Pakala (Makaweli)	3	None	5	0%	18
Palama Beach (Nomilu)	3	None	1	0%	18
Papa'a Bay	3	None	0	NA	18
Pila'a Beach	3	None	0	NA	18
Po'ipu Beach Co. Park	1	3/wk	78	1%	18

Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
<b>Kauai County</b>					
Polihale State Park	2	2/mo	2	0%	18
Port Allen	3	None	2	0%	18
Prince Kuhio Park	3	None	0	NA	18
Princeville	3	None	0	NA	18
Salt Pond Beach Co. Park	1	3/wk	78	0%	18
Sheraton Beach	3	None	24	4%	18
Shipwreck Beach	2	2/mo	3	0%	18
Spouting Horn Beach Co. Park	3	None	0	NA	18
Tunnels Beach	3	None	0	NA	18
Wahiawa Bay	3	None	1	0%	18
Waiakalua Iki Beach	3	None	0	NA	18
Waiakalua Nui Beach	3	None	0	NA	18
Waikoko Bay	3	None	0	NA	18
Wailua Beach	3	None	6	0%	18
Waimea Rec. Pier St. Pk.	3	None	25	24%	18
Wainiha Bay	3	None	0	NA	18
Wai'ohai Beach	3	None	5	0%	18
Wai'oli Beach Park	2	2/mo	37	3%	18
Waipouli	3	None	2	0%	18
<b>Maui County</b>					
Ahihi-kina'u Natural Area Reserve	3	None	0	NA	6
Alaeloa Beach	3	None	0	NA	6
Awahua Beach	3	None	0	NA	6
Awalua Beach	3	None	0	NA	6
Fagans Beach	3	None	0	NA	6
Father Jules Papa	3	None	0	NA	6
Fleming Beach North	2	2/mo	5	0%	6
H.P. Baldwin Beach Co. Pk.	2	2/mo	4	0%	13
Halawa Beach Park	3	None	0	NA	6
Halena Beach	3	None	0	NA	6
Halepalaoa Beach	3	None	0	NA	6
Hamoia	3	None	0	NA	6
Hana Bay	2	2/mo	0	NA	6
Hanaka'o'o Beach Co. Pk.	1	3/wk	80	5%	6
Hata's	2	2/mo	4	0%	6
Honokeana Bay	3	None	0	NA	6
Honokohau Bay	3	None	0	NA	6
Honokowai Beach Co. Pk.	2	2/mo	5	0%	6
Honolua Bay	2	2/mo	5	20%	6
Honomanu Bay	2	2/mo	0	NA	6

Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
<b>Maui County</b>					
Honouli Malo'o	3	None	0	NA	6
Honouli Wai	3	None	0	NA	6
Ho'okipa Beach Co. Pk.	2	2/mo	4	0%	6
H-Poko Papa	3	None	0	NA	6
Huakini Bay	2	2/mo	0	NA	6
Hulopo'e Beach Park	3	None	0	NA	6
Iliopi'i Beach	3	None	0	NA	6
Ka'anapali	2	2/mo	28	0%	6
Kahalepohaku Beach	3	None	0	NA	6
Kahalui Harbor	1	3/wk	81	1%	13
Kahana	2	2/mo	10	10%	6
Kahemano Beach	3	None	0	NA	6
Kaihalulu Bay	3	None	0	NA	6
Ka'ili'iili Beach	3	None	0	NA	6
Kakahai'a Beach Park	3	None	0	NA	6
Kalae, South Point	no data	no data	0	NA	6
Kalama Beach Co. Park	2	2/mo	7	14%	13
Kalepolepo Beach	2	2/mo	4	0%	13
Kamaka'ipo Beach	3	None	0	NA	6
Kama'ole Beach 1	1	3/wk	81	0%	13
Kama'ole Beach 2 (Ili'iliholo Beach)	2	2/mo	4	25%	13
Kama'ole Beach 3	1	3/wk	81	1%	13
Kanaha Beach Co. Park	1	3/wk	85	6%	13
Kanaio Beach	3	None	0	NA	6
Kanalukaha Beach	3	None	0	NA	6
Kapalua (Fleming's) Beach	3	None	5	0%	6
Kapoli Beach Co. Park	3	None	0	NA	6
Kapukahehu Beach	3	None	0	NA	6
Kapukuwahine Beach	3	None	0	NA	6
Kaunala Beach	3	None	0	NA	6
Kaunolu Bay	3	None	0	NA	6
Kaupoa Beach	3	None	0	NA	6
Kawa'aloa Bay	3	None	0	NA	6
Kawakiu Bay (Nui)	3	None	0	NA	6
Kea'a Beach	3	None	0	NA	6
Ke'anae	3	None	0	NA	6
Keawakapu Beach	2	2/mo	8	0%	13
Keomuku Beach	3	None	0	NA	6
Keonenui Beach	3	None	0	NA	6
Kepuhi Beach	3	None	0	NA	6

Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
<b>Maui County</b>					
Kiowea Park (Kamehameha Coconut Grove)	3	None	0	NA	6
Koki Beach Park (VFW)	3	None	0	NA	6
Kolo Wharf	3	None	0	NA	6
Ku'au Bay	2	2/mo	4	25%	13
Kuiaha Bay	3	None	0	NA	6
La Perouse Bay	3	None	0	NA	6
Lahaina Beach	2	2/mo	4	0%	6
Launiupoko St. Wayside	1	3/wk	78	1%	6
Leho'ula Beach	3	None	0	NA	6
Lighthouse Beach	3	None	0	NA	6
Lopa Beach	3	None	0	NA	6
Lower Pa'ia	2	2/mo	4	0%	13
Ma'alaea Beach	1	3/wk	85	2%	13
Mai Poina Oe lau Beach Co. Pk.	2	2/mo	12	0%	13
Maka'ala Pt.	3	None	0	NA	6
Makena Landing Beach	2	2/mo	5	0%	6
Maliko Bay	2	2/mo	4	50%	6
Malu'aka Beach	2	2/mo	5	0%	6
Manele Bay	3	None	0	NA	6
Mantokuji Bay	3	None	0	NA	6
McGregor Pt.	3	None	0	NA	6
Mokapu Beach Park	2	2/mo	4	0%	13
Mokulau	1	3/wk	0	NA	6
Mokule'ia Beach	2	2/mo	5	0%	6
Mo'omomi Beach	3	None	0	NA	6
Murphy Beach Park	3	None	0	NA	6
Naha Beach	3	None	0	NA	6
Nahiku	3	None	0	NA	6
Napili Bay	2	2/mo	5	0%	6
Nu'u Bay	3	None	0	NA	6
Olowalu	2	2/mo	8	0%	6
Oneali'I Beach Park	3	None	0	NA	6
Oneloa Bay Beach	2	2/mo	5	0%	6
Oneloa Beach (Big Beach)	2	2/mo	5	0%	6
Oneuli Beach	2	2/mo	5	0%	6
Palauea Beach Park	2	2/mo	5	0%	6
Papalua	2	2/mo	4	0%	6
Papalua Beach	3	None	0	NA	6
Papohaku Beach	3	None	0	NA	6

Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
<b>Maui County</b>					
Paukukalo Beach	3	None	0	NA	20
Pelekunu	3	None	0	NA	6
Pepeiaolepo Bay	3	None	0	NA	6
Pohaku Mauiuli Beach	3	None	0	NA	6
Polihua Beach	3	None	0	NA	6
Polo Beach Park	2	2/mo	5	0%	6
Po'olau Beach	3	None	0	NA	6
Po'olenalena Beach	2	2/mo	5	0%	6
Po'olenalena Beach Park	2	None	0	NA	6
Puamana Beach Co. Park	2	2/mo	4	0%	6
Puko'o	3	None	0	NA	6
Punalau	3	None	0	NA	6
Pu'u ola'i (Small Beach)	2	2/mo	5	0%	6
Pu'u Pehe Cove	3	None	0	NA	6
Pu'unoa Beach	2	2/mo	4	0%	6
Sandy Beach	3	None	0	NA	6
Shipwreck Beach	3	None	0	NA	6
Spreckelsville	1	3/wk	85	1%	13
St. Theresa's	2	2/mo	80	5%	6
Ukumehame Beach Co. Pk.	2	2/mo	4	0%	6
Ulua Beach Park	2	2/mo	5	0%	13
Wahikuli State Wayside Park	2	2/mo	4	0%	6
Wai'anapanapa State Park	2	2/mo	0	NA	6
Waiehu Beach Co. Park	2	2/mo	8	0%	13
Waihe'e Beach Co. Park	2	2/mo	4	0%	6
Waikoloa Beach	3	None	0	NA	6
Wailau	3	None	0	NA	6
Wailea Beach Park	1	3/wk	79	0%	13
Waimaha'ihai Beach	3	None	0	NA	13
Waipulani	2	2/mo	4	0%	6

\*Reported closing or advisory days are for events lasting six consecutive weeks or less. Number of days in parentheses are for events lasting more than six consecutive weeks.

## NOTES

- 1 Hunt, C.D., Jr., and Rosa, S.N. "A Multitracer Approach to Detecting Wastewater Plumes From Municipal Injection Wells in Nearshore Marine Waters at Kihei and Lahaina, Maui, Hawaii." U.S. Geological Survey Scientific Investigations Report, 2009-5253. 2009.
- 2 Watson Okubo, Hawaii Department of Health., Personal communication., February 2011.
- 3 Hawaii Department of Health. Beaches Environmental Assessment and Coastal Health Act 2010 Notification Report to EPA (draft). Not dated.

*Testing the Waters 2011 reflects data as of June 27, 2011.*