



DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII

345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAII 96720

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August 8, 2023

The Department of Water Supply (DWS) sincerely apologizes for the inconvenience of requesting a 25% reduction in water use due to the recent failure of our Honokohau deepwell. We at the DWS really do understand this puts a burden on our communities and our families, as we also live, work, and play here. The DWS team of employees work extremely hard at making sure to minimize disruptions in water service while ensuring the water is safe to drink by meeting all applicable State and Federal Standards.

We are continually working to improve our daily operations, especially since the previous water restriction situations in 2017 and 2022. Please note, during those times, due to the diligent efforts of conscientious customers and our hard-working personnel, we managed to continue to provide uninterrupted water service.

For the current situation, although we still have 9 of our 14 wells operating, we are challenged by the issue that 4 of the 5 wells out of service are in the same vicinity, at the northern end of our North Kona water system. These 4 wells are our Makalei, Hualalai, Palani, and Honokohau deepwells. If the 5 wells were spread throughout the entire water system, we'd likely be okay. In this case, we are limited by the capacity of our booster pumps to transmit water from our south sources to the northern area.

The most recent failure, Honokohau well, occurred on August 5, 2023. Although we won't know until all components (pump, motor, power cable and pipe column) are extracted and evaluated, we suspect pump and motor failure. The repair timeframe will be determined after the components have been evaluated.

Of the deepwells currently offline, we anticipate Hualalai deepwell will return to operation soonest. The current estimate is mid to end of August 2023. This well went offline in December 2022 due to a failure in the column assembly. With Hualalai deepwell back in service, we would likely be able to revert from the 25% restriction to a more modest request for continued conservation of 10%.

After Hualalai, we hope to have Palani deepwell back online in October 2023. This well went offline in November 2022 due to a pump failure.

After Hualalai and Palani deepwells are back online, the Department will proceed with the preemptive repair of the Keopu deepwell which is still functioning but has been running since January 2018.

Repairs of these deepwells are currently the Department's highest priority and we are using whatever means available to expedite the repairs.

With regards to DWS's use of made-to-order pumps and motors; most deep-set submersible pumps and motors are too large of an item for vendors and suppliers to keep in stock. The Department does its best to prioritize and predict which spare equipment should be purchased for our inventory, however, it must be balanced against how long it may stay in storage, as the equipment requires particular methods of storage to ensure the equipment is suitable for use when needed. Deep-set pumps and motors are meant to be installed and operated vertically. Ideally, proper storage should be vertical also. However, this is an issue for both DWS and vendors/contractors as there are no storage facilities to accommodate the length and weight of the pump and motor units (up to 20' and 1 ton; and 38' and 2½ tons respectively) in a vertical position. Therefore, they are typically stored horizontally. There are also warranties involved, which could expire before equipment is used.

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DWS has been working to have more standardized equipment, as part of our overall equipment management plan. This is a continual process which is being implemented as existing wells are repaired and in the design of new wells. Some of our existing wells do use the same equipment, but other wells have pumps/motors that need to be made-to-order. The fact is every well is different; the size, capacity, depth, electrical feeds all vary depending on the well. However, we are moving towards having more interchangeable equipment so that we can address repairs more efficiently.

The above being considered, DWS has annual contracts to bring some pumps, motors and other long-lead items into our inventory as spares. However, we recently have been experiencing significant delays due to material and labor shortages as well as shipping delays.

We are also proactively developing new well sources to improve our redundancy and resiliency in the North Kona area. There are 2 well drilling projects in motion. The Waiaha Well B project is currently in the construction phase however, the well construction permit is currently being pursued and is required before the drilling can start. The North Kona Mid-Elevation Deep Well project is another highly anticipated water source development project for DWS as it would tap a previously unutilized deep confined aquifer resulting in lower operational costs. Both well drilling projects are for the Phase 1 (Exploratory phase), which includes drilling, casing, and testing of the well. Once completed and if testing is acceptable, the Department would need to proceed with Phase 2 of the projects which involves the outfitting of the well for production, which would provide additional water sources to the community. In addition, the Department is also actively partnering on a development agreement to acquire the Keauhou Well – Phase 2 project. When the agreement is finalized, it is expected to take approximately 9 months to complete the planning and design of the project, with construction to follow.

There have been comparisons to the oil industry regarding maintenance intervals, spare equipment, and material, and why we cannot operate similarly. This is an unfair comparison as the revenues and operating budgets are very different between a water utility and the oil industry. As Hawai'i County's municipal water utility, our mission is to provide an adequate and continuous supply of safe drinking water in a financially responsible manner. We strongly believe that our product quality and consistency is of very high value at a fair price to our customers. We do this by working to find balance in our operational expenses and resulting impacts to water fees.

We know we are nowhere near perfect, but please be assured that the DWS team is committed to continual improvement for the benefit of our customers and communities we serve. Mahalo for your kokua!

Sincerely yours,

Keith K. Okamoto, P.E.
Manager-Chief Engineer

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