STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

STAFF SUBMITTAL

COMMISSION ON WATER RESOURCE MANAGEMENT
November 15, 2022
Honolulu, Hawai‘i

Approval of Well Construction and Pump Installation Applications with Special Conditions for
HWC-1 (State Well No. 8-1128-003)
HWC-2 (State Well No. 8-1128-004)
TMK (3) 9-6-002:016, Nā‘ālehu Aquifer System Area, Hawai‘i

LANDOWNER:

PMK Capital Partners, LLC
2827 Kalawao Street
Honolulu, Hawai‘i 96822
Contact: Mr. Al Kam

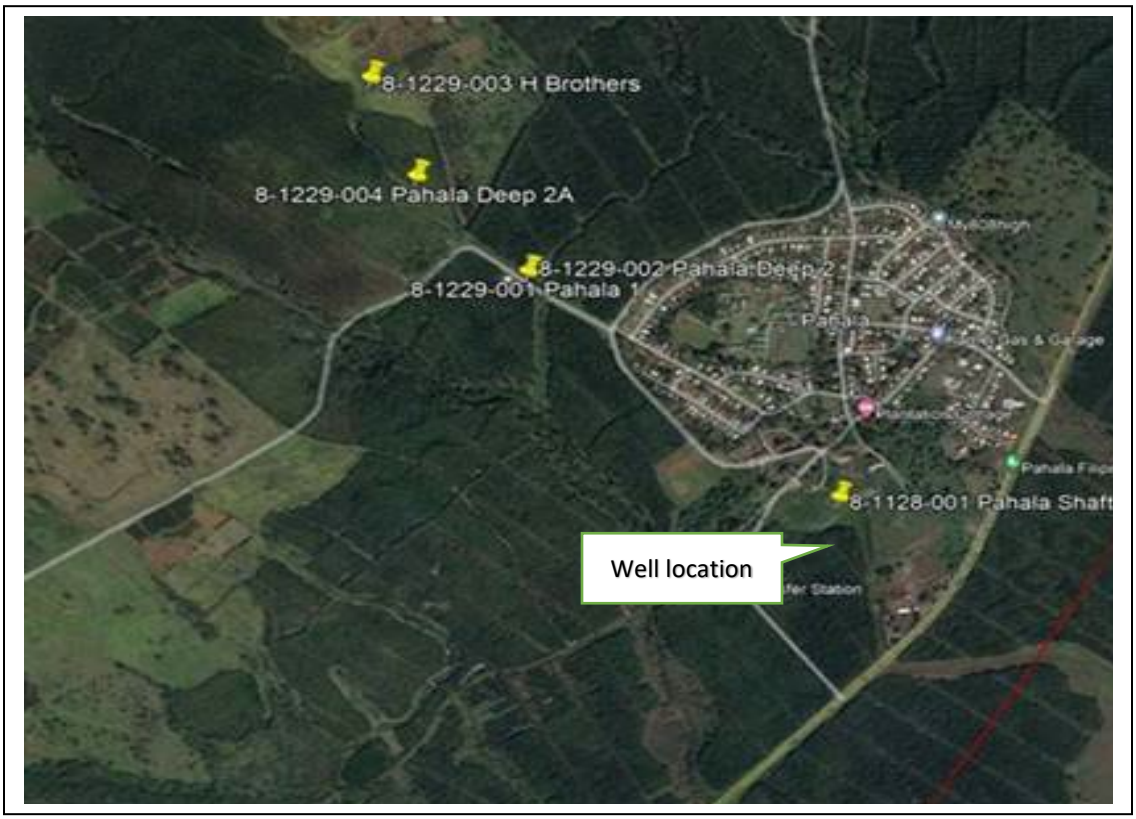
DRILLER/PERMITTEE:

Water Resources International, Inc.
P.O. Box 44301
Kamuela, Hawai‘i 96743

SUMMARY OF REQUEST:

Water Resources International, Inc. requests approval of well construction and pump installation permits for two proposed wells. Each well will have a 1,750 GPM (a total of 3,500 GPM) pump installed for a combination of 5 MGD to irrigate 369.8 acres of trees (3 MGD) and for the full build out of a water bottling plant (2 MGD).

LOCATION MAP: Exhibit 1



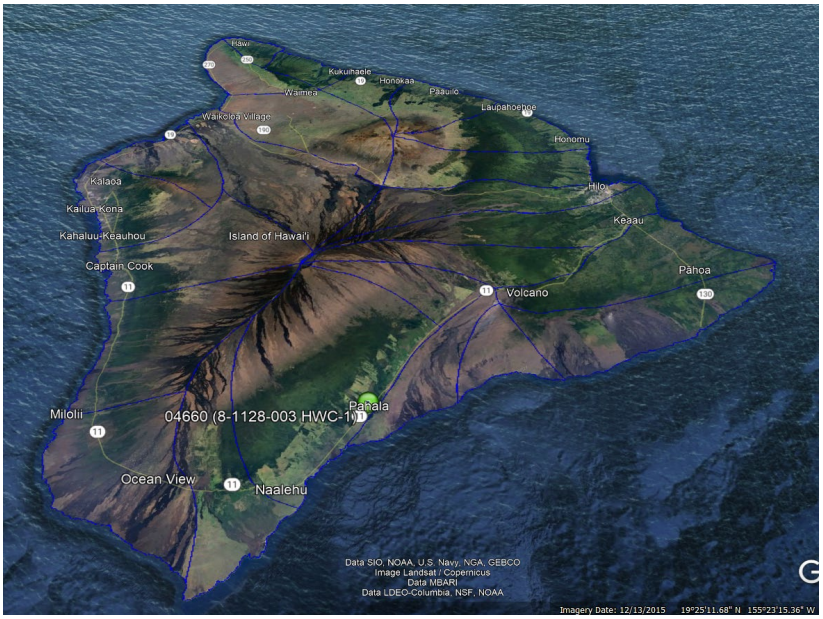


EXHIBIT 1 – Location Map

WATER AVAILABILITY:

The proposed HWC-1 and HWC-2 wells (State Well Nos. 8-1128-003 and -004) will be located in the Nāʻālehu Aquifer System Area, which has a sustainable yield (SY) of 118 MGD. Current Nāʻālehu Aquifer System Area (ASA) Pumpage is estimated based on the reporting of 10 tunnels and 4 production wells out of 48 (29%) reporting water use. Though the number could be higher with other wells not reporting, the 12-month moving average of pumping is 0.823 MGD as of August 2022. This is 0.70% of sustainable yield. However, adding historical flow for Tunnels that are not reporting, the current 12-MAV is 5.354 mgd or 4.5 % of sustainable yield.

Within the Nāʻālehu Aquifer System Area, there are 35 Tunnels. Unfortunately, staff have little or no information concerning the majority of the tunnel sources, and most don't report. There are also six documented springs in the Stearn's Bulletin 9 Hawaii – October 1946 for this area.

Proposed Use: The irrigation estimate is about 1.5 MGD per well (total 3 MGD) to irrigate 369.8 acres of trees. The remaining 1.0 MGD per well (total 2 MGD) is estimated for the full build out of the bottling plant. Therefore, there appears to be sufficient water to accommodate the requested amounts from an aquifer system-wide basis. Further analysis of potential localized impacts is addressed in a section below.

BACKGROUND:

August 26, 2021	Driller submitted Well Construction and Pump Installation Applications (WCPIAs), fee and 6E forms for the two subject wells.
September 2021	Preliminary review indicated errors and missing information in WCPIAs. Driller re-submitted applications to provide and correct information for 1) well location/ maps, 2) driller license number, and 3) solid casing thickness. Driller revised solid casing to make all 574 feet of solid casing be 3/8" wall thickness and conform to ASTM A606.
September 24, 2021	Copies of the applications were sent to the 1) Department of Health (DOH) Safe Drinking Water Branch (SDWB) and 2) Wastewater Branch (WWB), 3) Hawaii County Department of Planning (DOP), 4) Hawaii Department of Water Supply (HDWS), 5) DLNR Land Division, 6) State Historic Preservation Division (SHPD), 7) Stream Protection and Management Branch (SPAM) and 8) ʻAha Moku for review.
October 2021	Consultant (Tom Nance Water Resource Engineering) submitted the Ka Pa'akai Analysis for both wells via e-mail.
January 2021	Consultant provided revisions to the Ka Pa'akai Analysis.
March 2022	County of Hawaii Department of Water Supply (HDWS) provided comments regarding concerns on potential impacts to existing HDWS wells in the Pāhala area.

April 2022	CWRM sent a letter (Exhibit 2) in April requesting data and information to further evaluate the project impacts to the nearby wells and aquifer.
May 2022	Consultant submitted a response letter (Exhibit 3).
July 2022	HDWS provided final comments.

ANALYSIS/ISSUES:

The application indicates that the proposed wells will be used for irrigating a 369.8-acre macadamia nut farm and for a bottling water plant. The proposed pump capacity is a total of 3,500 GPM. Staff raised concerns related to potential impacts to nearby wells and the aquifer. Below is a summary of the issues/responses:

I. Impact to existing County of Hawaii Department of Water Supply (HDWS) wells:
Within approximately one mile of the proposed wells are two municipal HDWS wells (Pāhala Deep 1, 8-1229-001 and Pāhala 2, 8-1229-002). The current 12 month moving average (12-MAV) for these two HDWS wells is 0.238 mgd. The initial head of these wells, Pāhala Deep 1, 8-1229-001 and Pāhala Deep 2, 8-1229-002 were 383.6 (~1974) and 362 (~2005) feet MSL, respectfully. The HDWS wells are located mauka of the proposed two wells. The proposed pumpage might have potential impacts to the municipal wells, which serve the Pāhala town residents (Exhibit 5).

Staff Responses: See Exhibits 2 and 3. Though DWS's follow-up comments indicated no additional questions of any potential impacts, it is still important to understand how the proposed wells (in the dike-confined groundwater compartment) may impact nearby wells. Additional aquifer test, continuous monitoring data such as chloride and elevation measurements are needed to better understand if this dike-confined groundwater compartment spills over to the basal aquifer (in addition to or in lieu of stream discharge). Also, existing basal wells need to be monitored to assess any impacts. Staff is recommending a continuous monitoring plan and pump tests as conditions of the permits.

II. Potential impacts of nearby wells and existing Pāhala Shaft:
Two wells, (8-1128-002) Palima and (8-1129-004) Pāhala Deep 2, are located within 1 mile of the proposed wells. These wells have water levels of 14 feet and 8 feet and are drawing water from the basal aquifer. The existing Pāhala Shaft appears to be tapping into dike-impounded water (initial head 228'msl). Historical Pumpage data were reported for the existing Pāhala Shaft from January 1988 through December 1995 by Ka'ū Agribusiness Co. Inc. During that timeframe, the 12-MAV averaged at 3.28 mgd.

Staff Responses: See Exhibits 2 and 3. The new owner indicated that the existing Pāhala Shaft has not be in operation since July 2005. At the bottom of the Pāhala Shaft is a Pump Room with two drilled wells, one with a 2500 gpm pump and the other with a 2200 gpm pump. However, per the land owner, pumps have been removed from the wells. There is no open access to the aquifer.

The entrance at the surface of the Pāhala Shaft is secured by a locked gate. Historical chloride data were all in single digit numbers.

OTHER ISSUES:

I. Chapter 343 – Environmental Assessment (EA) Compliance

EA Triggers
In accordance with HRS § 343-5(a), the applicant's proposed action does not trigger the need for an EA, as none of the items below are a trigger for these two proposed wells.

Potential triggers: (1) use of state or county land or state or county funds; (2) use of conservation district lands; (3) use within a shoreline area as defined in HRS § 205A-41; (4) use within any historic site designated on the National or Hawai'i registers; (5) use within the Waikiki Special District; (6) amendment to county general plans which results in designations other than agriculture, conservation or preservation except as initiated by a county; (7) reclassification of land classified as conservation by the Land Use Commission; (8) construction/modification of helicopter facilities that may affect conservation district lands, a shoreline area, or a historic site designated on the National or Hawai'i Register; (9) construction of (a) wastewater treatment units (except an individual wastewater system or water treatment unit serving <50 SFR dwellings or the equivalent, (b) waste-to-energy facility (c) landfill, (d) oil refinery, or (e) power generating facility.

II. *Traditional and Customary Practices*

Ka Pa'akai Analysis
In *Ka Pa'akai O Ka'aina v. Land Use Commission*, the Hawai'i Supreme Court recognized that the State has an obligation to protect Hawaiian traditional and customary practices to the extent feasible, and that the proponent of an action must show sufficient evidence that these types of practices are protected, if they exist in the location in question. 94 Hawai'i 31, 7 P.3d 1068 (2000). The "Ka Pa'akai framework" was created by the Court "to help ensure the enforcement of traditional and customary native Hawaiian rights while reasonably accommodating competing private development interests." 94 Hawai'i at 35, 7 P.3d at 1072. The Commission is obligated to conduct a "Ka Pa'akai analysis" of a proposed action requiring CWRM approval independent of the entity proposing the action. This analysis should be used to inform any decision on the impact of the proposed action on traditional and customary practices.

The assessment set forth by the Court requires specific findings and conclusions regarding:

(1) the identity and scope of valued cultural, historical, or natural resources in the petition area, including the extent to which traditional and customary native Hawaiian rights are exercised in the petition area.

Ka Pa'akai Analysis from the applicant was submitted on January 26, 2022. See Exhibit 4.

Staff Responses: In addition, the OHA Kipuka database shows no sites or crown lands involved. In August 2021, SHPD conducted field investigation and concluded no impacts on the subject site.

(2) the extent to which those resources -- including traditional and customary native Hawaiian rights -- will be affected or impaired by the proposed action.

Staff responses: On October 21, 2021, SHPD responded that the well location is in an area that has been previously cleared and permitting process may continue. As a previously cleared site, surrounded by agricultural lands and the town of Pahala, the development of the well site will not impair any traditional and customary practices.

The use of 5 mgd from the proposed wells will withdraw water that would naturally stay within the aquifer. Based on the wells distance from the coastline, the proportion of the well's use in relation to sustainable yield (4.5%), and the lack of known springs in the vicinity of the wells, staff believe that impacts to groundwater dependent ecosystems and traditional and customary practices along the coastline will be minimal and hard to determine.

(3) the feasible action, if any, to be taken … to reasonably protect native Hawaiian rights if they are found to exist.

Staff responses: Staff concur with the applicant that existing and proposed wells should be monitored and tested. A monitoring plan and test will be required as a condition of permit issuance. If test and reporting data show impacts occurring, standard conditions of the permits (well construction condition 7, and pump installation condition 8,) require that pumpage may need to be reduced in the future should any legal uses, such as traditional & customary practices, be impacted. These notices are provided throughout the routine well permitting process. Alternatively, designation as a ground water management area is another action that may occur should the resource or traditional and customary practices with respect to ground water use in the Nā'ālehu Aquifer System Area become threatened.

III. *Consistency with Hawai'i Water Plan,*

The proposed wells' uses are for agricultural irrigation and water bottling. Related to estimated water demands for the acres of irrigated macadamia nuts, below is a table from the Agricultural Water Use and Development Plan, which was adopted by the Commission in 2004 that shows a water use rate of 4,400 gpd/acre for macadamia nuts.

Table 4. HDOA IRRIGATION WATER USE GUIDELINES

Crop	Water Use Rate (gpd/acre)	Crop	Water Use Rate (gpd/acre)
Alfalfa/Corn (feed & forage)	7,700	Orchids	3,700
Aquaculture	145,000	Papaya	5,000
Dendrobium	4,000	Passion Fruit	10,000
Field crops (grass & seed)	6,700	Pineapple	1,350
Foliage Plants	4,000-6,000	Protea	2,000-2,500
Forage Crops	7,400	Sugarcane (drip)	6,700
Guava	4,400	Sugarcane (furrow)	10,000
Leafy Vegetables (drip)	4,050	Taro (Asian)	4,000-8,000
Leafy Vegetables (sprinkler)	5,400	Taro (dryland)	5,400
Macadamia Nuts	4,400	Taro (wetland)	80,000-100,000
Nursery (potted plants)	6,000	Vegetables	6,700

Source of Data: Unpublished data compiled from various sources by the HDOA, Agricultural Resources Management Division, Irrigation Program Administrator and Planning Office, Office of Chairperson, 1985 – 2001.

In its latest findings of fact and decision and order in Nā Wai ʻEhā[1] in July 2021, the Commission adopted "2,500 gad, as the maximum irrigation requirement for both large- and small-scale agriculture of all types of crops, […]. Standards such as HDOA's for specific crops will not be accepted in lieu of specific justifications for amounts larger than 2,500 gad, because they have been shown to generally over-estimate irrigation requirements." COL 95.

Exhibit 7 shows the results of the IWREDSS program summary for Macadamia, perennial growth, irrigated with trickle, drip and using irrigate to field capacity. Staff uses a 1-in-5 year (recommended) drought frequency. This amount results in a duty of 2,242 gallons per day per acre, which is less than the requested amount.

The land owner provided calculations and explanation for the proposed pump capacity. See Exhibit 8. The proposed 4,000 gpd per acre includes the optimum saturation level and less the average rainfall for macadamia orchards in the location.

IV. *Agency Review*

Copies of the application were sent to the 1) Department of Health (DOH) Safe Drinking Water Branch (SDWB) and 2) Wastewater Branch (WWB), 3) Hawaii County Department of Planning (DOP), 4) Hawaii Department of Water Supply (HDWS), 5) DLNR Land Division, 6) State Historic Preservation Division (SHPD), 7) Stream Protection and Management Branch (SPAM) and 8) Aha Moku.

1) DOH SDWB determined these wells are not sources for a public water system.

[1]CCH-MA-15-01 Surface Water Use Permit Applications, Integration of Appurtenant Rights and Amendments to the Interim Instream Flow Standards, Na Wai Eha Surface Water Management Areas of Waihee, Waiehu, Iao and Waikapu Streams, Maui https://files.hawaii.gov/dlnr/cwrm/cch/cchma1501/CCHMA1501-20210630-D&O.pdf

2) DOH WWB provided routine or standard comments, but no special concerns nor objections.
3) HDOP identified the proposed location for the wells and facility to be in the General Industrial zoning area. Plan approval (PLA-16-001332 – revised) has been issued on April 20, 2017. See Exhibit 6.
4) HDWS initially informed the Commission that they would have concerns if the pumping of these wells would impact the water levels or the ability to pump their existing Pāhala Shaft 8-1128-001. On July 20, 2022, DWS reviewed the consultant's response letter and have no additional questions or comments regarding any potential impacts. See Exhibit 5.
5) DLNR Land Division did not provide a response.
6) SHPD conducted field investigation on August 17, 2021 and determined no effect. The field report states that the parcel was subject to previous ground-disturbing activities associated with sugar cane cultivation in the area and no historic properties were identified during the survey. See Exhibit 11.
7) SPAM' review indicated nearby streams are non-perennial at this elevation (ground elevation is 794') and water level estimated to be at 228' and any pumpage is not likely to affect surface water resources.
8) Aha Moku did not provide a response.

RECOMMENDATION:

Staff recommends that the Commission:

A. Approve well construction permits for the HWC-1 (State Well No. 8-1128-003) and HWC-2 (State Well No. 8-1128-004) to Water Resources International, Inc. subject to the standard well construction permit conditions as described in Exhibit 9.

B. Approve pump installation permits for the HWC-1 (State Well No. 8-1128-003) and HWC-2 (State Well No. 8-1128-004) to Water Resources International, Inc. subject to the standard pump installation permit conditions as described in Exhibit 10.

C. Approve the following special conditions to be included in items B above:
   1) An aquifer pump test should be run upon completion of HWC-1 (State Well No. 8-1128-003). A second aquifer pump test should be run on completion of HWC-2 (State Well No. 8-1128-004) and using HWC-1 to collect data. Finally, a third aquifer pump test should be run while both wells are operating at the same time.

   2) To determine if there are any impact to other existing wells (within 1 mile radius), the Land Owner must use an external existing monitor well to collect data during the pump test identified in condition 1 and coordinate with Hawai‘i DWS to determine if there are any impacts to their existing well and other existing wells. .

   3) The Land Owner must submit and receive approval for the required pump tests and a monitoring plan as a feasible action to mitigate impacts to traditional and customary practices. This approval is delegated to the Deputy Director of the CWRM for approval.

4) The pump capacity may be reduced to mitigate any potential impacts.

Ola i ka wai,

M. KALEO MANUEL
Deputy Director

Exhibits:
1 Location Map
2 April 21, 2022 CWRM Letter to Applicant
3 May 20, 2022 Consultant Reply Letter
4 January 26, 2022 Ka Pa'akai Analysis
5 Hawaii Department of Water comments
6 Hawaii Department of Planning comments
7 IWREDSS Results Summary
8 Pump Capacity Calculations from Land Owner
9 Well Construction Permit Standard Conditions
10 Pump Installation Permit Standard Conditions
11 SHPD CWB SDWB WWB comments

APPROVED FOR SUBMITTAL:

SUZANNE D. CASE
Chairperson

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

Apr 21, 2022

8-1128-003 & -004.comments.docx

Mr. Kihei Ahuna
Water Resources International, Inc.
1100 Alakea St., Suite 2900
Honolulu, HI 96813

Aloha Mr. Ahuna:

Well Construction/Pump Installation Permit Application for
HWC-1 and HWC-2 Wells
Well Nos. 8-1128-003 and 8-1128-004, Naalehu, Island of Hawaii

We have received comments from the Hawaii Department of Water Supply (HDWS) for the subject wells. The HDWS has concerns regarding pumping of these proposed wells and potential impact to the water levels or the ability to pump the existing Pāhala Deep 1 (8-1229-001). The review comments and the respective contact information have been attached for your use. Please addresses the questions raised by HDWS.

In addition, we have the following related questions:

1. The application indicated that the proposed wells will be used for irrigating a 369.8 acres Macadamia Nuts Farm and for a bottled water plant. The proposed pump capacity would be 1750 gpm and 2.5 MGD per well. Based on your engineering calculations, what amount will be used for each proposed operation (368.9 acres and bottled water plant). What is your design allocation of the 2.5 MGD? What are your design criteria and data used?

2. For the existing Pāhala Shaft (State Well No. 8-1128-001), please provide the following:
   - Operational plan for this source;
   - Reasons for not using this existing source;
   - Water elevation and chloride measurement; and
   - Pump test data

3. Two wells, (8-1128-002) Palima and (8-1129-004) Pahala Deep 2, are located within 1 mile radius of the proposed wells. These wells have water levels of 14 ft and 8 ft, and are drawing waters from the basal aquifer. The existing Pahala Shaft appears to be tapping into dike-impounded water (initial head 228'msl). Do you anticipate the two proposed wells will be drawing water from the basal, or the dike-impounded aquifer? What design criteria and indicators will you use? What pump test parameters do you plan to use?

If you have any questions, please contact Queenie Komori of the Commission staff at (808) 587-0251.

Ola i ka wai,

M. KALEO MANUEL
Deputy Director

QK:ss

c: Well Owner: Hawaii Water Company, Inc.
Land Owner: PMK Catpital Partners LLC
Tom Nance Water Resource Engineering
Hawaii Department of Water Supply (Ryan Quitoriano)

TNWRE
Tom Nance Water
Resource Engineering

No. of pages: 3
Email: kaleo.l.manuel@hawaii.gov
akam808@aol.com
kihei@wri.us.com
ryan.r.imata@hawaii.gov
greg@tnwre.com
todd@tnwre.com

Electronic Submission Only

May 20, 2022
22-103 | 21-25

Mr. M. Kaleo Manuel – Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Manuel:

Responses to Questions Regarding the
Well Construction / Pump Installation Permit Applications for the
HWC-1 and HWC-2 Wells, State Nos. 1128-003 and -004
In Naalehu on the Big Island, Hawaii

This letter and its attachments respond to questions raised by Ryan Quitoriano of the Hawaii Department of Water Supply (DWS) and in your letter of April 21, 2022 to the drilling contractor, Mr. Kihei Ahuna of Water Resources International Inc. The responses are itemized below.

1. Potential Impact to DWS' Pahala 1 and Pahala 2 Wells, State Nos. 1229-001 and 1229-004. The HWC-1 and HWC-2 Wells will be about 4400 feet downgradient of the two DWS Pahala Wells. The static water level in the two DWS wells stands about 380 to 385 feet above sea level. It is anticipated that the water levels in the HWC Wells will be similar to the nearby Pahala Shaft or about 225 feet above sea level.

   Based on their respective "high" water levels, it was commonly assumed that the wells were tapped into separate dike-confined groundwater compartments. Development of DWS' Pahala-2 Well in 2005 dispelled that assumption. As discussed with me during the well's construction in 2005 by Consultant Steve Bowles and as he subsequently explained to DWS' Board at its August 23, 2005 meeting (minutes attached), the Pahala 2 well was initially drilled to a greater depth than the adjacent Pahala 1 well. Their water levels were initially the same. However, during an attempt at a pump test in the Pahala 2 well, it was discovered that water was leaking out the bottom of the well. When it was back filled to essentially about the same depth as Pahala 1, the water level recovered. After also perforating the bottom portion of the solid casing, the Pahala 2 well had been recovered for production.

   The results of the work in developing the Pahala 2 well established that both of DWS' Pahala wells tap into a perched water body, not a dike confined one. Given this result and the fact that I have run into similar perched water bodies further to the south near Waiohinu, it is virtually certain that the Pahala Shaft and the proposed HWC Wells are and will tap into a separate and lower elevation perched water body. As such, there is no possibility that drawing water from the lower perched water body will impact the yield of the upper perched water body tapped by DWS' Pahala Wells.

TNWRE Inc. | 560 N. Nimitz Hwy. - Suite 213 | Honolulu, Hawaii 96817 | Phone: (808) 537-1141 | Fax: (808) 538-7757 | Email: tom@tnwre.com

2. Proposed Uses of the 2.5 MGD to the Drafted by the HWC Wells. Use rates were established by Al Kam, the Project Owner who had substantial prior experience in raising macadamia trees. His irrigation estimate is for the optimum saturation rate of about 4000 GPD per acre or approximately 1.5 MGD to optimally irrigate 369.8 acres of trees. The remaining 1.0 MGD is his estimate for the full build out of the bottling plant.

3. Information on the Pahala Shaft, State No. 1128-001. The inclined shaft leads down to a pump room with a floor elevation a couple feet above the water level. Unlike the more typical shafts in Hawaii which draw water from a horizontal skimming tunnel, the Pahala Shaft has two drilled wells, both to a depth of about 10 feet below sea level. The well pumps were last used prior to the shutdown of the sugarcane mill in 1996 and the well pumps are now removed.

   The Owner did consider the Pahala Shaft for his use, but the costs of the necessary upgrades were actually far greater than drilling two new wells. For that reason, as well as for operating efficiency, safety and maintenance costs, the proposal to drill the HWC-1 and HWC-2 wells was made. The Owner does intend to keep the Shaft in reserve just in case it is actually needed at some time in the future or if sufficient yield of the HWC Wells is not achieved. At this time, water level data, chloride measurements, and historic pump test data are not available. Since the cable car is out of commission and the pumps have been removed, it is not possible to do any meaningful sampling.

4. Potential Impact on Well Nos. 1128-002 (Palima) and 1129-001 (Pahala). Particularly for the Palima Well (State No. 1128-002) which is nominally downgradient of the proposed HWC Wells, a potential impact of use of the HWC wells cannot be dismissed out of hand. Use of the HWC wells will diminish the downgradient flow in the groundwater body moving toward and ultimately discharging into the marine environment. However, there are several factors which conclusively indicate that the impact will be insignificant, if at all:

   - Flow through the Groundwater Body Compared to Existing and Prospective Use. All of the wells in question are in the Naalehu Aquifer System, a 352 square mile area for which the CWRM has adopted a sustainable yield of 118 MGD based on a recharge amount of 268 MGD. More sophisticated recharge calculations in USGS Scientific Investigations Report 2011-5078 indicate that the recharge rate, even in drought or future climate change conditions, is significantly greater.

     The shoreline discharge of the Naalehu Aquifer System is 7.8 miles long. Using the low recharge estimate of 268 MGD and subtracting the 1 to 2 MGD rate of current use (Figure 1) and the potential 2.5 MGD ultimate pumpage of the two HWC wells, the average shoreline discharge rate is an incredible 33.8 MGD per coastal mile. This is an overwhelming amount compared to present and prospect use of the HWS wells and existing wells 1128-002 (Palima) and 1129-001 (Pahala). The reality is that pumpage by wells in this aquifer system is a very small amount of the flow of groundwater through the aquifer system (Figure 2).

   - Past Use of the Pahala Shaft at Rates Greater than Proposed Use of the HWC Wells has Overlapped Use of Well Nos. 1128-002 (Palima) and 1129-001 (Pahala). Reported pumpage data for the Pahala Shaft are available from 1988 to the end of 1995 (Figure 3). During this period of use, both wells 1128-002 and 1129-001 were also in use. Figure 4

depicts the use rate of the 1129-001 well over this same period. Similar data for the Palima well were not available. Past use of the Pahala Shaft at rates of three (3) to four (4) MGD, apparently without adverse impact to the nominally downgradient wells, were at a greater rate than the proposed HWC wells.

Sincerely,

Tom Nance

Tom Nance

Attached: Minutes from the August 23, 2005 DWS Board Meeting and Figures 1-4

Email Copy: Al Kam – Hawaii Water Company Inc.
Kihei Ahuna – Water Resources International, Inc.
Ryan Imata – Commission on Water Resource Management
Greg Fukumitsu and Todd Yonamine – TNWRE Inc.

MINUTES

DEPARTMENT OF WATER SUPPLY
COUNTY OF HAWAI'I
WATER BOARD MEETING
August 23, 2005

HILO OPERATIONS CONFERENCE ROOM

MEMBERS PRESENT:
Mr. Ivan Mochida, Chairman
Mr. Loren Heck, Vice-Chairman
Mr. Thomas Goya
Ms. Paula Helfrich (10:07 a.m.)
Ms. Millie Kim (10:08 a.m.)
Ms. Sandra Scarr
Mr. Riley Smith
Mr. George Wilkins

ABSENT:
Mr. Bernard Konanui, Water Board Member
Mr. Milton D. Pavao, Manager (ex-officio member)
Mr. Bruce McClure, Director, Department of Public Works (ex-officio member)
Mr. Christopher Yuen, Director, Planning Department (ex-officio member)

OTHERS PRESENT:
Ms. Katherine Garson, Deputy Corporation Counsel
Ms. Amy Self, Deputy Corporation Counsel
Mr. Bill Brooks, Westpro Development
Mr. Stephen Bowles, Waimea Water Services
Mr. Melvin Kam, State of Hawai'i, Department of Health, Safe Drinking Water Branch

Department of Water Supply Staff:

Mr. Quirino Antonio, Jr., Deputy Manager
Mr. Glenn Ahuna, Engineering Division Head
Mr. Daryl Ikeda, Chief of Operations
Mr. Richard Tsunoda, Waterworks Controller
Mr. Richard Sumada, Assistant Waterworks Controller
Mr. Calvin Uemura, Customer Service Section
Mr. David Mellom, Customer Service Section
Mr. Lawrence Beck, Engineering Division
Mr. Keith Okamoto, Water Quality Assurance and Control Branch

CALL TO ORDER - Chairman Mochida called the meeting to order at 10:00 a.m.

STATEMENTS FROM THE PUBLIC

None

conditions for the pump installation. This second time extension request was evaluated by staff and found to be justified.

The Deputy Manager recommended that the Board grant Isemoto Contracting Company, Ltd., a 52-calendar day extension for JOB NO. 2001-785, CONSTRUCTION OF THE WAIAHA PRODUCTION WELL AND 2.0-MG RESERVOIR, from September 11, 2005, to November 2, 2005.

MOTION: Ms. Kim moved for approval of the recommendation; seconded by Mr. Goya.

Mr. Smith did not see a cost associated with this extra work and asked if the contractor is not asking for additional funds.

Mr. Ahuna replied that they are only asking for additional time right now because they do not know what the remedy is until the conditions are verified.

ACTION: A vote was taken on the Motion. Motion was carried unanimously by voice vote.

KAU:

A. **JOB NO. 95-634, CONSTRUCTION OF THE PAHALA DEEP WELL #2 EXPLORATORY WELL DRILLING:**

Due to unforeseen problems, completion of this project will require additional time and money. During drilling operations, water was found to be at an approximate depth of 784' below ground (ground elev. ~1,113'). However, prior to commencing the pump test, the water level had dropped. The open hole was partially backfilled and the water level rose. However, when an attempt to pump was made, the well offered no yield (water did not make it to the surface). Based on discussion with the consultant and driller, the plan is to perforate the installed casing using a perforator. The contractor, Wai'ele Drilling & Development, has already experienced delays as well as additional work estimated at ~$23,000.00. Additional work to perform the perforating is estimated at ~$26,000.00 for a total of ~$49,000.00. Contingency for this project is $32,258.00. Therefore, it is requested that the total contingency amount be increased by $20,000.00 to $52,258.00. Contract completion date is August 14, 2005.

The Deputy Manager recommended that the Board approve an increase in the contingency amount of $20,000.00 for Wai'ele Drilling & Development for JOB NO. 95-634, PAHALA DEEP WELL #2 EXPLORATORY WELL DRILLING, to allow the additional work as well as a time extension of 60 calendar days to account for shipping of the perforator and work time required for perforator as well as other work items that still need to be done per contract such as pump testing, plumbness and alignment, and demobilization. This would extend the contract completion date to October 13, 2005.

MOTION: Mr. Goya moved for approval of the recommendation; seconded by Ms. Kim.

Upon Ms. Scarr's request for more information, Mr. Steve Bowles, of Waimea Water Services, explained that this well is very unusual. There was a well drilled by the County a short distance

from this site and may have been originally drilled by the State. It has been a fine producing well and running for years. An attempt was made when a second well was to be drilled for this Department, but it failed because of the construction ability of the contractor. This third attempt by Wai'ele Drilling & Development to drill a new hole 30 to 40 feet away from the first one found the water level where it was supposed to be. The casing was set; however, when the hole was deepened, as planned, the water level fell away. The conditions were not known until after a pump was set in the well because it was a slow falling away. While the pump was being set in the well, the water level was dropping. When the pump was turned on, no water came out. They pulled the pump out and placed a video camera down the hole and found the water level to be below where the pump was. As a corrective action, they brought the bottom of the well back up to recover the water level and got almost to where it was originally. After turning the pump back on, it completely dewatered the well, and they did not get any to the surface. It was then that they realized there is something geologically going on that they have never seen before. All of the rock appears to be either a fault or a cliff where all the rock within it has been totally cemented in place naturally. There is no water moving through the rocks. It is seeping, but not rapidly moving. It is a condition that he has never seen in all his years of working. The only solution they have been able to figure out is to go back in with a special tool, which they have had made on the mainland, and are bringing in to perforate the steel casing and get the water to come in from a higher level. They believe it will work, but there is no guarantee. The only other answer is to drill the well deep and go for a much lower water level, and that has not been something they have wanted to do.

The Board asked some questions about how this special tool will perforate the steel casing, and also about the depth of the well.

Mr. Bowles explained that because the nearby well is producing from a higher elevation, that is why they are going back up to try and get through to that higher elevation and attempt to bring that water in. All other attempts have been exhausted, and this is the way they feel they can do it. It has caused a significant delay in construction and will add cost to the well.

ACTION: A vote was taken on the Motion. Motion was carried unanimously by voice vote.

(Mr. Bowles left the meeting at 10:40 a.m.)

MISCELLANEOUS:

A. **DEDICATION OF WATER SYSTEMS:**

The Department received the following documents for action by the Water Board. The water systems have been constructed in accordance with the Department's standards and are in acceptable condition for dedication.

1. **CANCELLATION AND SURRENDER OF GRANT OF EASEMENT**
   PUAKO WATER SYSTEM (Old system)
   Grantor: Mauna Kea Development Corp., et al.
   Grantee: State of Hawai'i, Department of Land and Natural Resources
   TMK: (3) 6-2-013:002, 004, 005, 007, 013, 014, 017 & 026

Figure 1
Reported Total Monthly Pumpage in the Naalehu Aquifer System

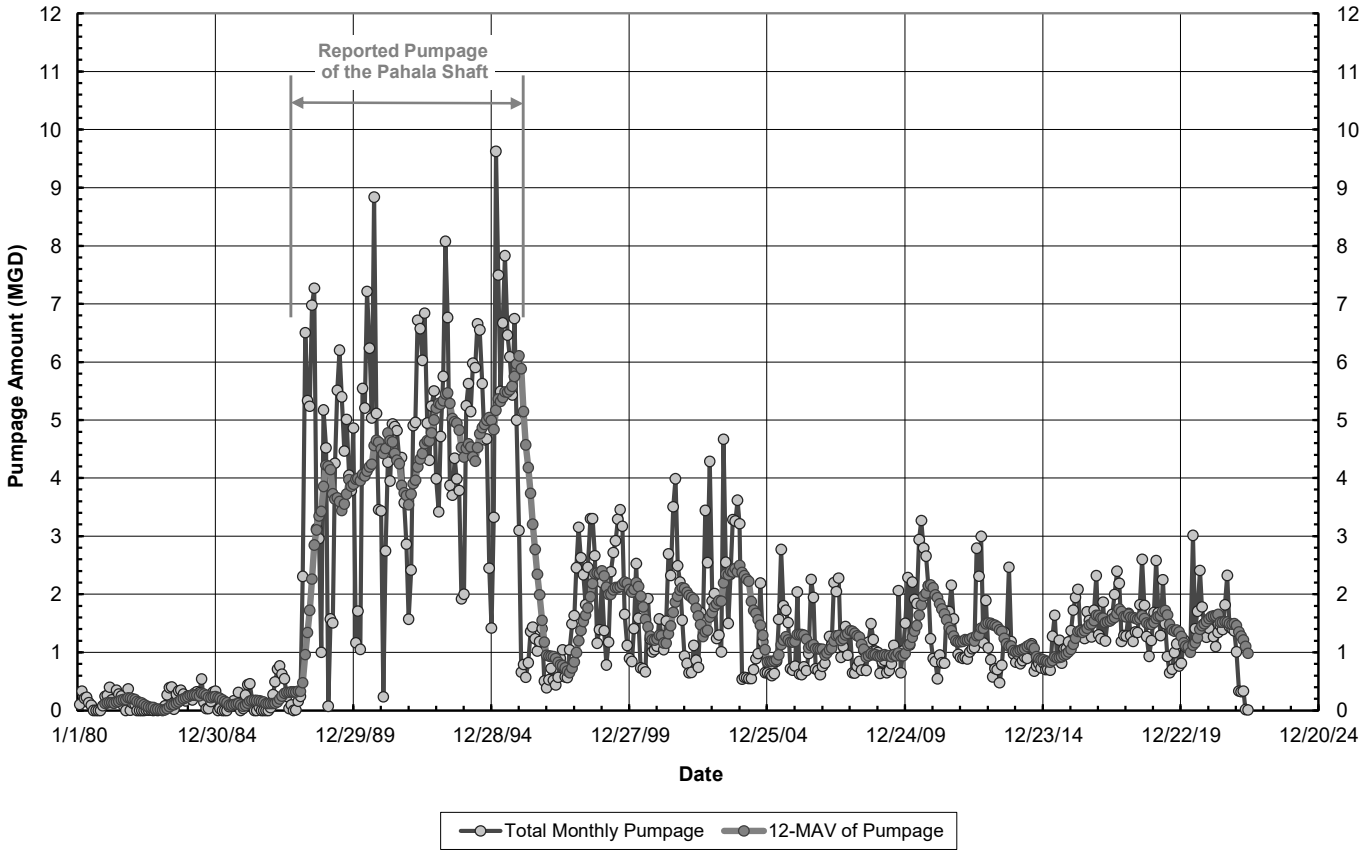


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Figure 2
Reported Monthly Pumpage in the Naalehu Aquifer System Compared to its Sustainable Yield Since January 1980

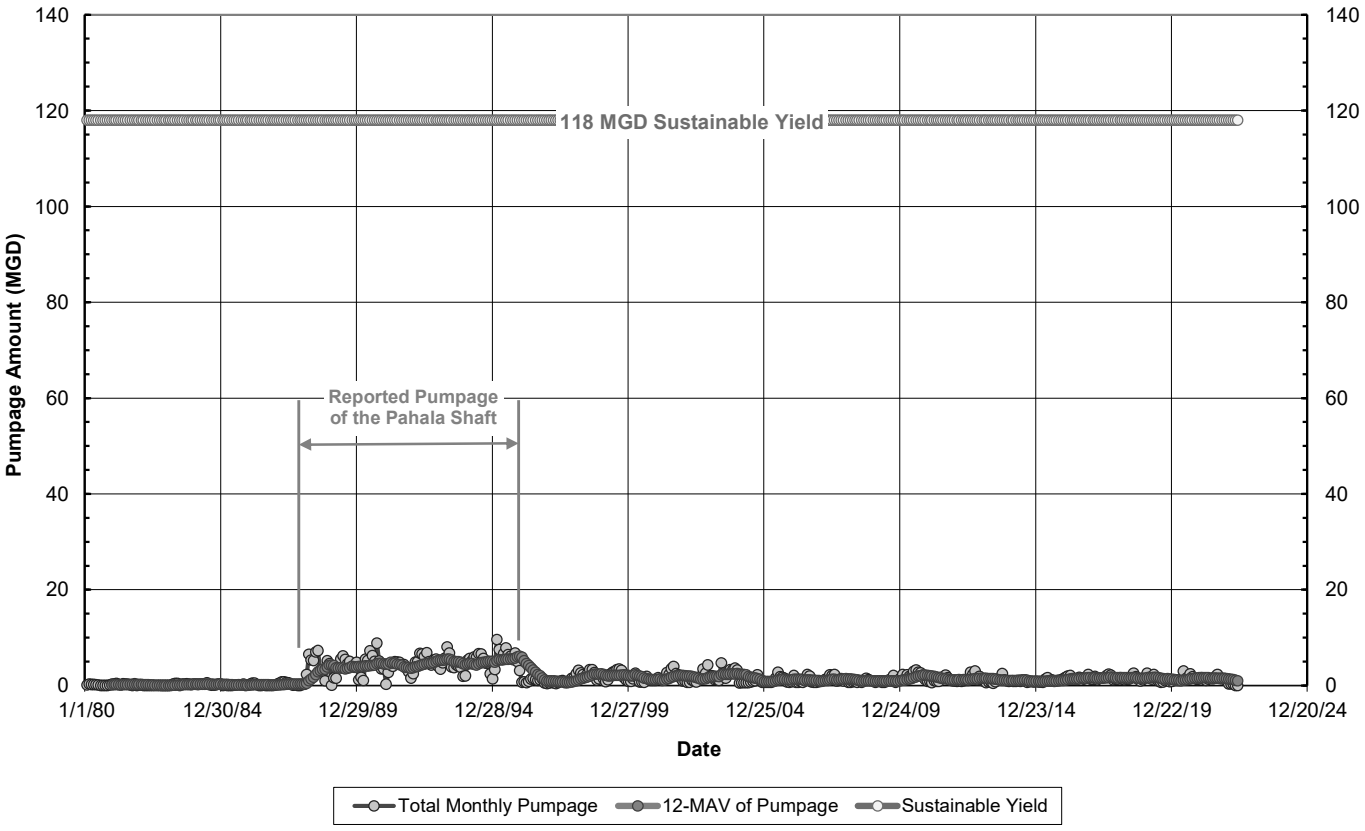

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Figure 3
Reported Pumpage of the Pahala Shaft from Janaury 1988 through December 1995

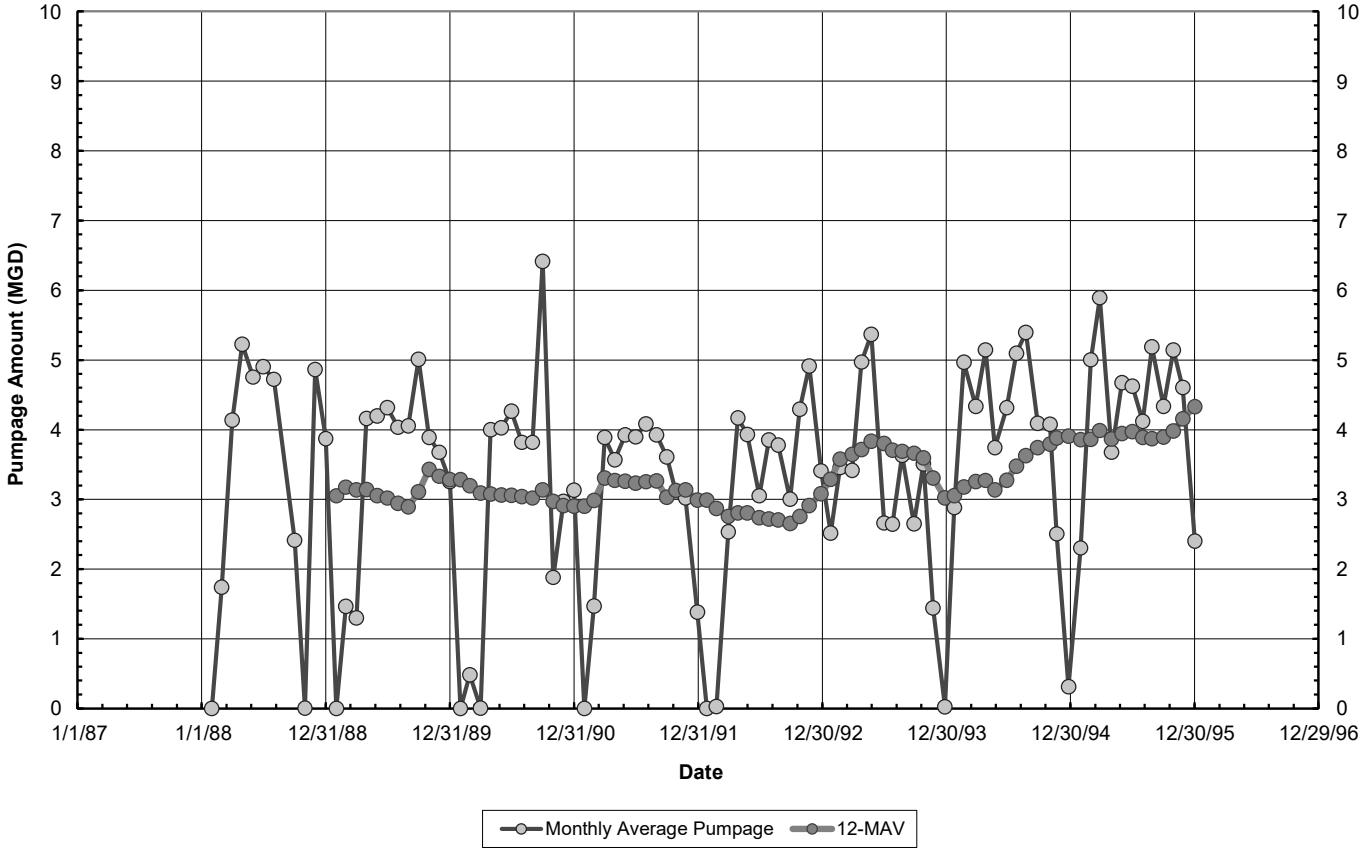

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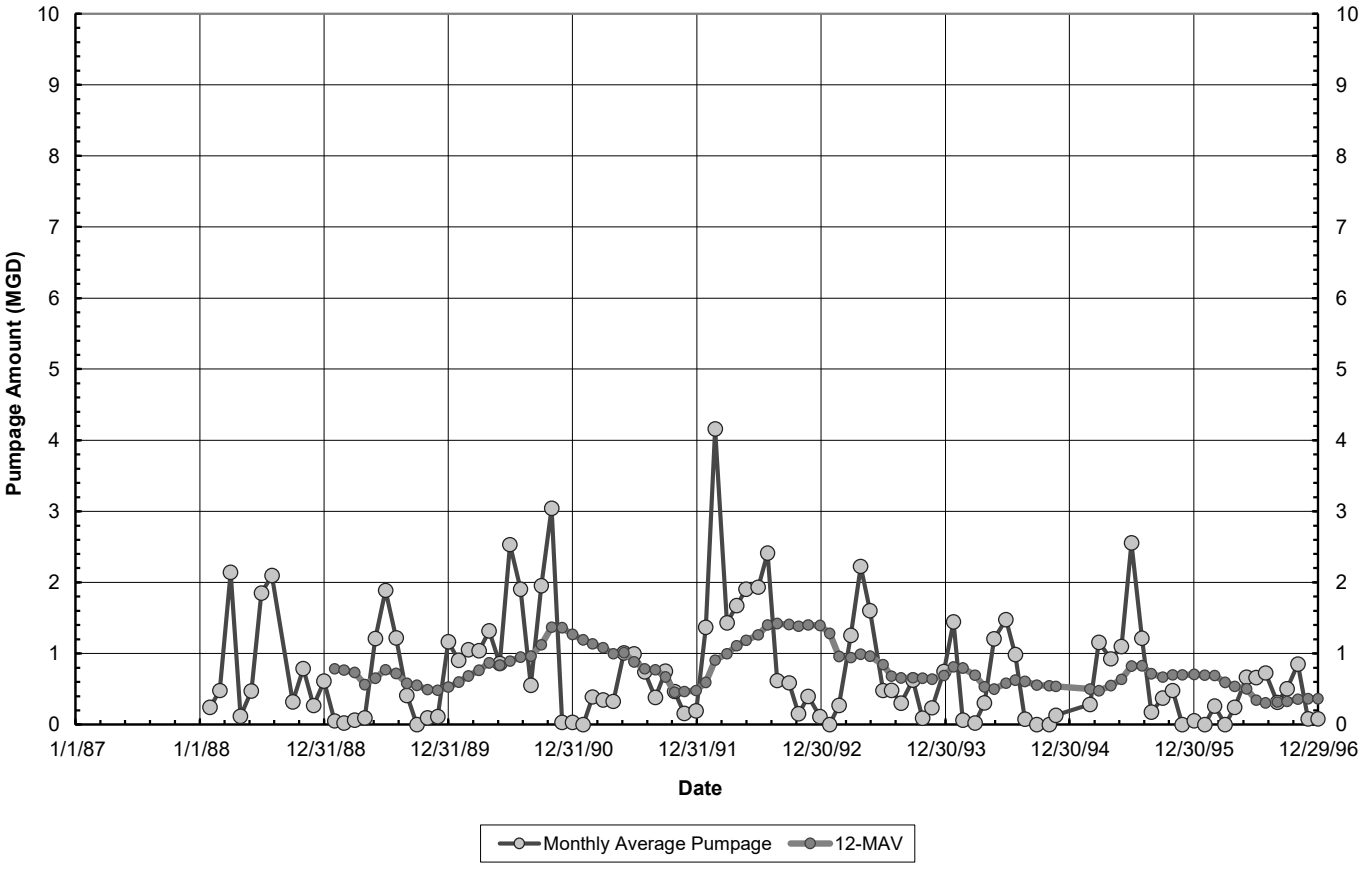
Figure 4
Reported Pumpage of the Pahala Well, State No. 1129-001



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Ka Paʻakai Analysis – Well Construction/Pump Installation Permit Application for HWC 1 & 2 Wells (Well Nos. 8-1128-003 and -004), Pāhala, Kaʻū, Hawaiʻi

> In Ka Paʻakai O Kaʻaina v. Land Use Commission, the Hawaiʻi Supreme Court recognized that the State has an obligation to protect Hawaiian traditional and customary practices to the extent feasible, and that the proponent of an action must show sufficient evidence that these types of practices are protected, if they exist in the location in question. This "Ka Paʻakai framework" was created by the Court "to help ensure the enforcement of traditional and customary native Hawaiian rights while reasonably accommodating competing private development interests." The Commission is obligated to conduct a "Ka Paʻakai analysis" of a proposed action requiring CWRM approval independent of the entity proposing the action. This analysis should be used to inform any decision on the impact of the proposed action on traditional and customary practices.
>
> Consequently, the Court required an assessment of the following:
>
> (1) "the identity and scope of 'valued cultural, historical, or natural resources' in the petition area, including the extent to which traditional and customary native Hawaiian rights are exercised in the petition area;
>
> (2) "the extent to which those resources -- including traditional and customary native Hawaiian rights -- will be affected or impaired by the proposed action;" and
>
> (3) "the feasible action, if any, to be taken … to reasonably protect native Hawaiian rights if they are found to exist."

To provide a context within which to assess the potential impact of the proposed action on traditional and customary practices, a brief culture-historical background for the HWC 1 & 2 Wells petition area is first presented, followed by the Court required assessment of the above items.

A Brief Culture-Historical Background for the HWC 1 & 2 Wells Petition Area

The petition area for HCW 1 & 2 Wells (a 0.7-acre portion of TMK: (3) 9-6-002:016) is located within Pālima Ahupuaʻa in the District of Kaʻū on the Island of Hawaiʻi (Figures 1 through 6). According to Pukui and Elbert (1986:12), the name Pālima literally translates as "fivefold," or as the name of a "temporary booth occupied by priests during taboo days of a heiau." The reason for the naming of this land division (the actual meaning of the name) is not known, and although traditional legendary accounts abound for the Kaʻū District, no legends that specifically mention Pālima Ahupuaʻa were identified as part of this analysis (Clark 2021).

Early Historic accounts of the lands in the vicinity of the petition area indicate that at the time of Western contact the Pāhala region of Kaʻū was extensively cultivated by the resident Hawaiian population (Menzies 1920). When the first Polynesian settlers arrived to this same region more than a millennia earlier, however, they would have encountered a verdant forest of native and endemic flora that included various ferns (e.g. *hāpuʻu*, *uluhe*, *ʻākōlea*), grasses (e.g. *pili*,

kūkaepuaʻa, *mauʻu lāʻili*), shrubs (e.g. *koʻokoʻolau*, *ʻūlei*), trees (e.g. *ʻiliahi*, *koa*, *kauila*, *wiliwili*), flowering plants (e.g. *ʻilima*, *pōhuehue*, *ʻawapuhi*), and vines (e.g. *maile*, *ʻieʻie*), but very little in the way of food plants (Handy et al. 1991; Handy and Pukui 1998). Over a period of centuries, generations of Hawaiian farmers slowly cleared and cultivated large swaths of these forests with new crops brought to the shores of Hawaiʻi Island in canoes, such as *kukui* (candlenut), *kō* (sugarcane), *kī* (ti), *ʻuala* (sweet potato), *kalo* (taro), *ʻawa* (kava), *wauke* (paper mulberry), *māmaki* (*Pipturus* spp.), *ipu* (gourds), and *ʻōlena* (turmeric). This work culminated in the system of well-organized fields that were described by early European visitors to the region as "plantations" (c.f. Ellis 2004; Menzies 1920).

One of the first European explorers to write specifically of Kaʻū was Archibald Menzies, a botanist who arrived in the Hawaiian Islands with Capt. George Vancouver, and visited the district in 1794 during an attempt to ascend Mauna Loa. Menzies (1920:181-183) who travelled along a trail that brought him inland of the present-day town of Pāhala, wrote that "our journey…led along the upper plantations…and was excessively rugged and woody, with here and there some intervening plantations arranged alternately with these rugged forests, which seemed to mark the latter courses of the lava down the side of the mountain." In 1823, the British missionary William Ellis (2004:202) described small Hawaiian settlement located near the project area in Makaka Ahupuaʻa that contained four or five houses, in which three or four families were residing. He also noted that "the land, though very good, was but partially cultivated, till we came to Kaaraara [Kaʻalaʻala; to the east of the Pālima Ahupuaʻa], where we passed through large fields of taro and potatoes, with sugar-cane and plantains growing very luxuriantly" (Ellis 2004:204-205).

No *kuleana* were awarded within Pālima Ahupuaʻa during the *Māhele ʻĀina* of 1848, but several were awarded *mauka* of the present day town of Pāhala in the neighboring *ahupuaʻa* of Makaka, Hionamoa, and Pāʻauʻau 2nd, where the Land Commission Award testimony indicates that crops such as taro, sweet potatoes, bananas, and *māmaki* were grown, and a number of houses were also located. As a result of the 1848 *Māhele*, Pālima Ahupuaʻa became Government Land and, along with the neighboring *ahupuaʻa* of Pāʻauʻau 1st (another Government Land), was subsequently divided up and sold as government land grants. Five grant parcels were sold within the combined Government Lands of Pāʻauʻau 1st and Palima between 1854 and 1860. These grants, ranging in size from 41 to 755 acres, subsumed the entirety of the lands within those two *ahupuaʻa*. The petition area for HWC 1 & 2 Wells is located along the boundary between two former grant parcels (Figure 7), and includes portions of both Grant No. 2446 to Kamalo (173.5 acres) and Grant No. 2727:1 to F.S. Lyman (755 acres).

During the late nineteenth century, both grant parcels were purchased by Hawaiian Agricultural Company, sometimes referred to as the Pāhala Plantation, which incorporated and began commercially cultivating sugarcane in the vicinity of the petition area in 1876 (Dorrance and Morgan 2000). The Hawaiian Agricultural Company's plantation eventually grew to include some 50,000 acres of land in and around the town of Pāhala. In ca. 1878, a sugar mill was built nearby the petition area on a grant parcel purchased from F.S. Lyman (Grant No. 2727:1). The 0.7 acres included in the petition area for HWC 1 & 2 Wells is located on previously developed land located to the west of the former Pāhala Mill structure and to the south of Maile Street (Figure 8), between a former seed tank and the plantation's gang cesspool (Clark 2021). The

petition area is approximately 1,000 feet from a well previously developed on the subject parcel by the Hawaiian Agricultural Company in 1947 (TLF Consulting 2016) (see Figure 4).

In 1972, the Hawaiian Agricultural Company consolidated with the Hutchinson Sugar Plantation Company, forming the Ka‘u Sugar Company, which continued growing and processing sugarcane in and around Pāhala until 1996. As can be seen in USGS aerial photographs taken between the 1950s to the 1980s (Figures 9 through 11), the petition area for HWC 1 & 2 Wells was transformed into a built environment by plantation activities associated with the use and expansion of the Pāhla Mill site during the second half of the twentieth century. Today, many of the old sugarcane fields are used for diversified agricultural and ranching. Most of the mill structure has been removed from the subject parcel, but the foundations of many of the old plantation buildings are still present in the vicinity of the petition area, and much of the original plantation infrastructure in and around the town of Pāhala is still in use today. Use of the well drilled on the subject parcel by the plantation in 1947 (referred to as the Pāhala shaft; well no. 1128-01) ceased after the Pāhala Mill was closed in 1996 (TLF Consulting 2016).

The former Pāhala Mill property (TMK: (3) 9-6-002:016 and 025), comprising 67-acres in and around the petition area, was purchased by PMK Capital Partners in 2005. With the exception of a new cell tower built directly to the northwest of the petition area for HWC 1 & 2 Wells in 2021(see Figure 5), no development has occurred within the subject parcel since the closure of the Pāhala Mill. Recent visits to the subject parcel (Clark 2021) indicate that some of the abandoned mill structures on the property are currently being occupied by houseless persons, and that the lands nearest to the petition area are currently used for striping and dumping motor vehicles.

An archaeological field inspection conducted for HWC 1 & 2 Wells (Clark 2021) noted that the surface of the petition area has undergone repeated prior mechanical disturbance, is covered in a secondary growth of weedy vegetation, and does not contain any significant historic properties. That study recommended an effect determination of “no historic properties affected” pursuant to HAR 13§13-284-7 for the proposed drilling of the two new wells within a roughly 0.7-acre portion of TMK: (3) 9-6-002:016. The State Historic Preservation Division (SHPD) concurred with the determination of “no historic properties affected” for the development of HWC 1 & 2 Wells in a letter dated October 21, 2021 (Project No. 2021PR01248, Doc. No. 2110NM08).

Other prior archaeological studies conducted in the vicinity of the petition area (c.f. Ahlo 1981; Barna 2020; Bautista et al. 2019; Cleghorn 2016; Dye and Jourdane 2006; Escott 2013; Haun 2001; Haun and Henry 2004a, 2004b; Ketner et al. 2008; Lizama et al. 2013; Muise and Rechtman 2008) have primarily documented the remains of Historic plantation era infrastructure such as plantation camp dwellings, irrigation features, roads, and other industrial sugarcane structures. These studies have found that surface structures and sites pre-dating the sugar plantation were mostly destroyed by ground-disturbing activities associated with the grubbing and plowing of the sugarcane fields, and that sites predating the plantation’s use of the lands (associated with traditional habitation, water collection, burial, and ceremonial practices) are found almost exclusively within lava tubes. Surface features related to traditional Hawaiian habitation, agriculture, transportation, burial and ceremonial practices are much more common along the coast *makai* of the petition area (McDermott et al. 1993).

(1) Valued Cultural, Historical, or Natural Resources in the Petition Area (including the extent to which traditional and customary native Hawaiian rights are exercised)

As demonstrated by the SHPD's determination of "no historic properties affected" for the proposed development of HWC 1 & 2 Wells (Project No. 2021PR01248, Doc. No. 2110NM08), and the findings of the archaeological field inspection conducted in support of the proposed project (Clark 2021), no valued cultural, historical, or natural resources are currently extant on the surface of the petition area. Furthermore, the use of this general area for the commercial sugarcane cultivation and milling activities for more than a century (from ca. 1878 to 1996) limits the potential for any traditional or customary native Hawaiian rights to be currently exercised within the area. There is however, at least one traditional cultural practice that formerly took place in the general vicinity of the petition area (agriculture), as well as an important cultural and natural resource found below the surface of the petition area (water).

During the Precontact Period of Hawaiian history, into the mid-1800s, the petition area for HWC 1 & 2 Wells may have been traditionally cultivated with crops such as taro, sweet potatoes, bananas, sugarcane, and *māmaki*. Early European explorers noted that the lands in this area were divided into plantations that were cultivated by residents living nearby in small villages of three to four families (Ellis 2004; Menzies 1920). A review of LCAw. documents for nearby lands also attests to agriculture taking place in the vicinity of the petition area, which was sold by the Government to private landowners in 1857 (as Grant No. 2446 to Kamalo) and 1860 (as Grant No. 2727:1 to F.S. Lyman). While traditional cultivation of the lands in this area may have continued throughout the mid-nineteenth century, it likely ceased following the construction of the Pāhala Sugar Mill on the subject property in ca. 1878 (Dorrance and Morgan 2000). Following the construction of the mill, until 1996, the lands encompassed by the petition area were used for activities related to the commercial cultivation of sugarcane. This later use of the petition area for commercial agricultural transformed the traditional landscape into a wholly built environment and destroyed any evidence of earlier use that may have once been present. Consequently, no traditional and customary native Hawaiian agriculture is currently practiced within the petition area, nor has it been for more than a century.

A valued cultural and natural resource, water (*wai*), is present beneath the surface of the petition area, however. The word *wai* is a component of several other words associated with water such as *kahawai* (river, stream, creek), *punawai* (spring), *ʻauwai* (irrigation ditch), *lokowai* (fresh water pond, lake). The term *waiwai* (water-water) is used to express the idea of prosperity and wealth of an individual or a place and refers to the amount of and access to fresh water (Handy et al. 1991:57). The term *kānāwai* (law, rule, ordinance, to learn from experience) is also associated with water. The concept of *kānāwai* is said to originate from the customary practice of sharing water between neighbors especially for irrigated fields. Given that traditional irrigated fields were built along the water system, it was a customary practice for Hawaiian farmers to take only what water they needed, and to ensure those located below them had access to an ample and clean supply of water (ibid.:58). Traditionally, the use and management of fresh water were both a right and a privilege, and anyone wishing to tap into any source of fresh water was expected to abide by these long-standing decrees (Sproat 2009:3). *Wai* was not just revered for its physical importance in nourishing crops and sustaining life but also its spiritual importance.

Wai is considered a *kinolau* (physical manifestation) of the *akua* (deity) Kāne, who along with his companion Kanaloa (whose dominion was over the ocean), came to Hawaiʻi from Kahiki (land outside of Hawaiʻi). Legend has it that Kāne and Kanaloa both enjoyed consuming *ʻawa*, a drink prepared by mixing the root of the *ʻawa* plant (*Piper methysticum*) with fresh water. In their travels, they stopped at various places around the Hawaiian Islands, including Kaʻū and opened new freshwater springs from which they prepared their favorite drink (Handy et al. 1991:65). The *ʻōlelo noʻeau* (Hawaiian proverb) "*He huewai ola ke kanaka na Kāne*" literally translates as [m]an is Kāne's living water gourd," and emphasizes the relationship that Hawaiians have to fresh water, and thereby to the deity Kāne (Pukui 1983:68). Handy et al. emphasize the spiritual relationship that Native Hawaiians had to water:

Fresh water as a life-giver was not to the Hawaiians merely a physical element; it had a spiritual connotation. In prayers of thanks and invocations used in offering fruits of the land, and in prayers chanted when planting, and in prayers for rain, the "Water of Life of Kane" is referred to over and over again. Kane—the word means "male" and "husband"—was the embodiment of male procreative energy in fresh water, flowing on or under the earth in springs, in streams and rivers, and falling as rain (and also as sunshine), which gives life to plants. (1991:64)

Wai was not only valued for its life-giving properties, but also its purifying properties. The continuous *mauka* to *makai* flow of *wai* provided fresh drinking water, supplied water to irrigated fields, and fishponds, recharged ground water supplies, and sustained productive estuaries and fisheries by transporting nutrients from the uplands to the sea (Sproat 2009). Because a flowing river was considered a vital artery for both the land and man, great care was paid to maintaining clean rivers. To that end, domestic duties involving the use of water were dispersed along the length of the river. For instance, "there was a place for bathing (*ʻauʻau*) low down in the stream; a place up farther along the stream for washing utensils or soaking calabashes; still farther up were dams for *ʻauwai*; and above the dams was the place where drinking water was taken" (Handy et al 1983:61). Because of the high degree of dependency on *wai* to furnish and satisfy life's needs, *wai* was a public trust resource that was considered inalienable. Handy et al. continue thusly,

Inalienable title to water rights in relation to land use is a conception that has no place in old Hawaiian thinking…[w]ater, whether for irrigation, for drinking, or other domestic purposes, was something that "belonged" to Kane-i-ka-wai-ola (Procreator-in-the-water-of-life)… The *aliʻi nui*, in old Hawaiian thinking and practice, did not exercise personal dominion, but channeled dominion. In other words, he was a trustee. (ibid.:63)

The introduction of western law during the reign of Kamehameha III (1825-1854), and the subsequent land privatization movement known as the *Māhele ʻĀina* set in motion new *kānāwai* (laws) that gave rise to the notion of private ownership of the land and its resources. Sproat (2009) notes that although the concept of water as a public trust carried over into the Kingdom of Hawaiʻi laws, many newcomers were unaware or failed to respect the customary practices resulting in a number of water disputes. This conflict was amplified as sugar plantations began diverting water to furnish their fields, thus resulting in the loss of water for farmers using the traditional method of irrigated taro cultivation (ibid.).

The development of plantation water systems in the Kaʻū District during the late nineteenth and twentieth centuries was arguably less detrimental to traditional agricultural practices than elsewhere in the Hawaiian Islands, since most of the traditional crops and fields were rain fed rather than irrigated (Handy et al. 1991). The sugar plantations' monopolization/privatization of land, and the clearing of fields for the cultivation of sugarcane, were much more detrimental to the pursuits of traditional Hawaiian farmers in Kaʻū (ibid.) than the development of new water sources and distribution systems, as the plantations generally tapped into underground water aquifers (previously unavailable to the Hawaiian farmer), rather than diverting water from streams and rivers. This was the case with the Hawaiian Agricultural Company's Pāhala shaft (well no. 1128-01) that was drilled nearby the petition area for HWC 1 & 2 Wells in 1947 and operated until 1996 (TFL consulting 2016). The Pāhala shaft, as will be the case for the proposed HWC 1 & 2 Wells, tapped into a source of perched groundwater that historically supported the milling operations at the Pāhala Mill, and today supplies irrigation water to nearby orchards, as well as drinking water to the residents of Pāhala, but was not traditionally available (ibid.).

While *wai* is certainly one of the most treasured and culturally significant natural and cultural resource in the Hawaiian Islands, and the history of water use in many parts of Hawaiʻi remains contentious and unresolved (Sproat 2009), the source of water that will be accessed by the HWC 1 & 2 Wells was historically developed by the Hawaiian Agricultural Company for plantation use and was not traditionally available to the native Hawaiian farmers of the region. Today, a small percentage of the perched groundwater that will be accessed by the HWC 1 & 2 Wells may be used for traditional agricultural practices by native Hawaiian farmers still living in the vicinity of Pāhala (no data is available on the specific use of water by individual households; TFL consulting 2016), but no traditional and customary native Hawaiian gathering of the water within the petition area are currently exercised, as it has not been accessible since the nearby Pāhala shaft well stopped operating in 1996.

(2) Extent to which Valued Cultural, Historical, or Natural Resources in the Petition Area -- including traditional and customary native Hawaiian rights -- will be affected or impaired by the proposed action

The proposed action (the drilling of the HWC 1 & 2 Wells) has limited potential to affect valued cultural, historical, and natural resources or impair traditional and customary native Hawaiian rights. As discussed above, one past cultural practice that may have occurred within the petition area was traditional agriculture, and another valued cultural and natural resource that exists beneath the surface of the petition area is water (or *wai*).

Concerning the traditional agricultural practices that potentially occurred within this area, while crops such as taro, sweet potatoes, bananas, sugarcane, and *māmaki* may have once been cultivated by native Hawaiians in and around Pāhala (Ellis 2004; Handy et al. 1991; Menzies 1920), that cultivation would have ceased more than a century ago when the lands were developed as the site of the Pāhala Sugar Mill. No archaeological features related to traditional agriculture (or any other traditional cultural activities) were identified within the HWC 1 & 2 Wells petition area as the result of an archaeological field inspection conducted by Clark (2021). The lack of surface features was largely attributed to the extent of plantation land clearing activities that occurred during the twentieth century, and SHPD concurred with a determination

of “no historic properties affected” for the development of HWC 1 & 2 Wells in a letter dated October 21, 2021 (Project No. 2021PR01248, Doc. No. 2110NM08). Thus, traditional agricultural practices and resources are unlikely to be affected or impaired by the proposed action.

Concerning the *wai* contained in the perched aquifer beneath the HWC 1 & 2 Wells petition area, the proposed action will tap into an underground water source and draw water from it. While *wai* is a valued cultural and natural resource (Handy aet al. 1991; Sproat 2009) that could be adversely impacted by the proposed action, the actual drilling of the wells themselves has only limited potential to effect valued cultural, historical, and natural resources. The HWC 1 & 2 Wells are essentially replacing an existing well on the same property (the Pāhala shaft) that operated for decades and pumped much more water from the aquifer than the current proposed withdrawal with little reported impact to the supply of water (TFL consulting 2016). Once the HWC 1 & 2 Wells are installed and operating, as long as the level of the water within the perched aquifer is adequately monitored and appropriate steps are taken if the water table begins to dip below acceptable recharge levels, there should be no effect on the *wai* itself (as natural and cultural resource), or on any traditional cultural practices associated with the use of that resource. Conversely, overuse of the wells might have a significant (negative) effect on the resource, and any traditional cultural practices conducted in the vicinity of Pāhala that depend on a steady supply of fresh water (such as traditional agriculture). Thus, feasible actions should be taken to prevent the depletion of the *wai* contained within the aquifer.

(3) Feasible actions to be taken to reasonably protect native Hawaiian rights

To reasonably protect native Hawaiian rights associated with the development of the HWC 1 & 2 Wells and maintain a clean and ample supply of water within the Pāhala aquifer, the applicant should use existing wells located in the same high-level groundwater compartment as the Pahala shaft well in order to develop a groundwater map and determine the more specific direction of groundwater flow in the area, as well as validate the lack of a significant connection between adjacent compartments (TLF Consulting 2016:27). The wells should also be monitored for several months prior to startup in order to assess the predominant direction(s) of groundwater flow, and the results of the monitoring should be used to identify and reassess any potential downgradient uses and impacts of the proposed water supply development. Following the development of HWC 1 & 2 Wells the applicant should install continuous well water level monitoring devices in order to track changes in groundwater levels over the long term (ibid.:27).

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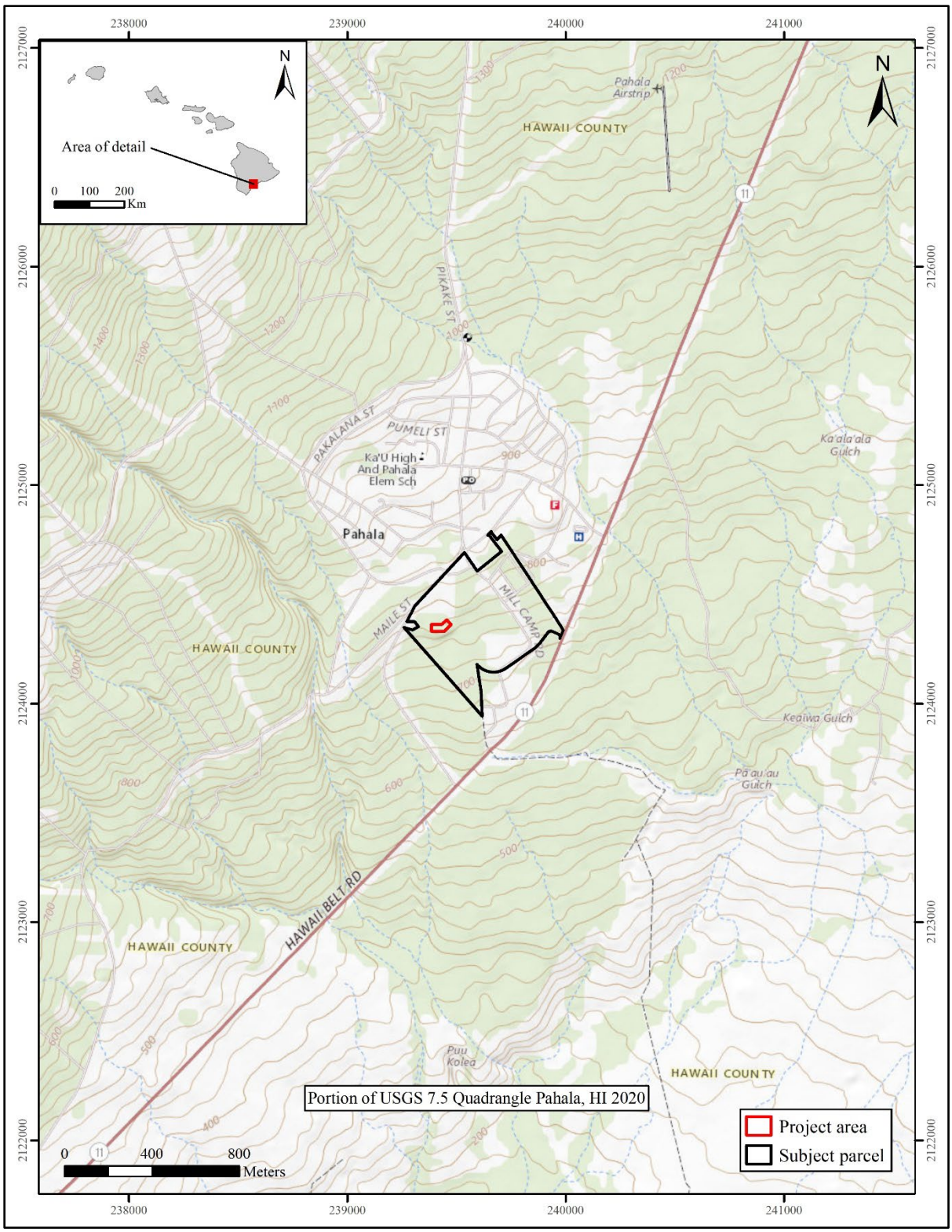

Figure 1. HWC 1 & 2 Wells project area location.

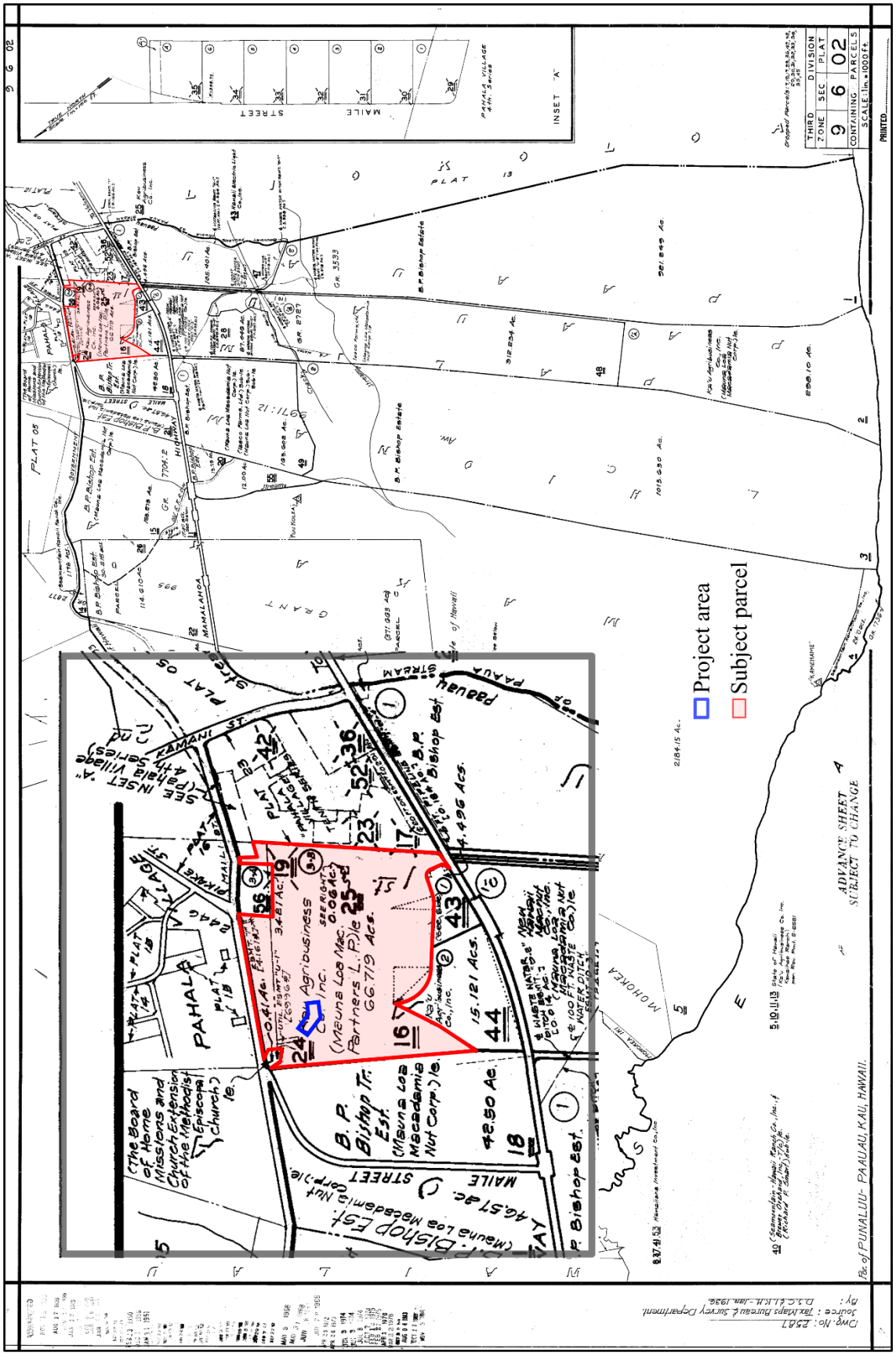

Figure 2. Tax Map Key (TMK): (3) 9-3-002 showing the subject parcel (016) and the HWC 1 & 2 Wells project area.

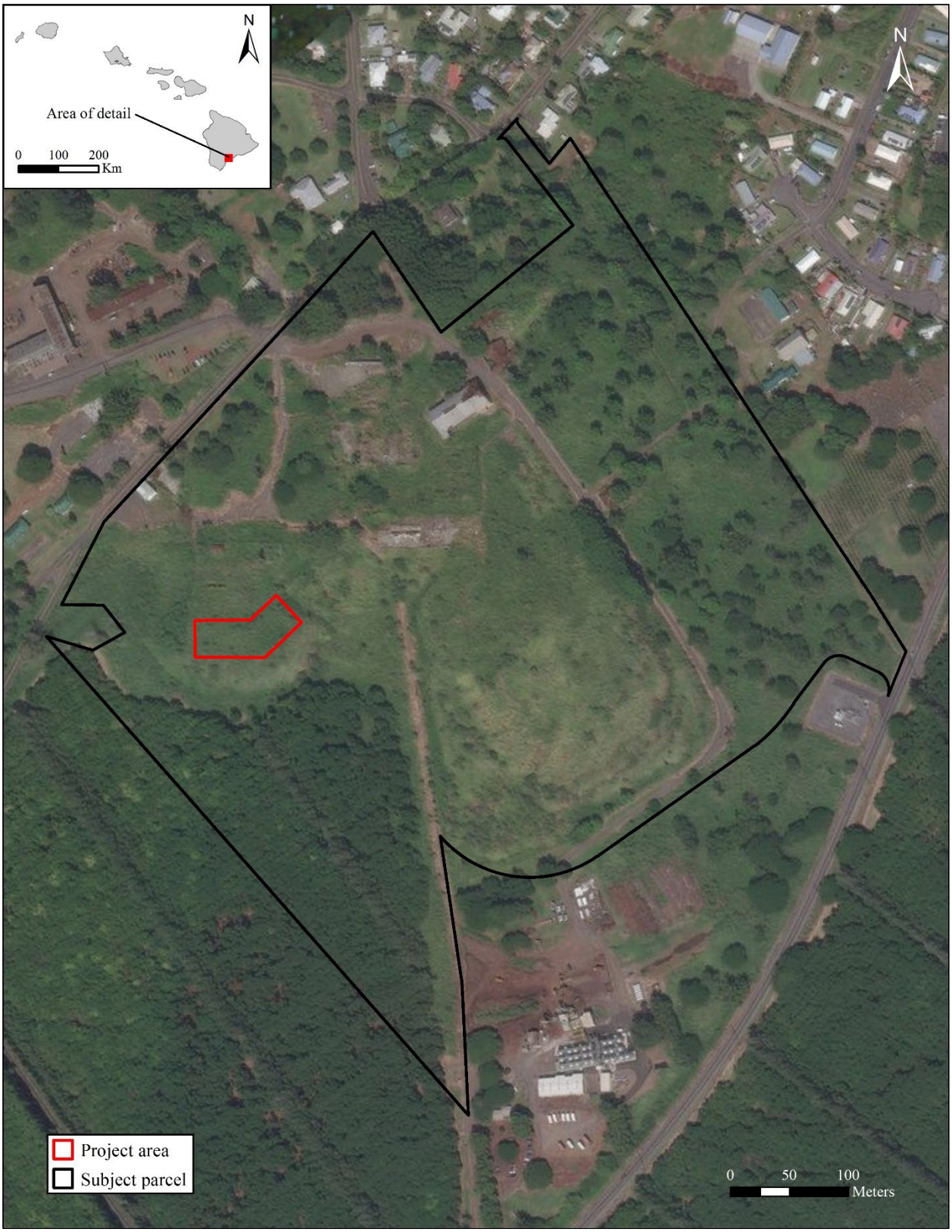

Figure 3. 2018 Google Earth™ satellite image showing the subject parcel and the HWC 1 & 2 Wells project area.

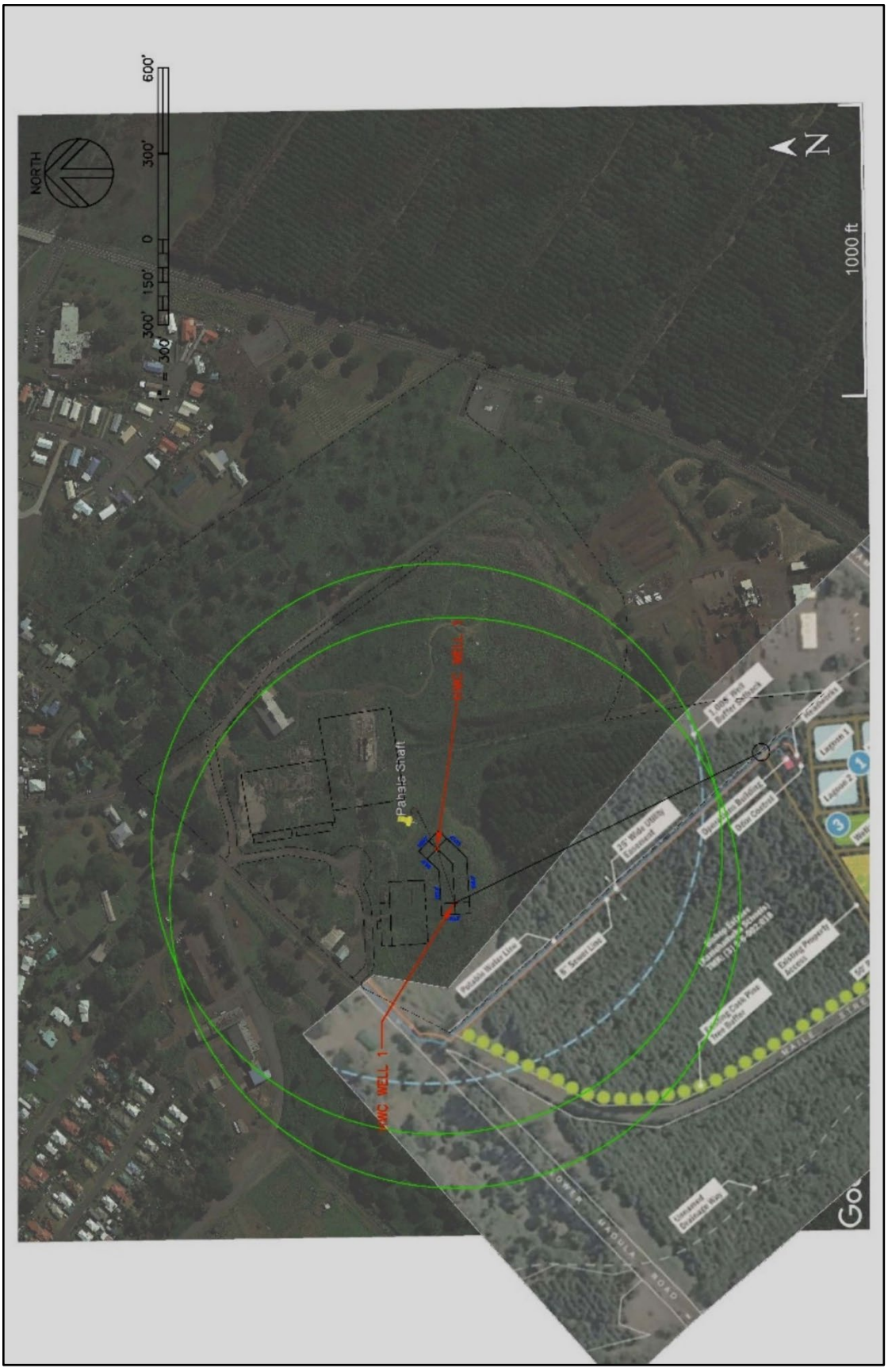

Figure 4. Preliminary development plan showing the location of the two proposed well sites and their proximity to the Pahala shaft.

Figure 5. Oblique aerial view (to the northwest) of the HWC 1 & 2 Wells project area (outlined in red).

Figure 6. Vegetation cover within the HWC 1 & 2 Wells project area, view to the southwest.

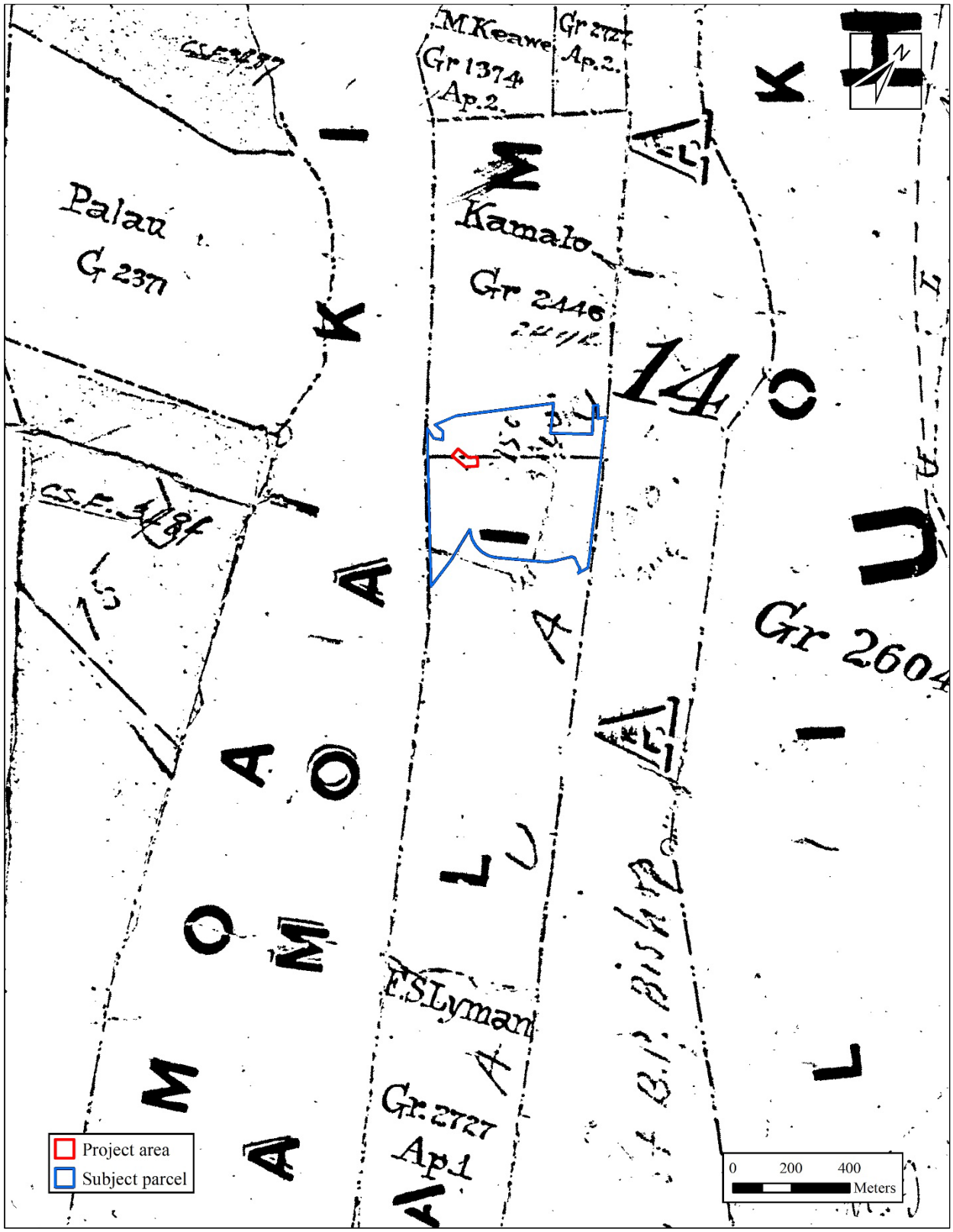

Figure 7. Portion of Hawai‘i Registered Map No. 1409 showing the location of the HWC 1 & 2 Wells project area along the boundary between Grant 2446 to Kamalo and Grant No. 2727:1 to F. S. Lyman (Brown 1885).

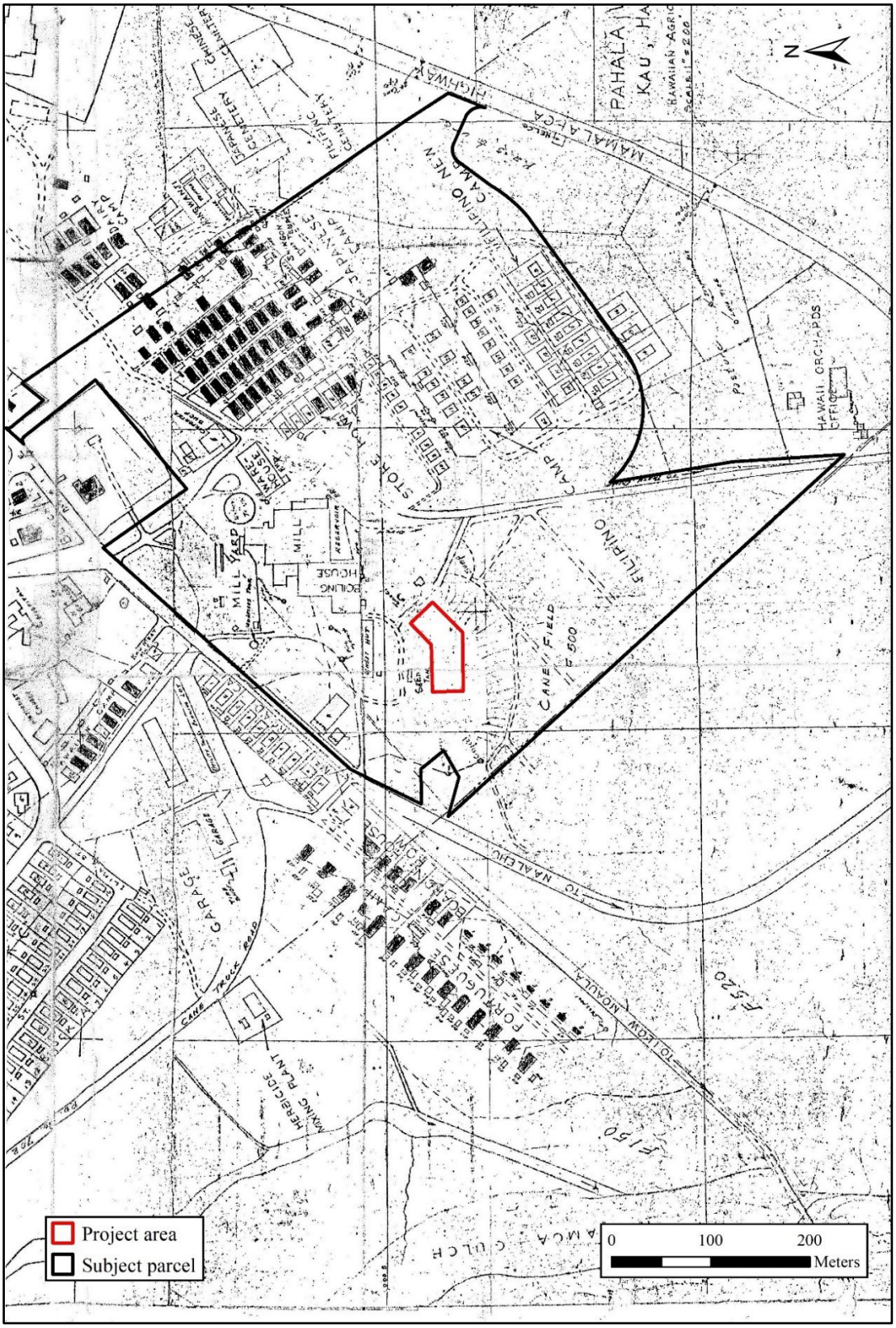

Figure 8. Portion of a 1942 map of Pāhala Village showing the location of the HWC 1 & 2 Wells project area (Clark 2021).

Figure 9. 1954 aerial photo showing the location of the HWC 1 & 2 Wells project area (USGS 1954).

Figure 10. 1977 aerial photo showing the location of the HWC 1 & 2 Wells project area (USGS 1977).

Figure 11. 1985 aerial photograph showing the location of the HWC 1 & 2 Wells project area (USGS 1985).

Komori, Queenie K

From: Quitoriano, Ryan <rquitoriano@hawaiidws.org>
Sent: Wednesday, July 20, 2022 9:11 AM
To: Komori, Queenie K
Cc: Inaba, Kurt; Beck, Lawrence; Greg (greg@tnwre.com); Tom Nance
Subject: [EXTERNAL] RE: [External Email] - RE: Well Construction/Pump Installation Permit Review (Well Nos. 8-1128-003 & 8-1128-004)

Hi Queenie,

We have reviewed the consultant's response letter and have no additional questions or comments regarding any potential impacts.

Sincerely,

Ryan G. Quitoriano, P.E.

Civil Engineer - Water Resources and Planning Branch
Department of Water Supply - County of Hawaii
345 Kekuanaoa Street, Suite 20 Hilo, HI 96720
Phone: 808-961-8070 X256 Fax: 808-961-8080
Web: www.hawaiidws.org

From: Komori, Queenie K <queenie.k.komori@hawaii.gov>
Sent: Monday, July 18, 2022 10:47 AM
To: Quitoriano, Ryan <rquitoriano@hawaiidws.org>
Cc: Inaba, Kurt <KInaba@hawaiidws.org>; Beck, Lawrence <LBeck@hawaiidws.org>
Subject: [External Email] - RE: Well Construction/Pump Installation Permit Review (Well Nos. 8-1128-003 & 8-1128-004)

Aloha Ryan,

Attached is the response letter for the subject well regarding your comment below.
The consultant indicated that there is no impact because the DWS Pahala wells are drawing from separate and lower elevation perched water body.
Please let me know if you have any additional questions or comments.

This application is still under review at CWRM. We will be meeting(zoom meeting) internally later this week.
Let me know if you would like to join our discussion. Thank you for your help.

Mahalo,
Queenie Komori, P.E.
Dept. of Land & Natural Resources

Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, HI 96813
Cell (808) 636-8503

From: Quitoriano, Ryan <rquitoriano@hawaiidws.org>
Sent: Friday, March 18, 2022 8:54 AM
To: Komori, Queenie K <queenie.k.komori@hawaii.gov>
Cc: Inaba, Kurt <KInaba@hawaiidws.org>; Beck, Lawrence <lbeck@hawaiidws.org>
Subject: [EXTERNAL] Well Construction/Pump Installation Permit Review (Well Nos. 8-1128-003 & 8-1128-004)

Hi Queenie,

Please be informed that we have reviewed the subject applications and would have concerns should the pumping of these wells impact the water levels or the ability to pump our existing Pāhala Deepwells .

Sincerely,

Ryan G. Quitoriano, P.E.

Civil Engineer - Water Resources and Planning Branch
Department of Water Supply - County of Hawaii
345 Kekuanaoa Street, Suite 20 Hilo, HI 96720
Phone: 808-961-8070 X256 Fax: 808-961-8080
Web: www.hawaiidws.org

Exhibit 5 - Hawaii Department of Water Supply comments

Komori, Queenie K

From: Darrow, Jeff <Jeff.Darrow@hawaiicounty.gov>
Sent: Tuesday, September 14, 2021 11:52 AM
To: Komori, Queenie K
Cc: Nakayama, Larry
Subject: [EXTERNAL] RE: water bottling well application
Attachments: 96002016-zoning.jpg; REVISED FPA APRVL STEVEN LIM - CARLSMITH BALL.pdf

Aloha Queenie,

The proposed location for the wells and facility appears to be in the General Industrial zoning area. Plan Approval has been issued.

Thanx,

Jeff

Jeffrey W. Darrow, Deputy Planning Director
County of Hawaii Planning Department
101 Pauahi Street, Suite 3
Hilo, HI 96720
808-961-8158

From: Komori, Queenie K <queenie.k.komori@hawaii.gov>
Sent: Tuesday, September 14, 2021 11:15 AM
To: Darrow, Jeff <Jeff.Darrow@hawaiicounty.gov>
Subject: water bottling well application

Aloha Jeff,

I have two pending water bottling well applications.
The TMK is (3) 9-6-002:016.
I don't think it's zoned industrial.

Do these application need to come to the Hawaii Department of Planning for review, or are they exempt from County requirements?

Mahalo,
Queenie Komori, P.E.
Dept. of Land & Natural Resources
Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, HI 96813
Cell (808) 636-8503

Harry Kim
Mayor

Michael Yee
Director

Daryn Arai
Deputy Director

West Hawai'i Office
74-5044 Ane Keohokalole Hwy
Kailua-Kona, Hawai'i 96740
Phone (808) 323-4770
Fax (808) 327-3563

County of Hawai'i
PLANNING DEPARTMENT

East Hawai'i Office
101 Pauahi Street, Suite 3
Hilo, Hawai'i 96720
Phone (808) 961-8288
Fax (808) 961-8742

April 20, 2017

Steven S. C. Lim, Esq
Carlsmith Ball LLP
P. O. Box 686
Hilo, HI 96720

Dear Mr. Lim:

SUBJECT: FINAL REVISED PLAN APPROVAL (PLA-16-001332 - Revised)
Pahala Town Square & Hawaiian Springs Facility
TMK: 9-6-002:016; Por. of Paauau 1st, District of Kau, Hawaii

We have reviewed the above-described revised plans for the establishment of a Water Bottling and Retail Facility. Enclosed and for your files, is the FINAL REVISED PLAN APPROVAL indicating the correction to the height of the structures. Final Plan Approval issued on October 3, 2016, is therefore rescinded.

Please be aware of the conditions of approval that are part of this FINAL REVISED PLAN APPROVAL for the proposed project. These conditions, listed on pages 2 - 4 of the FINAL REVISED PLAN APPROVAL document, must be complied with prior to the occupancy of the Water Bottling and Retail Facility.

For your information, all accessible parking spaces shall comply with current State and Federal Standards. Please find the most current requirements at the Disability and Communication Access Board website at http://health.hawaii.gov/dcab/parking or visit our website for information: http://www.coh.planningdept.com/ resources-and-references.

Any questions, please contact Larry Nakayama (808) 961-8149 or lnakayama@co.hawaii.hi.us.

Sincerely,

MICHAEL YEE
Planning Director

LHN:nci
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Enclosure: PLA-16-001332 - Revised Form

cc: April Surprenant, Division Manager – Long Range Division

Exhibit 6 - Hawaii Department of Planning comments

COUNTY OF HAWAII PLANNING DEPARTMENT

FINAL
REVISED PLAN APPROVAL
PLA-16-001332- Revised

APPLICANT:
Carlsmith Ball LLP

DATE APPROVED:
April 20, 2017

LOCATION:
96-3207 Maile Street

TAX MAP KEY:
9-6-002:016

PARCEL AREA:
2.906 Acres

ZONE:
Limited Industrial – 20,000 sq. ft. (ML-20)
General Industrial – (MG-1a)
Agricultural – 20 acres (A-20a) Open (O) and Single-Family Residential – 15,000 sq. ft. (RS-15)

PROPOSED USE:
Pahala Town Square & Hawaiian Springs Facility

As Shown on Plan	Comments
Front Yard: (Maile Street) 133' -1"	OK. 20'-0" Minimum required.
Rear Yard: (Southeast) Over Required Minimum	OK. 20'-0' Minimum required.
Side Yard: (Southwest) 295' -1"	OK. 10'-0' Minimum required.
Side Yard: (Northeast) 276' -10"	OK. 10'-0" Minimum required.
Ht. of Structure: Processing Plant & Warehouse Bldg.: 25 – 40 feet Office & Retail Bldg.: 25 feet	OK. 50'-0" Maximum. (General Industrial – 1 acre)
Access to parking: Existing asphalt paved driveways off of Maile Street.	OK. Must comply with the requirements of the Department of Public Works.
Off-Street Parking: 205 stalls shown including eight (8) ADA accessible stalls.	OK. Stalls Required: Retail: 10,000 sf/400 sf = 25 stalls Warehouse Bldg.: 12,000 sf/1,000 sf = 12 stalls Processing/Warehouse: 114,250 sf/1,000 sf = 115 (114.250) stalls Offices: 3,500 sf/400sf = 9 (8.75) stalls Total Stalls Required: 161 stalls; six (6) of which must be ADA Accessible, of which one (1) must be ADA Van Accessible.

As Shown on Plan	Comments
Loading and Unloading Space: 13 Loading stalls shown; two of which is 10' x 22' and11 loading stalls at 12' x 50'.	OK. **Note: Section 25-4-58. Dimension of loading spaces.** When more than one loading space is required or the total gross floor area is more than five-thousand square feet, the minimum horizontal dimensions of at least half of the required loading spaces shall be twelve feet wide and fifty feet long. The vertical clearance shall be at least fourteen feet. The balance of the required loading spaces may have horizontal dimensions of ten feet wide and twenty-two feet long.
Density:	
Fencing and Walls: None.	
Material:	
Height:	
Location:	
Landscaping: Loriann Gordon (LPLA), Landscaping Architect	OK. Complies with Rule 17, Planning Department Rules of Practice and Procedures.
Others: Tax Clearance. Authorization Letter. DLNR - SHPD	OK. Issued July 29, 2016. OK. June 28, 2016. OK. See Condition 7.
Site Drainage Plan:	OK. Approved July 29, 2016.
Special Management Area: N/A	OK.
Does this Project have a Fair Share Contribution?	FSC: Yes __ No X FSC checked by: Larry Nakayama Date: 8/22/16

Conditions of Approval:

1. Prior to issuance of the Certificate of Occupancy, approved landscape planting and improvements shall be established per approved landscape plan and in a manner consistent with the Standards of Rule 17 Landscaping Requirements. Plants shall be maintained in a manner conducive to their health and growth.

2. Approved parking to be paved, striped and appropriate signage installed prior to issuance of the Certificate of Occupancy.

3. The applicant is responsible for constructing accessible parking spaces in accordance with all current County, State, and Federal standards and requirements. ADA van–accessible spaces shall be 11' wide by 18' deep, with a 5' wide access aisle. An alternative design allows a van-accessible space to be 8' wide if the adjacent access aisle is also 8' feet wide. Two parking spaces may share one access aisle where multiple parking apaces are provided, one access aisle can serve two spaces.

4. **No modification to Plans without Prior Written Approval.** All work shown on the development plans covered by this Final Plan Approval shall be completed. No additions, substitutions or alterations to the site, parking, landscaping or building design plans covered by this Final Revised Plan Approval, shall be made without prior written approval of such changes by the Planning Department. A written request for approval of such changes shall be submitted and include scaled plan sheets clearly specifying all proposed changes. Upon assessing the requested changes, the director may approve or deny the requested changes or require a new, complete application for Plan Approval where the director finds the changes to be substantial.

5. Prior to approval of a Certificate of Occupancy (C.O.), the Planning Department may inspect the subject property to verify compliance with the approved plans. A C. O. shall not be approved where the buildings, site improvements, landscaping or use plans are found by the director to be inconsistent with the submittals for which the Final Plan Approval is issued.

6. Retail sales shall be incidental and subordinate to the Limited Industrial uses that are established on the subject property.

7. The owner/applicant shall comply with all conditions and requirements of Chapter 6E, Historic Preservation the State of Hawai'i, Department of Land and Natural Resources - State Historic Preservation Division (SHPD). No permits (building, grubbing, grading) shall be issued prior to any construction, alteration, disposition or improvements of any nature until the State Historic Preservation Division has given its concurrence.

8. The owner/applicant shall receive approval from the Director of Health prior to the construction of the proposed system or modification in accordance with HAR Section 11-20-29, "Use of new sources of raw water for public water systems" and HAR Section 11-20-30, "New and modified public water systems." The owner/applicant shall also meet with all Rules and Regulations regarding the Water Bottling Facility and shall also receive approval from the Director of Health prior to the construction of the proposed water bottling facility.

9. This Final Revised Plan Approval rescinds previous Final Plan Approval-16-001332 (PLA-16-001332) issued on October 13, 2016.

10. Applicant shall comply with all other applicable laws, rules, regulations and requirements of Hawai'i County.

MICHAEL YEE
Planning Director

Date: April 20, 2017

LHN:nci
P:\Plan Approvals\9\PLA-16-001332-Revised PMKCapital Partners LLC TMK 9-6-002-016 form.doc

IWREDSS Results Summary

Total Parcel Area in Acres: 64.760

Drought Frequency:	1 in 2 years	1 in 5 years (recommended)	1 in 10 years	1 in 20 years
Inches per acre:	22.565	30.140	34.166	37.497
gpd/acre:	1,679	2,242	2,542	2,790
Total Parcel Mgd:	0.054	0.073	0.082	0.090

11/10/2022 10:33 AM

Exhibit 7 IWREDSS Results Summary

Toggle full results

Komori, Queenie K

From: Al Kam <akam808@aol.com>
Sent: Friday, November 11, 2022 8:25 AM
To: Komori, Queenie K
Cc: tom@tnwre.com; todd@tnwre.com; greg@tnwre.com
Subject: [EXTERNAL] Re: pump capacity HWC1 and HWC2

Queenie,

The current capacity of the Pahala Shaft is 4,700 gpm or 6,768,000 gpd. With HWC1 and HWC2 we are proposing to put the Pahala Shaft in reserve and replace it with two above ground wells with a combined capacity of 3,500 gpm or 5,040,000 gpd, a 25.5% reduction in overall capacity.

Based upon research from the University of Hawaii, my 42 years of experience in the macadamia nut industry and the 76 year history of C. Brewer's macadamia orchards, the optimum saturation rate for an acre of macadamia orchards is 5,500 gpd (75 inches per year) in order to ensure commercial scale yields of macadamia nut production. C. Brewer pioneered much of the agronomic research for commercial scale macadamia operations and their successor orchards today remain the highest yielding orchards in the world. In our particular location in Pahala Makai, rainfall has averaged 60% of the Pahala Mauka rainfall gauges or approximately 20.2 inches per year, which is roughly 1,500 gpd per acre. Therefore, we take the optimum saturation level of 5,500 gpd less the average rainfall of 1,500 gpd to arrive at our need of 4,000 gpd per acre for macadamia orchards in our location.

We manage 369.8 acres of macadamia trees that need irrigation and are in the process of acquiring additional macadamia orchards that will also require irrigation.

Al

---------- Forwarded message ---------
From: **Komori, Queenie K** <queenie.k.komori@hawaii.gov>
Date: Thu, Nov 10, 2022 at 10:46 AM
Subject: pump capacity HWC1 and HWC2
To: greg@tnwre.com <greg@tnwre.com>
Cc: Imata, Ryan R <ryan.r.imata@hawaii.gov>

Greg,
See Attached reply, item no. 2 – about 4,000 gpd/acre

- Please confirm the rates established for optimum saturation rate per acre and what criteria did you use to establish the numbers.

We ran IWREDSS and the result indicate 2,242 gpd/acre.

Queenie Komori, P.E.
Dept. of Land & Natural Resources
Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, HI 96813
Cell (808) 636-8503

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

8-1128-003.wcp.docx

Mr. Kihei Ahuna
Water Resources International, Inc.
1100 Alakea St. Suite 2900
Honolulu, HI 96813

Aloha Mr. Ahuna:

Well Construction Permit
HWC-1 Well (Well No. 8-1128-003), Naalehu, Island of Hawaii

Enclosed are two (2) copies of your approved Well Construction Permit for the captioned well(s) that authorize well construction activities but excludes installation work for a permanent pump. As part of the Chairperson's approval, the following special conditions were added and are part of your permit under Permit Condition 17:

Special Conditions

1. **Attached for your information are copies of the Department of Health's (DOH) review comments. Please note DOH's requirements related to discharge of effluent from well drilling and testing activities. Also, please contact the Noise Radiation and Indoor Air Quality Branch at 586-4700 to check compliance with construction noise permit requirements for this project.**

2. **Attached for your information is a copy of the State Department of Land and Natural Resources Historic Preservation Division's comments related to historic sites. In the unlikely event that subsurface historic resources, including human skeletal remains, structural remains, cultural deposits, artifacts, sand deposits, or sink holes are identified during the demolition and/or construction work, cease work in the immediate vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division, at (808) 933-7651.**

Please refer to the Permit Processes Worksheet (transmitted with your acknowledgement letter) for further information regarding the process of drilling a well and installing a pump.

No withdrawal of water shall be made other than for testing purposes until a certificate of pump installation completion has been issued by the Commission.

Please sign both permit originals and return **one** copy to the Commission office for our files. For copies of the aquifer pump test worksheet, please call staff or visit http://files.hawaii.gov/dlnr/cwrm/forms/APTR.pdf.

IMPORTANT - Drilling work shall not commence until a fully signed permit is returned to the Commission. The permit shall be prominently displayed or made available at the construction site during construction. Be advised that you may be subject to fines of up to $5,000 per day for any violations of your permit conditions starting from the permit approval date.

If you have any questions, please call Queenie Komori of the Commission staff at (808) 587-0251 or toll-free at 974-4000 (Hawaii), 274-3141 (Kauai), 984-2400 (Maui), or 1-800-468-4644 (Lanai & Molokai), extension 70255.

Ola i ka wai,

M. Kaleo Manuel, Deputy Director for
Suzanne D. Case, Chairperson

Exhibit 9 Well Construction Permit Standard Conditions

Enclosures

c: Well Owner: Hawaii Water Company, Inc. (with applicable comments – DOH SDWB, WWB, CWB, and SHPD)
Land Owner: PMK Catpital Partners LLC (with applicable comments – DOH SDWB, WWB, CWB, and SHPD)

WELL CONSTRUCTION PERMIT

HWC-1 Well, Well No. 8-1128-003

Note: This permit shall be prominently displayed at the construction site until the work is completed

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the construction and testing of HWC-1 Well (Well No. 8-1128-003) at TMK (3) 9-6-002:016, Island of Hawaii, subject to the Hawaii Well Construction & Pump Installation Standards (HWCPIS - February 2004) which include but are not limited to the following conditions:

1. The Chairperson of the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work authorized by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules (HAR).
2. This permit shall be prominently displayed, or made available, at the site of construction work until work is completed.
3. The well construction permit shall be for construction and testing of the well only. The permittee shall coordinate with the Chairperson and conduct a pumping test in accordance with the HWCPIS (the latest pump test worksheet can be obtained by contacting Commission staff or at http://files.hawaii.gov/dlnr/cwrm/forms/APTR.pdf). The permittee shall submit to the Chairperson the test results as a basis for supporting an application to install a permanent pump. No permanent pump may be installed until a pump installation permit is approved and issued by the Chairperson. No withdrawal of water shall be made for purposes other than testing without a Certificate of Pump Installation Completion. The permitted pump capacity described on the pump installation permit **may be reduced** in the event that the pump test does not support the capacity.
4. In basal ground water, the depth of the well may not exceed one-fourth (1/4) of the theoretical thickness (41 times initial head) of the basal ground water unless otherwise authorized by the Chairperson. If it can be shown that the well does not tap basal ground water then this condition may be waived after consultation with and acceptance by Commission staff. However, in no instance can the well be drilled deeper than one-half (1/2) of the theoretical thickness without Commission approval.
5. The permittee shall incorporate mitigation measures to prevent construction debris from entering the aquatic environment, to schedule work to avoid periods of high rainfall, and to revegetate any cleared areas as soon as possible.
6. In the event that historically significant remains such as artifacts, burials or concentrations of shells or charcoal are encountered during construction, the permittee shall stop work and immediately contact the Department of Land and Natural Resources' State Historic Preservation Division. Work may recommence only after written concurrence by the State Historic Preservation Division.
7. The proposed well construction shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to construct the well shall not constitute a determination of correlative water rights.
8. The Well Completion Report Part I shall be submitted to the Chairperson within thirty (30) days after completion of work (please contact staff or visit http://files.hawaii.gov/dlnr/cwrm/forms/WCR1.pdf for current form).
9. The permittee shall comply with all applicable laws, rules, and ordinances; non-compliance may be grounds for revocation of this permit.
10. The well construction permit application and, if relevant, any related staff submittal approved by the Commission are incorporated into this permit by reference.
11. If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.
12. Any variances from the HWCPIS shall be approved by the Chairperson prior to invoking the variance.
13. The work proposed in the well construction permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than the date the permit expires.
14. If the well is not to be used it must be properly capped. If the well is to be abandoned during the course of the project then the permittee must apply for a well abandonment permit in accordance with §13-168-12(f), HAR, prior to any well sealing or plugging work.
15. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.
16. This permit shall apply to the location shown on the application only. If the well is to be relocated, the permittee shall apply for a new well construction/pump installation permit in accordance with §13-168-12(f), HAR.
17. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Date of Approval:
Expiration Date: **Two (2) years from approval date**

M. Kaleo Manuel, Deputy Director for
Suzanne D. Case, Chairperson
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I have signed, dated, and returned the permit to the Commission. I understand that this permit is not to be transferred to any other entity. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $5,000 per day starting from the permit date of approval.

Driller's Signature: _____ C-57 License #: C-33079 Date: _____

Printed Name: Kihei Ahuna Firm or Title: Water Resources International, Inc.

Please sign both copies of this permit, return one copy to the Commission office, and retain the other for your records.

Attachment Exhibit 9 Well Construction Permit Standard Conditions

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

11/12/2022

8-1128-004.wcp.docx

Mr. Kihei Ahuna
Water Resources International, Inc.
1100 Alakea St. Suite 2900
Honolulu, HI 96813

Aloha Mr. Ahuna:

Well Construction Permit
HWC-2 Well (Well No. 8-1128-004), Naalehu, Island of Hawaii

Enclosed are two (2) copies of your approved Well Construction Permit for the captioned well(s) that authorize well construction activities but excludes installation work for a permanent pump. As part of the Chairperson's approval, the following special conditions were added and are part of your permit under Permit Condition 17:

Special Conditions

1. **Attached for your information are copies of the Department of Health's (DOH) review comments. Please note DOH's requirements related to discharge of effluent from well drilling and testing activities. Also, please contact the Noise Radiation and Indoor Air Quality Branch at 586-4700 to check compliance with construction noise permit requirements for this project.**

2. **Attached for your information is a copy of the State Department of Land and Natural Resources Historic Preservation Division's comments related to historic sites. In the unlikely event that subsurface historic resources, including human skeletal remains, structural remains, cultural deposits, artifacts, sand deposits, or sink holes are identified during the demolition and/or construction work, cease work in the immediate vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division, at (808) 933-7651.**

Please refer to the Permit Processes Worksheet (transmitted with your acknowledgement letter) for further information regarding the process of drilling a well and installing a pump.

No withdrawal of water shall be made other than for testing purposes until a certificate of pump installation completion has been issued by the Commission.

Please sign both permit originals and return **one** copy to the Commission office for our files. For copies of the aquifer pump test worksheet, please call staff or visit http://files.hawaii.gov/dlnr/cwrm/forms/APTR.pdf.

IMPORTANT - Drilling work shall not commence until a fully signed permit is returned to the Commission. The permit shall be prominently displayed or made available at the construction site during construction. Be advised that you may be subject to fines of up to $5,000 per day for any violations of your permit conditions starting from the permit approval date.

If you have any questions, please call Queenie Komori of the Commission staff at (808) 587-0251 or toll-free at 974-4000 (Hawaii), 274-3141 (Kauai), 984-2400 (Maui), or 1-800-468-4644 (Lanai & Molokai), extension 70255.

Ola i ka wai,

M. Kaleo Manuel, Deputy Director for
Suzanne D. Case, Chairperson

Exhibit 9 Well Construction Permit Standard Conditions

Enclosures

c: Well Owner: Hawaii Water Company, Inc. (with applicable comments – DOH SDWB, WWB, CWB, and SHPD)
Land Owner: PMK Catpital Partners LLC (with applicable comments – DOH SDWB, WWB, CWB, and SHPD)

WELL CONSTRUCTION PERMIT

HWC-2 Well, Well No. 8-1128-004

Note: This permit shall be prominently displayed at the construction site until the work is completed

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the construction and testing of HWC-2 Well (Well No. 8-1128-004) at TMK (3) 9-6-002:016, Island of Hawaii, subject to the Hawaii Well Construction & Pump Installation Standards (HWCPIS - February 2004) which include but are not limited to the following conditions:

1. The Chairperson of the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work authorized by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules (HAR).
2. This permit shall be prominently displayed, or made available, at the site of construction work until work is completed.
3. The well construction permit shall be for construction and testing of the well only. The permittee shall coordinate with the Chairperson and conduct a pumping test in accordance with the HWCPIS (the latest pump test worksheet can be obtained by contacting Commission staff or at http://files.hawaii.gov/dlnr/cwrm/forms/APTR.pdf). The permittee shall submit to the Chairperson the test results as a basis for supporting an application to install a permanent pump. No permanent pump may be installed until a pump installation permit is approved and issued by the Chairperson. No withdrawal of water shall be made for purposes other than testing without a Certificate of Pump Installation Completion. The permitted pump capacity described on the pump installation permit **may be reduced** in the event that the pump test does not support the capacity.
4. In basal ground water, the depth of the well may not exceed one-fourth (1/4) of the theoretical thickness (41 times initial head) of the basal ground water unless otherwise authorized by the Chairperson. If it can be shown that the well does not tap basal ground water then this condition may be waived after consultation with and acceptance by Commission staff. However, in no instance can the well be drilled deeper than one-half (1/2) of the theoretical thickness without Commission approval.
5. The permittee shall incorporate mitigation measures to prevent construction debris from entering the aquatic environment, to schedule work to avoid periods of high rainfall, and to revegetate any cleared areas as soon as possible.
6. In the event that historically significant remains such as artifacts, burials or concentrations of shells or charcoal are encountered during construction, the permittee shall stop work and immediately contact the Department of Land and Natural Resources' State Historic Preservation Division. Work may recommence only after written concurrence by the State Historic Preservation Division.
7. The proposed well construction shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to construct the well shall not constitute a determination of correlative water rights.
8. The Well Completion Report Part I shall be submitted to the Chairperson within thirty (30) days after completion of work (please contact staff or visit http://files.hawaii.gov/dlnr/cwrm/forms/WCR1.pdf for current form).
9. The permittee shall comply with all applicable laws, rules, and ordinances; non-compliance may be grounds for revocation of this permit.
10. The well construction permit application and, if relevant, any related staff submittal approved by the Commission are incorporated into this permit by reference.
11. If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.
12. Any variances from the HWCPIS shall be approved by the Chairperson prior to invoking the variance.
13. The work proposed in the well construction permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than the date the permit expires.
14. If the well is not to be used it must be properly capped. If the well is to be abandoned during the course of the project then the permittee must apply for a well abandonment permit in accordance with §13-168-12(f), HAR, prior to any well sealing or plugging work.
15. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.
16. This permit shall apply to the location shown on the application only. If the well is to be relocated, the permittee shall apply for a new well construction/pump installation permit in accordance with §13-168-12(f), HAR.
17. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Date of Approval:
Expiration Date: **Two (2) years from approval date**

M. Kaleo Manuel, Deputy Director for
Suzanne D. Case, Chairperson
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I have signed, dated, and returned the permit to the Commission. I understand that this permit is not to be transferred to any other entity. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $5,000 per day starting from the permit date of approval.

Driller's Signature: _____ C-57 License #: C-33079 Date: _____

Printed Name: Kihei Ahuna Firm or Title: Water Resources International, Inc.

Please sign both copies of this permit, return one copy to the Commission office, and retain the other for your records.

Attachment

Exhibit 9 Well Construction Permit Standard Conditions

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

8-1128-003.pip.docx

Mr. Kihei Ahuna
Water Resources International, Inc.
1100 Alakea St. Suite 2900
Honolulu, HI 96813

Aloha Mr. Ahuna:

Pump Installation Permit
HWC-1 Well (Well No. 8-1128-003), Naalehu, Island of Hawaii

Enclosed are two (2) originals of your approved Pump Installation Permit for the captioned well(s) that authorize permanent pump installation work for your well(s). As part of the Chairperson's approval, the following special conditions were added and are part of your permit under Permit Condition 14:

Special Conditions

1. **If the elevation benchmark needs to be altered, the permittee, well operator, and/or well owner shall ensure that the benchmark is transferred (or the well resurveyed) and documentation of the new benchmark shall be submitted to the Commission within sixty (60) days after the pump is installed.**

2. **Attached for your information are copies of the Department of Health's (DOH) review comments. Please note DOH's requirements related to discharge of effluent from well drilling and testing activities. Also, please contact the Noise Radiation and Indoor Air Quality Branch at 586-4700 to check compliance with construction noise permit requirements for this project.**

3. **Attached for your information is a copy of the State Department of Land and Natural Resources Historic Preservation Division's comments related to historic sites. In the unlikely event that subsurface historic resources, including human skeletal remains, structural remains, cultural deposits, artifacts, sand deposits, or sink holes are identified during the demolition and/or construction work, cease work in the immediate vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division, at (808) 933-7651.**

The permittee is responsible for all conditions of the permit. This includes ensuring the submission of a completed Well Completion Report Part II form within thirty (30) days after the pump installation work is completed. Be advised that you may be subject to fines of up to $5,000 per day for any violations of your permit conditions starting from the permit approval date.

Please sign both permit originals and return **one** copy to the Commission office for our files.

IMPORTANT - Pump installation shall not commence until a fully signed permit is returned to the Commission.

If you have any questions, please call Queenie Komori of the Commission staff at (808) 587-0251 or toll-free at 974-4000 (Hawaii), 274-3141 (Kauai), 984-2400 (Maui), or 1-800-468-4644 (Lanai & Molokai), extension 7.

Ola i ka wai,

M. Kaleo Manuel, Deputy Director for
Suzanne D. Case, Chairperson

Enclosures

c: Well Owner: Hawaii Water Company, Inc. (with applicable comments – DOH SDWB, WWB, CWB, and SHPD)
Land Owner: PMK Catpital Partners LLC (with applicable comments – DOH SDWB, WWB, CWB, and SHPD)

PUMP INSTALLATION PERMIT
HWC-1 Well, Well No. 8-1128-003

Note: This permit shall be prominently displayed at the site until the work is completed

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the pump installation for HWC-1 Well (Well No. 8-1128-003) at TMK (3) 9-6-002:016, Island of Hawaii, subject to the Hawaii Well Construction & Pump Installation Standards (HWCPIS - February 2004) which include but are not limited to the following conditions:

1. The Chairperson to the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work covered by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules (HAR).

2. No withdrawal of water shall be made other than for testing until a Certificate of Pump Installation Completion has been issued by the Commission.

3. This permit shall be prominently displayed, or made available, at the site of construction work until work is completed.

4. The pump installation permit shall be for installation of a 1750 gpm rated capacity, or less, pump in the well. This permanent capacity may be reduced in the event that the pump test data does not support the capacity.

5. A water-level measurement access shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels.

6. The permittee shall install an approved meter or other appropriate means for measuring and reporting withdrawals and appropriate devices or means for measuring chlorides and temperature at the well head.

7. Well Completion Report Part II shall be submitted to the Chairperson within thirty (30) days after completion of work (please contact staff or visit **http://files.hawaii.gov/dlnr/cwrm/forms/WCR2.pdf** for current form).

8. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances, and non-compliance may be grounds for revocation of this permit.

9. The pump installation permit application and, if relevant, any related staff submittal approved by the Commission are incorporated into this permit by reference.

10. If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.

11. Any variances from the HWCPIS shall be approved by the Chairperson **prior** to invoking the variance.

12. The work proposed in the pump installation permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than the date the permit expires.

13. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

14. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Date of Approval:
Expiration Date: **Two (2) years from approval date**

M. Kaleo Manuel, Deputy Director for
Suzanne D. Case, Chairperson
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the pump installer have signed, dated, and returned the permit to the Commission. I understand that this permit is not to be transferred to any other entity. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $5,000 per day starting from the permit date of approval.

Installer's Signature: _____ C-57, C-57a, or A License #: C-33079 Date: _____

Printed Name: Kihei Ahuna Firm or Title: Water Resources International, Inc.

Please sign both copies of this permit, return one copy to the Commission office, and retain the other for your records.

Attachments Exhibit 10 Pump Installation Permit Standard Conditions

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

8-1128-004.pip.docx

Mr. Kihei Ahuna
Water Resources International, Inc.
1100 Alakea St. Suite 2900
Honolulu, HI 96813

Aloha Mr. Ahuna:

Pump Installation Permit
HWC-2 Well (Well No. 8-1128-004), Naalehu, Island of Hawaii

Enclosed are two (2) originals of your approved Pump Installation Permit for the captioned well(s) that authorize permanent pump installation work for your well(s). As part of the Chairperson's approval, the following special conditions were added and are part of your permit under Permit Condition 14:

Special Conditions

1. **If the elevation benchmark needs to be altered, the permittee, well operator, and/or well owner shall ensure that the benchmark is transferred (or the well resurveyed) and documentation of the new benchmark shall be submitted to the Commission within sixty (60) days after the pump is installed.**

2. **Attached for your information are copies of the Department of Health's (DOH) review comments. Please note DOH's requirements related to discharge of effluent from well drilling and testing activities. Also, please contact the Noise Radiation and Indoor Air Quality Branch at 586-4700 to check compliance with construction noise permit requirements for this project.**

3. **Attached for your information is a copy of the State Department of Land and Natural Resources Historic Preservation Division's comments related to historic sites. In the unlikely event that subsurface historic resources, including human skeletal remains, structural remains, cultural deposits, artifacts, sand deposits, or sink holes are identified during the demolition and/or construction work, cease work in the immediate vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division, at (808) 933-7651.**

4. **The permittee shall conduct aquifer pump tests in accordance with the Hawaii Well Construction and Pump Installation Standards (revised February 2004) on the latest aquifer pump test data forms, which are available by contacting staff or on the web at http://files.hawaii.gov/dlnr/cwrm/forms/APTR.pdf.**

The permittee is responsible for all conditions of the permit. This includes ensuring the submission of a completed Well Completion Report Part II form within thirty (30) days after the pump installation work is completed. Be advised that you may be subject to fines of up to $5,000 per day for any violations of your permit conditions starting from the permit approval date.

Please sign both permit originals and return **one** copy to the Commission office for our files.

IMPORTANT - Pump installation shall not commence until a fully signed permit is returned to the Commission.

Exhibit 10 Pump Installation Permit Standard Conditions

If you have any questions, please call Queenie Komori of the Commission staff at (808) 587-0251 or toll-free at 974-4000 (Hawaii), 274-3141 (Kauai), 984-2400 (Maui), or 1-800-468-4644 (Lanai & Molokai), extension 7.

Ola i ka wai,

M. Kaleo Manuel, Deputy Director for
Suzanne D. Case, Chairperson

Enclosures

c: Well Owner: Hawaii Water Company, Inc. (with applicable comments – DOH SDWB, WWB, CWB, and SHPD)
Land Owner: PMK Catpital Partners LLC (with applicable comments – DOH SDWB, WWB, CWB, and SHPD)

PUMP INSTALLATION PERMIT
HWC-2 Well, Well No. 8-1128-004

Note: This permit shall be prominently displayed at the site until the work is completed

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the pump installation for HWC-2 Well (Well No. 8-1128-004) at TMK (3) 9-6-002:016, Island of Hawaii, subject to the Hawaii Well Construction & Pump Installation Standards (HWCPIS - February 2004) which include but are not limited to the following conditions:

1. The Chairperson to the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work covered by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules (HAR).

2. No withdrawal of water shall be made other than for testing until a Certificate of Pump Installation Completion has been issued by the Commission.

3. This permit shall be prominently displayed, or made available, at the site of construction work until work is completed.

4. The pump installation permit shall be for installation of a 1750 gpm rated capacity, or less, pump in the well. This permanent capacity may be reduced in the event that the pump test data does not support the capacity.

5. A water-level measurement access shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels.

6. The permittee shall install an approved meter or other appropriate means for measuring and reporting withdrawals and appropriate devices or means for measuring chlorides and temperature at the well head.

7. Well Completion Report Part II shall be submitted to the Chairperson within thirty (30) days after completion of work (please contact staff or visit **http://files.hawaii.gov/dlnr/cwrm/forms/WCR2.pdf** for current form).

8. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances, and non-compliance may be grounds for revocation of this permit.

9. The pump installation permit application and, if relevant, any related staff submittal approved by the Commission are incorporated into this permit by reference.

10. If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.

11. Any variances from the HWCPIS shall be approved by the Chairperson **prior** to invoking the variance.

12. The work proposed in the pump installation permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than the date the permit expires.

13. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

14. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Date of Approval:
Expiration Date: **Two (2) years from approval date**

M. Kaleo Manuel, Deputy Director for
Suzanne D. Case, Chairperson
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the pump installer have signed, dated, and returned the permit to the Commission. I understand that this permit is not to be transferred to any other entity. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $5,000 per day starting from the permit date of approval.

Installer's Signature: _____ C-57, C-57a, or A License #: C-33079 Date: _____

Printed Name: Kihei Ahuna Firm or Title: Water Resources International, Inc.

Please sign both copies of this permit, return one copy to the Commission office, and retain the other for your records.

Attachments

Exhibit 10 Pump Installation Permit Standard Conditions

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD., STE 555
KAPOLEI, HI 96707

October 21, 2021

IN REPLY REFER TO:
Project No. 2021PR01248
Doc. No. 2110NM08

MEMORANDUM

TO: M. Kaleo Manuel, P.E., Deputy Director
State Commission on Water Resource Management
P.O. Box 621, Honolulu, Hawai‘i 96809
c/o Ryan R. Imata (ryan.r.imata@hawaii.gov)

FROM: Nicole Mello, Lead Hawai‘i Island Archaeologist

SUBJECT: Chapter 6E-42 Historic Preservation Review –
Well Construction/Pump Installation Permit Application
HWC-1 Well (Well No. 8-1128-003) and HWC-2 (Well No. 8-1128-004)
Pā‘au‘au 1, Palima Ahupua‘a, Ka‘u District, Island of Hawai‘i
TMK: (3) 9-6-002:016

RESPONSE:

[ ] This is a [ ] public (county or state) project [X] private project and [ ] **will** [ ] **may** affect historic properties.

[X] SHPD’s determination is that **no historic properties will be affected** by the work described under this permit (*no known historic properties have been identified within or near the proposed project area*)

At the request of the landowner, Albert Kam Jr. of PMK Capital Partners LLC, ASM Affilates conducted a field inspection of the two proposed well site locations within the subject parcel. The field inspection (Clark, August 2021) along with the permit information was received by SHPD on September 29, 2021. The report indicates that a field inspection of the two proposed well locations within a 0.7-acre area of the parcel was conducted on August 17, 2021. The report states that the parcel was subject to previous ground-disturbing activities associated with sugar cane cultivation in the area and no historic properties were identified during the survey. The attached photographs from the letter report also indicate that the subject parcel and the proposed well site locations have been impacted by previous ground disturbing activities. It is unlikely that any historic properties remain intact within the project area although **SHPD requests** the opportunity to review future permits in the subject parcel.

Pursuant to HAR §13-284-7(e), when the SHPD agrees that the action will not affect any significant historic properties, this is the SHPD’s written concurrence and historic preservation review ends. The historic preservation review process is ended. The permit issuance process may proceed.

Please attach to permit: In the unlikely event that subsurface historic resources, including human skeletal remains, structural remains, cultural deposits, artifacts, sand deposits, or sink holes are identified during the demolition and/or construction work, cease work in the immediate vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division, at (808) 933-7651.

Contact Nicole A. Mello at Nicole.Mello@hawaii.gov for any questions regarding this letter.

Signed: Alan Downer

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc. Queenie Komori, queenie.k.komori@hawaii.gov
Al Kam, akam808@aol.com
Matt Clark, mclark@asmaffiliates.com
Ben Barna, bbarna@asmaffiliates.com
Greg Fukumitsu, greg@tnwre.com

DAVID Y. IGE
GOVERNOR OF HAWAII

VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
EMD/CWB

05023PDCL.18

May 10, 2018

MEMORANDUM

SUBJECT: Clean Water Branch Standard Project Comments

TO: Agencies and Project Owners

FROM: ALEC WONG, P.E., CHIEF
Clean Water Branch

This memo is provided for your information and sharing. You are encouraged to share this memo with your project partners, team members, and appropriate personnel.

The Department of Health (DOH), Clean Water Branch (CWB) will no longer be responding directly to requests for comments on the following documents (Pre-consultation, Early Consultation, Preparation Notice, Draft, Final, Addendums, and/or Supplements):

- Environmental Impact Statements (EIS)
- Environmental Assessments (EA)
- Stream Channel Alteration Permits (SCAP)
- Stream Diversion Works Permits (SDWP)
- Well Construction/Pump Installation Permits
- Conservation District Use Applications (CDUA)
- Special Management Area Permits (SMAP)
- Shoreline Setback Areas (SSA)

For agencies or project owners requiring DOH-CWB comments for one or more of these documents, please utilize the DOH-CWB Standard Comments below regarding your project's responsibilities to maintain water quality and any necessary permitting. DOH-CWB Standard Comments are also available on the DOH-CWB website located at: http://health.hawaii.gov/cwb/.

DOH-CWB Standard Comments

The following information is for agencies and/or project owners who are seeking comments regarding environmental compliance for their projects with the Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program.

1. Any project and its potential impacts to State waters must meet the following criteria:

   a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.

   b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.

   c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).

2. You may be required to obtain National Pollutant Discharge Elimination System (NPDES) permit coverage for point source water pollutant discharges into State surface waters (HAR, Chapter 11-55). Point source means any discernible, confined, and discrete conveyance from which pollutants are or may be discharged.

   For NPDES general permit coverage, a Notice of Intent (NOI) form must be submitted at least 30 calendar days before the commencement of the discharge. An application for a NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. To request NPDES permit coverage, you must submit the applicable form ("CWB Individual NPDES Form" or "CWB NOI Form") through the e-Permitting Portal and the hard copy certification statement with the respective filing fee ($1,000 for an individual NPDES permit or $500 for a Notice of General Permit Coverage). Please open the e-Permitting Portal website located at: https://eha-cloud.doh.hawaii.gov/epermit/. You will be asked to do a one-time registration to obtain your login and password. After you register, click on the Application Finder tool and locate the appropriate form. Follow the instructions to complete and submit the form.

Some of the activities requiring NPDES permit coverage include, but, are not limited to:

a. Discharges of Storm Water

   i. For Construction Activities Disturbing One (1) or More Acres of Total Land Area.

      By HAR Chapter 11-55, an NPDES permit is required before the start of the construction activities that result in the disturbance of one (1) or more acres of total land area, including clearing, grading, and excavation. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale.

   ii. For Industrial Activities for facilities with primary Standard Industrial Classification (SIC) Codes regulated in the Code of Federal Regulations (CFR) at 40 CFR 122.26(b)(14)(i) through (ix) and (xi). If a facility has more than one SIC code, the activity that generates the greatest revenue is the primary SIC code. If revenue information is unavailable, use the SIC code for the activity with the most employees. If employee information is also unavailable, use the SIC code for the activity with the greatest production.

   iii. From a small Municipal Separate Storm Sewer System (along with certain non-storm water discharges).

b. Discharges to State surface waters from construction activity hydrotesting or dewatering

c. Discharges to State surface waters from cooling water applications

d. Discharges to State surface waters from the application of pesticides (including insecticides, herbicides, fungicides, rodenticides, and various other substances to control pest) to State waters

e. Well-Drilling Activities

   Any discharge to State surface waters of treated process wastewater effluent associated with well drilling activities is regulated by HAR Chapter 11-55. Discharges of treated process wastewater effluent (including well drilling slurries,

lubricating fluids wastewater, and well purge wastewater) to State surface waters requires NPDES permit coverage.

NPDES permit coverage is not required for well pump testing. For well pump testing, the discharger shall take all measures necessary to prevent the discharge of pollutants from entering State waters. Such measures shall include, if necessary, containment of initial discharge until the discharge is essentially free of pollutants. If the discharge is entering a stream or river bed, best management practices (BMPs) shall be implemented to prevent the discharge from disturbing the clarity of the receiving water. If the discharge is entering a storm drain, the discharger must obtain written permission from the owner of the storm drain prior to discharge. Furthermore, BMPs shall be implemented to prevent the discharge from collecting sediments and other pollutants prior to entering the storm drain.

3. A Section 401 Water Quality Certification (WQC) is required if your project/activity:

   a. Requires a federal permit, license, certificate, approval, registration, or statutory exemption; and

   b. May result in a discharge into State waters. The term "discharge" is defined in Clean Water Act, Subsections 502(16), 502(12), and 502(6).

   Examples of "discharge" include, but are not limited to, allowing the following pollutants to enter State waters from the surface or in-water: solid waste, rock/sand/dirt, heat, sewage, construction debris, any underwater work, chemicals, fugitive dust/spray paint, agricultural wastes, biological materials, industrial wastes, concrete/sealant/epoxy, and washing/cleaning effluent.

   Determine if your project/activity requires a federal permit, license, certificate, approval, registration, or statutory exemption by contacting the appropriate federal agencies (e.g. Department of the Army (DA), U.S. Army Corps of Engineers (COE), Pacific Ocean Division Honolulu District Office (POH) Tel: (808) 835-4303; U.S. Environmental Protection Agency, Region 9 Tel: (415) 947-8021; Federal Energy Regulatory Commission Tel: (866) 208-3372; U.S. Coast Guard Office of Bridge Programs Tel: (202) 372-1511). If your project involves work in, over, or under waters of the United States, it is highly recommended that you contact the Army Corp of Engineers, Regulatory Branch regarding their permitting requirements.

   To request a Section 401 WQC, you must complete and submit the Section 401 WQC application. This application is available on the e-Permitting Portal website located at: https://eha-cloud.doh.hawaii.gov/epermit/.

Please see HAR, Chapter 11-54 for the State's Water Quality Standards and for more information on the Section 401 WQC. HAR, Chapter 11-54 is available on the CWB website at: http://health.hawaii.gov/cwb/.

4. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of $25,000 per day per violation and up to two (2) years in jail.

5. It is the State's position that all projects must reduce, reuse, and recycle to protect, restore, and sustain water quality and beneficial uses of State waters. Project planning should:

   a. Treat storm water as a resource to be protected by integrating it into project planning and permitting. Storm water has long been recognized as a source of irrigation that will not deplete potable water resources. What is often overlooked is that storm water recharges ground water supplies and feeds streams and estuaries; to ensure that these water cycles are not disrupted, storm water cannot be relegated as a waste product of impervious surfaces. Any project planning must recognize storm water as an asset that sustains and protects natural ecosystems and traditional beneficial uses of State waters, like community beautification, beach going, swimming, and fishing. The approaches necessary to do so, including low impact development methods or ecological bio-engineering of drainage ways must be identified in the planning stages to allow designers opportunity to include those approaches up front, prior to seeking zoning, construction, or building permits.

   b. Clearly articulate the State's position on water quality and the beneficial uses of State waters. The plan should include statements regarding the implementation of methods to conserve natural resources (e.g. minimizing potable water for irrigation, gray water re-use options, energy conservation through smart design) and improve water quality.

   c. Consider storm water Best Management Practice (BMP) approaches that minimize the use of potable water for irrigation through storm water storage and reuse, percolate storm water to recharge groundwater to revitalize natural hydrology, and treat storm water which is to be discharged.

d. Consider the use of green building practices, such as pervious pavement and landscaping with native vegetation, to improve water quality by reducing excessive runoff and the need for excessive fertilization, respectively.

e. Identify opportunities for retrofitting or bio-engineering existing storm water infrastructure to restore ecological function while maintaining, or even enhancing, hydraulic capacity. Consideration should be given to areas prone to flooding, or where the infrastructure is aged and will need to be rehabilitated.

Komori, Queenie K

From: Miyahira, Michael M
Sent: Friday, September 24, 2021 1:49 PM
To: Komori, Queenie K; Hoagbin, Susan S
Subject: FW: Review for comments - 8-1128-003 & -004

This won't be a regulated public water system Queenie.

From: Hoagbin, Susan S <susan.s.hoagbin@hawaii.gov>
Sent: Friday, September 24, 2021 1:15 PM
To: Morikami, Lori <lori.morikami@doh.hawaii.gov>; Miyahira, Michael M <michael.miyahira@doh.hawaii.gov>; DOH.SDWB <DOH.sdwb@doh.hawaii.gov>
Cc: Komori, Queenie K <queenie.k.komori@hawaii.gov>
Subject: Review for comments - 8-1128-003 & -004

Aloha,

Please respond to this email request for comments to
queenie.k.komori@hawaii.gov

NOTE: In an effort to support the governor's initiative to go paperless, we will no longer be sending hard copies of correspondence to you. We will instead be sending you documents electronically via e-mail address that you provided.

Mahalo,

Groundwater Regulation Branch
Commission on Water Resource Management
State of Hawaii

Private Water Wells

WARNING! As the owner of a privately-owned well, you should **NOT** assume that water from your well is safe for consumption. It is your responsibility to make sure that your well water is safe to drink. The only way to do this is to have your well regularly tested for bacteriological and chemical contaminants.

There are no regulations controlling water quality in private wells serving individual residences as there are for public water systems (public or privately-owned utilities supplying water to 25 or more people or 15 service connections). In other words, there are no enforceable limits for contaminants and no requirements for regular testing. Private wells are often found in rural areas, where many activities such as onsite wastewater disposal can contaminate the ground water.

U.S. Environmental Protection Agency (EPA) Recommendations

The EPA recommends that private well owners test their well water each year for such contaminants as Total Coliform bacteria, Nitrates, as well as any other contaminants that may be of concern in your area. More frequent testing may be appropriate if you suspect a problem. EPA also suggests that you consider testing for pesticides, organic chemicals, and heavy metals before using it for the first time. Please refer to the EPA website on Private Drinking Water Wells at http://www.epa.gov/privatewells.

Other Contaminants

Water testing can be very expensive. It is important that you spend time to identify what other potential contaminants may be of concern. Please refer to the EPA website on Private Drinking Water Wells at http://www.epa.gov/privatewells/key-steps-protect-your-well for more information. Be aware of what and how you use and dispose of household and garden chemicals. Also determine the location of nearby septic tanks or cesspools, and agricultural or industrial activities in the area. General information on known chemical contamination of ground water in Hawaii can be found at the DOH website http://health.hawaii.gov/sdwb/groundwater-contamination-viewer.

Laboratories

Whenever possible, utilize a laboratory that is certified or approved for the specific drinking water tests and carefully follow their instructions for collecting, storing, and transporting the samples. Be sure to ask the lab to use EPA approved methods for drinking water analysis. A Directory of Drinking Water Laboratories Certified or Approved by the Hawaii Department of Health, State Laboratories Division can be found at http://health.hawaii.gov/sdwb/files/2018/01/Labs2017Dec.pdf. As lab certification status changes constantly, confirm their status when you contact the lab. Please note that the list is limited to currently regulated contaminants in public water systems.

Results

Once the lab provides you with the test results, you will be in a better position to determine if your well water is safe to drink or what contaminant you need to treat for. Generally, you should compare the results with Federal (www.epa.gov/safewater/mcl.html) and State (http://health.hawaii.gov/sdwb/files/2014/07/MCL-Fct-2014-07-10.pdf) Maximum Contaminant Level (MCL) drinking water standards. Where your test results are greater than the Federal or State maximum contaminant levels, your well water should be considered as **unsafe** for consumption.

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON

MICHAEL G. BUCK
ELIZABETH A. CHAR, M.D.
NEIL J. HANNAHS
AURORA KAGAWA-VIVIANI, PH.D.
WAYNE K. KATAYAMA
PAUL J. MEYER

M. KALEO MANUEL
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

Sep 24, 2021

TO: Elizabeth A. Char, M.D., Director
Department of Health
Attention: Sina Pruder, Chief, Wastewater Branch
Michael Miyahira, Acting Chief, Safe Drinking Water Branch

FROM: M. Kaleo Manuel, Deputy Director for
Suzanne D. Case, Chairperson
Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
HWC-1 Well (Well No. 8-1128-003)
HWC-2 Well (Well No. 8-1128-004)
TMK: (3) 9-6-002:016

96-3207 mailei st, pahala st 96777

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. **Please respond by returning this cover memo form by October 25, 2021**. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Queenie Komori of the Commission staff at 587-0251.

QK:ss
Attachment(s)

RESPONSE:

[ ] This well qualifies as a source which will serve as a source of potable water to a public water system (defined as serving 25 or more people at least 60 days per year or has 15 or more service connections) and **must** receive Director of Health approval **prior** to its use to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, Rules Relating to Potable Water Systems, §11-20-29

[ ] This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year or 15 service connections) and if the well water is used for drinking, the private owner **should** test for bacteriological and chemical presence before initiating such use and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required **prior** to implementation.

[ ] If the well is used to supply both potable and non-potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable spigots with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

[ ] It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

[X] For the applicant's information, a source of possible wastewater contamination [X] **is** [ ] **is not** located near the proposed well site (information attached).

[ ] **An NPDES permit is required.**

[X] Other relevant DOH rules/regulations, information, or recommendations are attached.

[ ] In the event that the location of the well changes but is still within the parcel described on this application, our division considers the comments to still be applicable, and we do not need to review the new location.

[ ] An injection well permit is required for the disposal of the effluent from this well.

[X] No comments/objections

cesspool card dated 1972 02 01

Contact Person: Amy Cook, Engineer in Hilo 933-0930

Signed: Mark Tomomitsu, PD Supervisor 586-4294 Date: 9/27/2021

WB Land use 5811

Exhibit 11 SHPD CWB SDWB WWB comments

San. Form 40

STATE OF HAWAII - DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH DIVISION - SANITATION BRANCH

SANITARIAN'S REPORT OF CESSPOOLS

Dist. 4 Kau Date 12-27-71

Property Owner Hawn. Ag. Sugar Co. (New Boarder House) Address Pahala, Kau

New Construction yes-cesspool and Intended for Taykey 9-6-2-16 sewage-boiler house toilet

Builder or Contractor Self

Distance from building 10 ft. Boundary over 5 ft. Stream or well —

Diameter(clear)-ft. 6 Depth-ft. 16½ No. ft. down to water if any —

Capacity(Gallons) 2172 Ground slope level

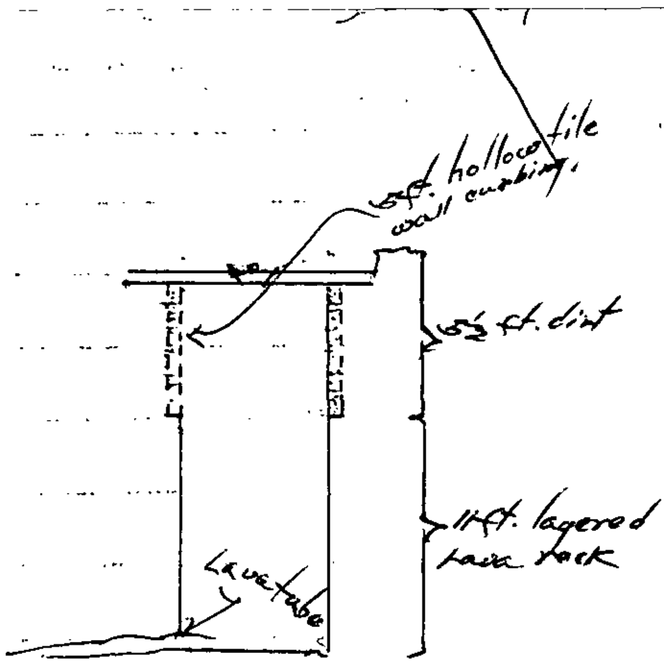
State soil or rock formation starting from surface 5½ ft. dirt 11 ft. layered lava rock. Small lava tube at bottom.

Kind of wall or curb 4 ft. Kellow tile curbing Kind of cover concrete

Distance from surface of ground to top of cover-ft. 1 ft.

Approved 1-1 1972 Sam Dang Ho

SANITARIAN



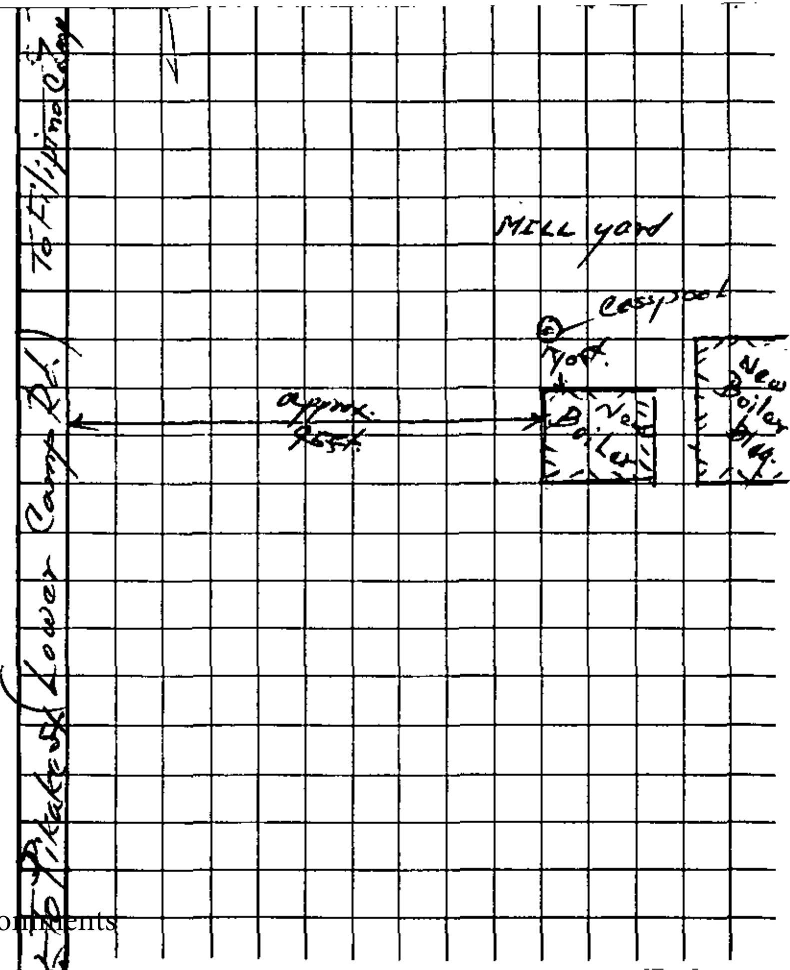


Exhibit 11 SHPD CWB SDWB WWB comments